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IMPACT OF PHARMACIST INTERVENTION ON THE AWARENESS ABOUT MENSTRUAL HYGIENE AND ITS IMPACT ON THE INCIDENCE OF REPRODUCTIVE TRACT INFECTION IN RURAL POPULATION AT ERODE

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ABSTRACT

Background: Menstruation is considered as unclean in the Indian society. Menstrual hygiene is an important aspect in women life. This study aims at assessing the knowledge regarding menstruation and hygienic practices. Unhygienic menstrual practices expose them to RTI. If not treated early it will lead to various disabilities. Good hygienic practices such as use of sanitary pads, clothes and changing it every 6 hours, adequate washing of genital area are required during menstruation. Aims and Objectives: To assess the awareness of menstrual hygiene and to improve the hygienic practices among the women in rural population and to determine the prevalence of related disorder. Methodology: A community based interventional study was conducted between February to August 2018 among 200 women of age group 11-50 years. Data was collected using a self structured questionnaire. Results: Among 200 women the mean age of attaining menarche was 13.27 years. 127 females had the habit of changing menstrual product before bed. It was found that 124 women attended school/job during menses. Burning sensation was experienced by 46(23%) females and itching by 58(29%) females. There was higher incidence of using soap as vaginal washers in the population (72.5%). The UTI incidence was reported in 58 women in our study. Conclusion: It is important that women be aware of the importance of maintaining menstrual hygiene to prevent the risk of RTI. The program produced significant changes in the knowledge, beliefs and practices of menstrual hygiene and complications from lack of hygiene.

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INTRODUCTION

Adolescents in India has been defined to be a period between 10 to 18 years. There are an estimated 200 million adolescents in India who comprise one-fifth of total population[1].It is a kind of intense physical and emotional change for an young people between the age 10-17.Puberty marks a transition change between childhood and adulthood which impacts the adolescents physical, social and emotional well being. Menarche is the onset of menstruation and it is one of the most significant milestones in a women life[2].Adolescent girls constitute a vulnerable group not only with respect to their social status but also in relation to health[3].Among all the development milestones associated with the adolescent years,menarche may be the most important.The bodily changes associated with puberty will have an impact in the girls physical,psychological and social development.Poor personal hygiene and unsafe sanitary conditions have also primarily resulted in gynecological problems.The motive of our study is to bring an awareness on menstruation and the importance of menstrual hygiene among the female population.Women suffer due to their ignorance on hygienic requirement during menstruation.Hygiene related practices of women during menstruation are of considerable importance,as it has a health impact in terms of increased vulnerability to reproductive tract infections(RTI)[4].According to the World Health Organisation(WHO),reproductive health problems are the leading cause of morbidity and mortality of Africa.Despire the recommendations,menstrual hygiene practices are poor in developing countries.While it is recognized that the adoption of appropriate hygienic practices is crucial in the prevention of RTIs,the incidence of gynecological morbidity suffered by many women is hushed in silence,bearing in mind that having a safe personal and cultural environment to manage menstruation hygienically and with dignity is the right of every women and adolescent.It is very important that young girls should be educated about importance of maintaining their hygiene during menstruation to prevent the risk of RTIs[5].Government has adopted certain programs like 'menstrual hygiene programs scheme' under the umbrella of NRHN as a pilot projects in 6 districts of Gujarat.

Sanitary napkins are provided at subsidized rates under the scheme and adolescent girls are encouraged to use sanitary napkin for hygiene practice of menstruation.A survey in Uttar Pradesh found that adolescent girls know too little about menstruation and menstrual hygiene management.Therefore,in addition to making sure that every household has a toilet,governments and all stakeholders must make sure that :

1. Every adolescent girl, woman and their families including men and adolescent boys must have awareness, knowledge and information about menstruation so that it can be managed safely with confidence and dignity.
2. Every adolescent and woman must have easy access to sufficient, affordable and hygienic menstrual absorbents during menstruation.
3. Every adolescent school girl must have access to a separate toilet with private space for cleaning ,washing. This includes access to adequate and sustained water supply and soap
4. Every adolescent girl must have access to infrastructure for disposal used menstrual absorbent and should know how to use it.

MENSTRUATION RELATED HEALTH ISSUES

Among the gynaecological problems,menstrual problems are said to be the major ones especially among the adolescent females. The common menstrual disorders are amenorrhea,abnormal or excessive uterine bleeding ,dysmenorrhea, premenstrual syndrome. To this effect,the practice of good menstrual hygiene reduces the incidence of RTI. The consequences of RTI are severe and may result in significant negative impact to a womens health including chronic pelvic pain, dysmenorrhea and in severe cases infertility. RTI's which have become a silent epidemic devastates womens lives and is closely related to poor menstrual hygiene. Unclean rags and old cloths increase the chance of RTI's including urinary, vaginal and perineal infections. Very often, serious infections are left untreated and may sometimes lead to potentially fatal toxic shock syndrome. Untreated RTI's are responsible for 10-15% of fetal wastage and 30-35% prenatal infection. Increasingly RTIs are also linked with incidence of cervical cancer, HIV/AIDS, infertility, ectopic pregnancy and a myriad of other symptoms. Every year approximately 10% of women worldwide are exposed to genital infections including UTIs and bacterial vaginosis and 75% of women have a history of genital infections specifically the common risk factors for vaginal infections include pregnancy and poor hygiene(both perennal and menstrual hygiene) as well as bad odour, soiled garments and ultimately shame leading to infringement on the girls dignity. Other causes of menstrual irregularities are endocrine disorders, tumors and acquired disorders like stress, strenuous exercise and cigarette smoking. Use of unhygienic clothes may lead to development of infection of reproductive tract which may seriously hamper the reproductive capacity or even life of females. Several research studies have revealed gap between facts and believes of adolescent girls and showed that there is low level of awareness about menstruation among girls when they first experience it.

STEPS FOR GOOD MENSTRUAL HYGIENE PRACTICES

1. Choose the right method of sanitation
2. Change regularly
3. Wash regularly
4. Don't use soaps or vaginal hygiene products
5. Use the right washing techniques
6. Discard used sanitary products properly
7. Beware of a pad rash
8. Choose only one method of sanitation at a time
9. Have a bath regularly
10. Be ready with on-the-go stuff during periods

MATERIALS AND METHODS

The study was an observational study conducted in rural areas of erode district, Tamilnadu. The female population between 11-50 years was chosen for the study. The informed consent was obtained and data was collected from 200 females. The study was conducted for a phase of 6 months, self assessed questionnaire was used and initially the datas was collected and counseling was given on all the various hygienic practices to be followed during the menstruation. Periodic follow up after 2 months was conducted and improvements or changes in the practices was noted. In total 2 follow ups was done.

Counseling sheets with diagrams was given during the second visit as much of the sample population was illetrate and the diagrams and contents were clearly explained orally.

RESULT

AGE WISE DISTRIBUTION

The study population included 200 females, for which the age wise categorization showed that 56 women were between 11-20 years(28%),78 women of 21-30years(39%),54 women of 31-40 years(27%) and finally only 12 women belong to 41-50 years(6%). The mean age of reproductive age group women was 29.2 years.

Table 1: AGE WISE DISTRIBUTION (N=200).

Age wise distribution of total women population (N=200)		
Age(Years)	Number of women	Percentage(%)
11 to 20	56	28%
21 to 30	78	39%
31 to 40	54	27%
41 to 50	12	6%

TOILET FACILITY AT HOME

Out of the total population, 163 women had toilet facilities (81.5%) and the remaining 37 women do not have toilet facility at their home (18.5%).

Table 2: TOILET FACILITY AT HOME (N=200).

Toilet facility at home (N=200)		
	Number of women	Percentage (%)
Yes	163	81.50%
No	37	18.50%

PATTERN OF USING MENSTRUAL PRODUCTS

Among the population, pad users were 163(81.5%) women, 30 women were cloth users(15%) and 7 used both pad and cloth(3.5%) in the baseline there was no change in visit 1 and 2.

Table 3: PATTERN OF USING MENSTRUAL PRODUCTS (N=200).

Pattern of using menstrual products(N=200)						
	Baseline	%	Visit 1	%	Visit 2	%
Pad	163	81.50%	163	81.50%	163	81.50%
Cloth	30	15%	30	15%	30	15%
Both pad and cloth	7	3.50%	7	3.50%	7	3.50%

NUMBER OF PADS USED PER DAY

On the initial analysis, among the 163 pad users it was found that 11 women(6.74%) used only one pad a day,63 women(38.66%) used 2 pads,55 women(33.74%) used 3 pads,24 women(14.72%) used 4 pads,4 women(2.46%) used 5 pads and 6 women(3.68%) used 6 pads.Counseling was given and on further visit it was found that there was a change in the pattern of usage,it was seen that 5 women(3.06%) used 2 pads,121 women(74.24%) used 3 pads,27 women(16.56%) used 4 pads,4 women(2.46%) used 5 pads,6 women(3.68%) used 6 pads and atlast during the visit 2 the pattern changed further as only one women (0.62%) used 2 pads,118 women(72.39%) used 3 pads,34 women(20.85%) used 4 pads,4 women(2.46%) used 5 pads and 6 women(3.68%) used 6 pads.

Table 4: NUMBER OF PADS USED PER DAY (N=163).

Number of pads used per day(N=163)						
No.of pads	Baseline	%	Visit 1	%	Visit 2	%
1	11	6.74%	0	0%	0	0%
2	63	38.66%	5	3.06%	1	0.62%
3	55	33.74%	121	74.24%	118	72.39%
4	24	14.72%	27	16.56%	34	20.85%
5	4	2.46%	4	2.46%	4	2.46%
6	6	3.68%	6	3.68%	6	3.68%

NUMBER OF CLOTHES USED PER DAY

Among the cloth users in the population (30),the trend of changing the cloth was found to be same cloth a day by 2 women(6.66%),2 in 13 women(43.34%) and 3 in 15 women(50%).The pattern changed in visit 1,whereas 2 in 3 women(10%) and 3 in 27 women(90%) and in visit 2,2 in 1 women(3.33%) and 3 in 29 women(96.67%).

Table 5: NUMBER OF CLOTHES USED PER DAY (N=30).

Number of clothes used per day (N=30)						
No. of clothes	Baseline	%	V1	%	V2	%
1	2	6.66%	0	0%	0	0%
2	13	43.34%	3	10%	1	3.33%
3	15	50%	27	90%	29	96.67%

PERIOD OF USING THE SAME CLOTH

Among the reusers the time period in which the same cloth being used in the baseline were 1 month 13(43.30%),2 months 13(43.40%),3 months 3(10%) and more than 3 months 1(3.40%), in visit 1 it changed and the pattern observed was 1 month in 15(50%), 2 months in 11(36.67%), 3 months in 4(13.33%) and more than 3 months is 0.In visit 2, 1 month in 16(53.34%),2 months in 11(36.66%),3 months in 3(10%) and more than 3 months is 0.

Table 6: PERIOD OF USING THE SAME CLOTH (N=30).

Period of using the same cloth(N=30)						
	Baseline	%	V1	%	V2	%
1 month	13	43.30%	15	50%	16	53.34%
2 months	13	43.30%	11	36.67%	11	36.66%
3 months	3	10%	4	13.33%	3	10%
More than 3 months	1	3.40%	0	0%	0	0%

PATTERN OF DRYING THE CLOTH AMONG THE REUSERS

In the total population, the cloth users are 37 women,in which 30 women reused the same cloth.There was no change in the number of reusers in all the visits however there was a change in the pattern of drying the cloth in each visits.In the baseline,15 (50%) dried under the sunlight and 15(50%) dried the cloth in the bathroom or inside the home.In visit 1,22(73.34%) dried under sunlight and 8(26.66%) dried inside the bathroom.In visit 2,there was further change,26(86.66%)dried under sunlight and 4(13.34%) dried inside the bathroom.

Table 7: PATTERN OF DRYING THE CLOTH AMONG THE REUSERS(N=30).

Pattern of drying the cloth among the reusers(N=30)						
	Baseline	%	V1	%	V2	%
Sunlight	15	50%	22	73.34%	26	86.66%
Bathroom	15	50%	8	26.66%	4	13.34%

PLACE OF STORING THE CLOTH AMONG THE REUSERS

Among the reusers there are mainly 3 different groups made on the method of storing the clothes they were inside the bathroom 2(6.66%) women,stored with routine clothes 15(50%) and finally clean and covered place 13(43.34%)women.This was seen during the baseline,changes were observed during the visit 1 and 2.In visit 1 and 2 there was no one who stored their clothes inside the bathroom.In visit 1 those who stored their clothes with routine clothes were 8(26.67%) women and in clean and covered place were 22(73.33%) women.In visit 2 the number of women who stored their clothes with routine clothes was 5(16.67%) and in clean and covered place were 25(83.33%).

Table 8: PLACE OF STORING THE CLOTH AMONG THE REUSERS (N=30).

Place of storing the cloth among the reusers(N=30)						
	Baseline	%	V1	%	V2	%
Inside the bathroom	2	6.66%	0	0%	0	0%
Store with routine clothes	15	50%	8	26.67%	5	16.67%
Clean and covered place	13	43.34%	22	73.33%	25	83.33%

HABIT OF CHANGING PAD OR CLOTHES AT NIGHT

Among the total population, the women who change their menstrual products regularly at night before sleep were 127 (63.5%) and those who do not change are 73(36.5%) in the baseline. There was a significant reduction in the number who does not change their menstrual products at night from 73 to 21(10.5%) in visit 1 and the number of those who changed their menstrual products every night before sleep is 179(89.5%). In visit 2, it has changed to 191(95.5%) who changed their menstrual products every night before sleep and only 9(4.5%) women showed to have continue the habit of not changing their menstrual product regularly at night.

Table 9: HABIT OF CHANGING PAD OR CLOTHES AT NIGHT.

Habit of changing pads or clothes at night(N=200)						
	Baseline	%	V1	%	V2	%
Changes every night before bed	127	63.50%	179	89.50%	191	95.50%
Does not change at night	73	36.50%	21	10.50%	9	4.50%

PRACTICE OF USING VAGINAL WASHERS

The vaginal washers used in this population was antiseptic, soap, water and warm water. Among these, incidence of using soap was higher 145(72.5%), followed by water in 29(14.5%), antiseptic in 21(10.5%) and warm water in 5(2.5%) women in baseline. In visit 1, after counseling it has changed remarkably 121(60.5%) women started using water followed by 48(24%) used warm water, soap was only used by 26(13%) and antiseptic by 5(2.5%) women. In visit 2, 142(71%) used water, warm water by 53(26.5%), soap by 4(2%) and antiseptic by only 1(0.5%).

Table 10: PRACTICE OF USING VAGINAL WASHERS.

Practice of using vaginal washers(N=200)						
	Baseline	%	V1	%	V2	%
Antiseptic	21	10.50%	5	2.50%	1	0.50%
Soap	145	72.50%	26	13%	4	2%
Water	29	14.50%	121	60.50%	142	71%
Warm water	5	2.50%	48	24%	53	26.50%

SUFFERED FROM MENSTRUAL PAIN

In this study, 156(78%) women suffered from menstrual pain and there was no change in the baseline, visit 1 and visit 2.

Table 11: SUFFERED FROM MENSTRUAL PAIN.

Suffered from menstrual pain(N=200)						
	Baseline	%	V1	%	V2	%
Suffered	156	78%	156	78%	156	78%
No menstrual pain	44	22%	44	22%	44	22%

SITE OF MENSTRUAL PAIN

In the total population of women taken for the study 156 were facing menstrual pain every month. The site of menstrual pain are lower back 20(12.82%), lower abdomen 53(33.98%), in extremities 14(8.97%), lower back and abdomen 27(17.31%) and others 42(26.92%). The pattern was same in both visits.

Table 12: SITE OF MENSTRUAL PAIN.

Site of menstrual pain(N=156)						
	Baseline	%	V1	%	V2	%
Lower back	20	12.82%	20	12.82%	20	12.82%
Lower abdomen	53	33.98%	53	33.98%	53	33.98%
In extremities	14	8.97%	14	8.97%	14	8.97%
Lower back and abdomen	27	17.31%	27	17.31%	27	17.31%
Others	42	26.92%	42	26.92%	42	26.92%

INCIDENCE OF ITCHING AMONG TOTAL POPULATION

Incidence of itching among the population is analyzed. It is found that the trend of itching is higher in the baseline 58(29%) women and it has reduced to 52(26%) women in visit 1 and 36(18%) women in visit 2.

Decrease in itching was due to the counseling given on hygienic practices during menstruation and consultation of a physician who was reluctant to do at the baseline.

Table 13: INCIDENCE OF ITCHING AMONG TOTAL POPULATION.

Incidence of itching among total population(N=200)						
	Baseline	%	V1	%	V2	%
Itching	58	29%	52	26%	36	18%
No itching	142	71%	148	74%	164	82%

BURNING SENSATION EXPERIENCED AMONG THE POPULATION

Burning sensations was experienced by 46(23%) women in the baseline and in visit 1 it was 49(29.5%) and after the visit 2 it has changed 23(11.5%).

Table 14: BURNING SENSATION EXPERIENCED AMONG THE POPULATION.

Burning sensation experienced among total population(N=200)						
	Baseline	%	V1	%	V2	%
Burning sensation	46	23%	49	24.50%	23	11.50%
No burning sensation	154	77%	151	75.50%	177	88.50%

CONSULTED PHYSICIAN FOR UTI

Incidence of UTI was reported among 58(49%) women and it has not changed in subsequent results. The data shows that not only the lack of menstrual hygiene practices but other factors could also lead to the incidence of UTI.

Table 15: CONSULTED PHYSICIAN FOR UTI.

Total number of population who have consulted a physician atleast once in their lifetime with an incidence of UTI or any other genito urinary tract infections(N=200)						
	Baseline	%	V1	%	V2	%
Consulted	58	49%	58	49%	58	49%
Not consulted	142	51%	142	51%	142	51%

RELUCTANCY TO CONSULT A DOCTOR

Number of women who was reluctant to consult a doctor at the baseline was 27(13.5%) women, gradually decreased to 18(9%) in visit 1 and 8(4%) women in visit 2.

Table 16: RELUCTANCY TO CONSULT A DOCTOR.

Reluctancy to consult a doctor(N=200)						
	Baseline	%	V1	%	V2	%
Reluctant	27	13.50%	18	9%	8	4%
No hesitation	173	86.50%	182	91%	192	96%

DISCUSSION

By comparing the socio demographic people of the study population. The majority of study population in the study was found to be in between 21-30 years(39%) followed by 11-20 years(28%),31-40 years(27%) and 41-50 years(6%).The mean age of reproductive age group women was 27-51 years. Similarity was seen in a study by Balamurugan *et.al*, which showed that the majority of study population 36% belonged to 21-30 years of age, followed by women of age 31-40 years(34.5%),15-20 years(22%) and 41-50 years(17.5%).The mean age of reproductive age group women was 29.2 years. In our study, the mean age of menarche of the respondents was 13-27 years, whereas in a study conducted in West Bengal in 2013 by Dr. Shamima Yasmin *et al*, the mean age of menarche was found to be 11.95 years. The type of absorbent used during menstruation is of paramount importance since reusable materials could be a cause of infection if improperly cleaned and poorly stored.In the present study, 90.5% of the respondents used disposable sanitary pads and only 9.5% girls used old piece of cloth as absorbents. This finding is in contrast with the study conducted in Maharashtra, where only 15.6% girls used sanitary napkins. The increased use of sanitary pads might be due to publicity through mass media and hence most of the girls have started use of disposable sanitary pads as absorbent right from their menarche. The use of cloth was found to be minimal around 37 including those using both pad and cloth and in these only 30 was found to reuse the cloth and the pattern of drying the clothes was observed to be in the baseline, 50% dried it under the sunlight and remaining dried it inside the bathroom.The pattern changed in visit 2 to 86.66% of women drying it under the sunlight and the remaining only 13.34% inside the bathroom, this was in comparable to a study conducted in 2009 by Dipali Nemade *et al*, only 4.27% girls dried their clothes under sunlight in pretest and it increased to 31.62% in the post test period. By analyzing our study, it was seen that most of the females experienced abdominal pain(33.98%) proceeded by various other symptoms like both lower back and abdominal pain, pain in extremities etc. the trend of experiencing abdominal pain(82.2%) as the major menstrual pain was observed in a study done by Prakash *et al* in a Union territory of India. The incidence of UTI or symptoms for RTI was seen in 49% women. Most common symptoms observed was abnormal vaginal discharge(78.5%), itching (29%) and burning sensation(23%).Similar trend was observed in a study Pushpita Barman *et al* done in Assam. The prevalence of RTI among girls was 43.3%. Most common symptoms were vaginal discharge(22.38%),vaginal pruritis (17.14%) and lower backache(17.14%).

CONCLUSION

Girls should be made aware of the process of menstruation and importance of maintaining its hygiene before attaining menarche and women should be educated about the importance of maintaining hygiene during menstruation to prevent the risk of urinary tract infection and other menstrual related disorders.

The program helped to bring out valuable changes in the knowledge,beliefs,lifestyle and practices of menstrual hygiene to avoid complication in the study population.

LIST OF ABBREVIATION

RTI - Reproductive tract infection

WHO- World health organization

UTI - Urinary tract infection

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REFERENCES

1. Shanbhag D, Shilpa R, D'Souza N, Josephine P, Singh J, Goud B.R Perceptions regarding menstruation and practices during menstrual cycles among high school going adolescent girls in resource limited settings around Bangalore city, Karnataka, India. *International Journal of Collaborative Research on Internal Medicine and Public Health*:2012;4(7):1353-1362.
2. Geol N.K, Dinesh Kumar, Sonia Puri, Rambha Patak, Sandeep Singh Sarpal, Sorab Gupta, Sumanth Arora Menstrual patterns among unmarried women from Northern India. *Journal of Clinical and Diagnostic Research*:2013;7(9):1926-1929.
3. Shabnam Omidvar, Khyrunnisa Begum. Across sectional study on factors influencing hygienic practices during mensus among girls from South India. *International Journal of Collaborative Research on Internal Medicine and Public Health*:2010;2(12):411-423.
4. Sangeetha Balamurugan.S, Shilpal S.S, Sheethal Shaji. A community based study on menstrual hygiene among reproductive age group women in a rural area, Tamilnadu. *Journal of Basic and Clinical Reproductive Sciences*:2014;3(2):83-87.
5. Reena V.Wagh, Aditi J.Upadhye, Jayashree J.Upaghye menstrual hygiene practices in young girls of Urban India. *International Journal of Reproduction, Contraception,Obstetrics and gyneocology*:2018;7(5):1897-1902.



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