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Knowledge and effects of menstrual distress among PCL nursing students of Pokhara, Nepal

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ABSTRACT

Introduction: Menstrual distress includes a range of physical, psychological, and emotional symptoms that can negatively affect students' academic performance, social life, and well-being. Nursing students may face added challenges due to academic pressures and clinical responsibilities. This study aimed to assess the knowledge and effects of menstrual distress among PCL nursing students in Pokhara, Nepal.

Methods: A quantitative, cross-sectional study was conducted among 303 PCL nursing students using a census method. Data were collected through a modified Menstrual Distress Questionnaire (MEDI-Q), developed based on the standard MEDI-Q. Permission to use and adapt the MEDI-Q was obtained from the original author. Data were entered in EpiData, and analyzed using IBM SPSS v.22. Chi-square was used, with $p < 0.05$ considered statistically significant.

Results: Results showed that majority of the students (91.74%) were aware of menstrual discomfort, most of them (83.82%) had knowledge of gastrointestinal issues, nearly all (98.34%) understood cognitive changes, and majority (94.71%) recognized physiological changes. Menstrual and inter-menstrual phases showed higher levels of reported distress. Study year and pain intensity were significant predictors of menstrual distress, whereas factors like age, religion, and ethnicity were not.

Conclusion: Despite high awareness, menstrual distress is often normalized and unaddressed, affecting students' mental health, academic performance, and clinical competence. The findings highlight the need for targeted interventions such as institutional support and access to menstrual health resources to improve the well-being and academic experiences of nursing students.

Keywords: Menstrual Distress, Students, Nepal

INTRODUCTION

Menstruation is a biological cycle that begins with menarche, usually between the ages of 10 and 15, and continues until menopause.[1] Adolescence, a time of physical and emotional transition, often overlaps with menarche. For many girls, this change is unanticipated, leading to anxiety, fear, confusion, and depression due to a lack of preparation and awareness.[2] Menstrual distress refers to the physical, emotional, and psychological symptoms experienced before or during menstruation, including irritability, headaches, fatigue, anxiety, low mood, breast tenderness, weight gain, pain, and difficulty concentrating.[3]

Globally, menstrual distress is a significant health concern. Dysmenorrhea, menstrual irregularities, and associated symptoms such as cramps, back pain, and mood disturbances affect 20–90% of adolescent girls, with about 15% reporting severe cases.[4] Such disorders impact the social activities and school attendance of the young girl students.[4,5]

In Nepal, menstrual pain is widely prevalent, with about 38.1% of adolescent girls reporting absenteeism due to menstrual discomfort.[6] Cultural taboos and restrictions, such as avoiding kitchens, temples, or sacred objects, can intensify emotional distress. These practices may create feelings of shame, fear, and isolation among adolescent girls.[7,8] Physical symptoms like abdominal cramps, back pain, and anxiety further complicate their menstrual experience.[9,10]

Nursing students, who are expected to balance academic responsibilities and clinical practice, are particularly vulnerable to the effects of menstrual distress. Menstrual distress can hinder concentration, reduce academic performance, and affect clinical duties because of pain, fatigue, and mood changes. Despite these impacts, limited research has explored menstrual distress among nursing students in Nepal.[11]

This study aims to assess the knowledge and effects of menstrual distress among PCL nursing students in Pokhara, Nepal. Understanding their experiences can guide the development of targeted interventions and support systems to reduce the academic and emotional burden associated with menstrual distress.

METHODS

A cross-sectional study was conducted among PCL Nursing students in Pokhara Metropolitan City, Nepal. The study included students from three nursing colleges offering the PCL Nursing program. Two colleges had 120 students each, while the third had 63. Census sampling was employed to include all eligible PCL nursing girl students from the three colleges. The total sample size was 303, comprising all students who were present during the data collection period. Students enrolled in the PCL nursing program who were present during data collection and provided consent were included in the study. Students absent on

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the day of data collection were excluded. A self-administered technique was used to collect data after obtaining informed consent from the participants. The research objectives were explained in detail before participation. Data collection took place between July to August 2024. The Principal Investigator and co-investigators conducted the data collection. Privacy and anonymity were maintained throughout the study, and each participant was provided a unique code to ensure confidentiality. Respondent's autonomy was maintained by giving the right to reject or discontinue from the research study at any time. A structured questionnaire was developed with two sections: socio-demographic and reproductive health information, and menstrual distress information. The first section was self-developed to collect descriptive participant characteristics. The second section was developed by using a standard tool from the "Menstrual Distress Questionnaire (MEDI-Q)". The MEDI-Q is a validated and reliable instrument for the assessment of menstrual distress and its impact on psychological well-being [12]. Permission to use and adapt the MEDI-Q was obtained from the original author. Pretesting of the instrument was done in 10% of the total sample size in the nursing college from another municipality. After the pretest, the questionnaire was modified to meet the needs of the study. Data were entered, cleaned, and coded into EpiData version 4.6 before analysis in Statistical Package for the Social Sciences (SPSS) version 22 (IBM). Descriptive statistics (e.g., frequency, percentage, mean, and standard deviation) were done to describe respondent characteristics, and a chi-square test was done to determine associations between variables. Ethical approval was obtained from the Institutional Review Committee of Pokhara University (Ref:26/2081/82). Permission was taken from the nursing colleges of the municipality. Verbal and written consent was taken from each participant after explaining the objectives of the study before the data collection.

RESULTS

A total of 303 PCL nursing students participated in the study. The majority (94%) were aged below 20 years. Most participants were Hindu (80.2%) and belonged to the Janajati ethnicity (66.7%). Participants were almost evenly distributed across academic years, with 34.0% in the first year, 33.7% in the second year, and 32.3% in the third year. Most participants (96.4%) had their first menstruation between the ages of 10 and 15. The majority (71.6%) reported having regular menstrual cycles. Nearly half (47.9%) had a family history of menstrual pain. More than half (52.5%) experienced moderate menstrual pain (Table 1).

Most participants (91.7%) reported experiencing discomfort during the menstrual phase. They were particularly knowledgeable about physiological changes (94.7%), cognitive changes (98.3%), and gastrointestinal problems (83.8%) associated with menstruation (Table 2).

Table 3 shows the distribution of menstrual distress symptoms among respondents. Many participants experienced physical discomfort during menstruation. Headaches (63.4%), nausea (73.4%), and constipation (69.3%) were reported more than half of the time. More than half also experienced bloating or breast tenderness (48.5%) and muscle or joint pain (41.2%). Lower abdominal pain was mainly experienced less than half of the time (58.4%). Emotional symptoms were common. More than half of the respondents felt anxious (55.8%) and impulsive (66.7%). Irritability was reported less than half of the time by half of the participants (50.8%). Only 27.7% reported no emotional instability. More than half had insomnia (62.4%) and excessive sleepiness (52.2%) more than half of the time. Difficulty concentrating was reported by nearly half of the respondents (49.8%) less than half of the time. More than half (58.4%) experienced lower abdominal pain for less than half of the time, and most (91.1%) reported pain during urination or bowel movements for less than half of the time. (Table 3).

Most respondents experienced a greater effect of menstrual distress (74.3%) while few reported a lower effect (25.7%). (Table 4).

The association between socio-demographic variables with menstrual distress was measured. The study showed significant association between study year and menstrual distress. In the first and second years, the majority of respondents experienced greater menstrual distress (88.3% and 86.3%, respectively). In contrast, third-year students showed a more balanced distribution, with 53.1% reporting lower distress and 46.9% reporting greater distress. The Chi-square value of 7.333 with a p-value of 0.026 suggests a significant association, indicating that as students' progress, their experience of menstrual distress may change.

The level of pain experienced during menstruation also showed a significant association with menstrual distress with a p-value of 0.046, indicating a statistically significant relationship, suggesting that higher levels of pain correlate with increased menstrual distress. Other socio-demographic variables such as age, religion, ethnicity, period of regularity, and family history of menstrual pain did not show significant associations with menstrual distress, highlighting the specific impact of study year and pain level on menstrual experiences among participants. (Table 5).

Table 1: Socio-economic, demographic, menstrual, and family-related factors of the participants (n=303)

Variables	Number	Percentage
Age		
Mean± SD	17.8±1.8	
<20	285	94.0
≥20	18	6.0
Religion		
Hinduism	243	80.2
Buddhism	56	18.5
Others	4	1.3
Ethnicity		
Dalit	24	7.9
Janajati	202	66.7
Brahmin/Chhetri	77	25.4
Study Year		
First	103	34.0
Second	102	33.7
Third	98	32.3
Age of menarche		
10-15 years	292	96.4
16-21 years	11	3.64
Period of regularity		
Regular	217	71.6
Irregular	86	28.4
Family history of menstrual pain		
Yes	145	47.9
No	158	52.1
Pain level		
Mild	63	20.8
Moderate	159	52.5
Severe	81	26.7

Table 2: Knowledge on menstrual distress (n=303)

Related knowledge	Number	Percentage
Knowledge about discomfort during mensuration		
Yes	278	91.7
No	25	8.3
Knowledge about gastrointestinal problem		
Yes	254	83.8
No	49	16.9
Knowledge about cognitive changes		
Yes	298	98.3
No	5	1.7
Knowledge about physiological changes		
Yes	287	94.7
No	16	5.3

Table 3 Menstrual distress related information (n=303)

Related information	Number	Percentage
Pain in lower abdomen in past 12 months		
No	100	33.0
More than half of time	26	8.6
Less than half of time	177	58.4
Pain during urinating or bowel movement		
No	27	8.9
Less than half of time	276	91.1
Muscle or joint pain		
No	46	15.2
More than half of time	125	41.2
Less than half of time	132	43.6
Feel bloated or breast tenderness		
No	51	16.8
More than half of time	147	48.5
Less than half of time	105	34.7
Nausea		
No	13	4.3
More than half of time	222	73.3
Less than half of time	68	22.4
Headaches		
No	19	6.3
More than half of time	192	63.4
Less than half of time	92	30.3
Digestive problem		
No	202	66.7
Less than half of the time	101	33.3
Diarrhea		
No	245	80.8
Less than half of time	58	19.1
Constipation		
No	17	5.6
More than half of time	210	69.3
Less than half of time	76	25.1
Discomfort due to vaginal bleeding		
No	51	16.8
More than half of time	135	44.6
Less than half of time	117	38.6
Feeling of being dirty		
No	60	19.8
More than half of time	105	34.7
Less than half of time	138	45.5
Emotionally unstable		
No	84	27.7
Less than half of the time	219	72.3
Irritable or short-tempered		
No	82	27.1
More than half of time	67	22.1
Less than half of time	154	50.8
Feel impulsive		
No	21	6.9
More than half of time	202	66.7
Less than half of time	80	26.4
Feel anxious		
No	134	44.2
More than half of time	169	55.8
Feel excessively hungry		
No	49	16.2
More than half of time	126	41.6
Less than half of time	128	42.2
Feel lack of hunger		
No	21	6.9
More than half of time	209	69.0
Less than half of time	73	24.1
Have insomnia		
No	14	4.6
More than half of time	189	62.4
Less than half of time	100	33.0
Experience excessive sleepiness		
No	41	13.5
More than half of the time	158	52.2
Less than half of the time	104	34.3
Excessively tired		
No	63	20.8
More than half of time	84	27.7
Less than half of time	156	51.5
Difficulty concentrating		
No	38	12.5
More than half of time	114	37.7
Less than half of time	151	49.8

Table 4: Effects of menstrual distress during menstrual phase (n=303)

Effects	Number	Percentage
Greater effect	225	74.3
Lower effect	78	25.7

Table 5: Association between socio-demographic variable and effects of menstrual distress (n=303)

Socio-demographic variables	Effects of menstrual distress		Chi-square	p-value
	Lower effect n(%)	Greater effect n(%)		
Age				
<20	71(24.9)	214(74.1)	1.548	0.213
≥20	7(38.9)	11(61.1)		
Religion				
Hinduism	63(25.9)	180(74.1)	0.793	0.851
Others	15(25)	45(75)		
Ethnicity				
Brahmin/Chhetri	27(35.1)	50(64.9)	4.614	0.100
Others	51(22.6)	175(77.4)		
Study year				
First	12(11.7)	91(88.3)	7.333	0.026*
Second	14(13.7)	88(86.3)		
Third	52(53.1)	46(46.9)		
Period of regularity				
Regular	60(27.6)	157(72.4)	1.488	0.223
Irregular	18(5.8)	68(94.2)		
Family history of menstrual pain				
Yes	36(24.8)	109(75.2)	0.320	0.571
No	45(14.8)	116(85.2)		
Pain level				
Mild	22(34.9)	41(65.1)	6.180	0.046*
Moderate	37(23.3)	122(76.7)		
Severe	19(23.5)	62(76.5)		

*Statistically significant at 95% level of confidence

DISCUSSION

This study showed 26.7% of the participants had severe pain during their menstruation.The finding aligns with the survey conducted in India

(21.5%),[13] Poland (21.7%)[14] and Saudi Arabia (21.5%)[15] The similarity in the percentage of students experiencing severe dysmenorrhea pain can be attributed to a combination of physiological, cultural, environmental, lifestyle, and psychological factors that affect menstrual health in similar ways across different populations.[16]

In this study, there is no statistically significant association between age and menstrual distress, which is consistent with the studies conducted in India,[17] and Italy.[12] Menstrual distress with symptoms like cramps and fatigue is influenced by hormonal changes rather than age. This may explain the weak association between age and menstrual distress.[3]

In this study, first-year students reported higher levels of distress, with severe pain compared to students in the second and third year, aligning with the study in Australia,[18] and Japan[19] which also reported greater menstrual distress among those students at the beginning of their academic program than those who had been there for some time. Several factors may contribute to such trend such as adjustment to university life exacerbating the menstrual symptoms,[20] increased academic pressures leading to anxiety,[19] and stress and changes in lifestyle, such as sleep patterns and diet activates contributing to increased menstrual distress.[21]

The level of pain experienced during menstruation also showed a significant association with menstrual distress in this study, where students with severe pain reported the highest effects of menstrual distress than those with moderate and mild. The findings are similar to various studies conducted in Poland,[22] and Ethiopia.[23] This may be because severe pain affects the ability to perform daily activities, leading to increased distress.[24] Additionally, severe pain and dysmenorrhea are associated with symptoms such as muscle stiffness, headaches, and cramps, all of which contribute to overall menstrual distress. The combination of these symptoms might intensify the negative experience of menstruation.[25]

Also, the study found no significant associations between the period of regularity of menstruation and menstrual distress. However, studies conducted in Korea,[26] and India[3] had contrast findings where participants with irregular menstrual cycles reported a higher level of menstrual distress. The variation in findings could be attributed to the differences in lifestyle factors, stress exposures, and health care access among study participants, which may lead to different outcomes. These differences highlight the need for further research to explore contextual factors that may contribute to menstrual distress across various settings.

The study provides a valuable insight into menstrual distress among PCL nursing students, an area that is often overlooked and ignored in academic settings. However, the study has some limitations. It is limited to PCL nursing students in Pokhara, hence the findings may not be generalizable to other student populations. There is a possibility of recall bias due to the self-reporting of data by the participants. Furthermore, as a cross-sectional study, it cannot establish causal relationships between menstrual distress and associated factors.

CONCLUSION

The study provides insight into the significant burden of menstrual distress among PCL nursing students in Pokhara. Socio demographic factors showed no significant associations with menstrual distress effects while study year and pain level are significant predictors of distress. The findings emphasize the impact of menstrual distress on students' well-being, potentially affecting their academic performance and clinical practice. Awareness programs, supportive institutional policies, and access to menstrual health resources are crucial to address these issues and improve the overall well-being and academic experience of nursing students.

DECLARATION

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Authors contribution

AK and SP conceptualized the research. AK and IBS collected the data and analyzed the data. AK and IBS wrote the manuscript, and SP reviewed the manuscript. All authors approved the final version of the manuscript and agreed to be accountable for all aspects of the research work.

Ethical approval

Ethical approval was obtained from the Institutional Review Committee of Pokhara University (Ref:26/2081/82). Participants showing depressive symptoms were counseled and referred to local health facilities.

Consent

Prior to data collection, permission was taken from the respective municipality office and collage, verbal and written consent was taken from each participant after explaining the objectives of the study before the data collection. The privacy and confidentiality of the information were maintained throughout the research process.

Data Availability statement

Data are available on request to the corresponding author.

Conflict of Interest

The researchers would like to assure everyone that they have no conflicts of interest related to this study.

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