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Prevalence of dysmenorrhoeal pain and its impact on school performance: A cross-sectional study

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ABSTRACT

Menstruation is normal biological phenomena for girls and women. During menstruation, girls and women feel a certain degree of pain (dysmenorrhea) that can be minor to severe resulting obstacles in carrying daily life activities including school. This study was conducted to determine how dysmenorrheal pain has affected the students' school as well as daily life along with prevailing social and cultural rules segregated just for the times during period. Following cross-sectional design, this study took place among 366 students of Kathmandu (66.1%) and Dhading (33.9%), aged from 13 to 20 years. 89% of the students complained of having dysmenorrhea where moderate degree of pain had the highest frequency of 49.7%. Nonetheless of the degree of pain, 45.1% missed school because of it. Besides missing classes, 81% didn't participate in sports activities during their period. 38% students regularly followed restrictions applied during period while 34% followed them sometimes only. 83% complained about school administration failing to address periodic problems. I would recommend the school administration to have an infirmary where the students can take rest and continue their classes after that. Adding on to it, the administration should be able to provide emergency sanitary pads and heat pads, so that the students don't have to go back home and miss their classes.

KEYWORDS: Dysmenorrhea, school, symptoms, restriction

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INTRODUCTION

Menstruation also known as period is the vaginal bleeding that contains blood and mucosal tissue from the inner lining of uterus and occurs regularly in the interval of 28-30 days. The menarche (first period) occurs at the age of 11-14 and menopause (end) at around the age of 51. During menstruation, girls and women feel a certain degree of pain that can be minor to severe. There are two types of dysmenorrhea; primary and secondary [1]. Primary dysmenorrhea is the cramping of lower abdomen along with other physical symptoms such as headache, backache, vomiting etc. during period. Secondary dysmenorrhea is caused by disorders in woman's reproductive system. Dysmenorrhea in adolescents and young adults is usually primary [2]. Contractions (tightening) in the uterus (which is a muscle) caused by a chemical called prostaglandin is the major reason for menstrual cramps or Dysmenorrhea [3]. Contraction of the uterus can press against nearby blood vessels, cutting off the supply of oxygen to the muscle tissue of the uterus which causes pain. Pain usually develops within hours of the start of the menstruation and can increase with the heavy flow [4]. Some females can't attend their schools and colleges because of pain.

Moderate to severe pain can cause absenteeism in institutions as well as disturbances in daily works. Besides school, the existing social construction that has set certain rules and regulations to follow during period has had an impact on mental health too. Not being able to enjoy daily life activities on top of period cramps does no good. This study will explore how dysmenorrhea has affected the students' school as well as daily life along with prevailing social and cultural rules segregated just for the times during period. Dysmenorrhoeal pain is neglected though the side effects can be very strong that can affect daily activities to social life [3]. This study not only covers the symptoms, pain and its effect but also highlights the social restrictions put upon menstruating girls.

METHODOLOGY

The cross sectional study took place in Kathmandu city and a village in Dhading. Female students aged between 12-20 years were taken as study participants. Total participants were 370 but 4 of them haven't had their period yet so were excluded from the study that decreased total participants to 366 making it 96.1%.

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Kathmandu Little Blossoms Public School, Milestone Academy, Supervision Academy, Emerald Academy, Prime International HSS & College, Oxford HSS and Bageswari HSS & College (Dhading) were the participatory schools.

Clustered sampling was used and the sample size was calculated using formula

$$N = \frac{z^2 p(1-p)}{d^2}$$

Where, n is the sample size required; d is marginal error of 5% ($d=0.05$); z is the degree of accuracy required at 95% confidence level = 1.96; p is the prevalence to be observed.

Using the above mentioned formula, the sample size that was obtained was 385.

$$N = \frac{(1.96)^2 (0.5) (1-0.5)}{(0.05)^2} = 385$$

After 10% of the calculated sample size was added for possible non response, the final sample size became 400 female students. The total number of participants in the study was 366 proving a response rate of 91.5%. A questionnaire was developed in a way so that all the necessary information was obtained, the question was semi-structured. It was a self-assessing questionnaire. The participants were given questionnaire to fill up. Before starting the questionnaire, the students were briefed about the questions so that they would not misunderstand the questions. Since the school did not allow filming and recording of interview, we had to have the interviews saved in handwritten form.

SPSS.24 software was used for data analysis. Use of descriptive analysis was done to understand the situation and health status. Pearson's chi-square and correlation was used to determine the relationship between dependent and independent categorical variables.

The study maintained maximum ethical standard with approval from Ethical Review Board (IRB) of AUW. The study also has maintained privacy and confidentiality of the participants. Informed written consent was given to every participant. Each school was approached first through official letter and consensus was taken to carry out the study. Before taking the consent the aim of the study was explained to the participants. They were allowed to ask any questions regarding to the research. Besides the research, a mini workshop on maintaining hygiene was given along with a mini Q/A session including all the students. Since the students were from middle and high school, they were first asked about their menstruation. Few of the students didn't have their period yet so they couldn't participate in the study. However, they were allowed to stay in the venue during the study, workshop as well as Q/A session.

RESULTS

Total 366 female students were taken as participants for the study and it was found that 89.30% of girls were suffering from

dysmenorrhoeal pain and 45.10% missed school because of it. 57.90% felt that their grades/performances were affected due to period and 27.00% responded that it might be one of the reasons that their grades/performances were affected. 93.20% said that they heard and knew about menstruation before having their own, which shows that parents are opening up about it. However, it was disheartening to discover that 38.00% of the study population still followed restrictions related to menstruation and 34.40% followed them depending on place and situation. It was found that there was a strong relation between missing classes because of period and its effect on grades.

Table 1 represents the demographic characteristics of the study population. The age of study population ranged from 12 to 20 years, with mean age (15.47 ± 1.39) in urban and (16.36 ± 1.52) in rural area. The highest number of students was from 11th standard with a frequency of 96 whereas grade 8 had the least number of participants with a count of 46. (12.12 ± 1.21) is the mean age of menarche in urban area whereas (13.36 ± 1.178) in rural area. 89.30% of study population suffered from dysmenorrhoeal pain. All of the participants suffer through a certain degree of pain during their period, where 49.7% had moderate degree of pain. 56.3% said that they missed class because of pain. 72.4% of the participants said that they lost concentration in the class during their period. 58% of the participants agreed that menstruation could affect their grades due to above mentioned reasons. 81.7% participants did not take part in any sports during their menstruation. It is clear that there is a strong relation between, missing classes and its effect on grades. Feeling uncomfortable or pain, whatever the reason, the students miss class and results show that it has effect on their grades. According to Table 2, 56% students missed school because of pain. Table 3 shows that there are still some restrictions being followed. The chi-square's p-value is evidence. 92.1% students do not attend any religious function, the remaining who attended are the ones who were lucky enough not get period during the occasions (interview). 59% students didn't enter kitchen and 62.8% were not allowed to touch food.

Table 1: Knowledge on menstruation

| Variables | Urban N=242 (%) | Rural N=124 (%) | Total 366 (%) |
|---|--------------------|--------------------|------------------|
| Age at menarche | | | |
| <11 years | 75 (94.90) | 4 (5.10) | 79 (21.60) |
| 12-14 years | 164 (62.40) | 98 (37.60) | 262 (71.60) |
| >14 years | 3 (33.90) | 22 (66.10) | 25 (6.80) |
| Mean age at menarche | 12.12±1.21 | 13.36±1.19 | |
| Heard about menstruation before having own? | | | |
| Yes | 223 (65.40) | 118 (34.60) | 341 (93.20) |
| No | 19 (76.00) | 6 (24.00) | 25 (6.80) |
| Presence of dysmenorrhea pain | | | |
| Yes | 218 (66.7) | 109 (38.5) | 327 (89.30) |
| No | 24 (61.5) | 15 (33.5) | 39 (10.70) |
| Degree of pain | | | |
| Negligible | 83 (65.40) | 58 (34.60) | 127 (34.70) |
| Moderate | 124 (68.10) | 22 (39.60) | 182 (49.70) |
| Severe | 35 (61.40) | 44 (31.90) | 57 (15.60) |

DISCUSSION

Among the effects of dysmenorrhea, absenteeism, loss of concentration, withdrawal from various activities and obligation to follow social restrictions were prevalent, that in some way affected the participants' school performance and similarity is found in the results of study carried out by Gebeyehu et al [5]. Other studies also have found similar results that unveil the relationship between periodic pain and its effect on school performance as well as daily activities [6,7]. This study had teen girls whereas other studies had adults [3,4].

Cramps, Nausea, diarrhoea, mood swings, backache, headache, and fatigue were the symptoms that were frequently associated with dysmenorrhea [3,5]. Along with the symptoms associated

Table 2: Consequences of dysmenorrhoeal pain in school performance

| Variable | Urban | Rural | Total |
|--|-------------|------------|-------------|
| Missed class because of pain | | | |
| Yes | 162 (78.60) | 44 (21.40) | 206 (56.30) |
| No | 80 (50.00) | 80 (50.00) | 160 (43.70) |
| Lost concentration in the class | | | |
| Yes | 182 (68.70) | 83 (31.30) | 265 (72.40) |
| No | 60 (59.40) | 41 (40.60) | 101 (27.60) |
| Do you think your grades are affected by it? | | | |
| Yes | 137 (64.60) | 75 (35.40) | 212 (58.00) |
| No | 43 (78.20) | 12 (21.80) | 55 (15.00) |
| Maybe | 62 (62.60) | 37 (37.40) | 99 (27.00) |
| Participation in sports during period? | | | |
| Yes | 34 (50.70) | 33 (49.30) | 67 (18.30) |
| No | 208 (69.60) | 91 (30.40) | 81 (70) |

Table 3: Period and restrictions

| Variable | Urban | Rural | Total | Chi-square/P value |
|--|-------------|-------------|-------------|--------------------|
| Feel uncomfortable talking about period? | | | | |
| Yes | 127 (75.10) | 42 (24.90) | 169 (46.20) | 0.001 |
| No | 115 (58.60) | 82 (41.60) | 197 (53.80) | |
| Follow restriction? | | | | |
| Yes | 83 (59.70) | 56 (40.30) | 139 (38.00) | 0.006 |
| No | 62 (61.40) | 39 (38.60) | 101 (27.60) | |
| Sometimes | 97 (77.00) | 29 (23.00) | 126 (34.40) | |
| Attend religious functions | | | | |
| Yes | 14 (48.30) | 15 (51.70) | 29 (7.90) | 0.034 |
| No | 228 (67.70) | 109 (32.30) | 337 (92.10) | |
| Do household works? | | | | |
| Yes | 96 (85.0%) | 17 (15.0%) | 113 (30.90) | 0.000 |
| No | 67 (77.0%) | 20 (23.0%) | 87 (23.80) | |
| Some of them | 79 (47.6%) | 87 (52.4%) | 166 (45.40) | |
| Are you isolated during your period? | | | | |
| Yes | 38 (58.50) | 27 (41.50) | 65 (17.80) | 0.150 |
| No | 204 (67.80) | 97 (32.20) | 301 (82.20) | |
| Are you allowed to enter kitchen? | | | | |
| Yes | 166 (76.90) | 50 (23.10) | 216 (59.00) | 0.000 |
| No | 76 (50.70) | 74 (49.30) | 150 (41.00) | |
| Are you allowed to touch food? | | | | |
| Yes | 165 (71.70) | 65 (28.30) | 230 (62.80) | 0.003 |
| No | 77 (56.60) | 59 (43.40) | 136 (37.20) | |
| Are you allowed to touch family member? | | | | |
| Yes | 220 (72.40) | 84 (27.60) | 304 (83.10) | 0.000 |
| No | 22 (35.50) | 40 (64.50) | 62 (16.90) | |

with pain, uncomfortable feeling, and no satisfaction in school's facility were the reasons resulting in loss of concentration in class which affected in their grades later. Besides that, they also complained about feeling uneasy due to period and not being able to participate in sports related activities. We can find similar results as well as differences too. This variation could be because of the difference in socio-demographic variables.

Use of soap and water to clean genitals after going to washroom was more prevalent (56.8%) than use of only water which is not a good hygiene practice. 83.6% were not satisfied with the facilities they had in school which didn't help during their menstrual period. Differences in hygienic practices in urban and rural area were found. Participants in rural area preferred other ways (burn) to dispose the sanitary pads. Normally, school finishes after almost 6+ hours but 31.4% students do not change pads in school which is another hazardous habit. The ones who changed were still in hesitation since school didn't have proper water or wastage facility.

53.8% still hesitated to talk about period normally. They would stay silent unless as it was not something they could openly discuss with anyone. 38% still followed restrictions put upon if they were menstruating. Not attending any religious function was the most prevalent one (92.1%). The remaining 7.9% responded that they were never on period when religious occasions happened when asked how it was different for them. Still 17.8% were isolated while on period. Not being allowed to enter kitchen or prohibition of touching foods were other restrictions that were to be followed which also affected in daily activities. These all affected the participants psychologically at some point to which they said they had no control upon. Sooner or later they would be affected and it resulted in inconsistency in

study patterns as well as absenteeism resulting in disintegrated grades.

Many studies showed that dysmenorrhoeal pain had significant effect on school as well as daily activities. This study also supports the finding as the data above are evident. It was found that even though the students were aware about the effects going on due to lack of proper facilities in school they were compelled to miss classes and stay home.

The study also reveals that there was no significant effect of menarche or periodic cycle as dysmenorrhoeal factor.

LIMITATIONS

The study included only one school from Dhading though the students represented from distant places. Also, it was hard to compare results from the area due to lack of research in the area. There could have been recall bias from the participants as they were asked about past events too.

CONCLUSION

It was found that there was a strong relation between missing classes because of period and its effect on grades. These all affected the participants psychologically at some point to which they said they had no control upon. Sooner or later they would be affected and it resulted in inconsistency in study patterns as well as absenteeism resulting in disintegrated grades. Besides that, due to lack of proper facilities as well as restrictions they

had to follow, they preferred missing classes. Periodic pain and its associated symptoms affect the students leading to effects on their grades and school performance. After the study, it was found that proper education on menstrual hygiene; facilities in the school as well as awareness regarding restrictions were needed for better menstrual experience.

REFERENCES

1. Friederich, M. (2008). Dysmenorrhea. *Women & Health*, 8(2-3), 91-106. doi: 10.1300/j013v08n02_05.
2. Harel Z. Dysmenorrhea in adolescents and young adults: an update on pharmacological treatments and management strategies. *Expert Opin Pharmacother*. 2012;13:2157–70.
3. Najafi, N., Khalkhali, H., Moghaddam Tabrizi, F., & Zarrin, R. (2018). Major dietary patterns in relation to menstrual pain: a nested case control study. *BMC Women's Health*, 18(1). doi: 10.1186/s12905-018-0558-4.
4. Assefa, N., Demissie, A., & Hailemeskel, S. (2016). Primary dysmenorrhea magnitude, associated risk factors, and its effect on academic performance: evidence from female university students in Ethiopia. *International Journal Of Women's Health*, Volume 8, 489-496. doi: 10.2147/ijwh.s112768.
5. Gebeyehu, M. B., Mekuria, A. B., Tefera, Y. G., Andarge, D. A., Debay, Y. B., Bejiga, G. S., & Gebresilassie, B. M. (2017). Prevalence, Impact, and Management Practice of Dysmenorrhea among University of Gondar Students, Northwestern Ethiopia: A Cross-Sectional Study. *International journal of reproductive medicine*, 2017, 3208276.
6. Agarwal, A. K., & Agarwal, A. (2010). A study of dysmenorrhea during menstruation in adolescent girls. *Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine*, 35(1), 159-64.
7. Derseh BT, Afessa N, Temesgen M, Semayat YW, Kassaye M, et al. (2017) Prevalence of Dysmenorrhea and its Effects on School Performance: A Cross-sectional Study. *J Women's Health Care* 6:361. doi: 10.4172/2167-0420.1000361.