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Study on information seeking behavior of female students of G.B. Pant University of Agriculture and Technology, Pantnagar, Uttarakhand related to menstruation

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ABSTRACT: As a natural biological process impacting nearly half the world's people, menstruation is often surrounded by myths, societal restrictions, and limited accurate information. This study investigates the information-seeking behavior of (140) female undergraduate students at G.B. Pant University of Agriculture and Technology, Pantnagar, Uttarakhand, regarding menstruation using online survey proforma. The primary objectives were to identify the origins of their menstrual wellness knowledge, the correctness and completeness of the information received, and their preferred methods of seeking knowledge about menstrual health. Collected data was analyzed and results shows that in the era of internet and social media participants till today turned to their mothers for guidance on menstrual concerns, like hygiene, problems faced, and solutions. A total of 55% of respondents relied on personal sources for resolving menstruation-related issues, doctors (22.86%) and internet searches (20%) were also commonly used. These findings might be getting attention of parents, government and health organizations, school and university administrators for planning and implementing menstrual health awareness in community.

Key words: Information seeking behavior, information source, menstruation, students

Amid abundant data today, converting it to actionable wisdom demands thoughtful evaluation for better decisions. Securing dependable info involves spotting reliable providers, crafting search plans, and applying results wisely (drawing from Sultana and Ayesha, 2016).

Deshpande *et al*. (2018) assessed hygiene routines in young females from city slums. While nearly all chose pads, understanding was limited, leading to problems like inconsistent cleaning and wrong waste handling. Influences included economic status, learning opportunities, and customs, underscoring calls for tailored learning and easier access to supplies.

Exploring societal impacts, Kumar and Srivastava (2011) surveyed 320 teens (13-19) across rural-urban divides. Few (under 40%) knew about periods pre-onset, many faced movement curbs from traditions, and cost barriers led half to use cloths. Family, especially maternal, input was central, but formal schooling fell short, recommending grassroots initiatives and budget-friendly options.
Venkatraman Chandra-Mouli *et al*. (2017) analysis of 81 reports from resource-limited nations revealed major shortfalls: many young females start periods without prep, due to hushed talks at home/school and stigmas. This results in unsafe methods, like improvised cloths in up to 40% of cases, heightening health threats. They advocate for holistic teaching, supply chains, and norm-shifting programs.

Menstruation marks a pivotal phase in women's lives. When females start menstruating, at that time, most girls may not be fully aware of the process of menstruation. Girls may also feel too shy to discuss about it with others. At that time the girls should be well versed with the understanding of menstruation. This involves information of various dimensions like- understanding the menstrual cycle, hygiene and sanitation, health issues, nutrition and diet, menstrual education, menstrual products, myths and misconceptions, medical help, emotional wellness etc. Evolving communication channels have broadened access to such topics, heightening exposure in recent decades. However, the origins of this knowledge warrant scrutiny, as factors like precision, pertinence, currency, impartiality, availability, and trustworthiness shape source

selection and application. Digital tools provide quick wellness tips, but increased reliance sparks doubts on content trustworthiness (Scott *et al*., 2008). Strong info access helps females handle cycles confidently, yet traditions and false ideas often block best practices, especially for youth. Reliable pathways could break these hurdles, promoting smarter choices and less shame.

Effective pursuit of menstrual-related knowledge empowers women to navigate this period with greater confidence and self-care. Yet, cultural barriers—such as taboos, folklore, and erroneous beliefs—often hinder optimal management, particularly for adolescents. Proper information channels could dismantle these obstacles, fostering informed choices, improved well-being, and reduced stigma.

Despite extensive studies on general health awareness, menstrual-specific inquiries lag, creating voids in dependable resources for hygiene and care. Bridging this divide is imperative to boost literacy, dispel myths, and equip young women for proactive health management. Strategies like fostering candid dialogues, distributing user-friendly materials, and embedding menstrual topics in curricula could fortify these patterns.

This investigation addresses such shortcomings by probing menstrual knowledge pursuit among university female students, aiming to illuminate acquisition and usage dynamics in an understudied domain. Objectives of the study was to study socio-personal characteristics of female students and to study information seeking behavior of female students regarding menstruation

By focusing on this research gap, the study aims to empower individuals with accurate knowledge and resources and to provide recommendations for improving menstrual health education and support services.

MATERIALS AND METHODS

This inquiry targeted 140 undergraduate female students of G.B. Pant University of Agriculture and Technology, Pantnagar, Uttarakhand. A structured digital questionnaire, pilot-tested for clarity and online survey was conducted for collecting data related to information seeking behavior of female students. Participants were selected randomly to ensure diversity in backgrounds, ensuring representation from various socio-economic groups. The survey focused on gathering data about the sources of menstrual information, its reliability, and the frequency of information-seeking behavior. The study also examined students' reliance on formal sources such as teachers, doctors, and digital platforms compared to informal sources like mothers, friends, and siblings.

RESULTS AND DISCUSSION

General Information

Table 1 indicates an average respondent age of 19.6 years, with over 60% in the 19-20 range and nearly half from urban settings (47.86%). The sample skewed toward the general category (68.57%) and Hinduism (92.86%), with most in nuclear households (72.86%).

Mothers of most of respondents were home maker (72.86%) and fathers of (32.14%) of respondents did government job followed by (27.14%) private job. Total family income of less than half of respondents (42.86%) was 1-5 lakhs per year followed by (22.14%) of respondents below 1 lakh per year.

Mothers of (32.14%) of respondents were educated to post-graduation level followed by (27.14%) graduated, (17.14%) intermediate level and (2.14%) were illiterate. In the similar study conducted by Bhore and Kumbhar (2014) reported that 52.22% of mothers (94 participants) had attained secondary education. According to the respondents, 33.57% of their fathers had attained a postgraduate level of education, while 35% had completed undergraduate degrees. It shows parental education levels varied, with 32.14% of mothers having postgraduate degrees and 35% of fathers being graduates.

Universal smartphone ownership (100%) and strong

Table 1: Respondent Distribution by Socio-Demographic Traits (N=140)

SI. No.	Variable	Category	Frequency	Percentage
1.	Age in Years	18	28	20
		19-20	85	60.71
		21	27	19.29
2.	Native Place	Urban	67	47.86
		Semi-Urban	30	21.43
		Rural	43	30.71
3.	Category	General	96	68.57
		SC	20	14.29
		OBC	23	16.43
		ST	1	0.71
4.	Religion	Hindu	130	92.86
		Muslim	5	3.57
		Sikh	3	2.14
		Christian	1	0.71
		Jainism	1	0.71
5.	Family Type	Joint Family	38	27.14
		Nuclear Family	102	72.86
6.	Education level of mother	Illiterate	3	2.14
		Primary	7	5.00
		High-school	20	14.29
		Intermediate	24	17.14
		Graduate	38	27.14
		Post graduate	45	32.14
		Ph.D.	3	2.14
7.	Education level of Father	Illiterate	-	-
		Primary	3	2.14
		High-school	12	8.57
		Intermediate	26	18.57
		Graduate	49	35
		Post graduate	47	33.57
		Ph.D.	3	2.14
8.	Occupation of Mother	Home maker	102	72.86
		Private jab	16	11.43
		Govt. job	15	10.71
		Business	1	0.71
		Any other	6	4.29
9.	Occupation of father	Govt. Job	45	32.14
		Private job	38	27.14
		Business	28	20
		Home maker	1	0.71
		Farmer	9	6.43
		Any Other	19	13.57
10.	Total family income/year	Below 1 lakh	31	22.14
		1-5 lakhs	60	42.86
		6-8 lakhs	27	19.29
		More than 8 lakhs	22	15.71
11.	Kind of mobile	Key Pad phone	-	-
		Smartphone	100	100
12.	Gadgets owned (other than Smartphone)	No gadgets available	42	30
		Laptop	68	48.57
		Computer	2	1.43
		Tablet	6	4.29
		More than one gadgets available	22	15.71
13.	Internet Connectivity at your area	Yes	127	90.71
		No	13	9.29

Table 2: Distribution of respondents on the basis of source of information, i.e. from where they got to know about menstruation for the first time

Information Source (N=140)

		Frequency	Percentage
A.	Personal Source		
	Mother	73	52.14
	Sibling	11	7.86
	Friend	29	20.71
	Relative	2	1.43
B.	Formal Source		
	Teacher	17	12.14
	Doctor	1	0.71
C.	Print media (Magazine, Newspaper)	-	-
	Books	4	2.86
D.	Electronic Media (Television, Radio, Internet)	-	-
E.	Any other	3	2.14

Table 3: Distribution of respondents on the basis of the correctness and completeness of the very first information that they received about menstruation

SI. No.	Correctness and completeness of the very first information received	Frequency	Percentage
1	Correct and complete	76	54.29
2	Partial	59	42.14
3	Incorrect	5	3.57

internet availability (90.71%) underscore digital readiness, though 30% lacked additional devices.

Information seeking

From Table no. 2, it is clear that a majority exceeding 50% (52.14%) first learned of cycle events from maternal figures, mirroring Igbokwe and John-Akinola's (2021) 34.7% interpersonal maternal relay and Dasgupta and Sarkar's (2008) 37.5% equivalent. This trend may arise from deep kin bonds and perceived safety in confiding intimate youth milestones

Table no. 3 reveals that over 50% (54.29%) deemed their inaugural cycle details fully reliable, likely due to maternal origins, versus 42.14% partial and a mere 3.57% flawed. Reason may be that as most of them got to know about menstruation from their mother that's why they got to know information which was correct and complete.

Table no. 4 reveals that the bulk (71.43%) attributed

Table 4: Distribution of respondents on the basis of source of information from where they got to know about the practices to maintain menstrual hygiene

Information Source (N=140)

		Frequency	Percentage
A.	Personal Source		
	Mother	100	71.43
	Sibling	8	5.71
	Friend	2	1.43
	Relative	-	-
A.	Formal Source		
	Teacher	9	6.43
	Doctor	7	5
B.	Print media		
	Books	1	0.71
	Magazine	-	-
	Newspaper	1	0.71
C.	Electronic Media		
	Television	1	0.71
	Radio	-	-
	Internet	8	5.71
D.	Any other	3	2.14

Table 5: Distribution of respondents on the basis of source of information they prefer the most for getting information or solving problems related to menstruation

Information Source (N=140)

		Frequency	Percentage
A.	Personal Source		
	Mother	66	47.14
	Sibling	6	4.29
	Friend	5	3.57
	Relative	-	-
B.	Formal Source		
	Teacher	2	1.43
	Doctor	32	22.86
C.	Print media (Books, Magazine, Newspaper)	-	-
	Electronic Media (Television, Radio)	-	-
	Internet	28	20
D.	Any other	1	0.71

Table 6: Distribution of respondents on the basis of frequency of using preferred sources when seeking information related to menstruation

SI. No.		Frequency of using preferred sources	Frequency Percentage
1	Daily	10	7.14
2	Weekly	21	15
3	Monthly	72	51.43
4	Yearly	26	18.57
5	Never	11	7.86

cycle sanitation guidance to maternal input, trailed by instructors (6.43%) and web/sibling ties (5.71% each), underscoring relational primacy over formal/

Table 8: Distribution of respondents on the basis of source of information from where they got to know detailed information/instructions about how to use this above-mentioned absorbent material during menstruation

	Information Source (N=140)	
A. Personal Source		
Mother	104	74.29
Sibling	6	4.29
Friend	3	2.14
Relative	-	-
B. Formal Source		
Teacher	9	6.43
Doctor	3	2.14
C. Print media (Books, Magazine, Newspaper	-	-
D. Electronic Media		
Television	2	1.43
Radio	-	-
Internet	8	5.71
E. Any other	5	3.57

Table 9: Distribution of respondents on the basis of source of information from where they got to know about a particular method for disposing the absorbent material used during menstruation

	Information Source (N=140)	
A. Personal Source	Frequency	Percentage
Mother	110	78.57
Sibling	7	5
Friend	3	2.14
Relative	1	0.17
B. Formal Source		
Teacher	6	4.29
Doctor	3	2.14
C. Print media (Books, Magazine)	-	-
Newspaper	1	0.71
D. Electronic Media		
Television	2	1.43
Radio	1	0.71
Internet	3	2.14
E. Any other	3	2.14

Table10: Distribution of respondents on the basis of source of information from where they got to know about mobile applications for menstruation for the first time

	Information Source (N=140)	
A. Personal Source	Frequency	Percentage
Mother	12	8.57
Sibling	6	4.29
Friend	30	21.43
Relative	1	0.71
B. Formal Source		
Teacher	5	3.57
Doctor	4	2.86
C. Print media (Books, Magazine, Newspaper)	-	-
D. Electronic Media		
Television	2	1.43
Radio	-	-
Internet	53	37.86
E. I don't know	21	15
F. Any other	6	4.29

Table 11: Distribution of respondents on the basis of source of information from where they consult for medicine that they take when they feel period cramps or other health problems related to menstruation

	Information Source (N=140)	
A. Personal Source	Frequency	Percentage
Mother	22	15.71
Sibling	1	0.71
Friend	10	7.14
Father	1	0.71
B. Formal Source		
Pharmacist	16	11.43
Doctor	77	55
C. Print media (Books, Magazine, Newspaper)	-	-
D. Electronic Media (Television, Radio, Internet)	-	-
E. I don't know	-	-
F. Any other	13	9.29

digital amid accessibility.

Table no. 5 shows that majority of (55%) of the respondents preferred to get solutions related to menstruation problems from personal sources. Out of those, less than half (47.14%) preferred their mother as the source for taking information or solving problems related to menstruation problems followed by (24.29%) that preferred formal source (doctor) for this reason may be that doctors are most credible source of health-related information and only (28%) respondents took information from internet. None of respondents preferred to get information related to menstruation problems from print and electronic media-radio and television but (20%) respondents preferred internet because easy access by increasing use of Smartphone's having internet by people and through it they are just a click away from information.

Table no 6 shows that the frequency of seeking information related to menstruation by respondents was (51.43%). Hence, it shows that more than half of the respondents were seeking this information on

a monthly basis coinciding with their menstrual cycles.

Table 7, shows that majority (67.86) of respondents got to know about absorbent material used during menstruation from their personal sources like mother, siblings, friends and relatives, followed by (12.14%) electronic media, (Television and radio) and only (1.43%) used print media (newspaper). Similar results were also found in the study conducted by Muralidharan (2019) who found that mothers often guided their daughters on personal hygiene and the use of menstrual absorbents. At menarche, mothers, sisters, and friends advised girls on choosing between commercially available sanitary pads and homemade cloth pads, with recommendations shaped by personal experiences, beliefs, and ease of disposal. For such type of results reason may be that in early ages mothers and teachers are most reachable, comfortable and convenient sources of information. Through internet they are coming across to advertisements, informative videos.

Table 8 shows that majority of respondents (74.29%) followed by (5.71%) got to know detailed information/instructions about how to use absorbent material during menstruation. Results shows that none of them used print media and radio for getting detailed information reason may be that now a day's people are more habitual to use internet and use radio and print media are fading off with time.

Table no. 9 shows that most of the respondents (78.57%) followed by (5%) respondents got to know about a particular method for disposing the absorbent material used during menstruation from their mothers and siblings respectively. Result also shows none of them used print media reason may be that people find print media more costly and it is also not available readily as required.

Table 10 reveals that (37.86%) respondents used internet followed by (21.43%) respondents got information about mobile applications for menstruation for the first time from their friends. None of them used print media and radio for knowing about use of mobile applications for managing periods. They reason behind may be that use of internet getting prominent day by day and new generation is more tech enthusiasts and social media fanatics. In many social media platforms videos related to menstruation are getting regularly uploaded and watched by people for information.

Table 11 reveals that majority (55%) sought docs for cramp relief or related woes, with 15.71% asking moms. This differs from Kusuma *et al.* (2016), where only about 40% saw pros, many preferring home fixes or elders. Consulting specialists ensures evidence-based care here. The number of participants sought professional medical advice, with 595 (39.66%) consulting a healthcare provider. In contrast, 471 (31.40%) attributed their symptoms to excess heat and used home remedies. 323 (21.53%) turned to their mother or an elderly woman for advice and followed their recommendations, while 111 (7.40%) chose to self-medicate. Girls consult doctors as they are most credible source of information for prescribing medicine that they take when they feel period cramps or other health problems related to menstruation.

CONCLUSION

The findings of this study emphasize that information-seeking behavior plays a critical role in shaping menstrual health awareness and practices among young women. The reliance on mothers as the primary source of information underscores the need to empowering parents with accurate knowledge so that they can provide correct guidance to their daughters. Although personal sources remain dominant, there is a need for formal educational interventions to ensure that menstrual health information is comprehensive and medically accurate. This work highlights how info pursuits influence young women's period management. Moms' key role calls for parent training in facts to better advise kids. While family ties dominate, structured school programs are vital for full, precise health info.

There are gaps and challenges in menstrual health information that despite the role of mothers in

menstrual education, professional sources such as healthcare providers and educators were underutilized. Print and electronic media had minimal impact on menstrual health education. Although digital sources are increasingly used, misinformation remains a concern due to the absence of verified health resources.

Recommendations for Improving Menstrual Health Awareness: Develop Comprehensive Menstrual Health Programs: Schools and universities should incorporate menstrual health into health education curricula.

Encourage Parental Involvement: Parents should be provided with resources to educate their children about menstruation.

Promote Reliable Digital Health Resources: Government and healthcare agencies should develop accessible, evidence-based digital platforms.

Foster healer-seeker bonds for verified counsel over dubious origins.

Use of Media for Awareness Campaigns: Television, radio, and print media should be leveraged to disseminate accurate menstrual health information, particularly in rural areas where digital access is limited.

REFERENCES

Bhore, N. and Kumbhar, V. R. (2014). Knowledge and practices regarding menarche and menstrual hygiene among the adolescent girls. *Innov Pharm Pharmacother*, 2: 359-64.

Dasgupta, A. and Sarkar, M. (2008). Menstrual hygiene: how hygienic is the adolescent girl? *Indian Journal of Community Medicine*, 33(2): 77-80.

Deshpande, T. N., Patil, S. S., Gharai, S. B., Patil, S. R. and Durgawale, P. M. (2018). Menstrual hygiene among adolescent girls–A study from urban slum area. *Journal of Family Medicine and Primary Care*, 7(6): 1439-1445.

Igbokwe, U. C. and John-Akinola, Y. O. (2021). Knowledge of menstrual disorders and health seeking behaviour among female undergraduate students of University of Ibadan, Nigeria. *Annals of Ibadan Postgraduate Medicine*, 19(1): 40-48.

Kumar, A. and Srivastava, K. (2011). Cultural and social practices regarding menstruation among adolescent girls. *Social Work in Public Health*, 26(6): 594-604.

Kusuma, M. L. and Ahmed, M. (2016). Awareness, perception and practices of government pre-university adolescent girls regarding menstruation in Mysore city, India. *International Journal of Community Medicine and Public Health*, 3(6): 1593-1599.

Muralidharan, A. (2019). Constrained choices? Menstrual health and hygiene needs among adolescents in Mumbai slums. *Indian Journal of Gender Studies*, 26(1-2): 12-39.

Scott, S. D., Gilmour, J. and Fielden, J. (2008). Nursing students and internet health information. *Nurse Education Today*, 28(8): 993-1001.

Sultana, A. and Ayesha, T. S. (2016). Information seeking behaviour of Academics of Maulana Azad national Urdu University in the digital environment. S. Dhanavandan, Transition in Librarianship, Pp245-252.

Venkatraman Chandra-Mouli, V. C. M., & Patel, S. V. (2017). Mapping the knowledge and understanding of menarche, menstrual hygiene and menstrual health among adolescent girls in low-and middle-income countries.

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