

Research Article

A Cross-Sectional Study on Knowledge of Breastfeeding and Knowledge and Practice of Personal Hygiene and Sanitation among Antenatal Mothers in a Tertiary Hospital of Kolkata, West Bengal

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A B S T R A C T

Background: Breastfeeding is beneficial for both the mother and child. Exclusive breastfeeding protects the child from various infections. It reduces the risks of ovarian and breast cancer in the mother. Poor hygienic and sanitary practices during pregnancy may lead to various infective conditions and adverse obstetric outcomes leading to increased maternal and neonatal morbidity and mortality.

Objectives: To determine the breastfeeding knowledge and knowledge and practice of personal hygiene and sanitation among the antenatal mothers.

Methodology: A cross-sectional study was performed in a tertiary hospital in Kolkata. 170 antenatal mothers were selected for the study. Data was collected on breastfeeding knowledge and knowledge and practice of personal hygiene and sanitation.

Result: 41.8% of antenatal mothers were between 25-30 years of age. According to 98.2% opined that breastmilk should be fed to the child first after birth. 75.9% of them cleaned their teeth twice daily, 72.4% bathed once in a day. 83.5% of them regularly washed their nipples with soap and water. 99.4% washed their hands before eating and after using the toilet, 75.9% had no idea about the 6 steps of hand washing. 37.7% used domestic filter as their source of drinking water. 7.1% used community toilets and 44.7% knows the usefulness of sanitary toilet.

Conclusion: In this study, it was found that most of the mothers had adequate knowledge about the importance of colostrum and exclusive breastfeeding and the correct time of initiating complementary feeding. Knowledge as well as practices of hygiene and sanitation were also found to be satisfactory.

Keywords: Antenatal, Breastfeeding, Hygiene, Knowledge, Practice, Sanitation

Introduction

On the basis of nutritional and economic grounds, breast milk is the ideal food for infants in the first months of life. It provides the necessary nutrients and energy to an infant in the first months of life and it continues to provide them upto half or more of a child's nutritional needs during the second half of the first year and upto one-third during the second year of life.¹

Under normal conditions, Indian mothers secrete 450-600 ml of milk daily with 1.1 gm protein per 100mL; the energy value of human milk is 70kcal/100mL.² Inadequate milk intake leads to lethargy, delayed passing of stool, decreased urine output, weight loss greater than 7% of body weight, hypernatremic dehydration and increased hunger in infants.³

Breast milk is often referred to as the "first vaccination for babies against diseases"⁴ by virtue of the anti-infective factors present in it which provide natural passive immunity to the child. It provides protection against acute disorders like diarrhoea, urinary tract infections, otitis media, necrotising enterocolitis, infant botulism, septicaemia, chronic disorders like Type 1 Diabetes Mellitus, Coeliac disease, Crohn's disease, childhood cancer (lymphoma, leukaemia), recurrent otitis media, allergy; obesity, thereby decreasing hospitalisations and infant mortality.³ It promotes improved cognitive development (maybe due to the presence of ω -3 fatty acids, particularly docosahexaenoic acid).⁵

The American Academy of Paediatrics recommends exclusive breastfeeding for at least the first 4 months of life and preferably the first 6 months of life to tackle infant nutrition and survival.³

The health and nutritional status of mothers and children are interlinked. Breastfeeding contributes much to the maternal health and well-being, reducing the risks of ovarian and breast cancer.⁶ It also reduces the chances of post-partum psychosis and post-partum haemorrhage by accelerating the process of uterine involution.⁶

Antenatal period is a vital period in a woman's life. Maintenance of personal hygiene during this period is of utmost importance as pregnancy is often associated with increased susceptibility to infections. This maybe due to the physiological, anatomical and biochemical changes that occur in the body of antenatal mothers particularly the increase in hormonal levels, suppression of the immune system and may also account for the increase in the excretion of sweat, mucous, urine, saliva etc.⁷

Unhygienic practices prevalent among the antenatal mothers include use of insanitary latrines, improper washing of hands without soap, use of dirty and wet underwear etc. which increase the susceptibility to infections.

Hormonal changes during pregnancy along with neglected oral hygiene often lead to gingivitis and periodontitis in the antenatal mothers.⁸ The physiological increase in plasma volume results in urine concentration and about 70% of pregnant women develop glycosurea which facilitates bacterial growth in urine. Thus genital hygiene during pregnancy is to be stressed as pregnancy enhances the progression from asymptomatic to symptomatic bacteriuria which may lead to pyelonephritis and obstetric outcomes like prematurity, low birth weight and increased neonatal mortality.⁹

Aims and Objectives

- To determine the breastfeeding knowledge among the antenatal mothers in a tertiary hospital of Kolkata.
- To determine the knowledge and existing practice of personal hygiene and sanitation among the antenatal mothers in a tertiary hospital of Kolkata.

Material and Methods

Study Design: It is an observational, descriptive and cross-sectional study.

Study Setting: The study was conducted in the Department of Gynaecology and Obstetrics of a tertiary hospital in Kolkata.

Study Period: The study was completed in a period of two months, i.e, between 1.07.19 and 1.09.19.

Study Population: All the antenatal mothers attending the OPD and those admitted in the Obstetrics ward of the Gynaecology and Obstetrics Department of a tertiary hospital in Kolkata during the study period.

Study Technique

- The questionnaire was pre-tested among 30 antenatal mothers prior to the initiation of the study and necessary modifications were made accordingly. The participants of the pretest were not included in the study.

Sampling Technique

- Consecutive sampling was done for the antenatal mothers attending the OPD of the Gynaecology and Obstetrics Department of a tertiary hospital in Kolkata during the study period.
- Complete enumeration was done for the antenatal mothers admitted in the Obstetrics ward of the Gynaecology and Obstetrics Department of a tertiary hospital in Kolkata during the study period.
- **Sample Size:** A total of 120 antenatal mothers who visited the OPD of the Gynaecology and Obstetrics Department of a tertiary hospital in Kolkata during the study period was selected for the study by consecutive

sampling. Another 50 antenatal mothers admitted in the Obstetrics ward of the Gynaecology and Obstetrics Department of a tertiary hospital in Kolkata during the study period were selected for the study by complete enumeration. Therefore, the total sample size is 170 (120+50).

- **Selection Criteria:** The study subjects were selected as per the following criteria:

Inclusion Criteria

Antenatal mothers attending the OPD and those admitted in the Obstetrics ward of a tertiary hospital in Kolkata who were willing to participate in the study and gave written consent were included in the study.

Exclusion Criteria

- Antenatal mothers who were critically ill and not in a state to participate in the study.
- Antenatal mothers not willing to participate in the study and not giving written consents.

Method of Data Collection

- The antenatal mothers fulfilling the inclusion criteria were chosen for participation in the study.
- After taking informed consent, they were interviewed and given a pre-designed pre-tested questionnaire for data capture.
- The hygiene practices of the antenatal mothers admitted in the Obstetrics ward of the Gynaecology and Obstetrics Department of a tertiary hospital in Kolkata were also observed during the study period.
- They were assured that their personal details would be kept private and used solely for the purpose of this study.

Study Tools

- A pre-designed pre-tested questionnaire for data collection. The questionnaire consists of the following parts:

Part 1: It includes the personal details of the participating antenatal mothers (name, age, address, number of pregnancies etc.) and their socio-demographic details (literacy, occupation, family income).

Part 2: It includes questions related to the knowledge regarding the importance and necessity of breastfeeding.

Part 3: It includes questions related to the knowledge and practice of personal hygiene and sanitation.

- Informed consent form was also filled before data collection.

Data Analysis: The collected data was analysed by descriptive and analytical statistical methods.

Ethical Clearance: Ethics approval was obtained from the

Institutional Ethics Committee prior to the conduction of the study.

Informed consents were also obtained from the participating antenatal mothers.

Result

Sociodemographic Profile

It was found from the study that majority of the interviewed antenatal mothers were housewives (98.2%) and 41.8% were in the age group 25-30 years. Equal proportion of the antenatal mothers resided in urban and rural areas. 46.5% of the antenatal mothers had completed only their secondary education. 2.9% of them were illiterate. Among the husbands, majority (48.8%) had completed only their secondary education. According to modified BG Prasad socioeconomic classification (2019),¹⁰ majority of the study population (43.5%) belonged to upper middle class. 63.5% of the antenatal mothers were primigravida while the rest were multigravida. Majority of them (58.8%) had had more than 4 antenatal checkups at the time of the interview (Table 1).

Table 1. Distribution of the Interviewed Antenatal Mothers according to their Sociodemographic Profile (N= 170)

	Number	Percentage
Age Group of Antenatal Mother		
Between 17-20 years	16	9.4%
Between 20-25 years	66	38.8%
Between 25-30 years	71	41.8%
Above 30 years	17	10%
Occupation of Antenatal Mother		
Housewife	167	98.2%
Employed	3	1.8%
Residence of Antenatal Mother		
Urban	85	50%
Rural	85	50%
Educational Qualification of Antenatal Mother		
Illiterate	5	2.9%
Primary	15	8.8%
Secondary	79	46.5%
Higher Secondary	23	13.5%
Graduate	34	20%
Post-graduate	14	8.3%
Educational Qualification of Husband		
Illiterate	3	1.8%
Primary	18	10.6%

Secondary	83	48.8%
Higher Secondary	18	10.6%
Graduate	43	25.3%
Post-graduate	5	2.9%
Socio-Economic Status (According To Modified BG Prasad Classification 2019¹⁰)		
Upper Class	66	38.8%
Upper Middle Class	74	43.5%
Middle Class	10	5.9%
Lower Middle Class	11	6.5%
Lower Class	9	5.3%
Gravida		
Primigravida	108	63.5%
Multigravida	62	36.5%
Number of Antenatal Checkups During Pregnancy		
1	12	7.1%
2	17	10%
3	18	10.6%
4	23	13.5%
>4	100	58.8%

Breastfeeding Knowledge

It was observed in the study that 45.9% of the interviewed antenatal mothers were explained about the importance of exclusive breastfeeding during the first 6 months by health staffs during these visits.

Majority of them (73.5%) believed that colostrum should be fed to the child. Among them, 66.4% cited growth and development of child as well as development of immunity in the child as the reasons for feeding colostrum while 0.8% of them was of the opinion that colostrum is rich in cholesterol and should be fed to the child and the remaining 32.8% did not know why it should be fed. 8.8% of the antenatal mothers opined that colostrum should be discarded while 17.7% did not know what colostrum is (Table 2).

Table 2. Distribution of the interviewed antenatal mothers according to their breastfeeding knowledge (N= 170)

	Number	Percentage
Instance of Any Health Staff Explaining about the Importance of Exclusive Breastfeeding for the First 6 Months		
Yes	78	45.9%
No	92	54.1%
What Should be Done with the Colostrum		

To be fed to the child	125	73.5%
To be discarded	15	8.8%
Do not know what colostrum is	30	17.7%
Importance of Feeding the Colostrum (n=125)		
It protects the child from future diseases and is rich in nutrients that help in the growth of the child	83	66.4%
Other reasons	1	0.8%
Do not know	41	32.8%
What Should be First Fed to the Child after Birth		
Breastmilk	167	98.2%
Honey	3	1.8%
Water or sugar water	-	-
Breastmilk Supplements	-	-
What will Provide the Best Nutrition to the Child During the First 6 Months		
Exclusive breastfeeding	161	94.7%
Breastmilk supplements	2	1.2%
Combined breastfeeding and breastmilk supplements	7	4.1%
If Breastmilk Supplements alone or with Breastmilk is considered to be the Best for the Child, the Reason behind such thought (n=9)		
Relatives or friends have told so	3	33.3%
Advertisements have convinced the importance of breastmilk supplements	6	66.7%
The Time for which the Child Should be Exclusively Breastfed		
The first 2 months	6	3.5%
The first 4 months	5	2.9%
The first 6 months	137	80.6%
Till 1 year	6	3.5%
>1 year	16	9.5%
Water can be Fed to the Child along with Breastmilk During Exclusive Breastfeeding		
Yes	93	54.7%
No	63	37.1%
Do not know	14	8.2%
How often the Child Should be Breastfed		
Every 10-15 mins	1	0.6%
Every 1-2 hours	74	43.5%
Every 2-3 hours	23	13.5%

Every time the child seems hungry	64	37.7%
Do not know	8	4.7%
Time when First Food to be Given with Breastmilk as Supplementary Feed		
Within 6 months after birth	14	8.2%
After 6 months post birth	156	91.8%
Breastfeeding should be Completely stopped when the Child is		
Under 6 months of age	1	0.6%
At 6 months of age	8	4.7%
Between 6-12 months of age	5	2.9%
>12 months of age	81	47.7%
>24 months of age	75	44.1%
In Case of Employed Women, Once the Mother Rejoins Work within 6 Months after the Birth of the Child, the Child will then be Fed (n=3)		
Only breastmilk	-	-
Breastmilk supplements	-	-
Combined breastmilk and breastmilk supplements	3	100%
Practice of Taking any Drugs During Pregnancy without the Knowledge of the Doctor		
Yes	-	-
No	170	100%
Know if Certain Drugs Can affect the Child through Breastmilk if they are Taken by the Mother during the Lactation Period		
Yes	33	19.4%
No	137	80.6%
If yes, the Drugs that can affect the Child through Breastmilk include (n=33)		
Analgesics	4	12.1%
Anti-allergic drugs	5	15.2%
Cannot name any	24	72.7%
Opinion about the Statement "Breastmilk Supplements and Breastmilk have the Same Nutritional Value."		
True	39	22.9%
False	131	77.1%
Opinion about the Statement "Breastmilk Supplements are Digested Better than Breastmilk."		
True	34	20%
False	136	80%

Among those who believed that colostrum should be fed to the child included 62.9% of the primigravida women and 91.9% of the multigravida women. 9.25% of the primigravida women and 8% of the multigravida women opined that it should be discarded while 17.7% of the study participants who did not know what colostrum is were all primigravida (Figure 1). Therefore, the knowledge about colostrum was better among multigravida women.

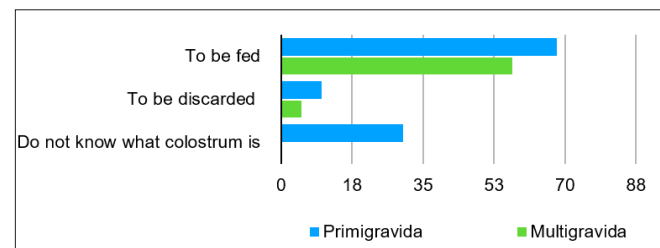


Figure 1. Knowledge about colostrum

Table 3. Distribution of the Interviewed Antenatal Mothers according to their Knowledge and Practice of Oral Hygiene (N= 170)

	Number	Percentage
Number of Times of Brushing/ Cleaning Teeth		
Once a day	34	20%
Twice a day	129	75.9%
More than twice a day	7	4.1%
Importance of Daily Cleaning the Teeth		
So that food is not stuck anywhere in the mouth and the mouth is kept clean	71	41.8%
To prevent gum diseases	26	15.3%
To prevent bad breath	68	40%
Do not know	5	2.9%
Time when the Teeth are Cleaned		
Before breakfast	33	19.4%
Before going to bed at night	1	0.6%
Both before breakfast and before going to bed at night	129	75.9%
Every time after major meals	4	2.4%
Others	3	1.7%
Importance of cleaning the teeth before going to bed at night (n=136)		
To prevent dental caries	132	77.6%
Just to prevent bad breath	9	5.3%
Just to keep the mouth clean	19	11.2%
Do not know	10	5.9%

The Teeth are Cleaned with		
Toothbrush	166	97.6%
Fingers	2	1.2%
Twigs	2	1.2%
If Toothbrush is Used, Number of Times it is Changed (n=166)		
Once in a month	40	24.1%
Once in 2 months	58	34.9%
Once in 3 months	33	19.9%
Once in 6 months	25	15.1%
Every time when the brush is damaged	10	6%
Substance Used to Clean the Teeth		
Toothpaste	166	97.6%
Tooth powder	2	1.2%
Guraku	1	0.6%
Ash	1	0.6%

Most of the antenatal mothers (98.2%) opined that breastmilk should be fed to the child first after birth while the others were of the opinion that honey should be fed first. 94.7% of the study population answered that exclusive breastfeeding is the best source of nutrients for their children in the first 6 months of life while the remaining considered breastmilk substitutes alone or with breastmilk as the best source. Majority (80.6%) of the antenatal mothers opined that the child should be exclusively breastfed in the first 6 months and 54.7% believed that water should be given to the child during exclusive breastfeeding. Majority (43.5%) of them answered that their children should be breastfed every 1-2 hours. Most of them (91.8%) knew about the correct age of starting complementary feeding. 47.7% of the antenatal mothers opined that breastfeeding should be stopped after 1 year post the birth of their child while 44.1% were of the opinion that it should be stopped after 2 years.

All the working antenatal mothers preferred to feed their children combined breastmilk and breastmilk supplements once they rejoined work within 6 months after their delivery.

Majority of the interviewed antenatal mothers (80.6%) did not know that certain drugs can reach their children through breastmilk and affect them accordingly.

77.1% of the antenatal mothers did not believe that breastmilk supplements and breastmilk have the same nutritional value while 80% believed that breastmilk is digested faster than breastmilk supplements (Table 2).

Knowledge and Practice of Oral Hygiene

The study revealed that majority of the interviewed antenatal mothers (75.9%) cleaned their teeth twice daily, i.e, before breakfast and before going to bed at night among which 53.5% of the antenatal mothers belonged to urban population while 46.5% of them belonged to rural population. 19.4%, 0.6% and 2.4% cleaned their teeth only after breakfast, before going to bed at night, after every major meal, respectively while 1.7% cleaned their teeth after every major meal and after bathing.

Most of the antenatal mothers (77.6%) believed that it is important to clean their teeth before going to bed at night to prevent dental caries. Majority (97.6%) used toothbrush and toothpaste to clean their teeth. 34.9% changed their toothbrush once in 2 months and 15.1% once in 6 months (Table 3).

Table 4. Distribution of the Interviewed Antenatal Mothers according to their Knowledge And Practice Of Bathing And Genital Hygiene (N= 170)

	Number	Percentage
Number of Times the Mothers Take Bath		
Once a day	123	72.4%
Twice a day	42	24.7%
More than twice a day	5	2.9%
Importance of Daily Bathing		
Just to keep the body clean and to keep away bad odour	63	37.1%
To feel refreshed	17	10%
To keep away germs and diseases	90	52.9%
Number of Times Shampoo is Used to Clean Hair		
Once a week	48	28.2%
2-3 times a week	122	71.8%
How Often Soap is used while Bathing		
Every time while bathing	150	88.2%
Occasionally	20	11.8%
Never	-	-
Clothes Changed after Bathing		
Yes	162	95.3%
No	8	4.7%
Number of Times the Genital Area is Cleaned		
Every time after going to the toilet	60	35.3%
Twice a day	17	10%
Once a day	76	44.7%

Once in 2 days	7	4.1%
Once a week	6	3.5%
Never	4	2.4%
Soap Used to Wash the Genital Area		
Yes	130	76.5%
No	40	23%
Nipples Cleaned Regularly with Soap and Water While Bathing		
Yes	142	83.5%
No	28	16.5%
Importance of Cleaning Nipples Regularly with Soap and Water (n=142)		
Just to keep the nipples clean	37	26.1%
To keep the nipples free from germs so as to protect the newborn from infections during the lactation period	100	70.4%
Do not know	5	3.5%
How Often the Undergarments are Changed during Pregnancy		
Once a day	44	25.9%
Twice a day	38	22.3%
Once in 2 days	2	1.2%
Once a week	1	0.6%
Do not use undergarments	85	50%
Importance of Changing the Undergarments (n=85)		
To maintain intimate hygiene	46	54.1%
To prevent infection due to sweating	16	18.8%
Do not know	23	27.1%
Undergarments Washed Daily (n=85)		
Yes	82	96.5%
No	3	3.5%

Knowledge and Practice of Bathing and Genital Hygiene

It was found from the study that majority of the interviewed antenatal mothers (72.4%) bathed once in a day while 71.8% and 88.2% used shampoo 2-3 times a week to clean their hair and soap every time while bathing, respectively. 52.9% believed bathing is important to keep away germs. Majority (95.3%) changed their clothes after bathing. Most of them (44.7%) cleaned their genital area once daily while 2.4% are not in a habit of cleaning their genital area. Majority (76.5%) used soap and water to clean their genital area. Only 1 antenatal mother answered

that she cleaned her genital area with mud. 83.5% of the antenatal mothers washed their nipples with soap and water regularly among which 70.4% were of the opinion that this is important to protect the newborn from any infection during the lactation period by keeping their nipples clean. 50% of the antenatal mothers were not in a habit of using undergarments during pregnancy while the remaining 50% used undergarments among which majority (96.5%) cleaned their undergarments daily (Table 4).

Table 5. Distribution of the Interviewed Antenatal Mothers according to their Knowledge and Practice of Hand Washing (N= 170)

	Number	Percentage
Hands Washed Before Eating		
Yes	169	99.4%
No	1	0.6%
Hands Washed after Defecation/ Using the Toilet		
Yes	169	99.4%
No	1	0.6%
Hands Washed Before Serving Food		
Yes	165	97.1%
No	5	2.9%
Hands Washed every time after Returning Home from Outside		
Yes	166	97.6%
No	4	2.4%
Hands Washed after Cleaning anyone Else's (Elderly, Sick, Children) Stool/ Urine		
Yes	170	100%
No	-	-
How Often Soap is Used While Wasing Hands		
Every time	122	71.8%
Occasionally	45	26.5%
Never	3	1.7%
Importance of Washing Hands with Soap		
To keep the hands free from germs and prevent diseases	149	87.6%
Do not think it is important	21	12.4%
Know about the 6 Steps of Hand Washing		
Yes	41	24.1%
No	129	75.9%
If Yes, Can Demonstrate the 6 Steps (n=41)		
Yes	25	61%
No	16	39%

Table 6. Distribution of the Interviewed Antenatal Mothers according to their knowledge and Practice of Cutting Nails (N= 170)

	Number	Percentage
How often Nails are Cut		
Weekly	110	64.7%
Monthly	20	11.8%
Every alternate month	3	1.7%
Every time the nails grow big	37	21.8%
Importance of Cutting the Nails Regularly		
To keeps away germs as germs stuck in the nails can cause diseases like diarrhoea etc	150	88.2%
Long nails look untidy	18	10.6%
Do not know	2	1.2%
Have a Habit of Biting Nails		
Yes	33	19.4%
No	137	80.6%

Knowledge and Practice of Hand Washing

The study revealed that majority of the interviewed antenatal mothers washed their hands before eating (99.4%), after using the toilet (99.4%), before serving food (97.1%) and every time after returning home from outside (97.6%) while all of them washed their hands after cleaning anyone else's stool and urine. Most of them (71.8%) used soap every time while washing hands while 26.5% used it occasionally and 1.7% did not use soap at all to wash their hands. 87.6% believed washing hands with soap is important to keep away germs and diseases. Majority (75.9%) did not know about the 6 steps of hand washing (Table 5).

Knowledge and Practice of Cutting Nails

The data provided in the table shows that 64.7% of the interviewed antenatal mothers had a habit of cutting their nails weekly and majority(88.2%) opined that cutting the nails at regular intervals helps to keep away germs and diseases. 19.4% had a habit of biting their nails (Table 6).

Knowledge and Practice of Sanitation

It was observed in the study that majority of the interviewed antenatal mothers (37.7%) used domestic filter as their source of drinking water.

92.9% of the interviewed antenatal mothers had a toilet in their house while 7.1% used community toilets. Majority (55.3%) answered that their toilets are cleaned once a week. Most of them (44.7%) opined that use of toilet is

necessary to prevent access of animals and flies to the urine and faecal matter and 31.1% answered that it is necessary to prevent pollution of ground water and soil (Table 7).

Table 7. Distribution of the Interviewed Antenatal Mothers according to their Knowledge and Practice of Sanitation (N= 170)

	Number	Percentage
Source of Drinking Water		
Packaged water	47	27.6%
Domestic filter	64	37.7%
Tube well	52	30.6%
Dug well	5	2.9%
Pond water	2	1.2%
Have a Toilet in the Household		
Yes	158	92.9%
No	12	7.1%
Use a Community Toilet		
Yes	12	7.1%
No	158	92.9%
How Often the Toilet is Cleaned		
Every day	27	15.9%
2-3 times a week	33	19.4%
Once a week	94	55.3%
Once in 2 weeks	13	7.7%
Once a month	3	1.7%
Importance of Using a Toilet for Urination and Defecation		
Prevent pollution of ground water and soil	53	31.1%
Prevent nuisance of odour and unsightly appearance	37	21.8%
Prevent access of animals and flies	76	44.7%
Provide privacy and security	4	2.4%

Discussion

Regarding and sociodemographic profile, majority of the interviewed antenatal mothers (98.2%) in the current study were housewives and 41.8% was in the age group 25-30 years. 97.1% of them was literate with majority (46.5%) having completed their secondary education. Among the hus-bands, 1.9% was illiterate. According to modified BG Prasad socioeconomic classification (2019),¹⁰ majority of the study population (43.5%) belonged to upper middle class. 58.8% had had more than 4 antenatal checkups at

the time of the interview. In the study conducted by Ray et al. (2012) in a rural community of West Bengal, 95.2% of the antenatal mothers were housewives and majority of them (68.7%) was between 19 and 25 years of age. 18.1% of the antenatal mothers were illiterate while among the husbands, 10.8% were illiterate. According to BG Prasad socioeconomic classification, 49.5% of them belonged to the lower middle class.¹¹ In the same study, majority of them (60.4%) were multigravida¹¹ in contrast to the present study where majority (63.5%) of the antenatal mothers were primigravida. Patrick Martial Nkamedjie Pete et al. (2013) observed in their study in Cameroon that majority of the participating mothers (46.2%) was between 15-25 years of age 33.8% were housewives and 2.4% had had no education at all.¹²

Regarding breastfeeding knowledge it has been observed in the present study, that 73.5% of the antenatal mothers intended to feed colostrum to the newborn among which 66.4% cited growth and development of child as well as development of immunity in the child as the reasons for feeding colostrum. 8.8% of the antenatal mothers opined that colostrum should be discarded while 17.7% did not know what colostrum is. The knowledge about colostrum was higher among multigravida women. 98.2% opined that breastmilk should be fed to the child first after birth while the others were of the opinion that honey should be fed first. 94.7% of the study population answered that exclusive breastfeeding is the best source of nutrients for their children in the first 6 months of life. 54.7% believed that water can be given to the child during exclusive breastfeeding. 43.5% answered that their children should be breastfed every 1-2 hours. 91.8% knew about the correct age of starting complementary feeding. 44.1% of the antenatal mothers were of the opinion that breastfeeding should be completely stopped 2 years after the birth of the child. 77.1% of the antenatal mothers did not believe that breastmilk supplements and breastmilk have the same nutritional value while 80% believed that breastmilk is digested faster than breastmilk supplement. Ray et al. (2012) observed in a rural community of West Bengal that 57.8% of the antenatal mothers considered breastmilk as the ideal food that is to be provided to the child after birth while the remaining opined that honey, water etc. should be fed to the child first after birth. 63.9% of them knew that their child should be exclusively breastfed during the first 6 months of life while 71.1% of the study participants knew about the correct age of beginning complementary feeding and 96.4% believed that breastfeeding was essential for the growth and development of the child and also for the prevention of infections. It was observed in the same study that 71.1% of the antenatal mothers was aware that breastfeeding should be continued for more than

2 years along with other food while 79.5% knew that it can be continued during any illness.¹¹ De et al. reported that 39.6% of the antenatal mothers in their study (2015) in Kolkata believed colostrum to be beneficial for the newborn while 9.1% considered it to be harmful and 51% did not know what colostrum is. 81.3% opined that breastmilk should be fed to the newborn first after birth. 70.8% of participants of the same study was aware about exclusive breast-feeding and 69.1% knew that it should be continued for the first 6 months. 73.5% opined that their children should be demand fed. They also observed that 54.2% of the antenatal mothers believed that breast-feeding can be continued during any illness.¹³ According to another study conducted between January 2015 and December 2016 in Nalanda, Bihar by Tiwari et al, only 18% of the antenatal mothers of the study population knew about exclusive breastfeeding. However, knowledge about breastmilk supplements was much higher (76%). Majority of the antenatal mothers did not know what colostrum is. It was observed in the same study that the role played by medical fraternity in imparting knowledge about the nutrition of the infant was minimal (18%).¹⁴

Batool Karimi et al observed that among antenatal mothers in Semnan, Iran, 77.5% believed that colostrum should be fed to the newborn. 78.5% believed that breast milk led to better development of their children in comparison to formula feeding and 94% considered breastmilk to be more nutritious than the formulated milk products.¹⁵ According to a cross-sectional analytical study (2014) conducted among primiparous and multiparous mothers in Wajir District hospital, Wajir County, Kenya by Mahat Jimale Mohamed et al., 98.6% and 86.8% of the primiparous and multiparous mothers respectively, in the study population was aware that breastmilk should be the baby's first feed after birth. 87.6% and 84.7% of the primiparous and multiparous mothers, respectively knew that colostrum should be fed to the child. 78.1% and 78.5% of the primiparous and multiparous mothers, respectively, knew that their child should be exclusively breastfed during the first 6 months of life. 75% and 67.4% of the primiparous and multiparous mothers, respectively knew about the correct age of beginning complementary feeding.¹⁶ In a study conducted among antenatal mothers between December 2015 and February 2016 in Edward Francis Small Teaching Hospital, Banjul, The Gambia, Senghore et al found that the proportion of women with sufficient knowledge on exclusive breastfeeding and intended to practise exclusive breastfeeding were 60.2% and 38.6% respectively, while only 34.4% received counselling about breastfeeding.¹⁷ In a study in Shanghai, China it was observed that 84.3% of the antenatal mothers believed that colostrum should be fed to the newborn and 99% were aware about the benefits of breastfeeding.¹⁸ In a

study in Malaysia, 74.8% of the participating antenatal mothers were knowledgeable about breastfeeding with total score of more than 70%. They acknowledged that colostrum and breastmilk as the best food for infants. They knew that colostrum helps in the growth of the child and protection against various infections and diseases as well as maternal recovery after birth.¹⁹

The practice of hygiene among the antenatal mothers is crucial for both the mother and the child. In the present study, it was found that 72.4% of the antenatal mothers bathed once in a day while 71.8% and 88.2% used shampoo 2-3 times a week to clean their hair and soap every time while bathing, respectively. Out of them 52.9% believed bathing is important to keep away germs and 95.3% changed their clothes after bathing.

With regards to oral hygiene, it was observed in the present study, that 75.9% of the interviewed antenatal mothers cleaned their teeth twice daily, i.e, before breakfast and before going to bed at night while 19.4%, 0.6% and 2.4% cleaned their teeth only after breakfast, before going to bed at night, after every major meal, respectively. Ravleen Nagi et al. observed in a study that 99.8% of the antenatal mothers in Chattisgarh brushed at least twice daily while 50.2% brushed daily before breakfast and after dinner.²⁰ Shimaa Abdelrahim Khalaf et al (2017) observed in Assuit, Egypt that 51.6% and 21.4% of the antenatal mothers brushed only in the morning and after each meal, respectively while only 9.4% of them brushed daily before breakfast and after dinner. 41.1% of the participants knew that teeth are cleaned to prevent dental caries while only 8.8% believed that gum diseases can be avoided by regular brushing of teeth. 47.4% of them did not about the importance of regular brushing of teeth. They observed that 85.9% used a toothbrush to clean their teeth.⁸ In the present study, it was observed that 97.6% of the interviewed antenatal mothers used a toothbrush and 41.8% answered that teeth should be daily cleaned to prevent food from getting stuck in the teeth; 15.3% believed that gum diseases can be avoided by regular brushing of teeth and 40% brushed their teeth daily to avoid bad breath while 2.9% did not about the importance of regular brushing of teeth.

With regards to genital hygiene, Patrick Martial Nkamedjie Pete et al. (2013) reported that 66.3% of the antenatal mothers cleaned the vagina and vulva simultaneously. Majority of them (63.8%) used non-irritant agent like water for cleaning the genital area. Almost one participant on four used antiseptic solutions for genital cleaning (vulva area and vagina). Antiseptic solutions along with water were used only by 34.5% of the participants while in 65% of the cases it was used only for cleaning the vagina.¹² In the present study, it was observed that 44.7% cleaned

their genital area once daily and 76.5% cleaned it with soap and water.

Bijaya K. Padhi et al. observed in a cohort study in coastal and inland tribal settings of Odisha, India that 58.2% of the antenatal mothers did not have any access to latrines and defecated in open fields while 45.8% of them living in households with access to latrines used them regularly and 32% rarely used latrines. Water source was present in about 60% of the latrines and faecal contamination was seen on the floor in 21.5% of the latrines. 58% of the antenatal mothers did not wash their hands with soap or detergent after defecation and 14.7% of the study participants used pipe water for bathing.²¹

In the present study, it was observed that majority of the antenatal mothers (37.7%) used domestic filter as their source of drinking water.

Majority of them (92.9%) had a toilet in their house while 7.1% used community toilets. Most of them (55.3%) answered that their toilets are cleaned once a week and 44.7% opined that use of toilet is necessary to prevent access of animals and flies to the urine and faecal matter and 31.1% answered that it is necessary to prevent pollution of ground water and soil.

In the present study, majority of the antenatal mothers washed their hands before eating (99.4%), after using the toilet (99.4%), before serving food (97.1%) and every time after returning home from outside (97.6%) while all of them washed their hands after cleaning anyone else's stool and urine. Most of them (71.8%) used soap every time while washing hands while 1.7% did not use soap at all to wash their hands. Out of them, 87.6% believed washing hands with soap is important to keep away germs and diseases and 75.9% did not know about the 6 steps of hand washing. Most of the antenatal mothers (64.7%) had a habit of cutting their nails weekly and 88.2% opined that cutting the nails at regular intervals helps to keep away germs and diseases. Out of them, 19.4% had a habit of biting their nails.

Conclusion

Majority of the antenatal mothers had completed only their secondary education. It was observed that knowledge about colostrum was higher in the multigravida women. 73.5% of the interviewed antenatal mothers intended to feed colostrum to the newborn and majority had adequate knowledge about the importance of feeding colostrum as well as about the correct duration of exclusive breastfeeding and the correct age of initiating complementary feeding. However, most of them did not know what exclusive breastfeeding is in the true sense. Knowledge with respect to the time when breastfeeding should be completely stopped was found

to be lacking among most of the antenatal mothers. Majority did not know that certain drugs when taken by them during the lactation period can affect their children through breastmilk. So healthcare staffs should emphasise the significance of exclusive breastfeeding as well as impart knowledge regarding the initiation, intervals and the age of stoppage of breastfeeding to the pregnant women in a language that they understand. This will help to lower the incidences of diarrhoea and malnutrition in the newborns and will reduce neonatal and post neonatal mortality rates. Knowledge as well as practices of hygiene of the antenatal mothers were found to be satisfactory. However, 50% of them were not in a habit of using undergarments which is a bad habit as it makes them susceptible to a variety of genital infections. The use of community toilets is still in vogue among 7.1% of them. Healthcare programmes should be organised promoting awareness and good hygiene practices among pregnant women. Education and awareness can promote the practice of hygiene among the antenatal mothers which is crucial for both the mother and the child. They can utilise this knowledge of personal hygiene in the postnatal period and can maintain the hygiene of the newborn as well. Practice of proper hygiene can reduce the incidences of diarrhoeal diseases, perineal sepsis, PID (pelvic Inflammatory Diseases), skin diseases and other infective conditions in the antenatal and postnatal mothers thereby reducing maternal and infant morbidity and mortality.

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Conflicts of Interest: None

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