



**EFFECTIVENESS OF EDUCATIONAL INTERVENTION ON MENSTRUAL HYGIENIC PRACTICES AMONG ADOLESCENT GIRLS OF SLUM**

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**ABSTRACT**

**Introduction:** In Indian society poor menstrual hygiene cause 70% of all reproductive diseases that is attributed to poor knowledge of menstrual hygiene resulting to poor practice. Slums adolescents are likely to suffer, because living in the poor and traditional community with lowest literacy. The educational intervention to improve their knowledge and practice is highly needed but requires the evaluation of effectiveness for further plan of action. **Material and methods:** Present analysis is one of the specific objectives of the main study carried on 562 adolescents of Varanasi slum. The intervention and control groups were made comparable by stratified block randomization in the ratio of 2:5 as sample size decided was 50 and 125 respectively. The educational intervention given was on four core components through pamphlet followed by individual counseling. The analysis to assess the effectiveness was judged by t test,  $\chi^2$  test and multivariable logistic regression. The statistical significance was seen at  $\alpha = 5\%$ . **Observations and Results:** All the adolescents in both the groups were lacking for at least one or all the core components. After 6 months of intervention, though the practice of at least one component increased in both the groups, but the increase in intervention group was 94.0%; higher by 20% compared to controls. Control group adolescent were about 9 times (OR = 9.05; 95% CI: 1.96 – 41.93) at higher risk of improvement of correct menstrual hygienic practices. **Conclusion:** Based on the impact of educational intervention in other and present study, it is suggested that adolescents of slums need proper education to promote the correct menstrual hygienic practice at least on four core components.

**INTRODUCTION**

Adolescent girls (aged 10 – 21 years<sup>1</sup>) are the most vulnerable segment of the population to know and maintain proper menstrual hygiene for future healthy reproductive health. This segment of the population constitutes globally 1198 million of which one fifth live in India.<sup>[1]</sup> To maintain the proper menstrual hygienic practices on at least four preventive components i.e. washing of genital with plain water, use of sanitary napkins or if cloth it should properly washed and dried, changing pad minimum four times a day and used pads disposal to a proper place by wrapping in old cloth or paper. If these four components of menstrual hygiene are adhered by each of the adolescent girls, menstrual health related problems can be reduce to the maximum extent. Many studies from India and other developing nations have reported poor awareness and practice of menstrual hygiene and the reason behind was mostly poor awareness.<sup>[2,3,4]</sup> In absence of proper menstrual hygiene, adolescents suffer with the most common adverse outcomes like RTI,s, UTI and PID along with vaginal thrush because of shedding of blood leaves, the genital tract moist and lowered acidity of the vagina making

vulnerable to infections.<sup>[5,6,7,8,9,10]</sup> Poor menstrual hygiene in India is causing 70% of all reproductive diseases<sup>[11]</sup>, hence, every women or girl of reproductive age need access to clean and soft absorbent to protect their reproductive health. RTIs are the commonest infection among adolescent girls with poor hygiene practices.<sup>[8,9]</sup> State Uttar Pradesh is reporting low level of literacy of women and is the lowest if one move from upper class community to lower class with a wide gap.<sup>[12]</sup> The slum pockets of the urban area are the poorest among the poor and constitute about 22% of the urban population having the lowest literacy level. In these slum pockets the adolescent girl's population is around 10%. Though, it is known fact literacy level is directly associated with the knowledge of menstrual hygiene; the unfortunate is that the slum community because of poor literacy level and poverty compounded with their traditional way of living do not provide enough opportunity of schooling especially to the girls; rather engage them in earnings or to share and support family in household activity. Increased literacy and educational attainment is the long term goal; to enhance the knowledge and practice of menstrual hygiene; educational intervention on menstrual

hygiene could be the only and immediate solution. Various recent studies in different parts of the country among school girls and slums have reported poor knowledge and practice of menstrual hygiene that increased significantly after educational intervention.<sup>[13,14,15,16,17]</sup> This study is scientifically planned and had found that only 1% adolescent girls had knowledge of all the four components of menstrual hygiene. The aim of this paper is to assess the effectiveness of the education through pamphlets followed by individual counseling.

## MATERIAL AND METHODS

Overall study was carried in Varanasi slum on 562 adolescents selected following two stage stratified random sampling. At the first stage random selection of 6 slums (Machodari Park, Suar Badawa, Shukulpurva, Bhogabeer, Madhopur, Karaundi) by stratifying the slum as per their population size. At the second stage predefined number of households with having at least one adolescent was randomly selected as per representation of different caste class with proportional allocation. It was seen in baseline observation that mostly (> 98%) of the adolescent were lacking with proper menstrual hygienic practices either for all are at least one of the four core components e.g. washing of genitals with plain water, use of sanitary napkins or washed cloth, change of minimum 4 pads per day and disposal of used pads with proper wrapping in road side dustbin. For the purpose of intervention, the stratified block randomization was done in the ratio of 2:5 for intervention and non-intervention groups to form the groups comparable with sizes 50 and 125 respectively ( $\alpha = 5\%$  and  $1-\beta = 90\%$ ). The stratification for randomization was based on number of menstrual hygienic practices lacking. The educational intervention was given through pamphlet followed by individual counseling. The analysis to assess the effectiveness was judged by t test,  $\chi^2$  test and multivariable logistic regression. The statistical significance was seen at  $\alpha = 5\%$ .

## OBSERVATION AND RESULTS

Table-1 is indicating the percent of adolescents who improved the correct practice of menstrual hygiene at least for one component. Improvement in correct practice of menstrual hygiene was much satisfactory even in the group that was not given education; 70.4% with any incorrect practice had adopted some correct practice for which they lack, but in the intervention group this rose

significantly to 94.0% ( $p = 0.001$ ). It seem in due time correct practice will enhance other sources even if education was not given.

Table-2 indicates that average number of correct menstrual practice was almost same during pre-intervention which increased in both the groups after 6 months. The increase in average number of correct practices increased from  $1.05 \pm 0.69$  to  $2.74 \pm 0.69$  in the intervention group while from  $1.30 \pm 1.00$  to  $2.47 \pm 0.69$  in the non-intervention group. Post intervention increase was significantly higher by 0.27 on an average in intervention group compared to non-intervention group ( $p = 0.003$ ).

To identify the true contribution of education on enhanced correct practice of menstrual hygiene, all the family and adolescents characteristics were considered in multivariable logistic regression analysis to eliminate the influence their effect if present and the result is presented in table-3. This can be seen by statistical significance that none of the family and adolescent's characteristics were to contribute to enhance the correct menstrual hygienic practice ( $p > 0.05$ ) except educational intervention ( $p = 0.005$ ). The risk of enhanced correct practice, if educational intervention is not given was about 9.05 times (95% CI: 1.96 – 41.93) higher compared to those given.

**Table-1: Percent of adolescents with enhanced correct menstrual hygiene practice in intervention and non-intervention groups.**

Groups	Number	Percent with enhanced correct practices	$\chi^2$ , df, p value
No Intervention	125	70.4	11.28, 1, 0.001
Intervention	50	94.0	
<b>Total</b>	<b>175</b>	<b>77.1</b>	

**Table 2: Pre and post average number of components of correct menstrual hygiene practices out of four in adolescents.**

Groups	Average number of components of correct practices			
	N	Mean $\pm$ SD		
		Pre-intervention	Post intervention	Change in practice
No intervention	125	1.13 $\pm$ 1.00	2.47 $\pm$ 0.69	1.34 $\pm$ 1.14
Intervention	50	1.05 $\pm$ 0.91	2.74 $\pm$ 0.69	1.90 $\pm$ 0.97
t, df, p value		0.59, 173, 0.557	2.31, 173, 0.022	3.03, 173, 0.003

**Table 3: Determinants of enhanced correct menstrual hygiene practice: Results of multivariate logistic analysis.**

Characteristics	$\beta$	Wald	P value	AOR	95% CI of AOR
<b>Intervention status</b>					
Not given	2.20	7.94	0.005	9.05	1.96 – 41.93
Given	Ref.	-	-	-	-
<b>Adolescent's age</b>					
Early adolescent	0.62	0.66	0.418	1.86	0.41 – 8.36
Middle adolescent	-1.05	2.60	0.107	0.35	0.10 – 1.25
Late adolescent	Ref.	-	-	-	-
<b>Religion</b>					
Hindu	-2.12	3.59	0.058	0.12	0.01 – 1.08
Muslim	Ref.	-	-	-	-
<b>Caste</b>					
General	0.33	0.16	0.687	1.39	0.28 – 6.84
OBC	-1.25	2.22	0.136	0.29	0.06 – 1.48
SC/ST	Ref.	-	-	-	-
<b>Type of family</b>					
Nuclear	-0.31	0.42	0.519	0.73	0.28 – 1.90
Joint	Ref.	-	-	-	-
<b>Type of house</b>					
Hut/Mud/Kachcha	1.28	2.83	0.093	3.60	0.81 – 16.04
Semi- Pakka/Pakka	Ref.	-	-	-	-
<b>Adolescent's education (Yrs. of schooling)</b>					
No/1-5	-1.06	1.26	0.263	0.35	0.05 – 2.22
6 -10	-0.40	0.49	0.483	0.63	0.17 – 2.32
>10	Ref.	-	-	-	-
<b>Mother's education (Yrs. of schooling)</b>					
No/1-5	0.79	0.78	0.375	2.21	0.38 – 12.65
6 -10	0.11	0.01	0.912	1.12	0.16 – 8.06
>10	Ref.	-	-	-	-
<b>Mother's occupation</b>					
Unskilled worker	0.26	0.13	0.723	1.29	0.31 – 5.30
Skilled worker/Small shop	-1.12	1.00	0.318	0.33	0.04 – 2.93
House wife	-0.56	0.73	0.394	0.57	0.16 – 2.07
Service (Pvt./Govt)	Ref.	-	-	-	-
<b>PCI Category</b>					
Lower	-0.68	0.44	0.505	0.51	0.07 – 3.75
Middle	-0.92	0.79	0.375	0.40	0.05 – 3.04
Upper	Ref.	-	-	-	-
<b>Type of school admitted in</b>					
Public	-1.02	3.39	0.065	0.36	0.12 – 1.07
Private	Ref.	-	-	-	-
<b>Interact with anyone</b>					
No	0.28	0.21	0.650	1.33	0.39 – 4.52
Yes	Ref.	-	-	-	-
<b>Watch TV</b>					
No	-0.51	0.60	0.441	0.60	0.17 – 2.17
Yes	Ref.	-	-	-	-

## DISCUSSION

India is the country of youth; the most productive country and about one fifth of are adolescents out of which half are adolescent girls. Menstruation, the first indication of puberty, is considered unclean and clouded by beliefs, socio cultural restrictions by most of the Indian society; hence girls remain ignorant of the scientific facts and unable to maintain reproductive health.<sup>[18-19]</sup> Maintaining menstrual hygiene is crucial for reproductive health. The consequential effect of poor menstrual hygiene make vulnerable to infections of the urinary tract, pelvic inflammatory diseases and vaginal thrush.<sup>[20]</sup> It has been reported that 70% of all reproductive diseases in India are caused by poor menstrual hygiene and that is only because girls are lacking with knowledge of menstrual and hygienic practices.<sup>[10]</sup> The use of commercial napkins that is hygienic; but only 12% of 355 million menstruating Indian women are using<sup>[21]</sup>, due to lack of awareness and unaffordable cost. The slums are a substantial proportion of population (22.58%) of the total urban population of the states/union territories are the mostly illiterate and the poorest community and lack severely with the knowledge of proper reproductive health; those educated even knowing the benefit of sanitary napkins are not able to use due to poor family income. Those unaware of menstrual hygienic practice are due to their low level of education and living in the traditional community with poor knowledge. The way these adolescents can be made aware is to provide educational input through various IEC activities. The knowledge and practice was well demonstrated to increase by the educational intervention.<sup>[22,23,24,25,26]</sup> The baseline of the present study indicated that almost all (99%) girls were lacking with either all or at least one out of four core components of menstrual hygienic practice. Though, increase in practice was also observed among those not given education (70.4%) but this increase was of 94.0% among those given the education. The differential characteristics of the family and adolescents in intervention and non-intervention group had no effect on practice of menstrual hygiene; the additional rise of 23.6% was only the contribution of educational input. The odds ratio of 9.05 (95% CI: 1.96 – 41.9) is indicating that educational intervention can make quickly a good dent to correct menstrual practice. The similar result has also been found in the study of slum, though was quasi experimental design and important point was sustainability that was poor.<sup>[27]</sup> The present study has not looked the component of sustainability.

## CONCLUSION

Based on the findings and good impact of educational intervention in other and present study, it is suggested that adolescents of slums should be given education on menstrual hygiene at least on four core components of menstrual hygiene.

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