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Prevalence and symptoms of menstruation-related disorders among adolescent girls in gairsain block of district Chamoli -a cross-sectional study.

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Abstract

Menstruation-related disorders are a common yet often overlooked health concern among adolescent girls, impacting their daily activities, academic performance, and overall well-being. Despite their significance, there is limited research on the prevalence and symptoms of these disorders in rural areas such as Gairsain Block of Chamoli District, Uttarakhand. This study aims to determine the prevalence and symptoms of menstruation-related disorders among adolescent girls in Gairsain Block, providing insights into the magnitude of the problem and associated risk factors. A community-based cross-sectional study was conducted among adolescent girls aged 10–19 years in Gairsain Block. Participants were selected using a stratified random sampling method, and data were collected through structured questionnaires covering demographic details, menstrual history, and common menstrual disorders, including dysmenorrhea, menorrhagia, oligomenorrhea, and premenstrual syndrome (PMS). Statistical analysis was performed to assess the prevalence and associated symptoms of these disorders.

List of Acronyms

AIDS Acquired Immuno Deficiency Virus
ANC Antenatal Care
CHC Community Healthy Care Centre
HIV Human Immuno Deficiency Virus
RTI Reproductive Tract Infection
STI Sexually Transmitted Infection

Introduction

India has one of the fastest growing youth populations in the world, with an estimated 190 million adolescents. Girls below 19 years of age comprise one quarter of India's rapidly growing population. Adolescent girls in India are caught in the cycle of early marriage, repeated pregnancy and poverty limiting their future choices of healthy life and development. That is why emphasis is given on adolescent health that is of future mother.

Menstruation is a natural physiological process that marks the onset of reproductive maturity in adolescent girls. However, many experience menstruation-related disorders that can significantly impact their physical health, psychological well-being, and daily activities, including school attendance and social participation. Common disorders include dysmenorrhea (painful menstruation), menorrhagia (heavy bleeding), oligomenorrhea (infrequent periods), and premenstrual syndrome (PMS), among others. In rural areas like **Gairsain Block of Chamoli District, Uttarakhand**, menstrual health issues are often compounded by inadequate healthcare access, limited awareness, cultural taboos, and poor menstrual hygiene management. Despite the high prevalence of menstrual disorders globally, there is a lack of region-specific data to understand the magnitude of the problem in

this geographically and socio-economically diverse area. This cross-sectional study aims to assess the prevalence and symptoms of menstruation-related disorders among adolescent girls in Gairsain Block, identifying common menstrual health issues and associated risk factors. The findings will contribute to better health interventions, awareness programs, and policy measures to improve menstrual health management in rural communities.

Material and Method

Sampling design

Systematic random sampling technique was used to select the sample villages for the study assessment of the project. The village list provided by the block officials used as a sampling frame. Following that sampling design, all the villages covered under the project area was categorized into three categories according to distance from the combined health care center. Category A was the villages, which are closest (up to 13 km) from the CHC, B villages were those within 14-25 km to the CHC, and C villages were those > 26 km to the CHC. Two villages from each category were randomly selected for survey. But to give proper representation of the selected block/district, care was taken to avoid selecting two villages from the vicinity. By following above mention scheme, selected villages are as follows:

Category	**Block-Gairsain**
A	**Gair**
	Rohira Sayana
B	**Lakheri**
	Chautariya
C	**Devpuri**
	Krishal

Sample size and selection criteria

Considering the village as an entity for post study intervention, all households of the selected villages were considered for household listing operation to identify all available eligible respondents in each household. To fulfill the objective of the study, information was collected from various stakeholders, the details of which are given below.

Category	**Number**
Number of household covered	271
Respondent category	266
Pregnant	14
Lactating	63
Currently married women of 20-49 years	78
Adolescent girls	111
Total	266

A total of 271 households were listed in the household listing operation and 266 ever married women and adolescent girls who were usual resident of the households were recruited for study. The data regarding the ante-natal care was collected from pregnant women and the lactating women were interviewed for natal and post-natal care, essential new born care, child rearing practices, immunization, nutritional need and hygiene practices followed for child care. Lactating women were also interviewed to study the father's involvement for the early childhood care. Besides this, adolescent girls were interviewed to collect their knowledge on maternal and child health issues.

ETHICAL CONSIDERATIONS

Ethical approval was obtained prior to commencing each interview. A standard consent form containing a brief introduction on the organization, its objectives and the purpose of the study was used for that purpose. All the participants were:

- informed of the background and purpose of the research
- reminded that participation was voluntary
- assured that data from the discussion and questionnaire would be kept strictly private and confidential for use only by the research team
- explained that focus group discussions would be audio-taped and that tapes would be transcribed and used for analysis
- explained that the response of the participants during IDI will be noted down and will be used for project purpose
- explained that there were no right or no answers and that each had the right not to respond or discuss issues with which they were not comfortable
- when participants had affirmed that they understood, consent was obtained from them verbally at the outset of each interview.

PRIMARY DATA COLLECTION & QUALITY CONTROL

The primary data in the form of survey was collected with the help of volunteers and staff. It took nearly one and half month to collect the necessary information from the project site. It is worth mentioning that the following measures were adopted in order to ensure good quality of data:

- Comprehensive training of volunteers with an emphasis on quantitative techniques through training workshop organized.
- Standard guidelines for the entire field operation (data collection) were premeditated.
- Standardized data collection tools for quantitative survey were designed and field tested in the villages other than study villages of present study in Gairsain Block.
- Monitoring and supervision of field operations.

SECONDARY DATA COLLECTION AND USE

To fulfill the set objectives, information from secondary sources (i.e., health, ICDS department) has also been collected. The national and state level reports like NFHS, DLHS reports and census information has been collected and analyzed to understand the existing gaps in the field of maternal and child health of the state, district and the block area.

DATA ANALYSIS

Quantitative data collected through beneficiary study has been edited on the very same day to avoid any information lapse. Un-coded sections of the schedule have been coded initially and the data has been entered and analyzed using the Statistical Package for Social Science (SPSS)13.0. The quantitative findings have been tabulated and presented in respective chapters of the report.

In short, the findings of the present study are based on the information collected from 266 survey participants of 271 households.

Table 1 shows the profile of adolescent girls age 11-19 covered under the study survey by background characteristics. The higher proportion of the adolescent girls covered under the study were of higher adolescent age group of 15-19 years. 81 percent of the adolescent respondents were of 15–19-year-old. None of the adolescent respondent from study area was found to be illiterate. Almost half (44.1 percent) of the respondents have completed up to high school level education. And 26.1 percent of them have completed 11 or more years of education.

Table 1 Profile of adolescent girls
Percent distribution of the adolescent by age and educational attainments

Characteristics	N	%
Age		
11	3	2.7
12	4	3.6
13	6	5.4
14	8	7.2
15	23	20.7
16	18	16.2
17	16	14.4
18	20	18.0
19	13	11.7
Total	111	100.0
Educational attainments		
Up to 5^{th}	3	2.7
6^{th}-8^{th}	30	27.0
9^{th}-10^{th}	49	44.1
11+	29	26.1
Total	111	100.0

Personal hygiene and healthy habits

Maintaining better personal hygiene and adopting good healthy habits are the factors that help us to remain healthy and keep us safe from different morbidity and many other health problems. The table 2 reveals that as high as 83.8 percent of the adolescent girls wash their hands with soap after going to toilet, whereas a slightly lower proportion (74.8 percent) wash their hands with soap before taking meal. Nearly 68 percent of the adolescent girls use different methods of protection during menstrual period to prevent bloodstains from becoming evident, and out of this only 26.7 percent use sanitary napkins followed by 13.3 percent use homemade napkins compare to 89.3 percent who uses old cloth. This shows that adolescent girls need to be more informed about use of sanitary napkins for better hygiene.

Table 2 Personal hygiene
Percent distribution of the adolescent by hand wash with soap after toilet, and before meal and use of napkins during period

Characteristics	N	%
Washing hand after toilet		
Yes	93	83.8
No	18	16.2
Total	111	100.0
Washing hand before taking meal		
Yes	83	74.8
No	28	25.2
Total	111	100.0
Used napkin during period		
Yes	75	67.6

No	36	32.4
Total	111	100.0
Type of napkin		
Sanitary napkins	20	26.7
Homemade napkins	10	13.3
Old cloth	67	89.3

Prevalence of menstruation related problems and symptoms

For the most recent time in the three months preceding the survey, the adolescent girl was asked if at any time she experienced any of the following menstruation related problems: No periods, Painful periods, Frequent or short periods, Irregular periods, prolonged bleeding, scanty bleeding, Inter-menstrual bleeding, and Blood clots/excessive bleeding. The table 3 is self-reported prevalence of menstruation related problems and symptoms. The table shows that the most commonly reported menstruation related health problem is no periods (85.7 percent) followed by frequent or short periods (64.3 percent). Nearly 29 percent had painful periods, 21.4 percent reported scanty bleeding, and 14.3 percent had Inter-menstrual bleeding. And only 7.1 percent of adolescent girls had prolonged bleeding and blood clots/excessive bleeding each. .

Almost 43 percent of the adolescent girls reported that these menstruation related problems are persisting since 1-6 months while 28.6 percent are suffering since less than one month period, and 14.3 percent reported since 13-24 months. Only 7.1 percent are from 7-12 months period. Regarding consultation for advice/treatment only about 36 percent of adolescent girls reported sought consultation for advice and/or treatment for any type of above mentioned menstruation related problems. And out of which 80 percent went to government hospitals for consultation and rest of others taken home based treatment. Regarding accompanying person it was only sister who accompanied her.

Table 3 Self reported prevalence of menstruation related problems and symptoms
Percent distribution of the adolescent reporting having a menstruation related problem and/or symptoms of menstrual problems in the last 3 months

Menstruation related problems	N	%
Menstrual problem in last 3 months		
Yes	14	12.6
No	97	87.4
Total	111	100.0
Type of problem		
No periods	12	85.7
Painful periods	4	28.6
Frequent or short periods	9	64.3
Irregular periods	0	0.0
Prolonged bleeding	1	7.1
Scanty bleeding	3	21.4
Inter-menstrual bleeding	2	14.3
Blood clots/excessive bleeding	1	7.1
Persistence of the problem		
Less than one month	4	28.6
1-6 months	6	42.9
7-12 months	1	7.1
13-24 months	2	14.3

Do not remember	1	7.1
Total	14	100.0
Consultation for advice/treatment		
Yes	5	35.7
No	9	64.3
Total	14	100.0
Facility visited for consultation		
Government hospital	4	80.0
Private hospital/clinic	0	0.0
At home	1	20.0
Total	5	100.0
Accompanied by		
Sister	5	100.0
Parents	0	0.0
Any friend	0	0.0
Any other relatives	0	0.0
Total	5	100.0

Knowledge and awareness about RTI/STI and source of knowledge

Knowledge and attitude towards STI seems important as it has a direct association with subsequent treatment seeking. This section describes the awareness, source of information and mode of transmission about RTI/STI in the project areas. Along with, the section presents self reported prevalence of RTI/STI among respondents.

All adolescent girls interviewed were asked if they had ever heard of an illness called RTI/STI. Additionally, all the respondents who had heard of RTI/STI were then asked a series of questions to ascertain the extent of their knowledge.

Table 4 shows the percentage of adolescent girls who have heard of RTI/STI and about source of knowledge. None of the adolescent girl respondent age 11-14 and all adolescent girls age 15-19 has heard of RTI/STI, which further increases with the level of education. The Radio (53.8 percent) and Kishori samuh/Bal panchayat/MMDs (46.2 percent) are reported to be most effective source of information about RTI/STI followed by educational programmes (38.5 percent) and TV (30.8 percent). The doctors and front line health workers who are the correct and effective source of information, their reach to inform adolescent girls over the problem is found to be very limited as none of them got information about RTI/STI from doctor, only 7.7 percent of the adolescent girls are informed by any type of health workers followed by 15.4 percent from ASHA of their villages.

A slightly less than half of the adolescent girls (46.2 percent) are not aware about mode of transmission. The most common mode of transmission was unsafe sex with persons who have many partners (42.9 percent) as reported by the adolescents of 15-19 years.

Prevalence of RTI/STI related problems and symptoms

For the most recent time i.e. three months preceding the survey, the adolescent girl was asked if at any time she experienced any of the following RTI/STI related problems: Itching or irritation over vulva, boils/ulcers/warts around vulva, pain in lower abdomen not related to menses, pain during urination or defecation, swelling in the groin, painful blister like lesions in and around vagina, low backache, pain during sexual intercourse, and spotting after sexual intercourse.

As shown in table 5 RTI/STI related health problems most commonly reported are low backache (42.9 percent) followed by itching or irritation over vulva (35.7 percent). 21.4 percent had pain in lower abdomen not related to

menses and swelling in the groin. 14.3 percent of adolescent girls had pain during sexual intercourse. And, only 7.1 percent reported boils/ulcers/warts around vulva, pain during urination or defecation and painful blister like lesions in and around vagina.

As high as (92.9 percent) of the adolescent girls reported that these RTI/STI related problems are persisting since 1-6 months period while 7.1 percent are since less than one month. Only 14.3 percent adolescent girls consulted for advice and/or treatment out of which 50 percent went to government hospitals for consultation and rest of them taken home care. Regarding accompanying person it was father only who accompanied her to the treatment centre for treatment.

Table 4 Knowledge and awareness about RTI/STI and source of knowledge
Percent distribution of the adolescent with knowledge about RTI/STI by background characteristics

Background characteristics	N	%
Age		
11-14	0	0.0
15-19	13	100.0
Total	13	100.0
Education		
Up to 5th	2	15.4
6th-8th	1	7.7
9th-10th	5	38.5
11+	5	38.5
Total	13	100.0
Source of information		
Radio	7	53.8
TV	4	30.8
Cinema	0	0.0
News paper/Books/Magazine	3	23.1
Slogan/Posters/Hoardings	0	0.0
Doctors	0	0.0
Health workers	1	7.7
ASHA	2	15.4
Educational programs	5	38.5
School/Teachers	2	15.4
Community meetings	1	7.7
Friends/relatives	0	0.0
Kishori samuh/Bal panchayat/MMD	6	46.2
Exhibition/Mela	1	7.7
Other	0	0.0
Mode of transmission		
Complicated delivery	0	0.0
Unsafe abortion	2	28.6
Unsafe IUD insertion	0	0.0
Unsafe sex with homosexuals	0	0.0
Unsafe sex with persons Who have many partners	3	42.9
Unsafe sex with sex workers	1	14.3
Other	0	0.0
Not aware	6	46.2

Table 5 Self reported prevalence of RTI/STI related problems and symptoms
Percent distribution of the adolescent reporting having a RTI/STI related problem and/or symptoms of RTI/STI in the last 3 months

RTI/STI problems	N	%
RTI/STI problem in last 3 months		
Yes	14	12.6
No	97	87.4
Total	111	100.0
Type of problem		
Itching or irritation over vulva	5	35.7
Boils/ulcers/warts around vulva	1	7.1
Pain in lower abdomen not related to menses	3	21.4
Pain during urination or defecation	1	7.1
Swelling in the groin	3	21.4
Painful blister like lesions in and around vagina	1	7.1
Low backache	6	42.9
Pain during sexual intercourse	2	14.3
Spotting after sexual intercourse	0	0.0
Persistence of the problem		
Less than one month	1	7.1
1-6 months	13	92.9
7-12 months	0	0.0
13-24 months	0	0.0
Do not remember	0	0.0
Total	14	100.0
Consultation for advice/treatment		
Yes	2	14.3
No	12	85.7
Total	14	100.0
Facility visited for consultation		
Government hospital	1	50.0
Private hospital/clinic	0	0.0
At home	1	50.0
Other	0	0.0
Total	2	100.0
Accompanied by		
Father	2	100.0
Mother	0	0.0
Sister	0	0.0
Friends	0	0.0
Other	0	0.0
Total	2	100.0

Discussion

Appropriate health seeking behavior in case of menstruation related problems, RTI/STIs needs to promoted. Knowledge about RTI/STI and HIV and AIDS need to be enhanced among young adolescent girls and they particularly needed to inform about HIV testing facilities. Some effective messages about check-up of new born after delivery within 24 hours and post-partum check-up of mothers have to be delivered in very effective way including adolescent girls as well. Community level mass awareness campaign should be launched in collaboration

with government department to create awareness on personal hygiene. The ever married young and women age 20-24 also needs to be informed about importance of post partum check up and consumption of supplementary nutrition. However, community members need to be regularly contacted and be informed about management of RTI/STI, diarrhea, Pneumonia, and HIV/AIDS.

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