

## ORIGINAL ARTICLE

# Predictors of menstrual health management among the high school adolescent girls

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### CITATION

Dogra E, Kumar S, Guleri N, Sharma E. Predictors of menstrual health management among the high school adolescent girls. Indian J Comm Health. 2024;36(1):47-51.

<https://doi.org/10.47203/IJCH.2024.v36i01.009>

### ARTICLE CYCLE

Received: 27/04/2023; Accepted: 25/01/2024; Published: 29/02/2024

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### ABSTRACT

**Background:** Adolescence (10-19 years) is an essential human developmental stage, during which physical, sexual, psychological, and social development occurs **Objectives:** To estimate the knowledge and attitude regarding menstruation health as well as its determinants among school going adolescent girls. **Methods:** A questionnaire based cross-sectional study was conducted among school going adolescent girls. In addition to descriptive analysis, bi-variate analysis was also done to find out the association between various predictors of knowledge and attitudes of the study population. **Results:** Majority of the adolescent girls preferred mother (75.6%) as a source of information regarding puberty related issue with 86.2% of them using health related sanitary pad as one of the methods for menstrual hygiene. **Conclusion:** Proper menstrual hygiene practices which could be imparted through appropriate interventions at earlier stages of life can prevent the girls and women from suffering reproductive morbidities.

### KEYWORDS

Adolescent Girls; Menstrual Health, Menstrual Health Programme, Menstrual Hygiene.

### INTRODUCTION

Adolescence (10-19 years) especially in girls signifies the transition from girlhood to womanhood in particular the start of menstruation. (1) In Indian societies discussing about reproductive health is considered as a taboo for both boys and girls. Awareness regarding phenomenon of menstruation before menarche is very essential for accepting it as a normal developmental process. This will

help in its appropriate management and less vulnerable to Reproductive Tract Infections along with its consequences. Despite all these factors, still much of the information is imparted in restricted form.(2) Thus adolescent girls end up gaining knowledge in bits and pieces from mothers, television, friends, teachers and relatives. (3) Recognizing its relevance to the health, wellbeing and educational achievements of

girl, the Ministry of Health and Family Welfare India has launched various schemes/programs for promotion of Menstrual Hygiene among adolescent girls. The same was adopted completely by Government of Himachal Pradesh in 2012. Hence considering all these factors; the present study was conducted to estimate the knowledge and attitude regarding menstruation health as well as its determinants among adolescents' girls.

#### **MATERIAL & METHODS**

A cross-sectional study was conducted for one year among adolescent girls of senior secondary schools of Shimla Municipal area in Himachal Pradesh, India. A two stage sampling procedure was adopted. A list of classes XI and XII of all the schools stratified by the type of school (government(11)/private(18)) along with the number of girl students in each class was prepared (Total 3700 students). At stage-I, using cluster sampling procedure schools were selected as Sampling units as per probability proportionate to size (PPS). The schools that refused to participate were later excluded from the study and another school was included by simple random procedure. In Stage- II we selected all consenting/ assenting students of classes XI and XII as elementary units. Sample size was calculated using Open Epi software version 7.1.3 by using a finite population correction for the total of 3700 girl students in Shimla city. The sample size worked out to be 836.

Ethical approval for this study was obtained by the Institutional Ethics Committee and necessary permissions from authorities like Directorate of Higher Education (DHE), respective School Principals were taken.

A pre-tested, validated and self-administered questionnaire (in Hindi/English) containing information on general demographic profile and menstruation related knowledge, its practices was administered. On prefixed dates and time, the selected schools were visited. The survey instruments were administered to all the eligible adolescent participants in a class-room setting in one sitting ensuring about confidentiality of the information and voluntary participation in the study. We

extended all the help to the students who complained of any morbid condition related to sexual or reproductive health issues by providing them necessary consultation.

Data was analysed using Open Epi Info version 7.1.3. A bi-variate analysis was also done to find out the association between various predictors of knowledge and attitudes of the study population.

#### **RESULTS**

A total of 1193 girl students studying in 11th and 12th standards of selected schools participated in the study. Study sample included 49% girls from 11th standard and 50.7% girls from 12th standard with 58.3% from government schools and 41.7% from private schools. Mean age of the participants was  $16.9 \pm 1.1$  years. 49.1% of the students were from science background and 50.9% from non-science background. Majority of (95.8%) respondent's mother had attended middle school and 76.1% of respondent's father had attended minimum high school. Only 4% of the respondent's mothers and 1.7% of the respondent's father were illiterate. Majority of respondent's mother (80.7%) were involved in household work with only 20% being employed.

#### *Sources of information*

Mother (75.6%) was preferred as a source of information regarding puberty related issues followed only by friends in both government and private schools. As a part of education curriculum, sexual & reproductive health topics are to be taught beginning from 6th standard, only 21.8% of the students reported to have attended the same.

Table 1 shows various menstrual health practices by adolescent girls. Overall, 94% of respondents had their menarche and 86.9% were reported to be aware of it before onset. 75.3% of students reported mothers being their source of information on menstruation. Relation between variables and fertility awareness

Amongst the various factors studied, significant factors associated were: studying in lower grade (eleventh vs. twelfth grade), having non science subjects (arts, commerce)

(RR-1.3), not having elder sister ( p value < 0.001) and elder brother, studying in government school (RR-1.7), and not attended any health facility (RR-2.2). (Table 2)

**Table 1: Awareness and misconceptions among the participants regarding menstruation.**

Variable	All participants (n=1193)		Government schools (n=696)		Private schools (n=497)		Response rate
	No.	%	No.	%	No.	%	%
<b>Menstruation</b>							
Started	1062	94.0	646	95.1	416	94.1	94.7
Soaking material used							MR*
Cloth & wash it again	166	13.9	142	20.4	24	4.8	
Cloth & throw it away	82	6.9	82	11.8	26	5.2	
Sanitary Pads	1027	86.2	587	84.3	440	88.5	
<b>Most Common complaint during menstruation</b>							MR*
Pain abdomen	668	56.0	410	58.9	258	51.2	
Backache	404	33.9	265	38.1	139	28.0	
Irregular Periods	310	26.0	199	28.6	111	22.3	
Consulted a doctor for any issue related to menstruation.	211	17.7	121	17.4	90	18.1	
<b>Awareness before start of menstruation</b>							
Yes	989	86.9	570	85.8	417	91.0	95.4
No	51	4.5	32	4.8	19	4.2	
Not Sure	100	8.8	81	12.2	19	4.2	
<b>Woman is most likely to get pregnant</b>							62.1
Just before menstruation	202	25.5	129	29.8	73	23.6	
Just after menstruation	297	37.4	184	42.6	113	36.6	
Midway between 2 menstruation cycle	295	37.1	158	36.6	137	44.3	
<b>Height stop growing after start of regular cycles</b>							87.2
Yes	279	26.8	163	23.8	116	19.1	
No	416	40.0	276	40.4	140	23.1	
Not sure	431	41.4	245	35.8	186	30.6	
<b>Attitude</b>							
<b>Take bath daily during menstruation</b>							94.6
Yes	1030	91.3	635	93.2	395	88.4	
No	54	4.8	29	4.3	25	5.6	
Not Sure	44	3.9	17	2.5	27	6.0	
<b>Avoid some activities or food during this period</b>							
Yes	583	57.6	370	62.2	213	51.0	84.9
No	371	36.6	190	31.9	181	43.3	
Not Sure	59	5.8	35	5.9	24	5.7	
<b>Most Common food items avoided</b>							Q†
Sour Things	279	47.8	163	44.0	116	54.5	
“Hot things”	431	73.9	245	66.2	186	87.3	
<b>Most Common activity avoided</b>							Q‡
Visiting Temples	454	77.9	301	81.4	153	71.8	
Jumping and doing any heavy work	430	73.8	290	78.4	140	65.7	
<b>Misconceptions</b>							
Not aware about menstruation before menarche	151	12.7	113	16.2	38	7.6	
Not aware of right fertile period	499	60.2	313	44.9	186	37.4	
Avoid certain food items/activities	583	48.9	370	53.2	213	42.9	
Not taking bath during menstruation	98	8.2	46	6.6	52	10.5	
Think height stops increasing after menarche	710	59.5	408	58.6	302	60.8	

**Table 2: Knowledge regarding the fertile period among the participants. (Analytical)**

Exposure	Unaware			Aware			Risk Ratio	95% CI	p-value*
	No.	Total	%	No.	Total	%			
Lower grade (XI th Standard)	264	493	53.5	107	185	57.8	1.3	1.2-1.4	<0.001
Non science stream students (Commerce, Arts)	270	491	54.9	105	290	36.2	1.3	1.2 - 1.5	< 0.001
Non Hindu (Muslim, Christian, Sikh, Buddhist)	24	407	5.9	20	249	8.0	0.9	0.7-1.2	0.15
Mother's education below High school	233	494	47.2	120	139	86.3	1.0	0.9-1.1	0.41
Father's education below High school	118	417	28.3	62	252	24.6	1.1	09-1.2	0.15
Non-working mother	340	420	80.9	212	236	89.8	0.9	0.8-1.1	0.27
Not having elder sister	132	501	26.3	85	192	44.3	0.8	0.7-0.9	<0.001
Not having elder brother	120	285	42.1	82	160	51.3	0.9	0.7-1.0	0.03
Living away from parents	68	460	14.8	76	286	26.6	0.7	0.6-0.9	<0.001
Government School students	313	399	78.4	158	295	53.6	1.7	1.4-2.1	<0.001
Not attended/had classes over SRH in school.	284	480	59.2	147	288	51.0	1.1	1.1-1.3	0.01
Not attended any health facility	403	488	82.6	226	293	77.1	1.2	0.9-1.3	0.03
Not seen any posters on HIV/AIDS or pregnancy prevention	195	468	41.7	103	263	39.2	1.0	0.9-1.2	0.26

## DISCUSSION

Literacy rate in HP is around 93.1% (as per census 2011) and in our study only 4% of the mothers were illiterate. Study participants (75.6%) preferred mother as important source of information on puberty followed by friends. Previous research has also concluded mother as the main source of information about menstruation, followed by siblings and friends. (4). Discussion of puberty related changes with parents and family are protective for healthy stepping into adulthood.

The objectives of Menstrual Health programs (MHP) in HP are to increase awareness among adolescent girls on Menstrual Hygiene and to increase access as well as use of high quality sanitary napkins. The use of hygienic practices due to promotion of MHP can be seen by comparing NFHS-4 to NFHS-5 along with our baseline i.e. increase from 86.8% to 95% & 93.4% respectively for our study area, which has increased since its launch. (5,6)

We also found three major misconceptions/myths about the menstruation in our study.

First, myth is of avoiding certain food items or activities during menstruation. Half (48.9%) of our respondents were practicing one or the

other thing or both. These practices were more prevalent among the students of government school (53.2%) and non-science students. These girls in future will become mothers and keep on following these taboos. (7)

It has been proven that these restrictions in mobility results in development of lack of dignity and confidence amongst adolescent girls. To ensure true empowerment of women of society this is an important aspect to be considered to have long lasting results; so that the women of future can accept it as a normal physiological function; rather to be ashamed of. (8)

Second misconception was regarding effect on physical growth after the beginning of menstruation. About 60% of our research participants believed that their height will not increase after menarche. However in reality, there is average gain in height after menarche i.e. about 7 cm (3 inches) and even greater for girls who menstruate early. (9)

Third myth was about the timings of fertile period. Only, 39.8% girl participants were aware regarding the accurate pregnancy time which was similar to previous studies concluding that most of the girls were unaware about the fertile period of a woman. (10) The

most common misconception being that pregnancy is most likely to occur immediately after menstruation and it was reported by 40.1% of our respondents. The accurate knowledge about fertile period can be empowering to girls and future women in many ways. Thus main goal of menstrual hygiene has increased; but to sustain these results focus should be more on empowering girls around all aspects of it.

The results of this study provided us with some insight into the most important gaps. Despite the clarity of findings, our study has few limitations. Only students of 11th & 12th classes of Shimla municipal area were included. Our study population was a mix of those belonging to rural areas as well as the urban areas. As the school attendance rate among 6-17 years old girls was 89.9% (DHE), thus results were not much affected by the exclusion of non-school going adolescent girls inherent in our study design. Also at the stage of questionnaire development we failed to include questions on waste management of menstruation.

#### **Way forward**

Menstrual health programs have helped in promoting menstrual hygiene. However, holistic sensitization can be accomplished by integrated awareness and motivation by engaging the women/ adolescents in more interactive and training sessions.

#### **CONCLUSION**

Menstrual health programs have helped in promoting menstrual hygiene. However, holistic sensitization can be accomplished by integrated awareness and motivation by engaging the women/ adolescents in more interactive and training sessions.

#### **AUTHORS CONTRIBUTION**

All authors have contributed equally.

#### **FINANCIAL SUPPORT AND SPONSORSHIP**

Nil

#### **CONFLICT OF INTEREST**

There are no conflicts of interest.

#### **DECLARATION OF GENERATIVE AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS**

The authors haven't used any generative AI/ AI assisted technologies in the writing process.

#### **REFERENCES**

1. Drakshayani DK, Venkata RP. A study on menstrual hygiene among rural adolescent girls. *Ind J Med Sci* 1994;48(6):139-43.
2. Khadilkar VV, Stanhope RG. Secular trends in puberty. *Indian Pediatr.* 2006;43(6):475-8.
3. Dasgupta A, Sarkar M. Menstrual Hygiene: How Hygienic is the Adolescent Girl? *Indian J Community Med.* 2008;33(2):77-80
4. Deo DS, Ghattargi CH. Perceptions and practices regarding menstruation: A comparative study in Urban & Rural Adolescent Girls. *Indian Journal of Community Medicine.* 2005;30 (1): 33-34.
5. National Family health Survey. NFHS 4- Himachal Pradesh 2005-06. Ministry of Family and Health Welfare. 34-35. Available from <https://rchiips.org/nfhs/NFHS-4Reports/India.pdf> . Accessed 25-02-2024
6. National Family health Survey. NFHS 5- Himachal Pradesh 2020-21. Ministry of Family and Health Welfare. Available from [https://main.mohfw.gov.in/sites/default/files/NFH\\_S-5\\_Phase-II\\_0.pdf](https://main.mohfw.gov.in/sites/default/files/NFH_S-5_Phase-II_0.pdf) . Accessed 25-02-2024
7. Spot On! Improving Menstrual Health and Hygiene in India. Report. Dasra, Kiawah Trust ,and USAID,2014. Available from <https://www.dasra.org/assets/uploads/resources/Spot%20On%20-%20Improving%20Menstrual%20Management%20in%20India.pdf>. Accessed 25-02-2024
8. Thakre, Subhash B., Sushama S. et al "Menstrual Hygiene: Knowledge and Practice among Adolescent School Girls of Saoner, Nagpur District." *Journal of Clinical and Diagnostic Research* 5: 1027-1033.
9. Nakamoto JM. Myths and variations in normal pubertal development. *West J Med.* 2000;172(3):182-5.
10. Bhatia V, Swami HM. Fertility control methods: Knowledge of adolescent girls in schools of Chandigarh. *Indian J Med Sci.* 2000;54(8):342-6..