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Beliefs and practices relating to menstrual hygiene among tribal adolescent girls in Odisha: A critical review

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Abstract

Menstruation is a completely normal biological process during the adolescence phase of girls. But it is a matter of concern that, when girls first experience it, they have relatively little information about menstrual health and cleanliness. Social constraints, as well as lack of openness on the part of parents and teachers, have hindered adolescent girls' access to accurate menstrual information. This situation becomes more sensitive among the vulnerable sections like tribal communities. Menstrual Hygiene Management (MHM) is critical because it affects women's health by increasing their susceptibility to urinary and vaginal infections, as well as their morbidity. MHM refers to the practice of being aware about menstruation, maintaining optimum hygiene during menstruation varied from using clean absorbents to disposing of absorbents safely and hygienically. Menstruation is stigmatized and uncomfortable for tribal adolescent girls in schools and colleges due to lack of clean water sources and sanitary bathroom facilities. In addition, there is a shortage of puberty education and hygiene. Menstruating tribal females leave their schools and colleges due to poor MHM products (absorbents), fear and embarrassment of gushing blood. When a female is menstruating, social taboos and cultural limitations prevent her from seeking health treatment, having a nutritious diet, and participating in social activities within or outside the tribal societies. The extensive literature reviews revealed that very less percentage of adolescent girls in tribal communities were aware about the menarche and menstrual hygiene management. Many social restrictions were imposed on them during menstruation and majority of them expressed that there is no need of social restrictions.

Keywords: MHM, Menstruation, Hygiene, Tribal adolescent girls

Introduction

Menstruation is a natural biological process that all women go through, yet in many civilizations it is cloaked in mystery, taboos, and even shame. Menstruation incorporates several myths and mysteries, and one of the most common social and cultural rules and restrictions surrounding menstruation among women is avoiding entering a sacred location (Winkler, 2019). Adolescent girls were deemed unclean at the period and were frequently barred from attending places of worship or touching holy artefacts (Sharma *et al.* 2006, Kumar and Srivastava, 2011). Furthermore, menstruating women are barred from entering the kitchen, cooking, handling pickles, or eating a meal (Garg and Anand, 2015, Thakur *et al.* 2014). Menstruation is not just a taboo issue in India, but it is also rarely discussed in private. This frequently leads to misunderstandings and a lack of readiness among women (Dasgupta and Sarkar, 2008). Inadequate or incorrect understanding about menstruation is frequently the basis of unnecessary limits on menstrual girls' daily routine activities, resulting in a variety of psychological difficulties (Juyal *et al.* 2013).

Although the situation is decreasing among educated and urban women, similar behaviors are still pervasive in rural regions (Thakre *et al.* 2011). Menstrual hygiene is critical for menstruating adolescent girls. Menstrual hygiene refers to the practice of keeping one's body clean when menstruating. It demands modest conveniences such as sanitary absorbent material, water, soap, and private bathroom facilities (Senapathi and Kumar, 2018). The selection and appropriate use of menstrual absorbents is an important part of menstrual hygiene management (MHM). According to Kathuria and Raj (2018), the degree of menstrual monitoring in adults may contribute to differences in core MHM behaviors such as absorbent usage, frequency of change, and daily bathing routines.

According to the World Health Organisation (WHO), around 1.7 billion people globally lack access to basic sanitation (Chandra-Mouli and Patel, 2020). Women also utilise old garments and other unsanitary materials as menstruation absorbents owing to a lack of information and costly expense. This lack of understanding and poor menstrual hygiene has been connected to serious health issues such as vaginal and urinary tract infections (Dasgupta and Sarkar, 2008, WHO, Sanitation, Bhatia and Cleland, 1995). A cross-sectional study conducted at a hospital identified a clear link between poor menstrual hygiene practises and a greater frequency of reproductive tract infections (RTIs) among women in Odisha (Mudey *et al.* 2010). These consequences reduce a woman's ability to support herself and her family and, as a result, have

an influence on a country's economy. As a result, knowing menstrual hygiene management is critical for women's health and dignity. Despite the fact that menstruation hygiene is a serious issue that has long been ignored, there is a long-standing need to address it publicly. Unaddressed menstrual hygiene is thought to impede the achievement of multiple Sustainable Development Goals (SDGs) since it is connected to gender equality and female empowerment through its direct influence on women's reproductive health, education, and labour participation.

In India, the social group is very important in determining access to social and economic resources (Torondel *et al.* 2018, Baru *et al.* 2010). Socially disadvantaged groups, such as scheduled caste (SC) and scheduled tribe (ST), frequently lag behind in most socioeconomic development and health indices, including health care awareness and use (Borooah *et al.* 2014). There is a lack of awareness in socially disadvantaged groups about the numerous procedures necessary to protect women's health and dignity during menstruation. Furthermore, some research has indicated that adolescent girls from these socially disadvantaged groups are more likely to have avoidable reproductive health disorders and have a poor grasp of sanitary menstruation practises (Ram *et al.* 2020, Nagar and Aimol, 2010, Dhingra *et al.* 2009). Recent research of adolescent girls in an Odisha tribal region found that more than one-third of them utilise unclean materials as menstruation absorbents (Shah, 2013). Despite the discomfort that cloth causes, it remains their favoured method due to its simplicity of availability, low cost, and reusability. Another study found that menstruation awareness is low among Munda tribal teenage girls in Odisha, and practises comprised many myths and misunderstandings (Mishra *et al.* 2020). According to the most recent National Family Health Survey 5 (2019-21), 59% of indigenous women aged 15-24 years use cloth as menstruation absorbents, compared to 25% of their general caste peers (Kumari *et al.* 2021).

Taking into consideration on above situation, the current study about beliefs and practices relating to menstrual hygiene of tribal adolescent females in Odisha was conducted. Odisha is home of 75 Particularly Vulnerable Tribal Groups (PVTGs). They are generally homogenous, with a small population and a remote location. Such societies have a pre-agricultural style of life focused on hunting and gathering, relatively sluggish population growth, a rudimentary economy, and extremely low literacy levels as compared to other tribal groups (IIPS and ICF, 2022, Bagchi and Gupta, 2005). Several anthropological investigations have demonstrated tribal peoples' strong loyalty to traditional rituals and health beliefs, yet scientific research on reproductive health in general, and menstrual hygiene practises in particular, is limited.

Therefore, the aim of the study is to provide an insight on beliefs and practices relating to menstrual hygiene among tribal adolescent girls in Odisha.

Materials and Methods

This literature review is primarily focused on tribal adolescent girls in Odisha. As per census 2011, the scheduled tribes of Odisha constitute more than 22.84% of the state's total population (95,90,756 totally) and 0.79% of the nation's total population. The Ministry of Tribal Affairs, Govt. of India has recognized 62 tribes of Odisha as "Schedule Tribe" out of which 13 tribes are regarded as "Particularly Vulnerable Tribal Groups" (PVTGs) based on their backwardness from mainstream population. Tribes in India are mostly concentrated in five geographical zones, primarily in isolated hill and forest parts of the country. Nonetheless, they constitute a primarily marginalised and disadvantaged segment of society, and according to the research, tribes lag well behind non-tribal populations in terms of health and livelihood issues (Senapathi and Kumar, 2018). Many research undertaken by experts on many dimensions of health vulnerability across tribes revealed health deprivation (Kathuria and Raj, 2018).

The data for this study were gathered from published research publications, from March to July 2023, using the Goggle Scholar, EBSCO, and PubMed databases. To identify relevant literature, we used the following search strategy: (menarche or menstruation or menstrual health or menstrual hygiene or menstrual management) and (tribal adolescence or adolescent or youth females) and (tribal females or girls or women) and (knowledge or belief or practice or experience) particularly studies among tribal population in Odisha. Given the limited research available, descriptive overviews and interventions that used qualitative, quantitative or mixed methods of any sample size were also included. In order to supplement our search, we looked through the reference lists of the included journal articles and papers and gathered a limited number of additional related research that fulfilled those broad criteria. These articles were extensively examined in order to find out the beliefs and practices relating to menstrual hygiene among tribal adolescent girls in Odisha.

Results and Discussions

Knowledge and Awareness about Menstrual Cycle

Das & Gautam (2022) in their study found out that some adolescents (30%) of Balda Village of Koraput district had idea on menarche from their grandmother, friends, Anganwadi and ASHA workers. Whereas some girls (70%) were not at all aware.

Table 1: Awareness about Menstruation and Menstrual Hygiene

Sl no.	Particulars	No. of Respondents	Percentage
1	Age of Menarche		
	10	00	0%
	11-13	23	23%
	14-15	50	50%
	16	17	17%
2.	Knowledge prior to Menarche		
	Yes	57	57%
	Mother/sister	09	9%
	Friends	37	37%
	Teachers	03	3%
	Media	08	8%
	No	43	43%
3.	Knowledge about menstruation		
	Blood origin from stomach	38	38%
	It is unhealthy	12	12%
	It's a disease	2	2%
	Pain is unhealthy	60	60%
	Harmful to run and dance	90	90%
4.	Cause of menstruation		
	Hormonal change/ Physiological Process	68	68%
	Disease	2	2%
	Curse	0	0%
5.	Feeling of first menarche		
	Discomfort	63	63%
	Scared	52	52%
	Normal	04	4%

Source: Thapa (2021).

Table 1 depicts girls' understanding and perceptions about menstruation and menstrual hygiene. Knowing about menstruation is essential since virtually all girls have similar feelings during menarche. Approximately 50% of females experienced menarche between the ages of 14 and 15, whereas 17% and 23% had menarche between the ages of 11-13 and 16 years old, respectively. 57 percent of the students had heard about menstruation through their mothers, sisters, or other family members. The mass media, such as television advertisements, play an important role in informing young girls about menstruation. About 8 per cent of students acquired their knowledge from television commercials and social media. 3% of them had their menarche in school and were informed about it by their instructors. The perception of young girls towards menstruation is said to vary greatly depending on familial background, social and cultural value system, and so on. Girls from nuclear families had understanding about menstruation, whereas girls from extended families with siblings and cousins' better knowledge. It was also shown that females from nuclear families were more open to their mothers and sisters. Menstruation, on the other hand, is kept a secret under the extended family structure. Correct knowledge regarding menarche is critical since it impacts women's health and lives. Wrong knowledge might have a negative impact on their lives. The vast majority of responders believed that menstruation blood originated in the stomach. Few respondents stated that menstruation is an illness and that it is harmful to one's health (Thapa, 2021). Mishra, (2020) in his study concluded that only 36% (n=268) of respondents were knowledgeable with menstruation and MHM.

The data revealed that while a modest (21%) fraction of students were fully knowledgeable, 34% of respondents were only slightly aware of the physiological changes that occur throughout puberty. It also showed that the majority of pupils (45%) were completely unaware. According to the findings, a substantial number of girls saw physiological changes as a natural occurrence. They were optimistic about physiological improvements. There was little difference in their reactions to physiological changes between students from nuclear and combined homes. It also revealed that 15% of respondents were fully aware of the menstrual cycle prior to its commencement, 27% were slightly aware, and 58% were completely unaware.

Table 2: Awareness of menstrual period before its onset cross tabulated with family type

Responses	Nuclear family	Joint family	Total
Fully aware	1 (2.27%)	14 (25%)	15 (5%)
Partially aware	8 (18.18%)	19 (33.92%)	27 (17%)

Not aware	35 (79.54%)	23 (41.07%)	58 (78%)
Total	44 (44%)	56(56%)	100%

Source: (Mishra, 2020)

Table 2 shows the Awareness of menstrual period before its onset cross tabulated with family type

Hygiene practices during menstruation

Das *et al.* (2015) stated in their study that during their menstrual cycle, the majority of Juang women (85%) utilised old clothing as absorbents. Furthermore, 9% utilised sanitary napkins/locally produced napkins during their menstrual cycle, whereas 6% did not use anything absorbent at all. During menstruation, 82% of women washed their external genitalia with simply water and 18% with water and soap. 53% of individuals who used cloth absorbents changed them once, 41% twice, and 6% three times per day. The majority of women (81%) merely used water to clean their menstruation garments. More than half of the women (56%) dried their menstruation clothing inside the home but in a hidden location; 32% dried them within the house but in an open area.

Table no. 3: Distribution of Juang women based on their hygiene practices during menstruation

Hygiene Practices	N	%
Type of absorbent used		
Sanitary napkin	33	9.2
Cloths	307	85.3
Nothing	20	5.6
Frequency of changing menstrual cloth		
1 time a day	162	52.8
2 times a day	127	41.4
3 times a day	18	5.9
Cleaning of menstrual cloth		
With water	252	81.8
With soap and water	51	16.6
Don't clean	5	1.6

Place of drying menstrual cloth		
Inside the house but in hiding	173	56.4
Inside the house but in open	98	31.9
Outside and in sunlight	36	11.7
Place of keeping reused menstrual cloth		
Normal like other cloths	56	18.2
At hidden place	251	81.8
Cleaning of external genitalia		
With water	295	81.9
With soap and water	65	18.1

Source: Das *et al.* (2015)

Table 3 shows the Distribution of Juang women based on their hygiene practices during menstruation

Social Restrictions

Research indicated that menstruating tribal girls faced various social restrictions. Data in table 4 depicted that these limitations included being prohibited from participating in religious events (100%), being restricted from carrying out regular household tasks (89.1%), being forbidden from attending classes (24.4%), being required to reside in secluded areas (83.5%), being prevented from going out or engaging in play (48.8%), being advised to avoid consuming certain foods (74%), being instructed not to bathe (50.4%), and being instructed to sleep on a bed instead of the floor (91.3%). These findings align with a study conducted in Delhi in 2021, which also identified restrictions on religious activities (94%), followed by restrictions on daily activities (69%), and restrictions on academic activities (60%).

Almost every religious practise, from Hinduism to Christianity, Islam, and Judaism, stigmatises and condemns menstruation women. Menstruating women are stigmatised, socially secluded, and barred from visiting holy buildings or even specific areas of the home, such as the kitchen. Though the degree of belief varies from family to household, a vast percentage of women face significant restrictions as a result of their bodies' inherent biological processes. Even discussing one's menstruation is frowned upon. Urban girls learn about menstruation from technical course materials taught by uncomfortable instructors in schools or through advertising in which the blood is camouflaged as a thin blue ink or blue stain (Hulland *et al.* 2015). According to

research performed in rural Odisha, women found menstruation to be the most distressing habit, followed by excrement and urine (Kumar and Srivastava, 2011)

Adolescent females from Indian tribal communities reported having restrictions for which they may face difficulties during their young period. Other social constraints include not participating in physical or social activities such as sports or exercise, not attending social gatherings or school, not completing home labour, cooking, or moving in and out of the house, and so on (Mahapatra, 2023). Females who are in menstruation are not permitted to visit the kitchen or bedrooms to avoid contaminating meals or others (Mishra, 2023)

Table no. 4: Social restrictions imposed on tribal adolescent girls during menstruation

Restrictions	Frequency	%
Not allow to attend religious functions	450	100%
Not allow to attend classes	110	24.4%
Isolation in a separated place	376	83.5%
Not going out or playing	220	48.8%
Avoid eating certain foods	333	74%
Bathing	227	50.4%
Sleep on floor	411	91.3%
Restrictions in routine household activities	401	89.1%
Food (sour, extreme hot and cold, nonveg)	68	68%
Visiting temple	100	100%
Entering to kitchen	75	75%
Staying in one room	09	09%
Not plucking flowers	28	28%
Not talking to the male numbers of the family	07	07%
No restrictions	00	00%
Is there any need of taboos		
Yes	33	33%
No	67	67%

Source: (Mudi *et al.* 2023 & Thapa, 2021)

Table no. 4 shows the Social restrictions imposed on tribal adolescent girls during menstruation

Girls are also subjected to some form of restriction during their menstruation, such as the prohibition on visiting temples and consuming Prasad during their periods, as this is considered a sin. Along with limitations on eating hot, cold, or sour food (68%), visiting the kitchen (75%), conversing with male family members, and so on. When queried about the reasons for the ban, they stated that it is placed on women because they are unclean during menstruation, which negatively affects other male members, flowers, and food items. They also discussed their thoughts about entering temples. It is forbidden because if a lady enters the temple during her menstrual cycle, she will be harmed. Girls are also subjected to some form of restriction during their menstruation, such as the prohibition on visiting temples and consuming Prasad during their periods, as this is considered a sin.

Pradhan, (2016) stated that 100 percent of the adolescents adhered to societal restrictions during menstruation, for example, refraining from entering the house, sleeping on the back porch, and staying behind the house during the day. They were not permitted to enter the central area of the village, touch any part of the house, or eat separately using different utensils. Additionally, at the conclusion of the menstruation period, the sleeping and sitting areas were cleaned with cow dung paste. This ritual served to purify the girl from menstrual impurity. It is prohibited to consume sour and excessively sweet food items, such as tamarind, jaggery, jujube, etc.

Social and Cultural Practices

Adolescent girls and mothers revealed different social, social practices and restrictions related with monthly cycle for which they couldn't give clarification. They simply follow it since they have been approached to do as such. The girls refrained themselves from religious practices, eating medicines, wearing new clothes, eating drugs, wearing new garments (Sahoo *et al.*, 2015), applying kajal (kohl), going to visitors, preparing food (Sridhar and Gauthami, 2017), work out, and different things. The most well-known limitations announced were not enjoying the strict practices among Hindu, Muslim, and Sarna young ladies, not going to spots of love, and not touching pickles during feminine cycle. Moms additionally announced that during period the body discharges some particular smell or beam, which turns protected food terrible (Torondel *et al.* 2018).

Menstruating girls are frequently regarded as filthy and polluting, and as a result, moms encourage them not to go out and play or even attend school (Kakeri *et al.* 2018). Strict cultural beliefs in Indian society forbid a menstruation female from entering the temple, presuming she is too unclean to accept the holy religion. Even she is forbidden from touching the pickle for fear that her impurities may ruin it. These heinous practises are common in both rural and urban Indian tribal community (Ramya, 2020).

Beliefs about menstruation

Belief in the utilization of home remedies, through interview it was observed that many tribal girls specifically from Mitrapur panchayat of Balasore district consume a special herb juice, local name Ghushi plant or Gayasha plant (*Atriplex hortensis*) in order to alleviate menstrual pain. They also employ various home remedies to alleviate menstruation and menstruation related problems like neem leaves, cumin seeds and jaggery for reducing body ache and abdominal pain. They also consume Bengal gram- jaggery mixture, raw egg-white, sesame Ladoo's, and sesame oil during menarche and menstruation for bone strength and to alleviate menstrual aches [34]. In accordance with their custom, they abstain from consuming sour and piquant cuisine, such as preserved vegetables, tangy tamarind, and other similar items. Additionally, they refrain from indulging in sugary treats due to their belief that it can lead to excessive blood flow. Instead, they opt for a diet consisting of rice, jaggery (Guda), and leafy greens (saga) during menstruation. Moreover, they avoid crossing the "Dhinki" (traditional wooden rice meal) as they believe it can result in more bleeding (Dey and Mahapatra, 2020).

Pradhan, (2016) discovered that merely 5.9% of the adolescent girls were taking measures for the early or delayed menstruation by utilizing local traditional knowledge, such as consuming a larger quantity of eggs, consuming more spicy foods, ripe papaya, etc. Some girls also sought the assistance of a traditional healer to perform superstitious rituals, while only 4.7% of girls were using medication for a healthy menstrual cycle.

The negative societal attitude of menstruation has prevented Indian women from discussing these difficulties, making them more prone to hazardous monthly abnormalities such as dysmenorrhoea, menorrhagia, hypermenorrhoea, and so on (Verma *et al.* 2021).

Conclusion

Menstruation is an important indicator of the start of reproductive life in girls. Many societies commemorate the commencement of menstruation (menarche). This study, however, emphasises that data on menstrual hygiene beliefs and practises among Indian tribal adolescent girls is insufficient, and even the existing data suggests that dangerous practises are ubiquitous in many regions. Community data from tribal girls on menstruation beliefs must be collected proactively in order to design future tribal health programmes. Emphasis should be placed on disposal and perineal cleanliness practises in local awareness initiatives. In addition, a unique socio-cultural approach is required to debunk traditional beliefs, incorrect ideas, and misconceptions to enable sustainable wellbeing among tribal adolescent girls.

Limitations

The process of doing this meta-analysis had many drawbacks. Our study did not use subgroup analysis since there were so few papers that included information on reproductive-age girls in tribal community settings. The majority of the studies that were reviewed provided information on adolescents. As a result, the results cannot be regarded as typical of the community statistics on tribal women's menstrual hygiene. All of the chosen papers' study designs differed from one another as well. Furthermore, a handful of the included studies' variables for the % prevalence of menstrual hygiene practises was lacking.

References

- Bagchi, J., & Gupta, S. D. (Eds.). (2005). *The changing status of women in West Bengal, 1970-2000: The challenge ahead*. Sage.
- Baru, R., Acharya, A., Acharya, S., Kumar, A. S., & Nagaraj, K. (2010). Inequities in access to health services in India: caste, class and region. *Economic and political Weekly*, 49-58.
- Bhatia, J. C., & Cleland, J. (1995). Self-reported symptoms of gynaecological morbidity and their treatment in south India. *Studies in family planning*, 203-216.
- Borooah, V. K., Diwakar, D., Mishra, V. K., Naik, A. K., & Sabharwal, N. S. (2014). Caste, inequality, and poverty in India: A re-assessment. *Development Studies Research. An Open Access Journal*, 1(1), 279-294.
- Chandra-Mouli, V., & Patel, S. V. (2020). Mapping the knowledge and understanding of menarche, menstrual hygiene, and menstrual health among adolescent girls in low-and middle-income countries. *The Palgrave handbook of critical menstruation studies*, 609-636.
- Das, D., & Gautam, R. K. (2022). Problems and Practices Related to Menstruation among Adolescent Girls of Dongria Kondh of Rayagada, Odisha, India. *Frontier Anthropology*, 11: 13-23.

Das, P., Baker, K. K., Dutta, A., Swain, T., Sahoo, S., Das, B. S., & Torondel, B. (2015). Menstrual hygiene practices, WASH access and the risk of urogenital infection in women from Odisha, India. *PloS one*, 10(6), e0130777.

Dasgupta, A., & Sarkar, M. (2008). Menstrual hygiene: how hygienic is the adolescent girl?. *Indian journal of community medicine*, 33(2), 77-80.

Dey, J., & Mahapatra, B. (2020). Knowledge, practices, and problem towards menstrual cycle with their socio-economic status: a comparative study of tribal and non-tribal female. *Int J Com Med Pub Hea*, 7, 2381-7.

Dhingra, R., Kumar, A., & Kour, M. (2009). Knowledge and practices related to menstruation among tribal (Gujjar) adolescent girls. *Studies on Ethno-Medicine*, 3(1), 43-48.

Garg, S., & Anand, T. (2015). Menstruation related myths in India: strategies for combating it. *Journal of family medicine and primary care*, 4(2), 184-186.

Hulland, K. R., Chase, R. P., Caruso, B. A., Swain, R., Biswal, B., Sahoo, K. C., & Dreibelbis, R. (2015). Sanitation, stress, and life stage: a systematic data collection study among women in Odisha, India. *PloS one*, 10(11), e0141883.

International Institute for Population Sciences (IIPS) and ICF. National Family Health Survey (NFHS-5), India, 2019–21: Odisha. Mumbai: IIPS. 2022.

Juyal, R., Kandpal, S. D., & Semwal, J. (2013). Social aspects of menstruation related practices in adolescent girls of district Dehradun. *Indian Journal of Community Health*, 25(3), 213-216.

Kakeri, M., Patil, S. B., & Waghmare, R. (2018). Knowledge and practice gap for menstrual hygiene among adolescent school girls of tribal district of Maharashtra, India: A cross sectional study. *Indian J. Youth Adol. Health*, 5, 23-27.

Kathuria, B., & Raj, S. (2018). Effects of socio-economic conditions on usage of hygienic method of menstrual protection among young women in EAG states of India. *Amity Journal of Healthcare Management*, 3(1), 40-52.

Kumar, A., & Srivastava, K. (2011). Cultural and social practices regarding menstruation among adolescent girls. *Social work in public health*, 26(6), 594-604.

Kumar, A., & Srivastava, K. (2011). Cultural and social practices regarding menstruation among adolescent girls. *Social work in public health*, 26(6), 594-604.

Kumari, S., Sood, S., Davis, S., & Chaudhury, S. (2021). Knowledge and practices related to menstruation among tribal adolescent girls. *Industrial Psychiatry Journal*, 30(Suppl 1), S160-S165.

Mahapatra, T. (2023). Menstrual health and status of tribal adolescent girls of Balasore, Odisha. *International Journal of Science and Research Archive*, 8(1), 393-403.

Mishra, P. (2020). Periods, perceptions and practice-a study of menstrual awareness among adolescent girls in a tribal district of Odisha, India. *Indian Journal of Public Health Research & Development*, 11(6), 577-585.

- Mishra, P. (2020). Periods, perceptions and practice-a study of menstrual awareness among adolescent girls in a tribal district of Odisha, India. *Indian Journal of Public Health Research & Development*, 11(6), 577-585.
- Mishra, S. (2023). Social Taboo and Menstrual Practices: A Qualitative Study in The Area Rajabagicha and Chandi Chhak of Cuttack District, Odisha. *International Journal of Multidisciplinary Educational Research*, 12(6): 1-15.
- Mudey, A. B., Kesharwani, N., Mudey, G. A., & Goyal, R. C. (2010). A cross-sectional study on awareness regarding safe and hygienic practices amongst school going adolescent girls in rural area of Wardha District, India. *Global journal of health science*, 2(2), 225.
- Mudi, P. K., Pradhan, M. R., & Meher, T. (2023). Menstrual health and hygiene among Juang women: a particularly vulnerable tribal group in Odisha, India. *Reproductive Health*, 20(1), 55.
- Nagar, S., & Aimol, K. R. (2010). Knowledge of adolescent girls regarding menstruation in tribal areas of Meghalaya. *Studies of Tribes and Tribals*, 8(1), 27-30.
- Pradhan, T. (2016). Knowledge on reproductive health issues among adolescent girls of Burla Town, Sambalpur, Odisha. *International Journal of Scientific and Research Publications*, 6(7), 226-229.
- Ram, U., Pradhan, M. R., Patel, S., & Ram, F. (2020). Factors associated with disposable menstrual absorbent use among young women in India. *International Perspectives on Sexual and Reproductive Health*, 46, 223-234.
- Ramya, S. (2020). *A Cross Sectional study on Menstrual Hygiene Practices among Adolescent Girls in Tribal Population in Tamil Nadu* (Doctoral dissertation, Stanley Medical College, Chennai).
- Sahoo, K. C., Hulland, K. R., Caruso, B. A., Swain, R., Freeman, M. C., Panigrahi, P., & Dreibelbis, R. (2015). Sanitation-related psychosocial stress: A grounded theory study of women across the life-course in Odisha, India. *Social science & medicine*, 139, 80-89.
- Senapathi, P., & Kumar, H. (2018). A comparative study of menstrual hygiene management among rural and urban adolescent girls in Mangaluru, Karnataka. *Int J Community Med Public Health*, 5(1), 2548-56.
- Shah, S. P., Nair, R., Shah, P. P., Modi, D. K., Desai, S. A., & Desai, L. (2013). Improving quality of life with new menstrual hygiene practices among adolescent tribal girls in rural Gujarat, India. *Reproductive Health Matters*, 21(41), 205-213.
- Sharma, N., Vaid, S., & Manhas, A. (2006). Age at menarche in two caste groups (Brahmins and Rajputs) from rural areas of Jammu. *The Anthropologist*, 8(1), 55-57.
- Sridhar, D., & Gauthami, N. (2017). Menstrual health status and cultural practices of tribal adolescent girls. *International Journal of Community Medicine and Public Health*, 4(11), 4120-4124.
- Thakre, S. B., Thakre, S. S., Reddy, M., Rathi, N., Pathak, K., & Ughade, S. (2011). Menstrual hygiene: knowledge and practice among adolescent school girls of Saoner, Nagpur district. *J Clin Diagn Res*, 5(5), 1027-33.

Thakur, H., Aronsson, A., Bansode, S., Stalsby Lundborg, C., Dalvie, S., & Faxelid, E. (2014). Knowledge, practices, and restrictions related to menstruation among young women from low socioeconomic community in Mumbai, India. *Frontiers in public health*, 2, 72.

Thapa, S. Knowledge, Attitude and Perception Towards Menstruation: A Study Among School Going Adolescent Girls of Rural Odisha. *International Journal of Multidisciplinary Educational Research*, 10(4): 191-197.

Torondel, B., Sinha, S., Mohanty, J. R., Swain, T., Sahoo, P., Panda, B., & Das, P. (2018). Association between unhygienic menstrual management practices and prevalence of lower reproductive tract infections: a hospital-based cross-sectional study in Odisha, India. *BMC infectious diseases*, 18, 1-12.

Torondel, B., Sinha, S., Mohanty, J. R., Swain, T., Sahoo, P., Panda, B., ... & Das, P. (2018). Association between unhygienic menstrual management practices and prevalence of lower reproductive tract infections: a hospital-based cross-sectional study in Odisha, India. *BMC infectious diseases*, 18, 1-12.

Verma, A., Patyal, A., Mathur, M., Mathur, N., & Hirani, J. (2021). Prevalence of self-reported reproductive tract infections/sexually transmitted infections symptoms and treatment seeking behavior among the married tribal women in Udaipur, Rajasthan. *Int J Reprod Contracept Obstet Gynecol*, 10(10), 3840.

WHO. Sanitation. <https://www.who.int/news-room/fact-sheets/detail/sanitation>. Accessed 04 June, 2022.

Winkler, I. T. (2019). Human rights shine a light on unmet menstrual health needs and menstruation at the margins. *Obstetrics & Gynaecology*, 133(2), 235-237.