

# A Community-based Cross-sectional Study on Knowledge and Belief of Menstruation and Practices of Menstrual Hygiene among Adolescence Girls of Vadodara, Gujarat, India

DIVYANGKUMAR NAROTTAMBHAI PATEL<sup>1</sup>, SARJIL AMIN<sup>2</sup>, JINAL BHAJIWALA<sup>3</sup>, MITACHARYA<sup>4</sup>, KAVYA BARADIA<sup>5</sup>, ABHINAV KUMAR<sup>6</sup>



## ABSTRACT

**Introduction:** Women undergo menstruation as part of their normal physiological cycle. In Indian society, it is associated with taboos, myths, misbeliefs and malpractice. Majority of adolescent girls are unprepared in terms of knowledge, attitude and hygienic practices for managing the menstrual cycle when they enter menarche. A better understanding of the scientific process of menstruation and good menstrual hygiene is very crucial for the health and well-being of adolescent girls. Unsafe practices are associated with unwanted outcomes.

**Aim:** To assess the knowledge, beliefs and sources of information adolescents have about menstruation, along with their management of menstrual hygiene.

**Materials and Methods:** The present community-based cross-sectional study was conducted among the adolescent school going girls of rural and urban areas in 2019 in Vadodara, Gujarat, India, among 240 adolescent girls of 14-17 years of age using

multistage sampling methods. Data were collected by using pre tested, structured self-administered questionnaire after having informed consent. Descriptive statistics was applied for analysis and results were presented into table and graph.

**Results:** A total of 98 (40.8%) girls were aware of menstruation before attaining menarche. Out of total 240, 26(10.83%) did not know the cause of menstruation and 11 (4.58%) were not aware about the organ from where menstrual bleeding occurs. Total 55.42% girls used only sanitary pads whereas 43.33% used both old clothes and sanitary pads as the absorbents. A 46.25% changed absorbent frequently ( $\geq 4$  times in a day). A 54.17% washed their genitals frequently. The most common method of absorbent disposal was disposal in a dustbin. Mother was the main source of information regarding menstruation.

**Conclusion:** Majority of adolescent girls were not having enough knowledge regarding menstruation and their menstrual practices are inexact. This is requisite for menstrual hygiene programme.

**Keywords:** Absorbent, Hygiene practices, Restrictions, Sanitary napkin, School girls

## INTRODUCTION

The World Health Organisation (WHO) defines an individual between 10 to 19 years of age as "adolescence" [1]. Adolescent girls account for about 20% of total female population globally. The adolescence phase is a transition period from childhood to adulthood. Hormonal changes in adolescent girls accelerate physical, cognitive, psychological and reproduction development [2,3]. Menstruation is a universal and normal physiological phenomenon for females, indicating their capacity for reproduction. The onset of menstruation is one of the vital events in a girl's life. The onset of menstruation is called "menarche" indicating the beginning of reproductive life. The menarche occurs between 11 to 15 years of age. The onset of menstruation is susceptible period because of major body changes, psychological changes and changing social roles [4-7]. An adolescent girl is a vulnerable population, particularly in Indian society. Even though menstruation is a normal physiological phenomenon, it is associated with many social taboos, misconceptions, supernatural beliefs and malpractices within the community. Menstruation is still thought out as something unclean or dirty in Indian society [4,8,9].

A better understanding of the scientific process of menstruation and good menstrual hygiene is crucial for the health, well-being and dignity of girls and women. Though menstrual hygiene is an important sanitation issue, still girls are not freely talked about menstruation and sanitary menstrual practices in Indian society. Even, it can be a big taboo to talk about it in the family. The majority of adolescent girls are unprepared- in terms of knowledge, attitudes and hygienic practices for managing the menstrual cycle when they enter in

menarche [3,6,10]. The issue of menstrual hygiene continues to be neglected in many parts of the world, especially in rural and urban slum areas. It is difficult for adolescent girl to maintain good hygiene in such social environment. An unhealthy menstrual practice has been associated with serious health problems ranging from genital tract infections, urinary tract infections, bad odour and long term complications of recurrent reproductive tract infections [6].

"Menstrual hygiene scheme" was launched in 2011 and scaled up in 2014 to promote the menstrual hygiene [11]. In spite of the fact that safe menstrual practices are not universal. There is limited information on menstrual hygiene practices and knowledge in the Gujarat region, which prompted this study. Aim of the study was to assess knowledge on menstruation and menstruation hygiene practices among adolescents in Vadodara, Gujarat, India. Findings of this study will provide valuable information to guide future research and develop appropriate interventions to promote menstrual hygiene.

## MATERIALS AND METHODS

The present community-based cross-sectional study was conducted among the school going adolescent girls of the rural and urban areas of the Vadodara district, Gujarat, India, from August 2019 to November 2019. Ethical approval was obtained from Sumandeep Vidyapeeth Institutional Ethics Committee (IEC) (Ethical approval No: SVIEC/ON/MEDI/SRP/19043).

**Inclusion criteria:** All school going menstruating girls between 14-17 years of age, were included in the study.

**Exclusion criteria:** Girls who were not willing to participate or suffering from the menstrual disorder were excluded from the study.

**Sample size calculation:** The sample size was calculated through open Epi software using single population proportion formula:

$$n = \left( Z_{\alpha/2} \right)^2 * p(1 - p) / d^2$$

Based on the following assumption: 95% confidence interval, 5% margin of error, 80% as a power of a study, 50% as anticipated prevalence [6]. The calculated sample size is-

$$n = \frac{(1.96)^2 * 50 * 50}{(10)^2} = 97$$

Then, adjoin 5% as non response rate and 2 as design effect then the final calculated sample size was 204. Data were collected from the 240 participants.

The sample was selected by multistage sampling method, first stage was simple random sampling followed by stratified random sampling. In the first stage, authors obtained a list of schools in both urban and rural areas of Vadodara, Gujarat, India. One school from each rural and urban area was selected randomly by the lottery method. After the selection of the study site randomly, permission was obtained from the principal of the selected school to carry out such research study in that school. In the second stage, authors selected proportion participants from each class, so as to get an equal number of participants from each age group. One day before the data collection, authors provided a participant information sheet and consent form to each participant to obtain voluntary consent from their parents. Only those students whose parents provided voluntary consent were included in the study. After reviewing literature, the author developed the questionnaire based on the outcome variables [2,5,6,8,10].

A questionnaire was prepared in English; translated into the Gujarati language then back translated into English to check consistency. Face validity of the questionnaire was carried. Authors pretested the final version of the questionnaire among 15 students who were not the part of the sample to see whether the questions were understandable, and necessary corrections were made. Data were collected on scheduled date and time, which was informed in advance to participants. The questionnaire was given to the participants to fill out in a classroom under the direct observation of the investigators and teachers, and return back to the investigators.

## STATISTICAL ANALYSIS

Data were entered and compiled into Microsoft Excel and exported to Epi-info software for analysis. Data cleaning was done before conducting the analysis. Descriptive statistics was applied for analysis and results were presented into table and graph.

## RESULTS

Total 240 adolescent girls of 8<sup>th</sup>-11<sup>th</sup> standard were involved in the present study. Among the 240 girls, 121 lived in rural areas and 119 lived in urban areas. The median age of girls was 16 years in a rural area and 15 years in an urban area.

The majority of the study population was Hindus, in both rural (85.95%) and urban (89.92%) areas. Total 42.15% girls from rural area and 57.98% girls from urban area lived in a nuclear family and 39.67% girls of rural area and 30.25% girls of urban area lived in a joint family [Table/Fig-1].

[Table/Fig-2] shows the knowledge of the study population regarding menstruation. The majority of the girls (59.2%) did not have any knowledge of menstruation before menarche. Only 45.83% girls knew that menstrual bleeding occurs from the uterus, girls from the urban area had higher accurate knowledge compared to girls from a rural area. An 80.42% girls knew that menstruation is a natural physiological phenomenon. A 78.51% of girls from a rural area and

82.35% of girls from an urban area knew the correct reason for menstruation.

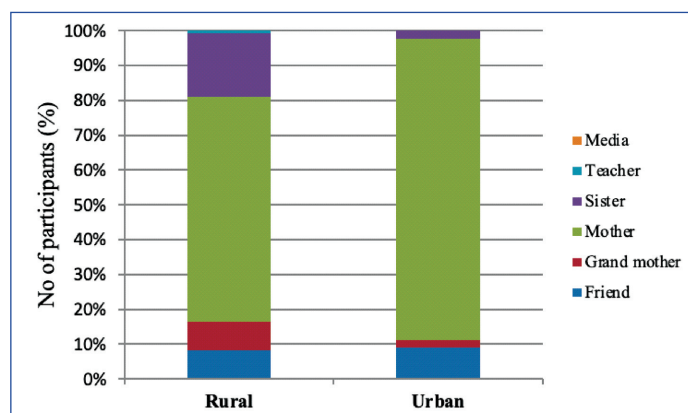
Socio-demographic characteristics		Rural (n=121) n (%)	Urban (n=119) n (%)	Total (n=240) n (%)
Religion	Hindu	104 (85.95)	107 (89.92)	211 (87.92)
	Muslim	17 (14.05)	11 (9.24)	28 (11.67)
	Other	0	1 (0.84)	1 (0.41)
Type of family	Nuclear	51 (42.15)	69 (57.98)	120 (50)
	Joint	48 (39.67)	36 (30.25)	84 (35)
	Three generation	22 (18.18)	14 (11.77)	36 (15)

[Table/Fig-1]: Distribution of study population according to socio-demographic characteristic.

Knowledge regarding menstruation		Rural (n=121) n (%)	Urban (n=119) n (%)	Total (n=240) n (%)
Knowledge of menstruation prior to onset of menstruation (Menarche)		42 (34.7)	56 (47.05)	98 (40.8)
Cause of menstruation	Natural	95 (78.51)	98 (82.35)	193 (80.42)
	A disease	7 (5.79)	3 (2.52)	10 (4.17)
	Curse from god	5 (4.13)	6 (5.04)	11 (4.58)
	Don't know	14 (11.57)	12 (10.09)	26 (10.83)
Organ from where menstrual bleeding occurs	Uterus	50 (41.32)	60 (50.42)	110 (45.83)
	Urinary tract	34 (28.1)	28 (23.53)	62 (25.83)
	Abdomen	12 (9.92)	14 (11.77)	26 (10.83)
	Vagina	18 (14.87)	13 (10.92)	31 (12.91)
	Don't know	7 (5.79)	4 (3.36)	11 (4.58)

[Table/Fig-2]: Knowledge of the adolescent girls regarding menstruation.

[Table/Fig-3] shows that the majority of adolescent girls got information on menstruation and menstrual hygiene practices from mothers, which is around 78 (64.46%) in the case of rural areas and 103 (86.56%) in urban areas. Other important sources were sister, friend and grandmother. Sister provided information to 22 (18.18%) girls of rural areas and 3 (2.52%) girls of urban areas. Grandmother gave information to 10 (8.26%) girls of rural areas and 3 (2.52%) girls of urban area. Friend provided information to 10 (8.26%) girls of rural areas and 10 (8.40%) girls of urban areas. In both areas teachers and media both occupied very negligible role in providing information.



[Table/Fig-3]: Primary source of information regarding menstruation and menstrual hygiene practices.

[Table/Fig-4] shows various restrictions followed during menstruation. All girls from rural area and 93.28% of girls from urban area were restricted to participate in religious activity. In the rural area, 11.57% of girls were restricted to eating a certain food, 16.53% of girls were restricted to entering in kitchen, 24.79% girls were restricted to shampooing their hair, and 15.7% of girls did not participate in during

menstruation. In the urban area 5.88% girls were restricted to eating a certain food, 10.08% girls were restricted to entering in kitchen, 17.65% girls were restricted to shampooing their hair and 17.65% girls did not participate in during menstruation.

Practices restricted	Rural (n=121) n (%)	Urban (n=119) n (%)	Total (n=240) n (%)
From religious activity	121 (100)	111 (93.28)	232 (96.67)
To eat certain food	14 (11.57)	7 (5.88)	21 (8.75)
To enter in kitchen	20 (16.53)	12 (10.08)	32 (13.33)
To shampooing hair	30 (24.79)	21 (17.65)	51 (21.25)
Playing	19 (15.7)	21 (17.65)	40 (16.67)
Going to school	3 (2.48)	1 (0.84)	4 (1.67)

[Table/Fig-4]: Practices restricted during menstruation\*.

\*Multiple responses received

[Table/Fig-5] depicts the practices during menstruation. In a rural area, 41.32% of girls were using sanitary napkin whereas 56.2% girls were using both sanitary napkin and cloth during menstruation. Compare to that in an urban area, 69.75% of girls were using sanitary napkin and 30.25% of girls were using both sanitary napkin and cloth. Majority of girls who utilised cloth either alone or with sanitary napkins were reutilising cloth. A 76.06% of girls of rural area and 86.11% girls of urban area were reutilising cloth after washing. A 44.63% of girls from rural area and 47.9% girls from urban area were changing absorbent frequently ( $\geq 4$  times per day). Most common method of disposal of sanitary pad was disposal in dustbin followed by disposal by burning. A 64.4% of girls from rural area and 91.6% girls from urban area were disposing of absorbent in a dustbin. A total of 50 (41.32%) girls from rural area and 80 (67.23%) girls from urban area were cleaning their genitals >4 times per day (frequently)

Practice of menstrual hygiene		Rural (n=121) n (%)	Urban (n=119) n (%)	Total (n=240) n (%)
Type of absorbent use	Sanitary napkin only	50 (41.32)	83 (69.75)	133 (55.42)
	Cloth only	3 (2.48)	0	3 (1.25)
	Both Sanitary napkin and cloth	68 (56.2)	36 (30.25)	104 (43.33)
Absorbent change in a day	2 times in a day	32 (26.45)	20 (16.81)	52 (21.67)
	3 times in a day	35 (28.92)	42 (35.29)	77 (32.08)
	$\geq 4$ times in a day	54 (44.63)	57 (47.9)	111 (46.25)
Cleaning of genitals in a day	$\leq 4$ times	71 (58.68)	39 (32.77)	110 (45.83)
	>4 times	50 (41.32)	80 (67.23)	130 (54.17)
		<b>Rural (n=118) n (%)</b>	<b>Urban (n=119) n (%)</b>	<b>Total (n=237) n (%)</b>
Disposal of a sanitary napkin	Dustbin	76 (64.4)	109 (91.6)	185 (78.1)
	Burned	26 (22.03)	5 (4.20)	31 (13.1)
	Flushed in toilet	13 (11.01)	4 (3.36)	17 (7.17)
	Dispose indiscriminately	3 (2.54)	1 (0.84)	4 (1.69)
		<b>Rural (n=71) n (%)</b>	<b>Urban (n=36) n (%)</b>	<b>Total (n=107) n (%)</b>
Reutilise cloth (if used)	Yes	54 (76.06)	31 (86.11)	85 (79.44)
	No	17 (23.94)	5 (13.89)	22 (20.56)
		<b>Rural (n=54) n (%)</b>	<b>Urban (n=31) n (%)</b>	<b>Total (n=85) n (%)</b>
Using soap to wash reusable absorbent cloth	Yes	51 (94.44)	28 (90.32)	79 (92.94)
	No	3 (5.56)	3 (9.68)	6 (7.06)
Drying of washed cloth in sunlight	Yes	25 (46.30)	22 (70.97)	47 (55.29)
	No	29 (53.70)	9 (29.03)	38 (44.71)

[Table/Fig-5]: Practice of menstrual hygiene.

during menstruation. A total of 51 (94.44%) girls from rural area and 28 (90.32%) girls from urban area use soap to clean absorbent cloth before reutilise. A total of 25 (46.30%) girls from rural area and 22 (70.97%) girls from urban area dry the absorbent cloth in sunlight.

## DISCUSSION

In this study, only 40.8% of adolescent girls were aware of menstruation before menarche. A 34.7% girls from rural area and 47.05% girls from urban area were aware of menstruation before menarche. Similarly to that, about 43.4% of girls from Bangalore and 48.3% of girls from Pondicherry were aware of menstruation according to studies conducted by Mathiyalagen P et al., and Kailasraj KH et al., respectively [6,12]. It was low around 24% in the study conducted by Deshpande TN et al., [10]. A socio-demographic difference between studies populations contribute to this difference. Menstruation should be discussed among adolescents before they reach menarche in order to prevent related morbidities and maintain menstrual hygiene.

Regarding the cause of menstruation, 80.42% knew that it is normal physiological phenomenon. Results of present study were similar to other studies conducted by Suman SK and Prasad B, Mathiyalagen P et al., and Savanthe A and Nanjundappa V [5,6,8]. It was low in the study conducted by Deshpande TN et al., and Kailasraj KH et al., [10,12]. In present study, a majority of girls did not know that menstrual bleeding originates from the uterus. The result was similar to studies conducted by Suman SK and Prasad B, and Mathiyalagen P et al., [5,6]. Study conducted by Mokhasi VR et al., shows that girls from the urban area had higher knowledge compared to girls from rural areas, the same was also evident in present study [13].

Mother was the main source of information in both rural and urban areas. Studies conducted by Savanthe A and Nanjundappa V; Verma DPB et al., and Ramachandra K et al., also revealed that the main source of information regarding menstruation was the mother [8,14,15]. This shows menstruation is a topic that is not discussed openly in India. So, mother played a significant role to provide knowledge and preparing a girl for menstruation. Studies by Savanthe A and Nanjundappa V; Verma DPB et al., Ramachandra K et al., also revealed that teachers and media played a very negligible role in providing information [8,14,15]. A study conducted by Dasgupta A and Sarkar M and Gandotra N et al., shows that friends followed by mother were the important source of information [4,16]. Menstrual health information should be disseminated through multiple communication methods.

It is believed in Indian society, that menstruation is unclean and dirty. This belief leads to many restrictions and malpractices being adopted in different communities. Several studies reported different types of restrictions observed during menstruation similar to present findings. The most common restriction followed in both urban and rural areas was a restriction from religious activity. In a study conducted by Kailasraj KH et al., in Rajasthan, Dasgupta A and Sarkar M in West-Bengal; Savanthe A and Nanjundappa V in Andhra Pradesh and Kshirsagar MV et al., Maharashtra had similar findings that 99%, 70.58%, 84% and 72% of girls were not allowed to attend religious occasions, respectively. Other restrictions like eating a certain food, not going to school, not entering the kitchen, not participating in sport and many others are also found in various studies. Similar observations were noted in the present study [2,4,8,12].

This study showed that most common absorbent used was sanitary napkin in urban area and mixed (both sanitary napkin and cloth) in rural area. Various studies show that sanitary pad was the most common absorbent used in urban area and sanitary pad with cloth or cloth was the most common absorbent used in rural area [5,6,8,12-14]. Around 80% of girls reutilised the cloth. Study conducted by Deshpande TN et al., shows that 70% of girls reutilise cloth [10]. The cost of sanitary napkins is a reason why women use cloth and repurpose cloth during menstruation particularly in rural

area. Health Department initiated social marketing to make sanitary napkins available at affordable price, but it still needs advocacy and marketing. Using of cloth and reuse cloth after washing can increase the risk of reproductive tract infections [17]. Universal use of the sanitary napkin must be practiced by girls.

The present study observed that 44.63% of the rural girls and 47.9% of the urban girls changed absorbent  $\geq 4$  times/day (frequently). Kailasraj KH et al., observed that 42.6% of the urban girls and 51.1% of the rural girls change absorbent frequently [12]. The present study observed that 91.6% of urban girls and 64.4% of rural girls dispose the used absorbent by throwing into dustbin. Studies of Kshirsagar MV et al., and Suman SK and Prasad B, showed that 64.8% and 79.4% of girls dispose absorbent in dustbin respectively [2,5]. Majority of girls washed their genitals frequently. Girls of urban area washed genitals frequently compared to girls of rural area. Study conducted by Mathiyalagen P et al., and Dasgupta A and Sarkar M show that 88% and 85% of girls respectively washed frequently [4,6]. Study conducted by Kailasraj KH et al., showed that 75.8% girls of urban area and 65.8% girls of rural area washed their genital frequently [12].

### Limitation(s)

Menstruation is sensitive topic, so the result may be affected by information bias and social desirability response bias. Standard data collection tool was not available so the comparison with different studies was difficult.

### CONCLUSION(S)

This study showed that majority of girls were not aware of menstruation and hygienic menstrual practices. Many girls and their family members had misbelieve regarding menstruation so the majority of population follow one or more restrictions. Hence, it is very essential to educate girls and their parents about the physiological facts of menstruation, wipe of misbelieve and malpractices and lead them to proper hygienic practices to prevent reproductive tract infections. Role of the mother in imparting knowledge on menstruation is important. Health education in school, educational television programme and education through health workers can be helpful to improve menstrual practices. This health education must be provided before menarche. Dustbin needs to arrange at public places and at school to dispose of the absorbent particularly in rural area.

Further study is needed to explore the "effectiveness of health education intervention on menstrual hygiene practices" and "Influence of access to affordable sanitary napkins and adequate wash facilities on menstrual hygiene practices".

### Acknowledgement

Authors would like to express their gratitude to all school principals, teachers who supported during data collection and study respondents for their responses.

### REFERENCES

- [1] World Health Organization. Young People's health- A Challenge for society. Geneva; 1986. p. 11–2. Report No.: WHO Technical report series 731.
- [2] Kshirsagar MV, Mhaske M, Ashturkar MD, Fernandez K. Study of menstrual hygienic practices among the adolescent girls in rural area. National Journal of Community Medicine. 2016;7(4):241-44.
- [3] Bulto GA. Knowledge on menstruation and practice of menstrual hygiene management among school adolescent girls in central Ethiopia: A cross-sectional study. Risk Management and Healthcare Policy. 2021;14:911-23.
- [4] Dasgupta A, Sarkar M. Menstrual hygiene: How hygienic is the adolescent girl? Indian J Community Med. 2008;33(2):77-80.
- [5] Suman SK, Prasad B. Cross-sectional study on menstruation and menstrual hygiene among adolescent girls of RHTC, ANMMCH, Gaya. IAIM. 2017;4(6):196-200.
- [6] Mathiyalagen P, Peramasamy B, Vasudevan K, Basu M, Cherian J, Sundar B. A descriptive cross-sectional study on menstrual hygiene and perceived reproductive morbidity among adolescent girls in a union territory, India. J Family Med Prim Care. 2017;6(2):360-65.
- [7] Belayneh Z, Mekuriaw B. Knowledge and menstrual hygiene practice among adolescent school girls in southern Ethiopia: A cross-sectional study. BMC Public Health. 2019;19(1):1595-603.
- [8] Savanthe A, Nanjundappa V. Menstruation: A cross-sectional study on knowledge, belief, and practices among adolescent girls of junior colleges, Kuppam, Andhra Pradesh. Int J Med Sci Public Health. 2016;5(1):22.
- [9] Bhusal CK. Practice of menstrual hygiene and associated factors among adolescent school girls in Dang District, Nepal. Advances in Preventive Medicine. 2020;2020:1292070.
- [10] Deshpande TN, Patil SS, Gharai SB, Patil SR, Durgawale PM. Menstrual hygiene among adolescent girls—A study from urban slum area. J Family Med Prim Care. 2018;7(6):1439-45.
- [11] Menstrual Hygiene Scheme (MHS): National Health Mission [Internet]. [cited 2021 Dec 28]. Available from: <https://nhm.gov.in/index1.php?lang=1&level=3&sublinkid=1021&lid=391>.
- [12] Kailasraj KH, Basavaraju V, Kumar J, Manjunatha S. A study of knowledge and practice of menstrual hygiene among adolescent school girls in rural and urban field practice area of Raja Rajeswari Medical College and Hospital, Bangalore, India. Int J Community Med Public Health. 2020;7(2):665-72.
- [13] Mokhasi VR, Mahesh V, Manjunath T, Muninarayana C, Latha K, Ravishankar S. A comparative cross sectional study of knowledge and practice of menstrual hygiene among adolescent girls in rural and urban schools of Rural Karnataka. Indian Journal of Forensic and Community Medicine. 2016;3(3):163-67.
- [14] Verma PB, Pandya CM, Ramanuj VA, Singh MP. Menstrual pattern of adolescent school girls of Bhavnagar (Gujarat). National Journal of Integrated Research in Medicine. 2011;2(1):38-40.
- [15] Ramachandra K, Gilyaru S, Eregowda A, Yathiraja S. A study on knowledge and practices regarding menstrual hygiene among urban adolescent girls. Int J Contemp Pediatrics. 2016;3(1):142-45.
- [16] Gandotra N, Pal R, Maheshwari S. Assessment of knowledge and practices of menstrual hygiene among urban adolescent girls in North India. Int J Reprod Contracept Obstet Gynecol. 2018;7(7):2825-28.
- [17] Torondel B, Sinha S, Mohanty JR, Swain T, Sahoo P, Panda B, et al. Association between unhygienic menstrual management practices and prevalence of lower reproductive tract infections: A hospital-based cross-sectional study in Odisha, India. BMC Infect Dis. 2018;18:473.

#### PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Department of Community Medicine, Dr. N.D. Desai Faculty of Medical Science and Research, Nadiad, Gujarat, India.
2. Intern, Department of Community Medicine, Smt. B. K. Shah Medical Institute and Research Centre, Vadodara, Gujarat, India.
3. Intern, Department of Community Medicine, Smt. B. K. Shah Medical Institute and Research Centre, Vadodara, Gujarat, India.
4. Intern, Department of Community Medicine, Smt. B. K. Shah Medical Institute and Research Centre, Vadodara, Gujarat, India.
5. Intern, Department of Community Medicine, Smt. B. K. Shah Medical Institute and Research Centre, Vadodara, Gujarat, India.
6. Intern, Department of Community Medicine, Smt. B. K. Shah Medical Institute and Research Centre, Vadodara, Gujarat, India.

#### NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Divyangkumar Narottambhai Patel,  
H-23, H Block, Doctor's Quarter, Dr. N.D. Desai Medical College and Hospital Campus,  
Nadiad-387001, Dist-Kheda, Gujarat, India.  
E-mail: drdivpatel@gmail.com

#### PLAGIARISM CHECKING METHODS: [Jain H et al.]

- Plagiarism X-checker: Nov 25, 2021
- Manual Googling: Dec 29, 2021
- iThenticate Software: Jan 01, 2022 (10%)

#### ETYMOLOGY: Author Origin

#### AUTHOR DECLARATION:

- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **Nov 24, 2021**  
Date of Peer Review: **Dec 17, 2021**  
Date of Acceptance: **Jan 03, 2022**  
Date of Publishing: **Feb 01, 2022**