Original Article

Water, Sanitation and Hygiene Practices: A Cross-sectional Study on Rural Women from West Bengal in India

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Abstract

Background: Sustainable Development Goal targeted equitable access to safe water, sanitation and hygiene (WaSH) in women's life. However, utilization in WaSH still does not reach optimal level in rural sector of India despite huge promotion of policies.

Objective: To understand water, sanitation and hygiene practices of rural women from the state of West Bengal.

Methods: The present cross-sectional study involved 252 women [88 from caste (PC women), 53 from tribal (PT women) group of rural part of Purulia; 111 from caste (HC women) group of rural part of Howrah] following purposive sampling technique. A pre-tested schedule was canvassed for collecting data on socio-demographic characteristics, water facilities, usage and associated issues, urination and defecation practices, menstrual health management. Descriptive statistics were performed. A sub-section of the participants was involved in group discussion.

Results: PC women reported scarcity of drinking water (89.7%), open site urination and defecation practice (97.9%), used clothes as menstrual absorbents (61.1%). PT women reported use of sanitary napkins (90%), could get access of household toilets (99.9%), nearby drinking water source (66.6%); however, 83.7% reported open site urination and defecation practice. HC women used household toilets (42.8%), nearby drinking water source (71.4%); reported habit of washing hands (89.5%) and private parts during menstruation (63.4%) along with frequent changing of menstrual absorbent (52.4%); however, unhygienic disposal of menstrual absorbent was practiced by HC women.

Conclusion: The study suggests that intervention programs could impart education for uprising knowledge and attitude towards adoption of healthy WaSH practices among rural women.

Key words: WaSH practices, rural women, Purulia, Howrah, India

Introduction

A comprehensive understanding of Water, Sanitation and Hygiene (WaSH) became an interesting domain of research as a multidimensional and culturally embedded phenomenon. Inadequate WaSH emerges global health challenge, affecting health and well-being of one-third population.[1]

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Worldwide, 2.1 billion people do not have access to safe drinking water at home, 2.3 billion do not have access to basic sanitation, 1 billion practice open defecation.[2] Women are the most vulnerable because they receive a limited access to WaSH services while they have greater need for privacy during defecation and bathing compared to men.[3] The Sustainable Development Goal (SDG) 6 (universal access to safe water and sanitation) jointly with the SDG 5 (Women and girls often manage water, and access to water reduces gender inequality) has been highlighting on access to equitable sanitation and hygiene for women during menstruation, pregnancy and postpartum.[4]

During the last few decades, Government of India implemented policies with the aim to improve WaSH facilities throughout India. In spite of huge promotion of these programs, rural people mostly remained unaware about adopting improved WaSH services,[5-10] thereby utilization of WaSH still does not reach optimal level.[11] In West Bengal, so far, a very few studies demonstrated the scenario of WaSH practices among people living in rural sector. Thus, the present study aimed to understand water, sanitation and hygiene practices of rural women from the state of West Bengal.

Materials and Methods

Study area

The present study was conducted in rural areas of Purulia and Howrah district of West Bengal. In Purulia, the study was conducted in two villages namely 'Bareriya' and 'Bhupatipally' of the Baghmundi community development CD block of Jhalda sub-division and four villages namely 'Anara', 'Loyara', 'Jhapra', 'Jabarra' of the Para CD block of Raghunathpur subdivision. In Howrah district, the study was conducted in one village 'Narit' of Amta II CD block and in two villages namely 'Chak Thakurani' and 'Paliara' of Udaynarayanpur CD block of Uluberia sub-division. The study areas were chosen following operational convenience.

Justification for selection of the study areas

Following the record of Ministry of Drinking Water and Sanitation, despite the successful coverage of Swachh Bharat Mission throughout India, West Bengal showed a little decline in open defecation free (ODF) coverage and Household toilet (HHT) coverage [West Bengal: ODF- 95.61%, HHT- 99.78%].[12] Furthermore, about 95% sanitation coverage was reported in rural sector of most of the districts (including Howrah) in West Bengal. However, Purulia district solely showed a low sanitation coverage (<65%).[13] Thus, there remained a definite need to involve both districts of West Bengal in order to depict a comparative approach with respect to WaSH practices.

Study participants

Initially, 736 women [(155 from Para CD block, 99 from Baghmundi CD block, and 482 from both Amta II and Udaynarayanpur CD block)] aged 20 to 45 years were enlisted following the electoral roll. The study used purposive sampling technique to finally recruit 252 women from the rural areas of Purulia and Howrah district following the selection criteria: the participants, who were married, aged between 20 and 45 years old, remained in child bearing age, had at least one surviving child. Out of 252 participants, 88 (PC women) from caste (Bauri) group, 53 (PT women) from tribal (Birhor) group were selected from 'Para' and 'Baghmundi' CD block of Purulia respectively; 111 (HC women) from caste (Mahisya, Bagdi, Tili) group were selected from Amta II and Udaynaranpur CD block of Howrah. Women, who attained both natural and surgical menopause (n=193), remained reluctant to voluntarily participate in survey (n=231) and remained unavailable (n=60) were excluded from study. The survey was conducted in Purulia between the month of December, 2019 and March, 2020; and in Howrah between the month of September, 2021 and November, 2021. The response rate for participation at survey was 55% and 23% in Purulia and Howrah respectively. A low response rate in Howrah district was associated with the fact that a large proportion of women expressed hesitant to take part in survey amid pandemic situation. A written informed letter was submitted to office of the Block Development Officer of each CD block. The verbal consent was obtained from each study participant.

Data types

Data on socio-demographic characteristics, water facilities, usage and associated issues, urination and defecation practices, menstrual health management

were collected using a pre-tested schedule. The schedule was developed in English language, translated into vernacular language and further back translated to English language to check validity of the questions. Each participant was interviewed in private. A sub-section of the participants was involved in group discussion.

Statistical analyses

Descriptive statistics (Frequency and percentage) was performed to understand the distribution of socio-demographic characteristics, water facilities, usage and associated issues, urination and defecation practices, menstrual health management for three distinct groups of the study participants using SPSS 26.0. Here, narratives of a few study participants during group discussion were presented as the excerpts.

Results

Socio-demographic profile

It is found that median value of age of the participants of PC, PT and HC group were 31 years, 29 years and 37 years respectively. Majority of the participants and the spouse belonging to PC and PT group were non-literate while a large proportion of HC participants and spouse reported attainment of school education up to primary and secondary levels. The participants of all three groups were exclusively home makers, while majority of spouse were engaged as the daily labour. (Table 1)

Table 1 Socio-demographic profile of study participants (n=252)

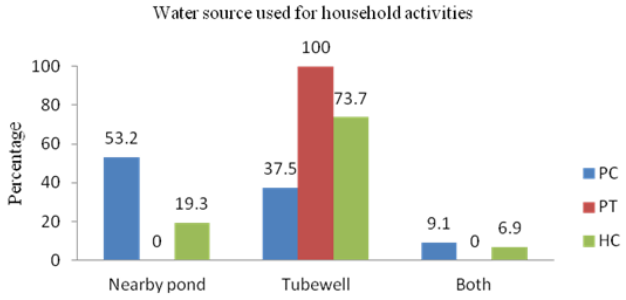
Socio-demographic characteristics	PC women (n=88)	PT women (n=53)	HC women (n=111)
	%	%	%
Age of the participants (completed years) (median value)	31	29	37
Educational levels of the participants			
Non-literate	72.2	87.0	43.3
Primary	24.2	13.0	33.3
Secondary	3.4	-	17.3
Graduate	-	-	6.0
Occupational status of the participants			
Exclusive homemakers	91.0	69.5	53.3
Daily labours	-	23.0	33.3
Others*	9.0	7.4	13.2
Educational levels of the spouse			
Non-literate	54.5	77.0	-
Primary	27.3	13.0	55.5
Secondary	15.2	10.0	33.3
Graduate	3.0	-	11.2
Occupational status of the spouse			
Daily labours	82.0	91.3	56.6
Service	4.5	-	30.1
Small scale business	13.6	8.7	13.2

PC= caste group of Purulia, PT= tribal group of Purulia, HC= caste group of Howrah

*others= engaged in small scale business, house-maid

Water facilities, usage and associated issues

About 49.6% of PC women and all HC women used water from tube well for drinking and cooking, 53.2% of PC women used water from pond for other household activities. All PT women used water for drinking and household activities from tube well. None of the water filtration method was used by PT and PC group; only 13.9% HC women reported the practice of water filtration. 89.7% PC women reported scarcity of drinking water in the locale. (Figure 1)



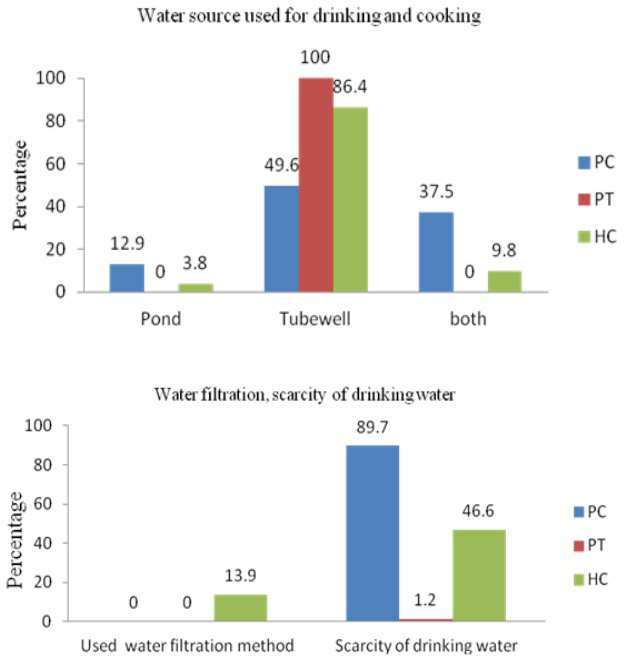


Figure 1: Water facilities, usages and associated issues reported by study participants

Urination and defecation practices

About 97.9% of PC women reported urination and defecation practices at open site, 1/4th of them reported presence of HHT. While almost all PT women reported presence of HHT, 66.6% of PT women reported presence of water source nearby HHT; however, only a few (19.8%) used HHT, 83.7% practiced open site urination and defecation. About 82% and 42.8% of HC women had HHT and water source nearby respectively; 39.8% of them practiced open site defecation and urination.

Moreover, PT women reported cleaning of places after defecation (60.8%), washing private parts after urination (78.2%) and hands with soap (39.6%) after defecation. About 13.8% and 33.3% of PC women respectively reported washing private parts after urination and washing hands with soap after defecation. While 50.8% of HC women reported washing places and private parts after urination; 89.5% of them used soap for hand washing after defecation. (Figure 2)

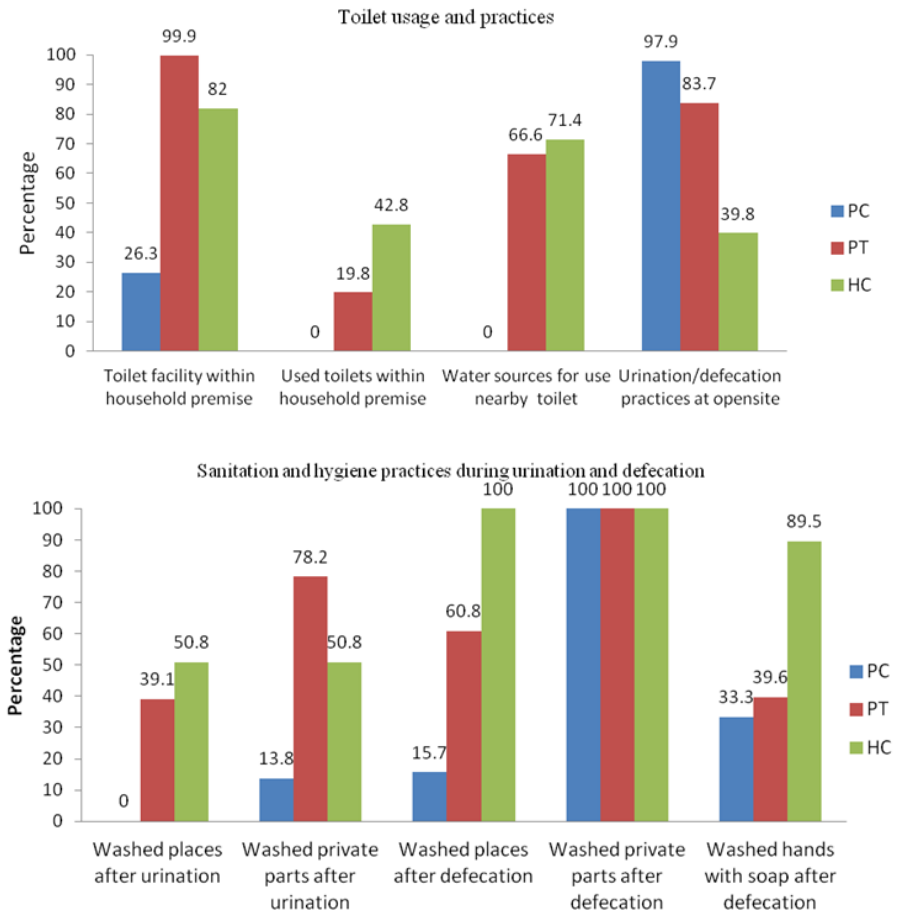
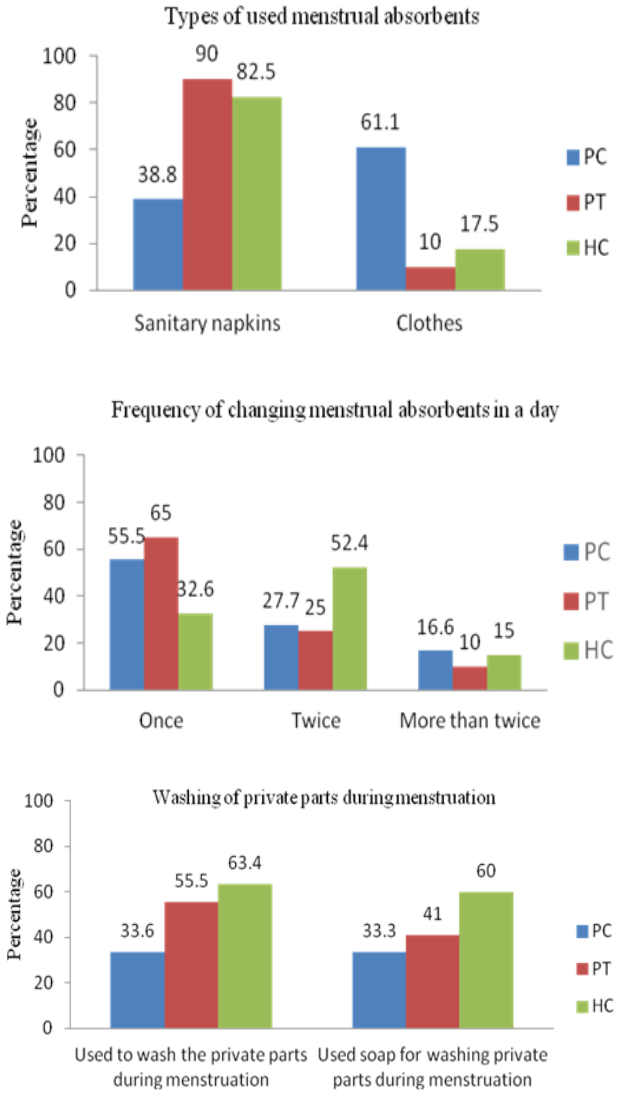


Figure 2: Urination and defecation practices reported by study participants

Menstrual health management

About 90% and 82.5% of PT and HC women respectively reported use of sanitary napkins, 61.1% of PC women reported use of clothes as menstrual absorbent. PT (65%) and PC (55.5%) women reported change of menstrual absorbents once in a day. HC women reported cleaning of private parts once in a day and used soap during menstrual days more compared to PC and PT women. PC women washed used clothes (58.4%) and disposed menstrual absorbents into pond or nearby places (44.5%). PT women burnt sanitary napkins (55%) and sometime disposed under-ground (33.6%). HC women reported disposal of absorbents into pond or nearby places (67.3%). (Figure 3)



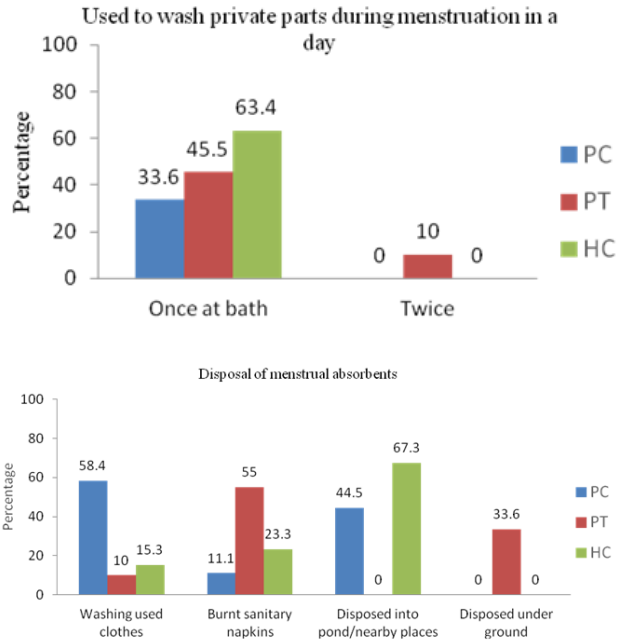


Figure 3: Menstrual health management reported by study participants

Excerpts from PC group

One participant (36 years old) said, "We have HHT, but it has been in the condition of no use due to its substandard construction. There is no water supply nearby the toilet. We need to carry water from pond, prefer to go open site defecation and urination nearby pond."

Another participant (37 years old) said, "We do not have tube well nearby. I have to carry water for drinking and cooking from a distance. I use water from nearby pond for other household chores."

Another participant (41 years old) said, "The water from tube well proximal to household contains dirt and soil. I regularly fetch water from tube well of neighborhood village. Drinking water shortage at summer remains high in this region."

A participant (33 years old) said, "Our family members do not use HHT because of its location beside living room. We go for open site urination and defecation. I use clothes as menstrual absorbent. I do not want to spend money for buying sanitary pads, but my two daughters use sanitary pads. I usually wash the clothes (used as menstrual absorbents) at the nearby pond. My two daughters also disposed sanitary pads nearby pond."

Excerpts from PT group

One participant (24 years old) said, "There are HHT attached with tube well. Family members use both HHT and tube well."

Another participant (43 years old) said, "In spite of having HHT attached with tube well, I prefer open site urination and defecation as I am used to with this practice since my childhood. Only my daughter-in-laws use HHT because of young age."

One participant (26 years old) said, "I use water for drinking and household chores from tube well nearby. I use sanitary pads and buy those from nearby health centre at low cost; often receive those from non-governmental organizations who frequently visit our village. I usually dispose of used sanitary pads under-ground."

Excerpts from HC group

One participant (29 years old) said, "HHT is being used by all family members. Water supply is sufficient because of presence of tube well proximal to my house. Family members use water for drinking and household chores from nearby tube well, but during monsoon, here due to the flood in each year, we need to use water from pond."

Another participant (41 years old) said, "I use water from nearby pond for household chores, use water for drinking from nearby tube well. I use clothes as menstrual absorbents. I wash private part once during menstrual days. I usually wash the used clothes (menstrual absorbents) nearby pond."

Another participant (25 years old) said, "I use sanitary pads and change it more than twice a day. I wash private part daily during menstruation. I usually dispose used sanitary pads nearby places."

Discussion

The present study aimed to understand WaSH practices of rural women from the state of West Bengal. The study involved women of both caste and tribal groups from rural part of Purulia and women of caste group from rural part of Howrah. Therefore, a comparative approach was reflected on these three groups of women living in distinct locales of West Bengal.

The study revealed that PC women could not be able to access safe water, mostly expended their energy to carry water from a distance, and reported scarcity of drinking water, particularly at summer. The urination and defecation at open site was largely practiced by them because of the substandard construction of HHT and/or the position of toilet beside living room. The attitude and practices towards menstrual hygiene remained unsatisfactory probably because of their paucity of knowledge regarding menstrual health management. Studies suggest that Purulia is considered to be the worst-performing district in terms of WaSH services in West Bengal.[14, 15] It was found that about 86% of rural people in Purulia still followed open site defecation and urination and reported complaint against substandard construction of the Government aided HHT; thus they used HHT as the alternative of other ancillary purposes.[16] On the other hand, Purulia being a drought-prone area, rural women commonly used to collect water by walking miles after miles with earthen pots, particularly at summer. Because of their hard struggle for water they remained aware of the importance of water conservation.[17] However, in the present study, PC women did not report any sort of water conservation practice despite their enormous grievance towards water quality and scarcity at summer.

PT women, from Birhor community could get access of toilets and had drinking water source within household premise. However, most of them never used HHT, preferred open site urination and/or defecation practices because of their long day's old habit. Despite the long-term struggle with cultural and religious identity, recently the Birhors in West Bengal tend to interact with mainstream society and participate slowly in various non-governmental and government-sponsored developmental programs[18] that probably develop positive attitude towards adoption of good menstrual health management among women as found in the present study. The reports of both NFHS 4 (2015-2016) and NFHS 5 (2019-2021) documented that tribal groups across different states of India showed a steady development in terms of decline in open defecation practice, acceptance of HHT facilities, and accessibility to drinking water source within premise and adoption of good habit like washing hand with soap before meals.[19] However, a study on Malayalee tribal group living at Jawadhi hills, TamilNadu demonstrated that WaSH practices remained significantly poor in association with low

per capita income of household.[20] Similarly, rural mothers belonging to both caste and tribal groups of Odissa were found failing to follow adequate WaSH practices, consequently that raised potential risk of getting infected with water borne diseases among their children of age under five years old.[21] In rural areas, several domestic and personal exposure (such as washing the cooking utensils, bathing, washing mouth, cooking, and drinking) into nearby pond could contaminate water source and caused to the outbreak of water born diseases,[22] that might have shown significant association with poor nutritional status of local people.[23]

HC women in the present study mostly reported use of HHT and drinking water source within premise. However, several preferred for open site defecation. A good habit of washing hand and private parts along with frequent changing of menstrual absorbent were also reported by them. But, the practice of unhygienic disposal of menstrual absorbents indicates their paucity of knowledge and ignorant attitude towards menstrual health management. Bera and Adhikari[24] showed that rural Bengalee Hindu women could not afford to maintain hygiene during menstruation because of their lower socio-economic standard, though they had a satisfactory level of knowledge and attitude towards menstrual health management. Studies from Odissa, Bihar and Chattisgarh found that rural women reported open site defecation practice despite having HHT, used clothes as menstrual absorbents and adopted the practice of unhygienic disposal of menstrual absorbents.[23,25] Several factors like non Hindu household, resource poor condition of the family, distant location of drinking water source, non acceptance of primary health centre visit, and non attendance in Government aided intervention programs were responsible to develop such attitude towards unhealthy WaSH practices among rural women.[23]

Like other studies,[5,7] the present study epitomized that despite the promotion of WaSH related policies, a gap still prevails in understanding towards the availability and utilization of WaSH services among rural women. Apart from this, unequal access to WaSH services as found in distinct groups of rural women living in same province also determines a large difference in WaSH utilization. Because of having inadequate knowledge on WaSH, rural women during their childbearing age are likely to be more susceptible to urinary infectious disease that may cause impaired menstrual health, declined fertility, adverse pregnancy outcome, and maternal and infant mortality[26].

Policy implication of the study

The present study findings would help the policy makers to recognize the notion regarding overall improvement in WaSH related quality of life of women in rural setting. Subsequently, it is imperative to focus on the investment for developing more advanced WaSH infrastructure, promotion of the district-wise awareness-generation campaign for imparting education on WaSH acceptance, proper utilization and the relevance of shifting social stigma and traditional cultural norms associated with unhealthy WaSH practices.

Strength and limitation

One of the major limitations of the study included a small sample size. Inclusion of both adolescent girls and menopausal women in this study could satisfactorily portray overall scenario of rural women, irrespective of age.

Studying issues associated with menstrual health management was the major strength. Inclusion of Birhor women also remained strength of the study.

Conclusion

The study showed a conspicuous difference in WaSH practices among rural women living in distinct locales of West Bengal. Intervention programs could impart education for uprising knowledge and attitude towards adoption of healthy WaSH practices among rural women. Furthermore, a multi-collaborator approach including efforts of both government and non-governmental organizations, local bodies and community engagement is required to increase accessibility and utilization of WaSH services in rural sector with a sustained commitment to achieving public health goals.

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Ethical Clearance: The objectives and methods of the study was reviewed and approved by the Research Ethics Committee of the Indian Council of Social Science Research (F. No. 02/92/2019-2020/MN/ICSSR/RP dated 31 October, 2019).

Conflicts of interest: not applicable

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