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Menstrual Disorder and Associated Factors among Female of Reproductive Age Group in Sunkoshi Rural Municipality, Sindhuli: A Community-based Cross-sectional Study

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ABSTRACT

Introduction: A menstrual disorder is an abnormal condition in women's menstrual cycle. Menstrual disorders may present as abnormal uterine bleeding, dysmenorrhea, premenstrual syndrome, and premenstrual syndromes. Within the Himalayan country of Nepal, menstruation is taken into account as taboo, an incident of stigma and sin. The main objective of the study was to assess the menstrual disorders of women of reproductive age group and find out the association between different factors.

Methods: A community-based cross-sectional study was conducted among 272 women. Convenience sampling was adopted for area selection and respondent selection. The study was done in Sindhuli. A semi-structured questionnaire was prepared whereas a face-to-face interview was done for information collection. SPSS software was used for data analysis.

Results: The prevalence of menstrual disorders was found to be 84.2%. The most contributing factors that remained to be statistically significant and independently associated with menstrual disorder were ethnicity (p=0.029), pregnancy history (p=0.032), family type (p=0.028), and junk food (p=0.014).

Conclusions: High prevalence of menstrual disorders among women of reproductive age group was seen. Several other research showed similar results even though there's limited research on menstrual disorders in Nepal, despite having a soaring number of menstrual disorders among women.

Keywords: *menstruation; menstrual disorder; menstrual hygiene; Reproductive age group.*

INTRODUCTION

Periods typically begin during adolescence around ages 11 to 14 and continue until menopause which occurs usually around age 51.[1] Premenstrual Syndrome (PMS) refers to the symptoms that cause discomfort before the onset of each menstrual cycle.[2] Amenorrhea on the other hand is the absence of menstruation for more than six months.[3] Oligomenorrhea is a disorder characterized by irregular and inconsistent menstrual flow in women with cycles lasting longer than 35 days or experiencing only four to nine menstrual cycles per year.[4] Dysmenorrhea is the medical term for severe pain during menstruation.[5] Lastly, menorrhagia refers to a menstrual period with abnormally heavy or prolonged bleeding.[6]

The main objective of the study was to determine menstrual disorders and associated factors among women of reproductive age group in Sunkoshi Rural Municipality, Sindhuli.

METHODS

A community-based cross-sectional study design was conducted among women of reproductive age group within the Sindhuli ward - 3, who have had their

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menstrual cycle for at least one year. The study was conducted from Magh 2078 to Ashar 2079, during a period of 6 months. Ethical approval was taken from the National Academy for Medical Sciences. Permission was taken from Sunkoshi Rural Municipality and from the ward office of ward no- 3. Informed consent from the respondents was also taken by ensuring privacy and confidentiality. Reproductive age group women of age group 18-45 and women who have had their menstruation for at least 1 year were included in the study. Females with chronic health problems were not included in the study. Women from other districts were also excluded. Pregnant and women who had early menopause were also not considered in the study. Respondents not willing to answer were also excluded. A convenient sampling technique was used to recruit the participants' .

Sample size

According to a study done in India on 'Prevalence of menstrual disorder' in 2019 found the prevalence was 77% [7], which was used to identify the sample size. Sample size of the study was determined using the formula the prevalence rate of menstrual disorder of adolescence to be 77%, with 95% confidence interval and 5% margin of error, sample size was calculated by using the following statistical formula for infinite population.

Sample size (n) = Z^2 pq/d^2

Where,

n= Sample size with infinite population

Z= Z Statistic for a level of confidence (1.96)

P= Prevalence of menstrual disorder among reproductive age (77%) = 0.77

q = 1- p= 1- 0. 77 =0.23

d= Acceptable margin error (5%)

Now,

n = [1.962× 0.77× 0.23] ÷(0.05)

2

= 0.68 ÷ 0.0025

= 272

So, the calculate sample size of the study was 272

In this study if a woman suffers from at least one discomfort like lower abdominal pain, the menstrual period for two consecutive months, having more than one menstrual period within a 28-day cycle within the past year with lower, excessive bleeding, or no bleeding at all. This study defines Premenstrual syndrome (PMS) as the occurrence of at least one discomfort, such as painful or tender breasts, lower abdominal pain, or upper abdominal pain, that occurs just before menstruation and ceases once when menstruation begins. Dysmenorrhea includes women who experience one of the following pains: lower abdominal pain, upper abdominal pain, or back pain. The severity of the pain is categorized as mild if analgesics are rarely needed, moderate if analgesics are required and interfere with daily activities, and severe if the pain is not relieved by analgesics. Oligomenorrhea is characterized by the absence of a menstrual period for two consecutive months within the past year. Polymenorrhea refers to having more than one menstrual period within a 28-day cycle within the past year. Menorrhagia is defined as excessive bleeding requiring the use of 5-7 pads within a 24-hour period. Amenorrhea is diagnosed when very little bleeding occurs, requiring less than 3 pads within a 24-hour period.

The instrumentation for data collection was a semi-structured questionnaire which helped to assess knowledge about menstrual disorder and its associated factors. The information is collected following the face-to-face interview method. It was designed in both Nepali and English language and composed in different sections. Pre-testing was done among similar groups in 10% of sample size. The questionnaire was developed based on the objectives, close supervision and guidance from supervision. Data were entered and analyzed in SPSS version 20.0. A descriptive analysis was done and presented using frequency and percentage.

RESULTS

Prevalence of different types of menstrual disorder

A total of 272 participants took part in this research study. The findings revealed that the occurrence of menstrual disorders was 84.2%. Of the respondents 80.9% experienced discomfort prior to the onset of menstruation commonly known as Premenstrual Syndrome (PMS while 19.1% did not experience any discomfort. Out of the participants, 77.2% reported experiencing menstrual pain whereas 22.8% did not experience any pain during their menstrual cycle. It is evident that 44.9% of the respondents had experienced the absence of a menstrual cycle for two consecutive months while 42.3% reported having more than one menstruation cycle in a span of 28 days. Furthermore, 43.9% of the participants experienced heavy blood flow 41.9% had moderate blood flow and 41.9% had less blood flow. Additionally, 43.4% of the respondents reported heavy bleeding also known as Menorrhagia while the rest 56.6 did not experience heavy bleeding. Lastly, 41.9% of the participants had minimal to no bleeding during their menstruation, a condition referred to as amenorrhea.

Table 1. Prevalence of Menstrual disorder (n = 272)

Menstrual Disorder	Frequency (n %)
Yes	229(84.2)
No	43(15.8)
Premenstrual syndrome	
Yes	220 (80.9)
No	52 (19.1)
Dysmenorrhea (cramps or pain during menstruation)	
Yes	210 (77.2)
No	62 (22.8)
Oligomenorrhea (absence of periods for 2 months in a row)	
Yes	122 (44.9)
No	150 (55.1)
Polymenorrhea (more than one menstruation in a month)	
Yes	115 (42.3)
No	157 (57.7)
Menorrhagia	
Yes	118 (43.4)
No	154 (56.6)
Amenorrhea	
Yes	114 (41.9)
No	158 (58.1)

The majority of the respondents were found to be between the age group 26-35 which was 39%.The mean age was 27.30 and the standard deviation was 8.003. Out of the total respondents, the majority of respondents i.e. 95.6% were Hindu followed by Buddhist 6%. The majority of respondents were Janajati with 39.7%. Regarding marital status, 61.40% were married and 57.3% had pregnancy history. Among the respondents, 55.5% have a secondary-level education. The respondents with a family monthly income of less than 10,000 were highest with 33.5%. Regarding occupation, 39.7 % of agriculture was the highest.

Table 2. Socio- demographic characteristics of respondent (n=272)

Socio Demographic Factors	Frequency(n %)
Menstrual Disorder	
Yes	229(84.2)
No	43(15.8)
Age of respondent	
18-25	77(28.3)
26-35	106 (39.0)
36-45	89(32.7)
Religion of respondent	
Hindu	260(95.6)
Buddhist	6(2.2)
Christian	6(2.2)
Caste/caste group of respondents	
Bhrahmin/ Chettri	65 (23.9)
Janajati	108(39.7)
Dalit	37(13.6)
Madhesi /Others (Sanyasi, Thakuri)	62(22.6)
Marital Status of respondent	
Married	167 (61.39)
Unmarried	105(38.60)
Educational Level of respondent	
Literate	32(11.8)
Illiterate	6(2.2)
Fundamental Level (1-8)	34(12.5)
Secondary Level (9-12)	151(55.5)
Above 12	49(18.0)
Pregnancy History of respondent	
Yes	156(57.3)
No	116(42.6)
Family Monthly Income of respondent	
Less than 10000	91(33.5)
10000-20000	89(32.7)
20000-30000	44(16.2)
More than 30000	48(17.6)
Occupation of respondent	
Agriculture	108(39.7)
Business	37(13.6)
Labor	14(5.1)
Housewife	23(8.5)
Student	90(33.1)

Association between various factor and Menstrual disorder

The following table shows that the menstrual disorder was found statistically significant with their ethnicity (p-value 0.029). Similarly, there was a significant association between pregnancy history and family type p value 0.032 and 0.028 respectively. It also shows that junk food consumption was found statistically significant with the menstrual disorder (p-value 0.014). Also, the pattern of coffee consumption also shows significance with the menstrual disorder (p-value 0.002).

Table 3. Association between various factor and Menstrual disorder

Factors	Menstrual Disorder		P- value
	Yes	No	
Ethnicity of respondent			
Bhramin/Chettri	55 (84.61)	10 (15.38)	0.029*
Janajati	97 (89.81)	11 (10.18)	
Dalit	32 (86.48)	5 (13.51)	
Madhesi/Others (Thakuri, Sanyasi,)	45 (72.58)	17 (27.41)	
Pregnancy history			
Yes	131 (85.62)	22 (14.3)	0.032*
No	98 (36.02)	21 (7.72)	
Family Type of respondent			
Single	118 (82.35)	30 (20.27)	0.028*
Extended/Joint	111 (89.51)	13 (10.48)	
Junk Food consumption by Respondent			
Yes	219 (85.54)	37 (14.45)	0.014*
Never	10 (62.5)	6 (37.5)	
Pattern of coffee consumption			
Frequent	87 (92.55)	7 (7.44)	0.002*
Rarely	23 (71.87)	9 (28.1)	

*P-value<0.05 denotes significance

DISCUSSION

The prevalence of the menstrual disorder was discovered to be 84.2 percent in the current study, which closely resembled the results of a previous study carried out in Jakarta. In that study, involving a sample size of 150 individuals with menstrual disorders, the prevalence was reported to be 87 percent. [8] Another similar study conducted in Pokhara, Nepal found that out of 260 girls, 64.2% had at least one menstrual disorder.[9] A recent cross-sectional descriptive study, was carried out among 320 adolescent studies done in 2022 January for over a period of 10 months 320 participants found the menstrual disorder to be 77%.[7] Many studies were conducted among reproductive age group women. The prevalence of Premenstrual Syndrome (PMS) in the current study was found to be 80.9% which is similar to a study done in Aligarh City in 2018 where the prevalence of PMS was found to be 71.3%. Likewise, our study showed the prevalence of dysmenorrhea to be 77.2%, which is quite close to a study done in Iran in 2018 which had a prevalence of dysmenorrhea of 73.27%.[10] The current study showed 44.9% prevalence of oligomenorrhea, with a study performed at a youth clinic that was part of the school health system in Stockholm, Sweden showing the prevalence of oligomenorrhea to be 42%. [11] Likewise, the present study showed the prevalence of polymenorrhea to be 42.30% which resemble to a cross-sectional study of Lebanese nursing students of the Islamic University of Lebanon in Beirut during the academic year 2005–06, where the prevalence of polymenorrhea was 37.5 [12], however, the result was inconsistent with other studies such as school-based study in Aligarh was found to be 22%. [7] The prevalence of menorrhagia was found to be 43.4% which is similar to a descriptive cross-sectional study with 402 adolescents of Osun State, where the prevalence of menorrhagia was found to be 57.4%. [13] Lastly, in the present study prevalence of amenorrhea was found to be 41.9% which has some similarity with a study performed at a youth clinic that was part of the school health system in Stockholm, Sweden showed the prevalence of amenorrhea to be 58% .[11]

The study found a statistically significant association between the ethnicity and menstrual disorder (p-value 0.029) of respondents, a similar finding was found between the ethnicity and menstrual disorder (p-value 0.007) in the study conducted in Pokhara, Nepal in 2016 .[9] The current study showed a significant association between pregnancy history and menstrual disorder (p-value 0.032). A study was done in Danish in 2011 also revealed the similar result between pregnancy history and menstrual disorder (p-value 0.024).[14] This study also showed a significant association between the family type and menstrual disorder (p-value 0.029), but in contrast, a study conducted in Pokhara, Nepal shows no significance (p-value 0.08).[9] This study shows no significant association between menstrual disorder and many socio-demographic factors namely age, monthly income, marital status, education, and occupation contrary to a study conducted at Ambo University showed a significant association between menstrual disorder and age (p-value 0.000205) and also showed a significant association between menstrual disorder and marital status (p-value 0.011002).[10]

There were a few limitations in the study. Information was obtained without any medical reference but rather through the answer of the respondent. Also, no interventional study was conducted during the study.

CONCLUSIONS

Over three fourth suffer discomfort before or during menstruation in Sunkoshi Rural Municipality. Premenstrual syndrome (PMS) is the most common disorder which is closely followed by dysmenorrhea. The findings of the present study are in line with other studies and reported a more-than-expected prevalence of menstrual disorders. Pregnancy history, food consumption and low consumption are independent components of menstrual disorder and it is significantly affected by the women's socio-demographic characteristics. Several other research showed similar results however, there's little research on menstrual disorders in Nepal, despite having a soaring number of

menstrual disorders among women.

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CONFLICT OF INTEREST

None

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