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Menstrual health and status of tribal adolescent girls of Balasore, Odisha

Tanushree Mahapatra *

Lecturer in Zoology, Swarnachud College, Mitrapur, Balasore, Odisha, India.

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Abstract

Lack of awareness, illiteracy, malnutrition, absence of personal hygiene and sanitation make menstrual situation worse for tribal girls. The aim of the current study to determine menstrual health, awareness among tribal adolescent girls, their source of information about menstruation before menarche, their menstrual hygiene practice, various cultural practices and restriction associated with it. Tribal community based cross sectional study was carried out on 450 tribal adolescent girls in various tribal areas of Balasore district of Odisha. Random sampling technique was used for selecting girls of the age group of 10-19 years. Data were collected by using interview guide. Only 39.5% of tribal girls aware about menstruation before menarche. Menstrual cycle was regular for 74.8% and 25.2% irregular for of girls. Around 61.7% girls used sanitary pads and rest used old clothes. All most all girls (100%) are restricted to attend religious function during their menstruation. To get rid from menstrual pain tribal adolescent girls drink a special herb juice, local name Ghushi or Gayasha (*Atriplex hortensis*) in Mitrapur panchayat of Balasore district. Use of sanitary pads for menstruation is more in late adolescent girls than early adolescent girls ($X^2=120.002$, $p=.00001$), girls who have literate mother than illiterate mother ($X^2=7.49$, $p= 0.01$), girls having housewife mother than mothers engaged in stone quarrying activities ($X^2=26.76$, $p=.00001$) and girls belong to higher economic classes (I,II, III) than lower economic classes (class IV, V) ($X^2=7.18$, $p=0.01$). Current study showed menstrual awareness and mother's education play a crucial role in maintaining menstrual hygiene.

Keywords: Tribal adolescent girls; Menstruation; Awareness; Restriction; Sanitary pads; Hygiene

1. Introduction

The tribal population constitute unique population as they live under primitive condition in geographically isolated remote area with their own social and cultural practice. Most of tribal girls are malnourished because of their primitive agricultural practice, low socio-economic status, lack of access to medical treatment and uncertainty food supply [1]. Adolescence is the period of shift from childhood to adulthood. Its means is to grow towards maturity. For girls it is marked by menarche that is first menstruation. She undergoes many physiological and psychological changes during this phase of life. Menarche, first menstrual period indicates the maturity of reproductive system and physiological growth. In India, menstruation is seen as unhygienic, impure and dirty and our cultural system imposed a lot of restrictions on menstruating girls [2]. This situation is worse for tribal girls across various parts of India. Majority of schedule tribe children are not enroll in school because of their economic issues [3]. Therefore a provision for educational opportunities forms a very important part of the programme for the welfare of the schedule tribes for enhancement of their awareness level. Irregular menstruation is common in tribal girls because of hormonal imbalance and lack of access to health care facilities.

Menstrual awareness and education are unspeakable words for many tribal women. Lack of awareness, illiteracy, malnutrition, absence of personal hygiene and sanitation are some factors responsible for tribal girls more vulnerable to reproductive diseases. Tribal girls generally neglected from their family. Various myths and misconception regarding

* Corresponding author: Tanushree Mahapatra

menstruation leads to several adolescent girls feel shame, fear and guilt to the entirely natural physiological process. The reaction to menarche (onset of menstruation) depends on awareness as well as manner in which a girl previously learn about menstruation. Lack of adequate information and knowledge about menstruation result in their use of unhygienic absorbent materials. Very few tribal girls seek medical advice although menstrual problems have serious impact on their reproductive health. Most of them feel hesitate to talk about menstruation and are afraid to approach medical treatment. So they manifest silent suffering and acceptance of menstrual problems. Out of various menstrual problems reported in tribal area, dysmenorrhea is most common and main reason for school absent and breakage of daily activities [4].

Health and education of girls and women depend upon their proper menstrual hygiene and sanitation practice. Menstrual hygiene depends upon family economic, cultural and educational status. Since many girls of our country particularly from tribal areas are not aware about menstruation complications, therefore they face various challenges and difficulties at every stage of their life. Therefore, it is very much essential to up to date knowledge about menstruation in rural tribal area among tribal adolescent girls and tribal mothers. Because mother is the first source of information about menstruation to her daughter.

Various studies conducted in Odisha [5], but recent data is not available for the tribal population of various tribal areas of Balasore district of Odisha.

The present studies conducted in tribal areas of Balasore district of Odisha. It was carried out with the objectives of determine menstrual awareness among tribal adolescent girls, their source of information before menarche, their menstrual hygiene practice, cultural practices and restriction associated with it. We also observed various menstrual complications of tribal adolescent girls during their periods and their home remedies practice to get relief from it. Current study demonstrated that a lesser number of adolescent girls were aware of using sanitary pads. The reason for using old clothes as an absorbent material could be because of socio-economic status, lack of access, high cost of pads etc. Despite subsidized pads being available to them, several cultural factors promote to use old clothes rather than sanitary pads. Used of unhygienic cloth may leads to the development of reproductive tract problems like vaginal inflammation, itching, rashes, urine infection, ovarian cancer etc.

2. Material and methods

2.1. Study design and setting

A cross sectional observation was carried out in various tribal areas of Balasore district of Odisha from June to December 2022.

2.2. Sample size

The sample of the present study comprised of 450 tribal adolescent girls in the age group of 10-19 of various tribal communities like Kondha, Kolha, Santala, Bhumija etc. of various tribal areas of Balasore district of Odisha. Random sampling technique was used for selecting girls of the age group of 10-19 years.

2.3. Data collection

The study was carried out from June to December 2022. A total of 450 tribal girls were interviewed. Data were collected by using interview guide. A report was developed with each girl and a personal interview was conducted by a female investigator. A pre-tested structured questionnaire designed in the local language was used to collect data. The parameters in this questionnaire included age of menarche, awareness of menstruation, source of information about menstruation, mother's education level, duration of bleeding, duration of menstrual cycle, types of absorbent use, number of absorbent used per day, level of hygiene, home remedies practice during menstruation etc. Menstrual abnormalities and restrictions practice during periods also assessed during interview. The time required for each interview was around 20-30 minutes. After collection of data, any menstruation related queries of students were solved.

2.4. Statistical analysis

Data was collected and entered in Microsoft excel worksheet for the purpose of analysis, calculation of chi square value and percentages. The statistical test of significance was decided at the level of P-value < 0.05.

The present study was approved by institutional ethical committee of Swarnachud College, Mitrapur, Balasore. Informed consent was obtained from all individual participants included in the study.

3. Results

Table 01 shows socio-demographic characteristics of tribal adolescent girls of Balasore district of Odisha. Out of 450 girls, 211 (46.8 %) were in early adolescent (10-14 years) and 239 (53.11%) were in late adolescence (15-19 years). Regarding mother's education, 391 (88.46%) were illiterate, 27 (6.1%) were educated up to the seventh standard, 24 (5.4 %) has studied up to 10th standard and no one completed graduation. 99 (22.3%) mothers of girls were housewives, whereas 343 (77.6%) were working women in local stone quarrying area. The majority of belong to lower-middle (31.55%) and lower socio economic classes (65.33%). Main reasons for not use of sanitary pads are high cost and lack of knowledge.

Table 1 Socio-demographic characteristics of tribal adolescent girls of study area

Socio-demographic characteristics	No.	%
Age group		
10-14 years	211	46.8%
15-19 years	239	53.11%
Education of mother		
Illiterate	391	88.46%
Up to 5 th standard	27	6.1%
Up to 7 th standard	24	5.4%
Graduate	0	0%
Working status of mother		
Housewife	99	22.3%
Working in stone quarrying area (unorganized sector)	343	77.6%
Socio economic status		
Upper class	0	0%
Upper middle class	0	0%
Middle class	15	3.3%
Lower middle class	142	31.55%
Lower class	293	65.33%

Table 02 shows the menstrual profile of tribal adolescent girls of study area. Regarding the menstrual profile of the girls, most of the tribal girls attained menarche up to the age of 13-14 years. The duration of menstrual cycle was found to be 21-35 days for most of the girls (68.4%) (Figure 01). The duration of bleeding was two to six days for the majority of the girls (74.4%) (Figure 02). The menstrual cycle was regular for most girls (74.8%) and some tribal girls also experienced irregular menstruating cycle (25.1%) (Figure 03).

Table 2 Menstrual profile of tribal adolescent girls

Age of menarche	No.	%
11 years	14	3.1%
12 years	38	8.4%
13 years	109	24.2%
14 years	197	43.77%
15 years	78	17.33%
16 years	14	3.1%
Duration of the menstrual cycle		
Up to 21 days	97	21.5%
21-35 days	308	68.4%
More than 35 days	45	10%
Duration of bleeding		
< 2 days	30	6.6%
2-6 days	335	74.44%
>6 days	85	18.8%
Menstrual pattern		
Regular	337	74.8%
Irregular	113	25.1%
Awareness about menstruation before onset of menarche		
Yes	178	39.5%
No	272	60.4%
Source of menstruation information		
Mother	98	55.05%
Friends	52	29.21%
Teacher	28	15.73%

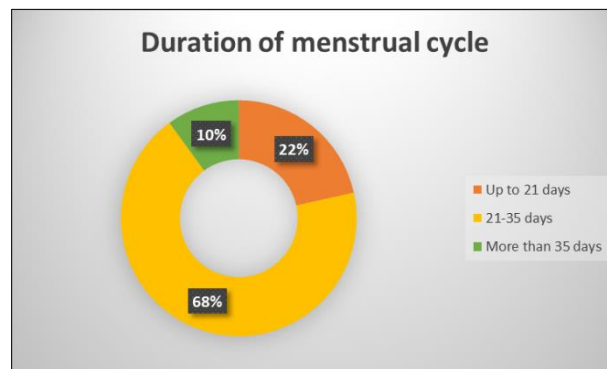


Figure 1 % of tribal adolescent girl's duration of menstrual cycle

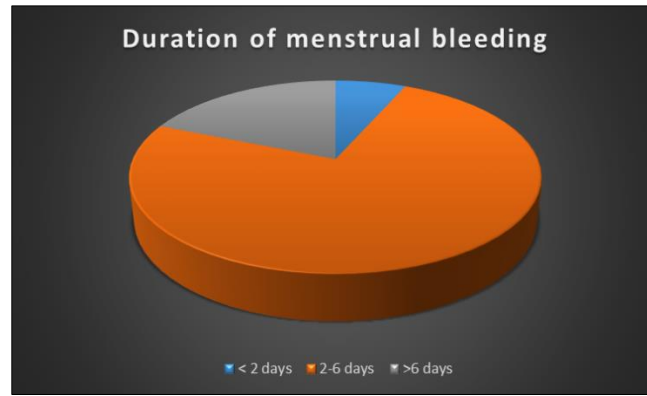


Figure 2 % of tribal adolescent girl’s menstrual bleeding duration

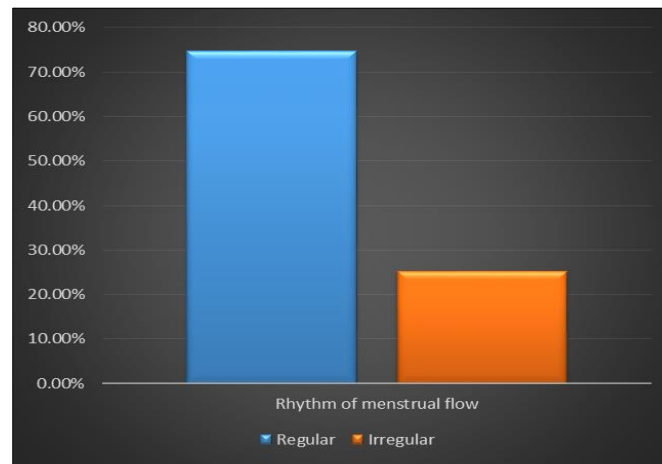


Figure 3 % tribal adolescent girls showing regular and irregular menstrual cycle

Table 03 shows adolescent girl’s practices during menstruation. Regarding practices of the adolescent girls, 278 (61.7%) used sanitary pads and 172 (38.2%) girls used old clothes. 122 (27.1%) girls changed the absorbent material once a day, 244 (54.2%) girls changed absorbents twice a day and 84 (18.6%) girls changed absorbents more frequently. 34.4% girls threw the absorbent material in the dustbin or buried them, but 21.5% threw it anywhere indiscriminately and only 5.7% girls collect and burnt them. In washing and reusing the absorbent material, 123 (71.5%) girls dried it inside the house and 49(28.4%) outside the house. The hygienic practice of washing external genitalia every time while changing the pad was followed by only 159 (35.3%) girls. Only 195 (43.3%) girls cleaned their external genitalia with soap and water.

Table 3 Adolescent girl’s practices during menstruation

Variable	Numbers	%
Material (absorbent) used		
Sanitary pads	278	61.7%
Old clothes	172	38.2%
Frequency of change of absorbent		
Once daily	122	27.1%
Twice daily	244	54.2%
More frequently	84	18.6%
Method of disposal of absorbent		
Washed and reused	172	38.22%

Collect and burnt	26	5.7%
Thrown in dustbin or buried	155	34.4%
Thrown anywhere	97	21.5%
Places of drying absorbent (n= 172)		
Inside house	123	71.5%
Outside house	49	28.4%
The practice of cleaning external genitalia		
Every time while changing the absorbent	159	35.3%
While bathing only	291	64.6%
Washing external genitalia with		
Only water	255	56.6%
Soap and water	195	43.3%

Table 04 shows restrictions imposed on girls during menstruation. The most important restrictions imposed on the girls during menstruation were not being allow to attend religious functions (100%) followed by 83.5% girls live in isolated places, many menstruating girls not allow to attend classes (24.4%). 48.8% girls not going out or not allow to play and 74% girls avoid of eating certain food as restriction imposed on them. 91.3% girls sleep on floor during menstruation and 89.1% girls not allow to enter into kitchen (Figure 04).

Table 4 Restrictions imposed on tribal adolescent girls during menstruation

Restrictions	Numbers	%
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%



Figure 4 % of tribal adolescent girls showing various restrictions during menstruation

Table 05 shows that use of sanitary pads for menstruation is more in late adolescent girls than early adolescent girls ($X^2=120.002$, $p= 0.00001$), girls who have literate mother than illiterate mother ($X^2=7.49$, $p= 0.01$), girls having housewife mother than mothers engaged in stone quarrying activities ($X^2=26.76$, $p= 0.00001$) and girls belong to higher economic classes (I,II, III) than lower economic classes (class IV, V) ($X^2 =7.18$, $p= 0.01$). The difference was discovered have statistical significance. Particularly in Mitrapur panchayat many tribal women engaged in stone quarrying activities and neglect their children.

Table 5 Socio demographic variation and use of sanitary pads during menstruation

Variable	Sanitary pad usage		Chi-square value (X^2)	P-value
	Yes (no=278)	No (no.= 172)		
Age (stage of adolescent)				
10-14 years (early adolescent)	74	137	120.0021	0.00001
15-19 years (late adolescent)	204	35		
Mothers education level				
Literate	44	7	7.49	0.01
Illiterate	234	113		
Mothers occupation				
Working in stone quarrying area	210	133	26.76	0.00001
Housewife	88	11		
Socioeconomic status				
Class- I,II, III	15	0	7.18	0.01
Class- IV, V	263	172		

Table 6 Menstrual related symptoms

Associated symptoms	Numbers of tribal girls experienced various menstrual associated symptoms	%
Fatigue	310	68.88%
Abdominal bloating	105	23.33%
Back pain	229	50.88%
Abdominal pain	410	91.11%
Change in bowel habits	195	43.33%
Breast tenderness	220	48.88%
Anxiety	250	55.55%
Dizziness	44	9.7%
Headache	150	33.3%
Vomiting and nausea	80	17.77%
Leg pain	110	24.44%
Body ache	175	38.88%
Dysmenorrhea	130	28.88%

Various menstrual related symptoms reported through interviews of many tribal adolescent girls like fatigue, abdominal bloating, back pain, abdominal pain, change in bowel habits, breast tenderness, anxiety, dizziness, headache, vomiting and nausea, leg pain, body ache, dysmenorrhea etc. % of tribal adolescent girls showing these symptoms shown in table 06 and figure 5.

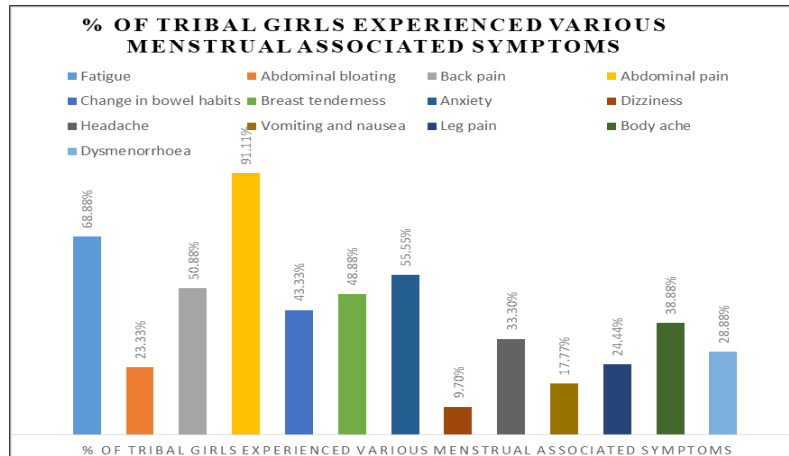


Figure 5 % of tribal adolescent girls experienced various menstrual associated symptoms

Through interview it was observed that many tribal adolescent girls suffered from various menstrual abnormalities or complications like dysmenorrhea, menorrhoea, hypo menorrhoea, break through bleeding and various premenstrual symptoms like constipation, acne, headache, nausea, pain in breast area, moodiness etc. % of girls of the study area showing these complications are mentioned in Table 07 and figure 06.

Table 7 Various types of menstrual complications experienced by tribal adolescent girls

Menstrual problem experienced by tribal girls	Numbers of tribal girls experienced	%
Dysmenorrhoea	130	28.88%
Menorrhoea	110	24.44%
Hypo menorrhoea	405	90%
Break through bleeding	105	23.33%
Premenstrual symptoms	356	79.11%

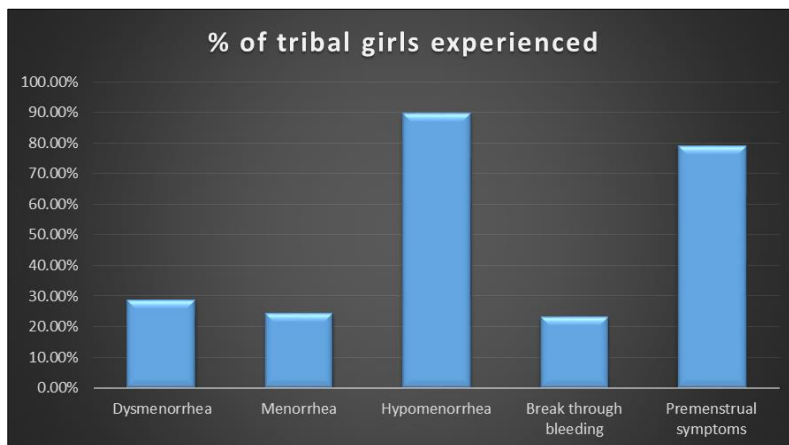


Figure 6 % of tribal adolescent girls experienced various menstrual abnormalities

3.1. Conviction about rituals and beliefs on menstrual hygiene

Much isolated and culturally oriented tribal women believe that menstruation is a secret issue of women and should not be exposed openly in society. Most of the tribal menstruating girls face various restrictions in attending or carrying out religious functions and activities as restrictions imposed by their family and particularly by their mothers. Many tribal girls in the present study areas believe that if they burn their used menstrual clothes or pads then in their old age they will definitely suffer abdominal burning sensation.

3.2. Belief in the usage of home remedies

Through interview it was observed that many tribal girls particular from Mitrapur panchayat of Balasore district drink a special herb juice, local name Ghushi plant or Gayasha plant (*Atriplex hortensis*) in order to get rid from menstrual pain. They also use various home remedies to get relief from menstruation and menstruation related problems like neem leaves, cumin seeds and jaggery for reducing body ache and abdominal pain. They also eat Bengal gram- jaggery mixture, raw egg-white, sesame laddos, and sesame oil during menarche and menstruation for strengthening their bones and to get relieve from menstrual aches.

4. Discussion

The present study showed that majority of tribal adolescent girls were in late adolescent stage than early adolescent. This observation is very much similar to Kansal et al. and Nagar et al. [6, 7]. But Sridhar et al., Pandit et al. and Khanna et al. found majority were early adolescence [8, 9, 10]. It is because of different socio demographic setting and methodology of study design. Mothers of majority tribal adolescent girls were illiterate (88.46%). It is very much similar to the reports of Sridhar et al. and Khanna et al. [8, 10].

Pandit et al. found majority mothers were completed their middle school followed by primary school, they observed very less illiterate mothers [9]. Nagar et al. found that majority mothers were completed high school [7]. It is reflected that female literacy rate in rural and tribal areas in India much poorer compared to urban areas. Because it is a community based tribal study so much of variations seen compared with the others findings and as per India 2011 census literacy rate among tribal was very low. Present study showed that there is a positive relationship between use of sanitary pads by tribal adolescent girls and their mother's educational status. Present study also showed that majority tribal mothers working in local stone quarrying areas of Balasore district (77.6%) and some are housewives (22.3%). Most of the tribal adolescent girls belong to lower economic classes which is similar to the finding of Sridhar et al. [8].

In the present study, most of the tribal girls menarche at the age of 13-14 which is similar to study conducted in Karnataka in 2020 and it is comparable to studies conducted in Madhya Pradesh and Andhra Pradesh (11-16 years of range) [11, 12, 13]. Menstrual awareness before onset of menarche was found to be 39.5% in this study similar to the study conducted in Madhya Pradesh (39%) [12]. In contrast, awareness was extremely low among tribal girls in Karnataka in 2022 (12%) [14]. The duration of menstrual cycle was found to be 21-35 days for majority tribal girls (68.4%) similar to study conducted by Sudhir et al. in Nagpur district [8]. Still many tribal adolescent girls of the study area used old clothes as absorbent during menstruation (38.2%).

The best way of disposal of sanitary pads, that is throwing in a dustbin was followed by only 34.4% of girls in this present study whereas around 60% of tribal girls practice this method of disposal found in studies conducted Karnataka and Uttarakhand [11, 15].

Current studies showed several restrictions imposed on menstruating tribal girls like restriction to attend religious functions (100%), restriction in routine household activities (89.1%), not allow to attend classes (24.4%), live in isolated places (83.5%), not going out or playing (48.8%), avoid eating certain foods (74%), bathing (50.4%) and sleeping on floor (91.3%) similar to a study conducted in Delhi in 2021, restrictions in religious activities (94%) followed by routine activities restrictions (69%) and restrictions in academic activities (60%) [16].

In the current study, a significant relationship found between use of sanitary pads by adolescent tribal girls and their ages (early and late adolescent), mother's education (literate and illiterate), and economic status (higher economic class (class I, II, III) and lower economic class (class IV, V)). Similar observation was reported in Uttar Pradesh and Bihar in 2021 also show significant association between sanitary pad usages and mother's education [17].

Various menstrual related symptoms were observed in many tribal girls like fatigue, abdominal bloating, back pain, abdominal pain, change in bowel habits, breast tenderness, anxiety, dizziness, headache, vomiting and nausea, leg pain, body ache and dysmenorrhea similar to the study conducted by Pramila Jena et al. 2017 [5]. To get relief from these

problems many tribal adolescent girls used home remedies like neem leaves, cumin seeds, jaggery etc. similar to the study conducted by Sudhir et al. [8]

5. Conclusion

The present study observed that many tribal adolescent girls did not practice proper menstrual hygiene during their periods. Many of them still faced several restrictions during menstruation. It was observed through interview, many early tribal adolescent girls hesitate to discuss about their menstruation and still believe in many misconceptions and superstitions. Major cause of suffering from menstrual related problems among tribal girls their lack of knowledge, insufficient information and awareness about various complications of menstruation. Educating mothers in tribal areas helpful to break various misconception because she is the first source of information about menstruation to her daughter. It is very much essential to create a healthy atmosphere for menstrual awareness and promote menstrual hygiene among tribal girls to break the barrier.

Compliance with ethical standards

Acknowledgments

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Statement of ethical approval

The present study was approved by our institutional ethical committee.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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