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Menstrual health equity among adolescent girls of central Himalayan region of India

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Abstract
Menstrual health equity among adolescent girls is a critical issue that encompasses access to menstrual products, education, and healthcare. This study focuses on the knowledge, attitude and practice (KAP) about menstruation among adolescent girls of Champawat district and the awareness about government programmes related to Menstrual Hygiene in the Champawat district of Uttarakhand, India. A descriptive study was conducted involving 80 adolescent girls aged 13-21. Participants were selected through purposive sampling, and data were collected using a self-administered questionnaire. The analysis used central tendency and simple percentage methods to summarize findings. The findings highlight the urgent need for comprehensive menstrual health education, destigmatization initiatives, and improved access to hygienic products. Addressing these issues is essential to empower girls, promote menstrual health equity, and foster a supportive environment where they can manage menstruation with dignity and confidence. The study underscores the importance of community engagement and culturally sensitive interventions to improve adolescent menstrual health outcomes.

Keywords: Adolescent girls, governments programme, KAP, menstrual health equity, menstruation

1. Introduction
Menstrual health equity is a pedantic component of overall health and human rights, particularly for adolescent girls who are navigating a pivotal stage of development. Despite global advancements, disparities in knowledge, access to hygienic products, and supportive environments persist, often rooted in cultural, socioeconomic, and infrastructural barriers. These inequities can lead to adverse health outcomes, educational disruptions, and social stigmatization, thereby impeding girls' full participation in society. Addressing menstrual health equity involves ensuring that all girls, regardless of their background or circumstances, have access to accurate information, hygienic products, and supportive environments that uphold their dignity and rights. Promoting equity in menstrual health is essential for empowering adolescent girls, fostering gender equality, and advancing public health goals worldwide [3, 5, 7, 8].

Menstrual hygiene management (MHM) is an essential factor of health and well-being for adolescent girls that affect their physical, emotional, and social development [1, 2]. In many parts of the world, including rural India, menstruation is often surrounded by cultural stigma and misinformation, which can hinder girls' ability to manage their menstrual health effectively [10]. The Champawat district of Uttarakhand, India, presents a unique context for examining these issues, as it is characterized by a blend of traditional beliefs and modern challenges related to health education and access to resources [13].

Despite the recognition of menstruation as a normal physiological process, many adolescent girls lack adequate knowledge about menstrual health, leading to misconceptions and negative emotional responses during menarche [10, 11]. Previous studies have indicated that inadequate education, limited access to menstrual hygiene products, and cultural taboos contribute to a significant gap between knowledge and practice among young girls. This gap not only affects their health but also impacts their educational attendance and overall quality of life [1, 2, 6, 9, 10].

The present study focuses to assess the KAP related to MHM among adolescent girls in the Champawat district of Uttarakhand in India. By identifying the existing gaps in understandings and the challenges faced during menstruation, this research seeks to target vulnerable group

regarding educational interventions related to MHM. Furthermore, it aims to raise awareness about the importance of menstrual hygiene and the need for supportive measures from families and communities. Ultimately, this study aspires to empower adolescent girls to manage their menstrual health with confidence and dignity, thereby contributing to their overall well-being and development.

1.1 Context of the Study

In India, menstruation is frequently viewed through a lens of taboo, leading to a culture of silence and shame [10]. This study highlights the pervasive cultural stigma, misinformation, and limited access to menstrual hygiene resources that many girls face, especially in rural regions like Champawat district, Uttarakhand. Menstruation is often viewed as a taboo, leading to silence and shame, which restricts open discussion and education about menstrual health. Many girls rely on family members for information, which can be inaccurate or incomplete, resulting in misconceptions and emotional distress during menarche [6]. Additionally, inadequate access to hygienic products and facilities exacerbates disparities, impacting girls' health, self-esteem, and school attendance. Addressing these issues are crucial for promoting menstrual health equity, ensuring all girls have the knowledge, resources, and supportive environments to manage menstruation with dignity [9, 10, 11, 12].

The Champawat district, located in the hilly terrain of Uttarakhand, presents a unique setting for this study. The region is predominantly semi urban, with limited access to healthcare facilities and educational resources [13]. Traditional beliefs and practices often dictate the understanding of menstruation, which can further complicate the dissemination of accurate information. In this context, it is crucial to assess the knowledge levels of adolescent girls regarding menstruation and identify the sources of information that shape their understanding.

1.2 Significance of the Study

The significance of this study lies in its potential to highlight critical gaps in knowledge, attitudes, and practices related to menstrual hygiene among adolescent girls in the Champawat district. By identifying the cultural barriers, misinformation, and infrastructural limitations that hinder equitable access to menstrual health resources, the study provides valuable insights for policymakers, educators, and health practitioners. Addressing these disparities is essential to promote menstrual hygiene equity, empower girls to manage their menstruation with dignity, and reduce associated health and educational disadvantages. The findings can inform targeted interventions that foster open dialogue, improve access to hygienic products, and ensure supportive environments for all adolescent girls, thereby advancing overall menstrual health equity.

2. Objectives

1. To evaluate the overall knowledge and awareness about menstruation among adolescent girls in the Champawat district, including their understanding of the physiological aspects of menstruation.
2. To evaluate the level of awareness and knowledge about menstrual health rights and available government schemes among adolescent girls from diverse backgrounds.
3. These objectives aim to promote fairness and inclusivity in menstrual health management, ensuring all girls have the resources, knowledge, and support necessary for their well-being.

3. Methodology

A descriptive study was conducted in Lohaghat block of Champawat district in Uttarakhand, India. The study involved a total of 80 adolescent girls, categorized into three age groups: 13-15 years, 16-18 years, and 19-21 years. Participants were primarily school and college-going girls selected through purposive sampling. Data was collected using a self-prepared questionnaire designed to assess the participants' knowledge about menstruation. The questionnaire contained questions about their understanding of menstruation, the knowledge about governments schemes in Uttarakhand state. During the survey some queries of the respondents related to MHM were clarified. To summarize the findings, the collected data was analyzed using tabulation and simple percentage method. This approach allowed for a clear presentation of the knowledge and practices related to menstruation among the respondents.

4. Result & discussion

The research findings of the present study are as follows:

Table 1: Socio-demographic characteristics of respondents

Characteristics	Categories	Frequencies (n=80)	Percentage
Age in years	13-15	16	20
	16-18	42	52.50
	19-21	22	27.50
Educational Qualification	Junior School	3	3.75
	High School	16	20
	Intermediate	33	41.25
	Graduation	28	35
Religious of Respondents	Hindu	77	96.25
	Muslim	03	3.75
Occupation of Respondent's Father	Govt Employee	18	22.5
	Business	04	5
	Agriculture & Dairy	58	72.5
Occupation of Respondent's Mother	Govt Employee	02	2.5
	Business	23	28.75
	Agriculture & Dairy	55	68.75
Type of Family	Nuclear	39	48.75
	Joint	41	51.25
Family Income (Monthly)	EWS Class	53	66.25
	Lower Class	20	25
	Lower Middle Class	7	8.75
	Upper Middle Class	0	0
	High Class	0	0

The table no. 1 shows that the majority of the respondents that is 52.5% were in the age group of 16-18 years while 20% were in the age group of 13-15 yrs. In terms of educational qualifications, 41.25% of the participants were studying at the intermediate level, while 20% were in high school, and a small fraction, 3.75%, were in junior school. The table also showed that maximum respondents (96.25%) belong to Hindu religion. Maximum 72.5% respondents' father had occupation in agriculture and dairy followed by 22.5% in government services and only business 5% while mother of 68.75% respondents were house wife and only 2.5% mothers were government employee.

The table also revealed that the majority of respondents (51.25%) living in joint family. The financial conditions of the respondents were also revealed from the Table 1, 66.25% of respondents were belong to economical weaker section (EWS), 8.75% respondents were belonging to lower-middle class while none were found in upper middle class and high class.

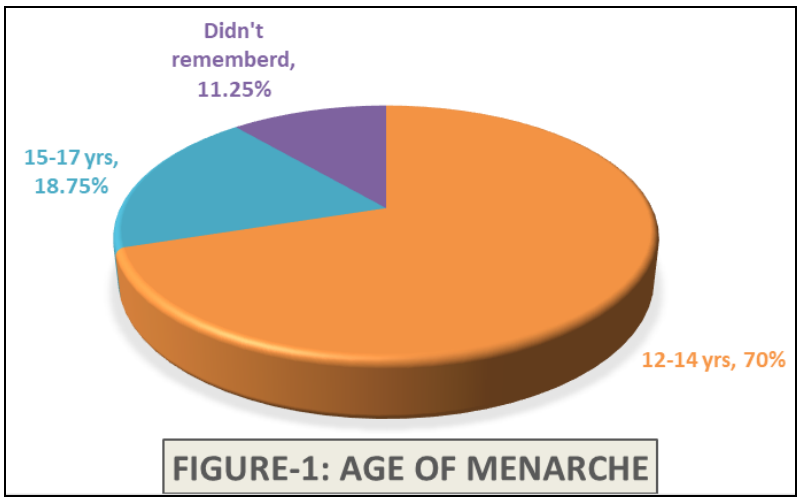

Fig 1: Age of Menarche among adolescent girls

Figure.1 expressed the age of menarche among the respondents in the study. Specifically, 70% of the girls reported that they experienced menarche between the ages of 12 and 14 years. Additionally, the average age of menarche was found to be around 12 years, which aligns with findings from the other studies. [1, 2, 4, 9]

This onset of menarche can have implications for the physical and emotional well-being of adolescent girls, as it often coincides with their transition into adolescence and the accompanying changes in their social and educational environments.

Table 2: Knowledge of Respondents

Characteristics	Categories	Frequency (n=80)	Percentage (%)
Pre- Knowledge about the Menstruation	Yes	53	66.25
	No	27	33.75
Knowledge regarding menstruation	Physiological Phenomena	78	97.5%
	Kind of Disease	2	2.5
Source of Knowledge	Mother	29	36.25
	Sister	15	18.75
	Teacher	3	3.75
	Internet & Books	8	10
	Friends	4	5
	Mother & Sister	16	20
	Mother & Friends	5	6.25
Difficulties during Menstruation	Stomachache	41	51.25
	Pain in legs	2	2.5
	Back pain	4	5
	Stomachache & Pain in leg	16	20
	Stomachache & Back pain &Pain in leg	8	10
	Normal	8	10
Knowledge about the Organ from where menstrual blood comes	Stomach	6	7.5
	Urinary tract	20	25
	Ovary	12	15
	Uterus	25	31.25
	Don't Know	17	21.25
Knowledge about Govt. Schemes	Yes	2	2.5
	No	78	97.5

From Table No 2 it is clear that 66.25% of the girls had some prior knowledge before experiencing menarche while 33.75% of the respondents had no pre-knowledge about menstruation.

The present study in accordance with the findings from another study highlighting a gap in awareness that could lead to confusion and anxiety during their first experience [4].

The knowledge about the menstrual phenomenon among the respondents was generally positive, with 97.5% of the girls recognizing menstruation as a normal physiological process. However, there were some misconceptions, as 2.5% of the respondents believed that menstruation was a disease rather than a natural occurrence. Similar findings were also reported by other studies [4, 9, 10, 14].

The primary sources of information about menstruation for the respondents were family members. Maximum 36.25% of the girls received information from their mothers followed by sisters (18.75%), teachers (3.75%) and internet and books (10%). Similar studies indicate that familial sources play a crucial role in educating girls about menstruation [9, 10].

Data pertaining to difficulties during Menstruation as shown in Table No. 2 revealed that 51.25% girls faced stomachache during the periods and 20% girls faced both stomachache & pain in leg during periods while only 10% girls faced all three types of problem. Other investigators also found similar findings [9, 10].

According to 31.25% girls, menstrual blood come from uterus while 25% girls responded that menstrual blood come from urinary tract while 21.25% girls did not know about it. Familiar findings are reported in other studies [10, 11].

The results showed that only 2 girls knew about government scheme (Rashtriya Kishor swasthya karyakram) while 78 girls did not know about any scheme.

Table 3: Attitude of respondents regarding menstruation

S.N.	Characteristics	Categories	Frequency	Percentage
1.	Regularity of Cycle	Yes	18	22.5
		No	62	77.5
2.	Emotional Reactions	Scared	29	36.25
		Cried	11	13.75
		Embarrassing	6	7.5
		Happy	4	5
		Two of them	3	3.75
		Three of Them	6	7.5
		Normal	20	25
		None	1	1.25
3.	Comfortable to Discuss with Others	Comfortable	32	40
		Uncomfortable	40	60

Data presented in Table 3 shows that 75.5 % girls had irregular menstrual cycle which may indicate some underlying health issues. Regarding reaction on the first period most of girls 29 (36.25%) were scared, 11 girls (13.75) were cried, while 20 girls had normal reaction. Similar findings are reported in other studies [11, 12].

Result also revealed that 40% respondent could discuss openly about the menstruation cycle with their friends, mother and sisters whereas 60% respondent ashamed of discussing about the periods with others.

Table 4: Practice & hygiene management among adolescent girls

S.N.	Characteristics	Categories	Frequency	Percentage
1.	Daily Bath during Period	Yes	43	53.75
		No	7	8.75
		Alternate days	30	37.5
2.	Duration of Cleaning Genital Organ	Two times	5	6.25
		Three times	19	23.75
		More than Three times	56	70
3.	Hygienic Material	Soap	28	35
		Only water	52	65
4.	Use of absorbent	Old Cloth	10	12.5
		Sanitary Napkin	60	75
		Sanitary Napkin & cloth (both)	10	12.5
5.	Duration of Changing Absorbent in a day	Two times	11	13.75
		Three Times	18	22.5
		Four Times	20	25
		More than four times	31	38.75
6.	Hand wash after Changing	Use soap and water	80	100

Data on Practice & hygiene management among adolescent girls as showed in the Table No. 4 revealed that 53.75% girls took bath daily during the menstruation, 8.75% girls did not take bath daily during period while 37.5% girls took bath alternate days which is lower than other study [14].

It is also evident from the Table 4 on girls cleaning their genital organ during menses, 70% girls cleaned their genital organ more than three times during period. For cleaning of genitalia during periods, 65% girls used only water while 35% girls used water and soap both. Other studies also revealed similar results [4, 9, 14].

Regarding use of absorbent material during menstruation in the table no.-4 shows that 75% girls used sanitary pad for absorbent while 12.5% girls used sanitary pad and cloths both which is higher from other studies [9, 10].

It is clear from data in table no. 4 that only 11 girls changed absorbent two times a day while 38.75% girls changed the absorbent more than four times a day which is similar from another study [9, 14].

5. Conclusion

The study revealed a complex picture of menstrual health awareness and practices among adolescent girls in Champawat district. On the positive side, a high percentage of

girls recognized menstruation as a normal physiological process, and many engage in hygienic practices such as genital cleaning and using sanitary pads, reflecting a foundation of health consciousness. Family members, especially mothers, serve as primary sources of information, which can be leveraged for further education and support.

However, some challenges remain. Only about one-third of girls have adequate knowledge about menstruation, and a large proportion had no prior awareness before menarche, indicating gaps in education. Cultural stigma persists, with feeling ashamed to discuss menstruation openly, which hampers open communication and normalize efforts. Additionally, there are many government schemes related to menstruation but the girls were unaware about these programmes and misconceptions about menstrual health are still prevalent. These issues highlight the need for comprehensive awareness programs, destigmatization initiatives, and improved access to hygienic products.

Thus, it can be concluded that progress has been made in recognizing menstruation as a normal physiological process and adopting hygienic practices, addressing the existing knowledge gaps, cultural barriers, and lack of awareness is crucial. A combined approach of education, community engagement, and policy support is essential to empower adolescent girls to manage menstruation with dignity and confidence, ultimately promoting menstrual health equity in the region.

6. Recommendations

Based on the findings of this study, the following recommendations are proposed to promote menstrual hygiene equity among adolescent girls:

1. Implement Comprehensive Educational Programs: Develop targeted awareness campaigns in schools and communities to improve knowledge about menstruation, dispel myths, and promote healthy practices.
2. Increase Awareness of Government Schemes: Enhance efforts to inform adolescent girls and their families about existing government initiatives like the Rashtriya Kishori Swasthya Karyakram to facilitate access to resources and support.
3. Involvement of Family Members: Encourage active participation of mothers, sisters, and other family members in discussions about menstruation to create a supportive environment and reduce stigma.
4. Improve Access to Menstrual Products: Ensure availability of affordable, hygienic menstrual products in rural and semi-urban areas through partnerships with local organizations and health programs.
5. Promote Supportive Environments: Foster open dialogue about menstruation in schools and communities to normalize the topic, reduce cultural taboos, and empower girls to manage their menstrual health with confidence.
6. Regular Health Check-ups: Advocate for routine health assessments of adolescent girls to monitor menstrual health and address any issues promptly.
7. Implementing these recommendations can help bridge knowledge gaps, improve access to resources, and promote a supportive environment, ultimately advancing menstrual health equity among adolescent girls.

7. Acknowledgement

The authors are grateful to all the adolescent girls who participated in this study, as their willingness to share their experiences and knowledge was invaluable.

8. Ethical Considerations

Ethical approval was obtained, and informed consent was secured from participants before data collection to ensure their rights and confidentiality were respected.

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