

KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING MENSTRUATION AMONG ADULT WOMEN IN ANAND DISTRICT, GUJARAT, INDIA.

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Abstract

Introduction: Across cultures, menstruation is accompanied by various taboos, often stemming from religious and cultural beliefs, which can affect women's daily lives and hygiene management. Lack of attention to menstrual health issues in public health policy, despite the substantial burden of such issues among women of reproductive age in India. The improvement of reproductive health is seen as contingent on addressing customs, values, and myths related to fertility, pregnancy, and intercourse. The present study aimed to explore knowledge, attitude and practices related with menstruation in adult women. **Methods:** A questionnaire designed and validated was used for quantitative and qualitative methods of data collection in rural and urban settings of Anand district of Gujarat. The data obtained were analysed through Microsoft excel and SPSS software. **Results:** The study involved 458 respondents, with diverse characteristics with age ranging from 18 to 67, with the majority (29.69%) in the 38-47 age group. Awareness before menarche varied, with 35.3% being moderately aware, 26.3% slightly aware, and 11.5% not aware at all. Primary sources of information included mothers (73.6%). Pads were the most used for menstrual hygiene (65.2%), followed by cloths (53.88%). Restrictions during menstruation ranged from religious practices such as saying prayers, visiting temples or mosques were widely observed (85.7% and 88.1% respectively) followed by restriction from cooking (62.1%). The findings reflect a diverse range of attitudes toward menstruation, with varying perspectives on traditional practices, family influence, and changing societal norms.

Keywords: Menstrual practices, hygiene, restrictions, attitude.

INTRODUCTION

Menstruation is a natural and vital aspect of women's reproductive health, yet the knowledge, attitudes, and practices surrounding menstruation vary widely across different cultural and geographical contexts. In India, a country characterized by diverse cultural nuances and socioeconomic disparities, understanding the perceptions and behaviors related to menstruation is crucial for addressing women's reproductive health needs comprehensively. The present study aims to explore and analyze the knowledge, attitudes, and practices (KAP) related to menstruation among adult women in both rural and urban areas of the Anand District in Gujarat, India. Existing literature has convincingly highlighted the impact of menstrual hygiene on the educational pursuits of adolescent girls. However, the experiences and challenges faced by adult women during menstruation remain understudied.^[1,2,3]

Understanding the distinctive needs and practices of adult women is essential for developing comprehensive public health strategies that extend beyond the school environment and encompass the broader community. This study serves as a stepping stone toward recognizing and addressing the specific needs of adult women in menstrual health discourse, complementing the existing research focus on adolescent girls.

MATERIALS AND METHODS

The study used mixed methodology; quantitative and qualitative amongst the diverse cultural, societal, and ethnic groups, encompassing both rural and urban areas of Anand District, Gujarat, India.

Data Collection Method: Quantitative Study: - Utilized open-ended and closed-ended questionnaires designed for both married women. Qualitative Study: Conducted focus group discussions (FGDs) and in-depth interviews (IDIs) to gather deeper insights into participants' experiences. Informed consent was taken prior to FGDs and IDIs. Questionnaires aimed to assess knowledge, attitudes, and practices related to menstruation in women of reproductive, menopausal, and postmenopausal age groups. Questionnaires refined through iterative processes involving peers and underwent three redesigns post-pilot testing. Employed a 5-point Likert scale to gauge attitudes, knowledge, practices. Construct and content validity assessed through expert

review and peer ratings. The scale content validity index (S -CVI) was 0.8125 which is appropriate. Reliability tested using Cronbach's alpha which came to 0.91 which is reliable.

Sample size : Total 460 women of all age groups of rural and urban areas studied. The sample utilized snowball and purposeful sampling using key informants. Desirable sample size selected for diverse groups: married females (reproductive, menopausal, postmenopausal), and from various castes and religions from 45 villages, towns, and cities of Anand district.

Ethical clearance obtained from Institutional ethics committee. Microsoft Excel was used for descriptive statistics and frequency distribution of data. Quantitative data obtained through the questionnaire was analyzed using the Statistical Package for the Social Sciences (SPSS) software IBM company version 22.

Results : The results from quantitative and qualitative data collected were analyzed as below. Total 45 areas of Anand district including towns, villages and semi urban areas were studied.

Table 1 :Sociodemographic data

Background characteristics	Respondents (N)	Percentage
Age	458 respondents	
18-27	70	15.28%
28-37	122	26.63%
38-47	136	29.69%
48-57	90	19.65%
58-67	40	8.73%
Education	445 respondents	
Illiterate	13	2.9%
Less than 10 th	89	20%
SSC (10 th)	90	20.2%
HSC (12 th)	68	15.3%
Graduate	91	20.4%
Postgraduate	62	13.9%
Doctorate	32	7.2%
Demographic area	441 respondents	
Rural	170	38.5%
Urban	236	53.5%
Semi urban	35	7.9%
Occupation	438 respondents	
Housewife	197	45%
Business	5	1.1%
Service	160	36.5%
Others	58	13.2%
Labour work	18	4.1%
Socio-economic status	448 respondents	
Poor	33	7.4%
Lower middle	143	31.9%
Middle	201	44.9%
Upper middle	67	15%
Upper	4	0.9%
Religion	454	
Hindu	313	68.94%
Muslim	45	9.91%
Christian	92	20.26%
Jain	3	0.66%
Diet	439	
Vegetarian	206	46.9%
Mixed	228	51.9%
Eggetarian	5	1.1%

The study involved 458 respondents, with diverse characteristics with age ranging from 18 to 67, with the majority (29.69%) in the 38-47 age group, a significant portion having education up to SSC (10th grade) or HSC (12th grade), primarily urban (53.5%), followed by rural (38.5%) and semi-urban (7.9%), predominantly housewives (45%), followed by those in service (36.5%), mainly middle-class respondents, with 31.9% in the

lower-middle class and 44.9% in the middle class, primarily Hindu (68.94%), followed by Christian (20.26%) and Muslim (9.91%), vegetarian (46.9%) and mixed diet (51.9%).

Knowledge and awareness about menstrual cycle :

In the assessment of menstrual cycle knowledge and eagerness to learn, data from 435 participants revealed key insights.

Table 2 : Knowledge and awareness about menstruation.

Awareness regarding menstruation	N	Percentage
Information about menstruation given by?	(N=435)	
Mother	320	73.6%
Sister	132	30.3%
Friends	177	40.7%
Teacher	153	35.2%
Doctor	23	5.3%
Newspaper	12	2.8%
Textbook	13	3%
Television	14	3.2%
Nobody	6	1.4%
Others	5	1.1%
Want to learn about menstruation	406	
Strongly disagree	21	5.2%
Disagree	49	12.1%
Neutral	55	13.5%
Agree	185	45.6%
Strongly agree	96	23.6%
Programs conducted by menstrual awareness in school by	N=324	
Doctor	64	19.8%
Teacher	190	58.6%
Sanitary pads company people	92	28.4%
Others	12	3.7%
From where the menstrual blood come?	417	
Uterus	293	70.3%
Vagina	97	23.3%
Urinary bladder	03	0.7%
Don't know	24	5.8%
Aware of menstrual cycle before menarche	N=419	
Not at all aware	48	11.5%
Slightly aware	110	26.3%
Moderately aware	148	35.3%
Very aware	63	15%
Extremely aware	50	11.9%

Awareness about Menstruation: Primary sources of information included mothers (73.6%), sisters (30.3%), friends (40.7%), and teachers (35.2%). A significant 69.2% expressed a desire to learn more about menstruation. Awareness before menarche varied, with 35.3% being moderately aware, 26.3% slightly aware, and 11.5% not aware at all.

Information Sources: In rural settings, information predominantly came from mothers or grandmothers, supplemented by elder sisters in 30.2% of cases.

Awareness Programs: Teachers (58.6%) conducted awareness programs, followed by individuals from sanitary pads companies (28.4%) and doctors (19.8%).

Knowledge of Menstrual Blood Source: Correct identification of the uterus as the source of menstrual blood was reported by 70.3%, while 23.3% chose the vagina, and 9.8% admitted not knowing.

Perceptions on Irregular Menstruation: Regarding irregular menstruation, 83.1% associated it with potential infertility, 27.8% mentioned obesity, and respondents acknowledged other potential reasons for irregularity. The findings highlight diverse sources of menstrual awareness, a prevalent eagerness to learn, and varying perceptions regarding irregular menstruation among the participants.

Menstrual practices:

(a) Hygiene practices

Table 3: Sanitation and hygiene practices

Type of sanitation used during menstruation	N=399	Percentage
Pads	260	65.2%
Cloths	215	53.88%
Menstrual cups	4	1%
Cotton Pads	11	2.8%
Frequency of changing pads / cloth/ cup	N=371	
3 hourly	121	32.6%
2 hourly	86	23.2%
1 hourly	40	10.8%
> 3 hours	81	21.8%
Cleaning menstrual cloths	N=224	
Clean with water and dry in sun	183	81.7%
Clean with water and dry inside home	28	12.5%
Throw away after first use	6	2.6%
Frequency of disposing menstrual cloths	N=207	
3 months	115	55.6%
6 months	51	24.6%
1 year	32	15.5%
Disposal of menstrual cloths	N=214	
Burn	163	76.2%
Bury	10	4.7%
Throw in bush	38	17.8%
Others	3	1.4%
Disposal of sanitary pads	N=260	
Dustbin	235	90%
Incinerators	5	1.9%
Others	19	7.3%
Clean water sufficiently available	N=371	
Yes	353	95.1%
No	18	4.9%
When do you prefer to use pad	N=385	
Never use pads	121	31.4%
Always use pads	171	44.4%
When do you prefer to use cloth	N=200	
Never use cloth	87	43.5%

The study explored menstrual hygiene practices among 399 participants, with a focus on sanitation methods, frequency of changing products, water availability, and disposal methods. Menopausal and postmenopausal women often abstained from participating in this section.

Sanitary product usage: Pads were the most commonly used (65.2%), followed by cloths (53.88%) and menstrual cups (1%). Frequency of changing: 32.6% changed every 3 hours, 23.2% every 2 hours, and 10.8% every 1 hour. Cloth cleaning: 81.7% cleaned with water and dried in the sun. Cloth disposal: 55.6% discarded every 3 months, with burning being the primary method (76.2%). Pad disposal: 90% disposed in a dustbin. Water availability: 95.1% had sufficient clean water and privacy. Purchase behavior: 81.9% purchased sanitary pads themselves, with minimal shame (43.6%) or strong disagreement (31.9%). Overall, the majority preferred pads, with some using both pads and cloth. Hygiene practices, disposal methods, and purchasing behavior demonstrated a variety of approaches among the respondents.

Among the respondents, 24.7% (95 individuals) cited outing as a primary reason for preferring pads over cloth. In situations where pads were unavailable at home, 15.5% (31 individuals) turned to cloth, and 16% (32 individuals) specifically chose pads for overnight use. The majority, 72%, cited comfort as the primary reason for choosing pads as their preferred menstrual hygiene product. Among those who opted for cloth, 85.1% mentioned using it since the beginning. In rural areas, 55% highlighted ease of handling, while 50.2% emphasized better absorption when using menstrual pads. Additionally, 33.1% expressed a preference for pads because they feel cleaner during use. When female participants were queried about issues encountered while using cloth or pads as menstrual sanitation, the highest reported problem was itching in the genital area, with 45.9% (102 individuals) citing this concern out of 222 respondents. Rashes were reported by 35.1% (78 individuals), and 33.3% (74 individuals) expressed difficulty in disposing of used sanitation materials. Cleaning challenges for used sanitation materials were noted by 23% (51 individuals). Additionally, 5.9% (13 individuals) mentioned the costliness of pads as a specific concern.

(b) Other menstrual practices

You Restricted from tasks during menstruation, prohibited activities during menstruation (you can select multiple)

335 responses

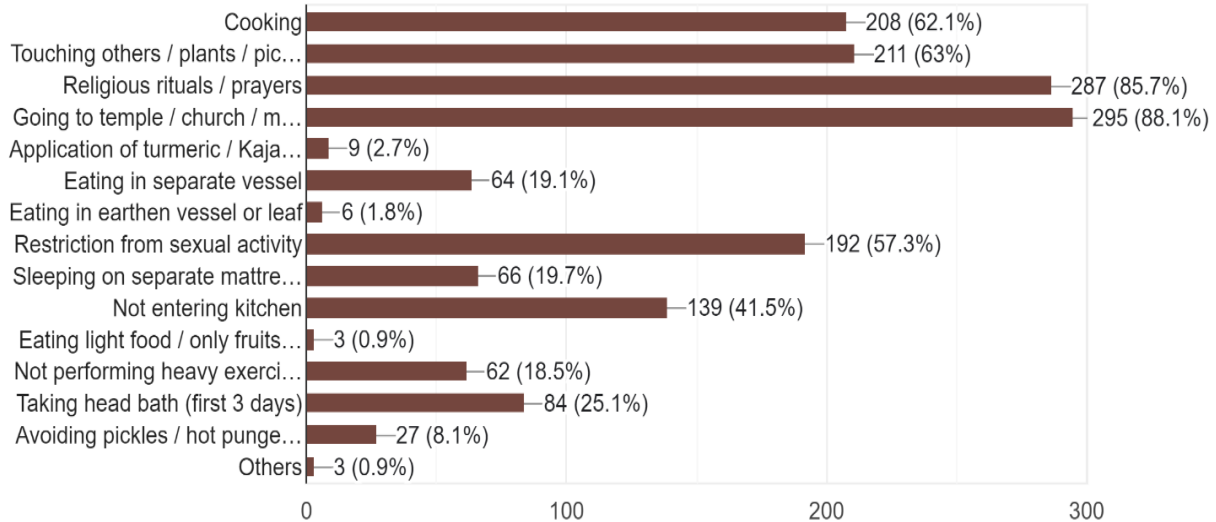


Chart 1 : menstrual practices

The study on menstrual practices began by asking participants in Gujarati language whether they observed any restrictions during menstruation, to which many responded affirmatively with "Paliye chie." (which means they observe restrictions). Subsequently, they were queried about the specific prohibitions they followed, including traditional, spiritual, and lifestyle-related restrictions aligned with Ayurvedic Rajaswala Paricharya. In Anand district, the absence of menstrual huts was noted, but women commonly isolated themselves by sitting in a separate area with their own mattress and utensils. For three days, they refrained from touching water containers, entering the kitchen, and were assisted with tasks like cooking by nearby families or relatives. Religious practices such as saying prayers, visiting temples or mosques were widely observed (85.7% and 88.1% respectively). Other common restrictions included cooking (62.1%), avoiding contact with others/plants/pickles (63%), abstaining from sexual activity (57.3%), and refraining from entering the kitchen (41.5%). Interestingly, Ayurvedic practices like diet and work restrictions, as well as the use of cosmetics, were less commonly followed. The findings shed light on the diversity of menstrual practices, with religious and daily life restrictions being more prevalent than traditional Ayurvedic practices.

Who in the family follows such restrictions ? (you can select multiple)

387 responses

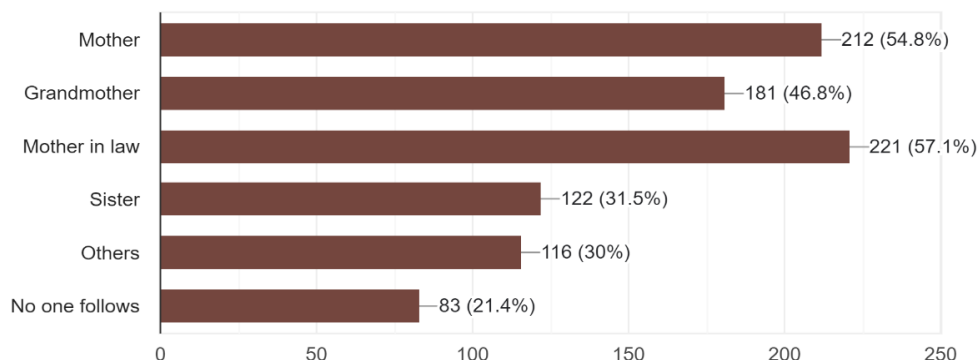


Chart 2 : Family members observing restrictions

In the inquiry about family members observing menstrual restrictions, it was found that mothers and mothers-in-law played a crucial role as the main practitioners. Consequently, daughters and daughters-in-law were often instructed or trained to adhere to these practices. However, the present generation of young daughters, whether in school or college, showed reluctance to follow these restrictions. Many viewed these practices as myths and superstitions, asserting that education had equipped them with a better understanding.

Table 4: Reasons for observing restrictions.

Reason to observe restrictions	N=305	
Culture	160	52.5%
Religion	197	64.6%
Am scared to be punished	46	15.1%
Something bad will happen to family	42	13.8%
Told to do so by elders in family	36	11.8%
Don't know	16	6.2%
Tried to break restriction any time	312	
Never	242	77.6%
Rarely	23	7.4%
Sometimes	26	8.3%
Often	6	1.9%
Always	15	4.8%
Broken menstrual restrictions	58	
Purposefully	31	53.4%
By mistake	27	46.6%
Reason for disagreeing to follow menstrual restriction	187	
New culture	83	44.4%
Not possible to work with restrictions	42	22.5%
Allowed from family	87	46.5%
They all are taboos with no science	33	17.6%
Others	15	8%

When enquired about family members observing menstrual prohibitions, the responses highlighted that the source of information and family members practicing restrictions were consistent. Participants learned about these practices primarily from their mothers (54.8%) and later, post-marriage, from their mothers-in-law (57.1%). Interestingly, some families observed restrictions at the maternal home before marriage, while others followed them at the in-laws' place and vice versa. Grandmothers (46.8%) and elder sisters (31.5%) were also reported as members observing these practices. Only 21.4% indicated that no one in their family followed these restrictions. Participants cited cultural 160(52.5%) and religious 197(64.6%) reasons as primary motivations for observing menstrual restrictions. Fear of punishment, concerns for family, and instructions from elders were also mentioned. Most participants 242 (77.6%) had never attempted to break restrictions, but for those who did 58 (22.4%), it was often intentional 31 (53.4%). Reasons for disagreement included perceiving these practices as part of a new culture 83(44.4%), impracticality for work 43(22.5%), family permission 87 (46.5%), and skepticism about their scientific basis 33(17.6%).

Qualitative perspective of menstrual practices : During focus group discussions and in depth interviews, the perspective of menstrual practices were recorded and transcribed. Following is the essence of the discussion with the participants.

Focus group discussion and interview with Christian community adult female with minimum education as graduation.

"There are no such restrictions in our community, as it is written in our Bible also, menstruation is given by GOD and if GOD heals a women during menstruation also so she cannot be restricted from any such activities like touching Bible or going to church."

"It is exactly opposite to what Hindus follow, we can do everything even post partum, 45 days only for rest purpose but we are not restricted from entering Kitchen or going to Church."

"Even our house is not cleaned after delivery."

"No sleeping on separate mattress, we do all exercise, yoga, no restriction from any food."

"Only while purchasing grocery for year, as it is being said that during menstruation one should not store grocery or touch, do not make pickles during menstruation."

"No body in our family follows or nobody has informed us."

"As no one follows any restrictions, hence nobody knows when our menstrual cycle comes and goes."

"We can talk with male who are relatives or friends and have any question related with menstruation otherwise we restrict talking with opposite gender."

“We restrict sexual activity, but there is no reason behind it.”
“It is followed in other religion due to Parampara.”
“Female of other religion who follows restriction gets rest because she might be in pain. We sometimes feel that atleast they are getting rest for few days every month due to restrictions. We do not get any rest and we do not follow any restrictions.”
Whether the blood is impure or poison? ‘No we do not believe it is such’
Priest will also say all the above things? “Yes”
Do you take any pills for menstrual suppression? “only for visiting out of station not for any religious activity.”

Focus group discussion with Scheduled Caste (Dalit tribe) community. : Mixed group of education upto 12th.

“In our community almost everyone strictly observe all restrictions in fear of Mataji.”
“Cannot touch others, cannot visit temple or perform Puja at home, cannot cook or enter kitchen or touch Matlu (water can made of clay).”
“Mother in law or other female members of family will cook or neighbours cook.”
“Husband also cooks if no one else is available.”
“Even if we cook during menstruation, no one in the family will eat.”
What is the reason for not cooking or eating food made by menstruating female?
“If you follow all restrictions, you will gain prosperity.”
“If one does not follow the restrictions, Mataji will take away everything from you.”
“Everyone in the family from in laws and mother side all follow.”
“We also perform Vidhi (ritual) during menarche. Make Shiro(made from ghee, milk and flour) for her to eat, make garlands, all female members attend the function.”
“Sexual restriction is strictly followed, cannot sit together also (husband and wife).”
“We cannot touch any aged female (postmenopausal) during menstruation.”
The younger generation like their daughters do not ask questions or resist from observing such restrictions?
“We feel happy when our daughters starts menstruating, it is like a celebration or wedding. We do all the shopping like wedding. Our daughters also follow the restrictions without any questions. They have observed us and hence they follow whatever we say. Initially she don’t feel good for 2 to 3 months, afterwards they are accustomed.”
“We cannot celebrate or perform any religious function at home if any one in family is menstruating.”
“Can wash clothes, do utensils, except cooking and entering kitchen everything else is done. During ancient times, they used to allow female to follow restrictions so that she may get rest during menstruation, but now they don’t understand that we need rest, hence they ask us to do all other household chores except cooking.”
“They(mother in law) used to give Kantan (sack made of coarse material woven to store wheat grain) to sleep not even Godadi (carpet or mattress).”
“Avoid washing hair for 2 days, do not restrict any diet.”
Do you feel bad in following all restrictions? What about your children? Any difficulty in cooking for family?
“As we live in joint family or the relatives will be nearby, they help us, we help them on those days. But if we live alone then it becomes a problem. Children used to ask when they were younger that why I am not cooking food, but later after observation they understand and don’t ask anything. The restrictions are good for everyone, like someone during menstruation if does not wash hands properly and start kitchen work or cooking it will be bad for all. Instead, it is better in our community that we restrict from cooking or touching others.”
“There is change in attitude in today’s generation, they are more independent, they deny certain restrictions like sleeping on sack etc. But those who follow all the restrictions only prosper, the family who do not observe the restrictions, money and prosperity does not come to them or they loose money some who.”
“I have seen the families who do not keep house clean or do not observe menstrual restriction, they and their children are always ill, something bad always happens with them. They are never happy.”
“Even the grains gets destroyed if someone in the family who is menstruating touches the grains which are to be filled for yearly use, even pickles.”
One of the members even said that “we even cannot clean house during menstruation for Diwali cleaning.”
“Churning of buttermilk for ghee also should not be done by menstruating female otherwise it gets stale.”

Other group of Dalit: Education less than 10th of all participants in the group.

“We don’t know why, but it is in our family since ages. We don’t cook, cannot touch anybody, cannot pray or touch temple.”
While discussing, the scholar asked that only cooking is restricted but rest all other household chores they are doing so restrictions are not because they are given rest but that they are not pure enough to cook food or touch others. In response to the question, this group answered “We cannot enter kitchen and yes we are impure.”

"It is in our family since ages, told to do so by others in family so we do the same. We even use separate vessel to eat and sleep in separate mattress. If they believe we are impure enough to cook or touch, may be it."

"We have seen other doing and told to do so by others hence we observe the restrictions, we have never thought or tried to break the restrictions."

Do you change any diet during menstruation. "Sour food may increase flow, spicy may do."

"If we have more pain, we eat less." "No other restrictions like walking more or exercising."

When asked about their daughter and how they follow the restrictions they answered as follows.

"We tell our daughters to stay away, not to cook or enter kitchen, not drink water by herself."

"My husband helps us in cooking and kitchen work. He even tells my daughter on 5th day of her menstruation to take head bath."

"We follow the restrictions strictly and hence we do not have any problems like pain, but our daughters always have pain during menstruation as if she has fallen very sick."

"They eat everything and perform all physical exercises at school."

"My daughter suffers from giddiness also during menstruation."

"My daughter is having excessing menstruation."

"I tell my daughter to drink more water and eat less, whenever she passes urine she feels better."

"We never had any problems throughout our life related to menstruation, during delivery also we recovered very well."

Attitude towards menstruation and menstrual practices:

Response towards menstruation : 391 respondents revealed diverse attitudes towards menstruation. The majority of respondents, 193 (49.4%), expressed a negative perspective, stating that they have to "put up with" menstruation. Additionally, 46 individuals (11.8%) preferred not to discuss periods openly. A smaller percentage, 25 (6.4%), believed that men have an advantage in relation to menstruation, while 65 participants (16.6%) characterized it as a "monthly interruption." Interestingly, a significant number of women, 106 (27.1%), particularly those from rural areas, considered menstruation to be a special aspect of womanhood, viewing it as a boon that enables them to bear children. This positive perspective contrasts with the prevalent negative sentiments expressed by a considerable portion of the participants.

Table 5: Attitude towards menstruation and menstrual practices

Sr No	Attitude towards menstruation	Strongly disagree	Disagree	Neither	Agree	Strongly agree
1	Discussing about menstrual restrictions is embarrassing (N=408)	65 (15.9%)	210(51.5%)	43(10.5%)	78(19.1%)	12(2.9%)
2	Feel free to discuss about menstruation with female (N=418)	5(1.2%)	16(3.8%)	21(5%)	309(73.9%)	67(16%)
3	Feel free to discuss about menstruation with male (n=379)	40(10.6%)	153(40.4%)	39(10.3%)	122(32.2%)	25(6.6%)
4	Society / culture feels menstruation as natural process (n=410)	10(2.4%)	17(4.1%)	24(5.9%)	176(42.9%)	186(44.6%)
5	Feel free to talk about menstruation with parents (N=410)	69(16.8%) Never	51(12.4%) Occasionally	144(35.1%) Sometimes	91(22.2%) Often	55(13.4%) Always
Sr No	Attitude towards menstrual practices	Strongly disagree	Disagree	Neither	Agree	Strongly agree
6	Restrictions are for gender discrimination and hampers women empowerment (n=381)	63(16.5%)	158(41.5%)	67(17.6%)	78(20.5%)	15(3.9%)
7	Restrictions are for reproductive health, menstrual regularity and health (N=382)	31(8.1%)	109(28.5%)	82(21.5%)	141(36.9%)	19(5%)
8	Not following restrictions may affect health of family members (N=360)	55(15.5%)	133(36.9%)	79(21.9%)	81(22.5%)	12(3.3%)
9	Not following restrictions may affect pregnancy	63(18.6%)	146(43.2%)	75(22.2%)	49(14.5%)	5(1.5%)

	(N=338)					
10	Family members force to follow restrictions (N=322)	50(15.5%)	136(42.2%)	47(14.6%)	74(23%)	15(4.7%)
11	Male members in the family allow to decide about restrictions (n=316)	24(7.6%)	77(24.4%)	49(15.5%)	143(45.3%)	23(7.3%)
12	Isolation is necessary during menstruation (n=340)	55(16.2%)	95(27.9%)	60(17.6%)	105(30.9%)	25(7.4%)
13	Rest is needed during menstruation (N=387)	0	29(7.5%)	28(7.2%)	236(61%)	93(24%)
14	Cooking can be done during menstruation (n=405)	64(15.8%)	65(16%)	45(11.1%)	181(44.7%)	50(12.3%)
15	Now a days people freely talk about menstruation (n=414)	21(5.1%)	68(16.4%)	57(13.8%)	216(52.2%)	52(12.6%)
16	Change in attitude towards menstruation in younger generation (N=410)	22(5.4%)	70(17.1%)	34(8.3%)	206(50.2%)	78(19%)
17	Studying / working does not allow to follow all restrictions (N=393)	8(2%)	47(12%)	33(8.4%)	117(45%)	128(32.6%)
18	All the menstrual related restrictions / prohibitions should be banned (N=384)	38(9.9%)	145(37.8%)	85(22.1%)	81(21.1%)	35(9.1%)
19	It is natural not to have periods (N=399)	23(5.8%)	45(11.3%)	52(13%)	118(29.6%)	161(40.4%)
20	Religious Gurus / priests should change the prohibitions / ban the restrictions related with menstruation (N=393)	49(12.5%)	113(28.8%)	90(22.9%)	106(27%)	35(8.9%)
21	Agree with sanitary napkin advertisements showing physical exercise during menstruation (N=409)	19(4.6%)	94(23%)	94(23%)	160(39.1%)	42(10.3%)

Study on attitudes toward menstruation revealed that discussing menstrual restrictions is generally considered embarrassing, with more comfort discussing with females than males. While a majority believes in the natural aspect of menstruation, opinions on the necessity of restrictions vary. Respondents expressed diverse views on gender discrimination, health implications, and family influence regarding menstrual practices. A notable proportion supports changes in traditional restrictions, citing challenges due to work/studies. Overall, there is an openness to modern perspectives, as seen in discussions on sanitary napkin advertisements and perceptions of changing attitudes in the younger generation. The findings reflect a diverse range of attitudes toward menstruation, with varying perspectives on traditional practices, family influence, and changing societal norms. The study also highlighted challenges related to work/studies and an openness to reevaluate and modernize menstrual practices. During focus group discussions and interviews, participants provided diverse reasons for the practice of isolation during menstruation. Common responses included the need for rest, adherence to menstrual restrictions, hygiene, avoiding intercourse, addressing mood swings, and spiritual beliefs. The rationale for rest during menstruation included pain relief, elimination of waste, tiredness, weakness, and the alleviation of cramps. Cooking restrictions were attributed to cultural, spiritual, and hygiene considerations, as well as the belief that the food might spoil or cause religious hindrance. Changes in the younger generation's attitude were linked to modernization, increased awareness, education, independent thinking, and a departure from traditional practices due to practical challenges in urban lifestyles.

Approximately 30% of respondents (out of 384) expressed agreement with the idea of banning all menstrual restrictions, providing diverse reasons for their stance. These reasons ranged from the belief that menstruation is a natural process and should not be restricted to concerns about health issues in the family, awareness, technological advancements, and the absence of scientific basis for the restrictions. Some argued against discrimination and gender bias associated with these practices, while others emphasized the need for individual choice, relaxation, and adaptation to modern lifestyles. The respondents' perspectives reflected a mix of cultural, health-related, and practical considerations, contributing to their views on the necessity of menstrual restrictions.

Positive Attitudes Towards Menstruation: Recognized as a natural process enabling motherhood, acknowledged for eliminating body waste monthly, viewed as "Stree dharma" with associated restrictions, perceived as holy and contributing to women's identity, seen as a source of rest during the menstrual cycle.

Negative Attitudes Towards Menstruation: Some dismissed restrictions as superstitions, emphasizing the need for rest, challenges related to cooking were highlighted, noted that women must endure difficulties during menstruation, extreme suggestions, like removing the uterus or stopping menstruation permanently.

Benefits to Rural and Urban Women: Diverse views on whether women in villages or cities benefit. Village women gain rest due to isolation and restrictions, city women enjoy greater independence and decision-making. Perspectives vary, with considerations of advantages and disadvantages in both settings. Both rural and urban women face difficulties and workloads, emphasis on providing daughters with a healthy mind, peace, and rest.

Table 6: Approval of restrictions during menstruation

	Strongly disapprove	Disapprove	Neutral	Approve	Strongly approve
Do you approve religious activities / prayers during menstruation (N=339)	96(28.3%)	136(40.1%)	46(13.6%)	40(11.8%)	21(6.2%)
Male members of family approve with restrictions during menstruation (n=323)	20(6.2%)	43(13.3%)	65(20.1%)	147(45.5%)	48(14.9%)

A significant portion, 40.1%, disapproved, and 28.3% strongly disapproved of engaging in religious activities such as chanting prayers or entering temples during menstruation. Reasons cited during discussions include teachings received since childhood, traditional beliefs, and fear of angering the Goddess, possibly leading to a loss of prosperity. Contrarily, 45.5% and 14.9% mentioned that male members in their families approved and strongly approved of these restrictions, respectively.

Association of menstrual restriction with socio economic status

To know the association of practices with socio economic and demographic status, SPSS software was used and P value was calculated.

Table 7: Restriction with So-Ec-De status

Menstrual restrictions		Present	Absent	Chi square value
Socio economic status	<= Middle class	118	63	0.000
	> Middle class	91	186	
Education	<=SSC	134	59	0.000
	>=SSC	74	187	
Area	Rural	120	52	0.000
	Urban	85	194	

The analysis shows significant associations between restrictions during menstruation and socio-economic status, education, and area of residence. Individuals from the "> Middle class" are less likely to follow restrictions. Education-wise, those with "<=SSC" levels are more likely to adhere, and rural residents show a higher likelihood of following restrictions.

Menstrual health:

Approximately 55.2% (243 individuals) indicated that their menstrual cycles were consistently regular. Meanwhile, 16.8% (74 individuals) responded with "sometimes," and 8.6% (38 individuals) mentioned "rarely." In response to inquiries about the safety of taking hormonal medications, among 333 respondents, 46.8% (156) expressed disagreement, 15.2% (52) indicated agreement, and 18.9% (63) neither agreed nor disagreed as they were unsure how to respond.

Table 8: Discomfort during menstruation

Item	Never	Rarely	Sometimes	Often	Always
Is your menstrual cycle(periods) painful? (N=426)	N=68(16%)	N=86(20.2%)	N=208(48.8%)	N=35(8.2%)	N=29(6.8%)
Pain is severe enough to stay home and keep away from school, college or work? (N=406)	N=158(38.9%)	N=73(18%)	N=140(34.5%)	N=22(5.4%)	N=13(3.2%)
Require any medication for pain relief? (N=397)	N=248(62.5%)	N=43(10.8%)	N=90(22.7%)	N=10(2.5%)	N=6(1.5%)
Miss school / college /	N=171(53.6%)	N=60(18.8%)	N=64(20.1%)	N=15(7.4%)	N=9(2.8%)

work / house work due to pain during menstruation ? (N=319)					
Have you consulted any doctor for discomfort ? (N=371)	N=273(73.6%)	N=28(7.5%)	N=60(16.2%)	N=10(2.7%)	N=0
Any pre menstrual symptoms (before menstruation beings) (N=408)	N=79(19.4%)	N=89(21.8%)	N=160(39.2%)	N=49(12%)	N=31(7.6%)
Get emotional support / relaxation from family members / work place during menstruation ? (N=401)	N=93(23.2%)	N=40(10%)	N=151(37.7%)	N=65(16.2%)	N=52(13%)

Out of 462 respondents, 48.8% (208) experienced occasional pain during their menstrual cycle. Of the 267 participants asked about taking breaks due to menstruation-related pain, 34.5% (140) indicated the need for intermittent breaks, while 52.8% (141) required a full day break, 31.5% (84) needed a half-day break, and 15.7% (42) sought more than one day off. Additionally, 22.7% (90) sometimes used pain relief medication, and 73.6% (273) never consulted a doctor for menstrual pain. Around 39.2% (160) occasionally suffered from premenstrual symptoms. Moreover, 23.2% (93) never received emotional support or relaxation at work or home during menstruation, while 37.7% (151) experienced such support intermittently.

Which type of pain / discomfort is felt during menstruation ? (you can select more than one from choices)

416 responses

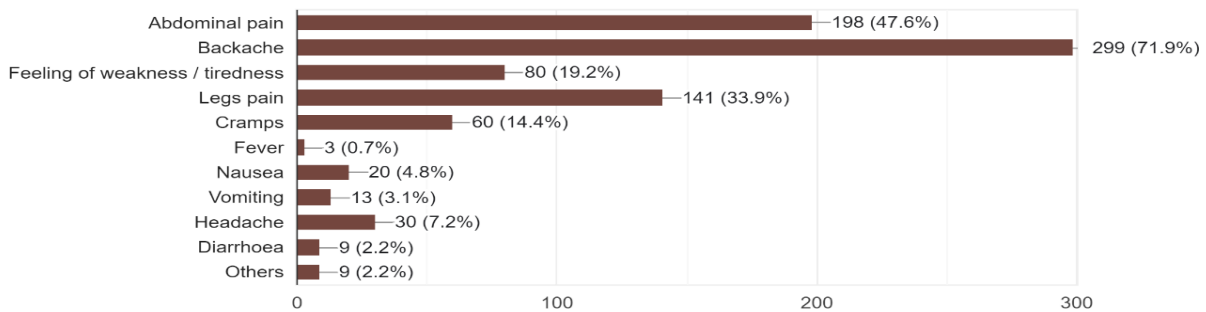


Chart 3: Type of discomfort during menstruation.

The most commonly mentioned discomfort among females was backache, cited by 71.9% (299), followed by abdominal pain at 47.6% (198), and leg pain at 33.9% (141). The term 'Kedo dukhe,' translating to backache, was commonly used to describe menstrual pain. Tiredness was noted by 19.2% (80), and cramps were reported by 14.4% (60). Some individuals also mentioned experiencing nausea, vomiting, and headaches.

Emotional discomfort during menstruation (you can select multiple)

323 responses

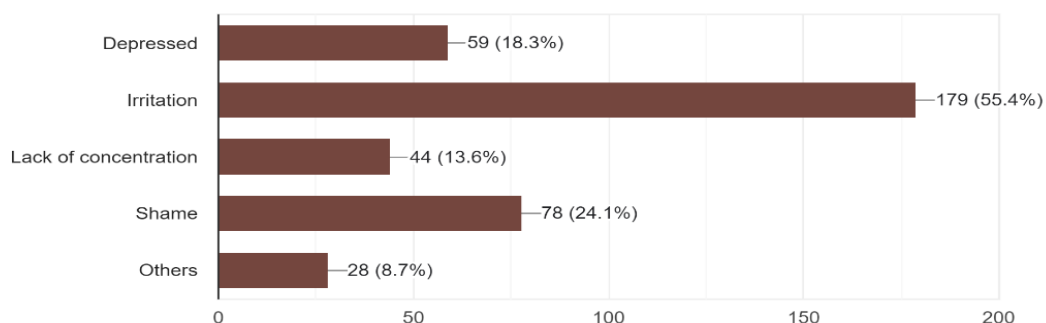


Chart 4: Emotional discomfort during menstruation

A significant portion of the respondents, 55.4%, experienced irritability during menstruation, with 24.1% feeling shame, 18.3% feeling depressed, and 13.6% reporting a lack of concentration. The emotional discomfort was attributed to both menstrual pain and the associated restrictions during this period.

If yes, which symptoms ? (you can select multiple)

349 responses

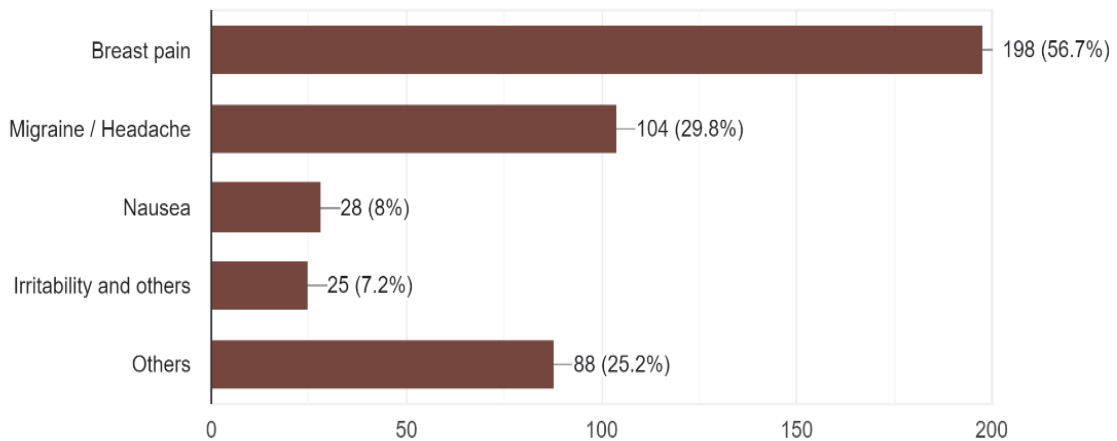


Chart 5: Premenstrual symptoms

A total of 56.7% of women (198) identified heaviness in the breast and breast pain as premenstrual symptoms, while 29.8% (104) reported experiencing migraine or headache. Additionally, 8% (28) mentioned nausea, 7.2% (25) opted for irritability, and 25.2% (88) selected other premenstrual symptoms. Further inquiry revealed common symptoms such as leg pain, backache, and cramps.

DISCUSSION

The study sheds light on the diverse knowledge, attitudes, and practices (KAP) related to menstruation among adult women in the Anand District of Gujarat, India. The findings provide valuable insights into the cultural, social, and economic factors influencing menstrual health, contributing to the existing literature on this subject. Knowledge and Awareness: The participants demonstrated varied sources of knowledge about menstruation, with mothers playing a prominent role in information. Primary sources of information included mothers (73.6%) followed by friends. A significant 69.2% expressed a desire to learn more about menstruation. Awareness before menarche varied, with 35.3% being moderately aware, 26.3% slightly aware, and 11.5% not aware at all. This finding is common with other study on adolescent girls where 52.11% of girls, who were aware about menstruation before menarche, were informed by their mother. Friends as informants were 33.09% followed by sister.^[4]

In a study conducted in west Bengal with sample size of 100 girls between age group of 13-16 years, 45% had knowledge about menstruation before menarche and almost all followed socio cultural restrictions.^[5]

The variation in awareness levels before menarche highlights the importance of targeted interventions to ensure comprehensive knowledge dissemination.

Menstrual Practices: The hygiene practices, revealed a preference for sanitary pads (65.2%), yet a considerable number still use cloth(53.8%), which is better than a research study utilizing data from the National Family Health Survey (NFHS-5) and focusing on 95,551 adolescent women (aged 15 to 19) in rural India, where only 42% of these young women exclusively adopted hygienic methods for menstrual sanitation.^[6] The frequency of changing practices and disposal methods reflects a diverse range of behaviors. Notably, the study captures the nuanced reasons behind product choices, including comfort, availability, and cultural considerations. These findings underscore the importance of tailoring menstrual health initiatives to accommodate diverse preferences and challenges.

Menstrual Restrictions: Research on menstrual practices shows socio cultural restriction being followed between different age groups where 97.6% followed religious restrictions, with few having dietary restrictions during menstruation.^[7,8] In present study, highest adherence to socio-cultural restrictions was observed in practices such as refraining from cooking (62.1%), avoiding entry into the kitchen (41.5%), adhering to religious rituals (85.7%), visiting temples or other religious places (88.1%), refraining from touching others/plants/pickles (85.7%), and practicing abstinence (57.3%). Dietary and lifestyle restrictions outlined in

Rajaswala paricharya, such as using a separate vessel for eating (19.1%), taking a head bath (25.1%), avoiding strenuous exercise (18.5%), refraining from consuming pickles or hot pungent food (8.1%), using cosmetics (2.7%), and opting for a diet of light food and fruits (0.9%), were followed by a significantly smaller proportion. The research identifies a spectrum of menstrual restrictions, encompassing cultural, religious, and daily life aspects. The absence of menstrual huts in the Anand District indicates a departure from more traditional practices, yet the persistence of isolation and specific prohibitions reflects the complexity of cultural beliefs. The generational shift in attitudes, particularly among younger women who question these practices, signals a changing landscape that requires attention and understanding.

Diverse Sources of Restrictions: Responses indicated varied sources of menstrual restrictions, with many attributing them to cultural practices, family traditions, and guidance from elders. Some mentioned religious, spiritual, and scientific reasons, while others acknowledged these practices as ancient traditions without clear reasoning.

Christian women embrace menstruation as a natural gift from God, with no reported restrictions. In contrast, the Scheduled Caste community adheres strongly to menstrual restrictions, driven by fear of the Goddess. Strict practices include avoiding touch, refraining from cooking, and staying out of the kitchen, believed to bring prosperity, while disobedience is associated with potential loss and negative consequences.

Generational Shift and Resistance: The younger generation, especially daughters, showed resistance to certain restrictions, questioning their necessity. Change in attitudes was noted, with some finding these practices outdated and others acknowledging their positive impact on well-being. Mothers expected daughters to follow the restrictions, though resistance and questioning were observed. The impact on the younger generation's well-being, especially during menstruation, was discussed, with some noting challenges like excessive bleeding and dizziness.

Impact on Well-being and Prosperity: The belief in the positive impact of adherence to restrictions on prosperity was prevalent, with some noting that families not following restrictions faced health and financial challenges.

Hygiene and Physical Activity: The participants mentioned engaging in household chores, with restrictions primarily related to cooking and kitchen activities. Practices varied, including restrictions on washing hair, avoiding certain foods, and refraining from sexual activity.

Perceptions on Purity: Some acknowledged feeling impure during menstruation, associating it with restrictions on cooking and touching others. The concept of impurity was deeply ingrained in the understanding of these restrictions.

Attitudes Toward Menstruation: The study uncovers a range of attitudes toward menstruation, with a notable percentage expressing negative perspectives. The perception of menstruation as a "monthly interruption" or the belief that men have an advantage underscores the persistence of menstrual stigma. However, a positive perspective from a significant portion of women, considering menstruation as a unique aspect of womanhood, provides a counter-narrative. This diversity in attitudes necessitates targeted educational initiatives to challenge stereotypes and foster positive views.

Association with Socio-Economic Factors: The analysis reveals significant associations between menstrual practices and socio-economic status, education, and area of residence. The inverse relationship between socio-economic status and adherence to restrictions, where "> Middle class" individuals are less likely to follow restrictions, emphasizes the role of socio-economic factors in shaping cultural practices. Education emerges as a determining factor, with lower education levels associated with a higher likelihood of following restrictions. Additionally, rural residents exhibit a stronger adherence to menstrual restrictions, pointing to the influence of geographical context on cultural practices.

Strengths and Limitations: The study's strengths lie in its mixed-methods approach, capturing both quantitative and qualitative data to provide a comprehensive understanding of menstrual KAP. The inclusion of diverse demographic groups adds depth to the findings. However, the study's cross-sectional nature poses limitations in establishing causation, and self-reporting may introduce response bias.

Implications for Public Health: The findings underscore the need for holistic public health strategies that consider cultural, educational, and socio-economic factors in addressing menstrual health. Tailored educational programs, especially targeting younger generations, can contribute to dispelling myths and fostering positive attitudes. Additionally, efforts to provide accessible and culturally sensitive menstrual hygiene products can enhance the overall menstrual health landscape.

Menstrual health : 55.2% responded their menstrual cycle to be regular always and 30.22% had complaints of irregular menstruation. Irregular menstruation is a very common problem and major indicator of reproductive health conditions. The prevalence of irregular menstruation can vary according to socio economic status like age, education and residence.^[9] In another study, 14.2% of adult women aged 19–54 years reported having irregular menstruation.⁹ 48.8% of female reported painful menstruation sometimes whereas 8.2% and 6.8% reported to have painful periods often and always respectively. The result in the present study is somewhat identical from a survey study reported of 408 girls where 43.1% had painful menstruation in every period and, 41% reported pain in some periods.^[10]

Dysmenorrhea peaks at adolescent period and the incidence falls beyond 20 years of age.^[10] Apart from age, other risk factors for dysmenorrhea were reported as nulliparity, heavy menstrual flow, smoking, high socioeconomic status, attempts to lose weight, physical activity, disruption of social networks, depression, and anxiety.^[11] Unlike this report, in present study socio economic status had no significant association with menstrual pain and health, whereas education and demographic area were found to have significant association.

A study on university students found that characteristic symptoms like abdominal cramps and backache during menstruation were associated with nausea, vomiting, headache, and diarrhea.^[12] In the current study, prominent signs included backache (71.9%), abdominal pain (47.6%), and leg pain (33.9%), along with a feeling of tiredness (19.2%). Nausea (4.8%), headache (7.2%), vomiting (3.1%), and diarrhea (2.2%) were less prevalent in comparison.

A study involving 328 women aged 16 to 35 assessed the impact of mood swings during menstruation using validated questionnaires. Mood swings were identified as a prevalent symptom overlapping with psycho-emotional, physical, and behavioral symptoms. The overall prevalence of premenstrual syndrome (PMS) was 67.4%, and premenstrual dysphoric disorder (PMDD) was 25.6%. Symptoms included anger, irritability, depression, physical discomforts, and behavioral changes such as social withdrawal and altered work or academic performance.^[13] In the present study the findings reflect a lesser range of physical and emotional manifestations during the premenstrual period attributed to both pain and menstrual restrictions.

CONCLUSION

In summary, the qualitative findings reveal a complex interplay of cultural, religious, and traditional beliefs influencing the observance of menstrual restrictions. Generational shifts in attitudes, resistance, and diverse perceptions of well-being and prosperity were evident across different communities. This study contributes valuable insights into the nuanced landscape of menstrual KAP in the Anand District. Overall, the study highlights a spectrum of attitudes towards menstruation, with some viewing it as a unique and empowering aspect of femininity, while others perceive it as a monthly inconvenience that they must endure.

It also underscores the prevalence of irregular menstruation and diverse menstrual symptoms among adult women. Despite no significant association with socio-economic status, the findings provide valuable insights into the factors influencing menstrual health in this demographic. Addressing the challenges and opportunities revealed in this research can inform more effective public health interventions, promoting healthier attitudes and practices related to menstruation in the community.

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