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A cross-sectional study to investigate the impact of focused group discussion on menstrual hygiene among rural school girls of Southern Haryana, India

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Abstract:

INTRODUCTION: Menstruation is a natural phenomenon among women who experience shedding of blood for 1–7 days every month which usually starts between age 11 and 14 years and continues until menopause at about 51 years of age. It is important to maintain menstrual hygiene, as poor practices increase vulnerability to reproductive and urinary tract infections. The present study was conducted with an aim to investigate the impact of focused group discussion (FGD) compared to didactic lectures (DLs) on the menstrual hygiene knowledge and practices.

METHODS: The present cross-sectional study was conducted among 649 school girls during January to August 2019 using a convenience sampling technique. After collecting baseline information using a pretested, predesigned, standardized questionnaire, the participants in the control and intervention groups were exposed for the DLs and FGD, respectively, and 1 month after such intervention, the same questionnaire was again self-administered by participants. All tests were performed at a 5% level of significance using SPSS (version 22.0).

RESULTS: The baseline characteristics of both the groups such as participants' mean age, mean age of menarche, mother's literacy status, religion, type of family, and socioeconomic status were comparable. There was a difference in the knowledge and practice mean score of participants in the control group for pre- and postintervention, which was highly statistically significant ($P < 0.001$).

CONCLUSIONS: This study reveals that menstrual hygiene is far from satisfactory among most of the school girls. The DLs and FGD have improved the menstrual hygiene knowledge and practices among school girls.

Keywords:

Adolescent, knowledge, menstrual, school health

Introduction

Menstruation is a natural phenomenon among women who experience shedding of blood for 1–7 days every month which usually starts between age 11 and 14 years and continues until menopause at about 51 years of age.^[1,2] About one-fifth (21.4% or 243 million) of India's population is constituted by the

adolescents who can transform the social and economic fortunes of the country and are often reluctant to discuss the topic regarding menstruation with their parents and often hesitate to seek medical help regarding menstrual problems.^[3]

Good hygiene, such as the use of sanitary pads and adequate washing of the genital area, is essential during menstruation. It is important to maintain menstrual hygiene, as

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poor practices increase vulnerability to reproductive and urinary tract infections including gynecological problems such as ectopic pregnancy, infertility, and chronic pelvic inflammatory disease.^[4,5] Moreover, inadequate and inappropriate water, sanitation, and hygiene facilities in schools, especially in rural areas, also come in the way of managing their menstruation healthily, safely, and with dignity.

Many of these associated factors are modifiable, and if such factors are identified and addressed, it can go a long way in promoting good menstrual hygiene practice among adolescent girls from the very beginning. In general, health education for most of the health problems is based on didactic lectures (DLs), and it has several drawbacks while comparing with focused group discussion (FGD). A recent meta-analysis has shown that in India, health education focusing on menstrual hygiene is mainly imparted using DLs and too a very less extent using FGD.^[6] FGD attempts to bring about a change in the behavior of community members compared to DLs. There is an active involvement of members in FGD compared to DL, which is usually one-sided. With this background, the present study was conducted with an aim to investigate the impact of FGD compared to DLs on the menstrual hygiene knowledge and practices. Thus, the study hypothesizes that FGD is a better method of health education (which is routinely not practiced) compared to DL (which is commonly practiced) in bringing about the change in the knowledge and practices related to menstruation among school girls.

Methods

The present study was conducted during the months of January–August 2019 in the service area of a rural health center, Nalhar (Mewat), which also happens to be field practice area under the aegis of the Department of Community Medicine, SHKM GMC, Nalhar (Mewat), Haryana. This cross-sectional study included school girls (12–19 years) as participants.

All government and private secondary schools were listed, and the school principals were approached to obtain permission for conducting the study. Only two government schools provided permission for conducting study, and following which, interview and intervention dates of the study were fixed. Both schools granted permission to conduct a study only from ninth standard onward. The line listing of students from 9th standard to 12th standard was done for both the schools; total students were about 840. As the inclusion criteria were the unmarried students who had attained menarche at the beginning of the study, so out of 840 participants, 649 students were included in the study. Written informed consent from the parents and assent from the students

were obtained, and anonymity and confidentiality of the participants were maintained throughout the study. Students who were seriously ill such as malaria, severe anemia, high-grade fever, urinary or vaginal discharge, and severe depression were excluded from the study.

A pretested, predesigned, standardized questionnaire was prepared. The questionnaire included demographic details such as age, sociodemographic characteristics, knowledge regarding menstruation, and practice of menstrual hygiene. The questionnaire was first prepared in English. Then, it was translated into Hindi by an expert in that language keeping semantic equivalence. To check the translation, it was back-translated into English by two independent researchers who were unaware of the first English version. The collected questions were subjected to content validation by a panel of ten medical experts. The purpose was to identify the items with a high degree of agreement among experts. Aiken's *V* was used to quantify the concordance between experts for each item. Questions that had an Aiken's *V* > 0.7 were selected for the study. All efforts were made to keep the questions simple and unambiguous according to the objectives of the study.

The questionnaire focusing on baseline knowledge regarding menstruation and menstrual hygiene practice details consisted of six and nine questions, respectively. Every question was compulsory and consisted of different sets of responses for various questions, and scoring was done on the basis of response to each of the question with maximum scores as 14 and 20 for knowledge and practices, respectively. The socioeconomic status was obtained using modified BG Prasad socioeconomic status classification (revised for the year 2019, CPI (Consumer Price Index) 2001 as a base).

Everyday activity included briefing of the study through face-to-face interaction among students of different classes. After collecting baseline information, the students by a simple random method were equally into two groups, i.e., control group (325) and intervention group (324). Before any kind of intervention, the questionnaire was self-administered by participants under the direct supervision of the investigator and also care was taken that no consultations were made with the fellow students by strict vigilance with the help of school teachers. The questionnaire required 12–15 min per participant to be completed. The participants in the control and intervention groups were exposed to the DL and FGD, respectively. DL included details of menstruation which covered all the aspects including age of onset of menarche, days of menstrual bleeding, common symptoms such as weakness, headache, and cramps, importance of menstrual hygiene, and morbidity related to poor menstrual hygiene, and it was given with

the help of PowerPoint in a classroom. Similarly, FDG session was conducted following all basic principles. One month after such intervention, the questionnaire was again self-administered by participants under the direct supervision of the investigator to assess the change in the level of knowledge and practices. The participants in both the control and intervention groups took part in the group of 12–15 participants per session, so that day-to-day academic activities of school are not hampered. In this way, all selected students were covered in the study during defined period. The completed questionnaires were then collected and checked for the completeness. Ethical approval was obtained from the Institutional Ethical Committee.

Collected data were entered in the MS Excel Spreadsheet, coded appropriately, and later cleaned for any possible errors. Analysis was carried out using IBM SPSS Statistics for Windows, version 22.0 (IBM Corp. Armonk, NY, USA). During data cleaning, more variables were created so as to facilitate the association of variables. Clear values for various outcomes were determined before running frequency tests. Categorical data were presented as percentages (%), whereas continuous data were presented as mean and standard deviation (SD). A paired *t*-test was used to compare knowledge and practice scores of pretest and posttest for the two groups and between the two groups. All tests were performed at a 5% level of significance; thus, an association was significant if $P < 0.05$.

Results

The present study was conducted among 649 students and during follow-up 16 students in control group and 30 students in intervention group were lost to follow-up, however they were not excluded from the study [Figure 1]. The overall mean age (\pm SD) of study participants in control and intervention was 15.43 ± 1.09 and 15.59 ± 1.17 years, whereas the mean age (\pm SD) of menarche for the same was 12.81 ± 1.73 and 12.65 ± 1.86 years. Furthermore, other baseline characteristics of both the groups were comparable such as mother's literacy status, religion, type of family, and socioeconomic status, and it was surprising that in both the groups among more than two-third of participants, no sanitary latrine was available at home and nearly one-fourth of participants were never exposed to advertisements in mass or social media regarding the usage of sanitary pads [Table 1].

The improved score can be clearly visualized from Table 2, as a poor score in pretest got transformed into a good score posttest after training sessions in both the control and intervention groups. There was a difference in the knowledge and practical mean score of participants

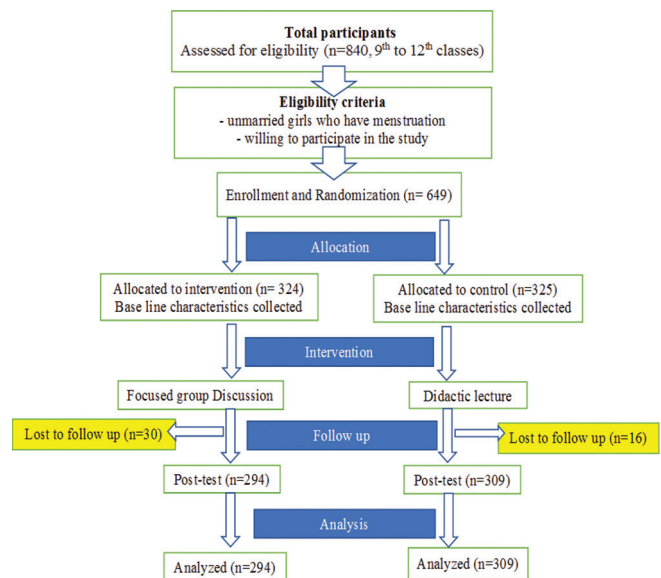


Figure 1: CONSORT flowsheet

in the control group for pre- and postintervention, which was highly statistically significant ($P < 0.001$). Similarly, a statistically significant difference ($P < 0.001$) was observed between pretest and posttest scores when scores were calculated for the intervention group for knowledge and practice.

While comparing the efficacy of FGD over DL, it was observed that the difference in the mean pretest score for knowledge and practice in both the control and intervention groups was not statistically significant ($P > 0.05$), but a statistically significant difference ($P < 0.001$) was observed in posttest scores when scores were calculated for the control and intervention groups for knowledge and practice [Table 3].

Discussion

In the present study, there was a difference in the knowledge and practical mean score of participants in both the control and intervention groups for pre- and postintervention, which was highly statistically significant ($P < 0.001$).

Furthermore, in a study conducted by Min and Ahn, there were significant differences in menstrual knowledge as well as menstrual self-management behavior between the two groups. The experimental group (knowledge pretest mean score was 11.22 ± 2.35 and posttest it was 17.86 ± 2.48 ; practice pretest mean score was 49.00 ± 4.80 and posttest it was 54.82 ± 3.50) showed significant improvement in both menstrual knowledge score ($t = 13.37, P < .001$) and menstrual self-management behavior score ($t = 8.38, P < .001$) than the control group (knowledge pretest mean score was 11.26 ± 2.15 and posttest it was 11.76 ± 2.26 ; practice

Table 1: Comparison of baseline characteristics of the study participants in control and intervention groups (n=649)

Variable	Frequency, n (%)		Significance level
	Control group (didactic lecture) (n=325)	Intervention group (focused group discussion) (n=324)	
Age group (years)			
12-14	82 (25.2)	83 (25.6)	$\chi^2=0.053$, df=2, $P=0.973$
15-17	226 (69.5)	223 (68.8)	
18 or more	17 (5.3)	18 (5.6)	
Class			
9 th	79 (24.3)	86 (26.5)	$\chi^2=1.152$, df=3, $P=0.764$
10 th	46 (14.2)	41 (12.7)	
11 th	117 (36.0)	108 (33.3)	
12 th	83 (25.5)	89 (27.5)	
Mother education			
Illiterate	138 (42.4)	144 (44.4)	$\chi^2=1.331$, df=3, $P=0.721$
Primary or middle school	77 (23.7)	69 (21.3)	
High school or senior secondary	59 (18.2)	66 (20.4)	
Graduate or diploma or above	51 (15.7)	45 (13.9)	
Religion			
Hindu	61 (18.8)	53 (16.4)	$\chi^2=0.651$, df=1, $P=0.419$
Muslim	264 (81.2)	271 (83.6)	
Type of family			
Nuclear	111 (34.1)	114 (35.2)	$\chi^2=0.785$, df=2, $P=0.675$
Joint	193 (59.4)	184 (56.8)	
Extended	21 (6.5)	26 (8.0)	
SES*			
Class I	17 (5.2)	14 (4.3)	$\chi^2=1.208$, df=4, $P=0.876$
Class II	79 (24.3)	82 (25.3)	
Class III	84 (25.8)	92 (28.4)	
Class IV	131 (40.3)	125 (38.6)	
Class V	14 (4.4)	11 (3.4)	
Sanitary latrine available in home			
Yes	112 (34.5)	101 (31.7)	$\chi^2=0.795$, df=1, $P=0.372$
No	213 (65.5)	223 (68.3)	
Exposure to advertisements promoting use of sanitary pads in media (radio/television/social)			
Yes	236 (72.6)	241 (74.4)	$\chi^2=0.260$, df=1, $P=0.610$
No	89 (27.4)	83 (25.6)	
Mean age (years), mean±2SD	15.43±1.09	15.59±1.17	$t=1.803$, df=647, $P=0.072^{\#}$
Mean age at menarche (years), mean±2SD	12.81±1.73	12.65±1.86	$t=1.135$, df=647, $P=0.257^{\#}$

*Modified BG Prasad SES Classification. #Independent sample t-test assuming equal variances and excluding cases analysis by analysis. SES=Socioeconomic status, SD=Standard deviation

pretest mean score was 47.90 ± 4.23 and posttest it was 46.90 ± 5.32 .^[7]

While comparing the efficacy of FDG over DL, it was observed that the difference in the mean pretest score for knowledge and practice in both the control and intervention groups was not statistically significant ($P > 0.05$), but a statistically significant difference ($P < 0.001$) was observed in posttest scores when scores were calculated for the control and intervention groups for knowledge and practice. In a study by Kokiwar and Nikitha, both education methods, i.e., DL and FDG, were equally effective in increasing mean knowledge and practice score (for the control group, knowledge pretest mean score 9.38 ± 2.10 and posttest score 11.29 ± 2.06 ,

$P < 0.000$, and practice pretest mean score 7.62 ± 1.33 and posttest score 8.62 ± 1.15 , whereas for the intervention group, knowledge pretest mean score 9.78 ± 1.89 and posttest score 11.87 ± 1.97 and practice pretest mean score 7.73 ± 1.19 and posttest score 8.46 ± 0.97). On comparison of mean postintervention scores between the two groups for knowledge, the FDG method was found to be superior ($P < 0.05$) but not for practices ($P > 0.05$).^[8]

Nisman *et al.* showed in a study that there were significant differences in the levels of knowledge and practice of menstruation hygiene between the boarding school students in the rural areas before and after health education using a booklet (knowledge pretest mean score 26.35 ± 2.49 and posttest score 28.15 ± 2.08 , $P < 0.000$,

Table 2: Pre- and post-test mean score for knowledge and practices regarding menstrual hygiene in control and intervention groups

Knowledge and practice score	Mean±2SD		Significance level
	Pretest (n=325)	Posttest (n=309)	
Control group (didactic lecture)			
Knowledge score	4.94±1.83	8.55±2.18	t=40.593, df=308, P<0.001*
Practice score	8.28±3.94	11.70±3.43	t=28.342, df=308, P<0.001*
Knowledge and practice score	Mean±2SD		Significance level
	Pretest (n=324)	Posttest (n=294)	
Intervention group (focused group discussion)			
Knowledge score	4.99±1.82	10.38±2.28	t=36.551, df=293, P<0.001*
Practice score	8.34±3.96	13.51±2.86	t=30.689, df=293, P<0.001*

*Paired sample t-test and excluding cases analysis by analysis. SD=Standard deviation

Table 3: Comparison of control and intervention groups for obtained pre- and post-test mean score for knowledge and practices regarding menstrual hygiene

Knowledge and practice score	Mean±2SD		Significance level
	Control group (didactic lecture) (n=325)	Intervention group (focused group discussion) (n=324)	
Pretest score			
Knowledge	4.97±1.81	5.03±1.80	t=0.433, df=647, P=0.665*
Practice	8.31±3.92	8.35±3.92	t=0.113, df=647, P=0.901*
Knowledge and practice score	Mean±2SD		Significance level
	Control group (didactic lecture) (n=309)	Intervention group (focused group discussion) (n=294)	
Posttest score			
Knowledge	8.55±2.18	10.38±2.30	t=10.033, df=601, P<0.001*
Practice	11.72±3.42	13.52±2.84	t=6.990, df=601, P<0.001*

*Independent sample t-test assuming equal variances and excluding cases analysis by analysis. SD=Standard deviation

and practice pretest mean score 16.80 ± 1.36 and posttest score 17.75 ± 1.30 , $P < 0.000$).^[9]

Nazimah and Tabassum study reflected that the knowledge level of the study participants regarding reproductive health showed that the mean posttest knowledge score (33.10 ± 3.03) was higher than the mean pretest knowledge score (16.52 ± 4.44). This indicates the effectiveness of the health education package in increasing the level of knowledge of adolescent girls regarding reproductive health.^[10]

A study by Iswarya and Varshini showed that after health education session, the girls had improvement (91%) in knowledge regarding the cause for menstruation. The frequency of changing pads was significantly higher (86%) at the follow-up. Nearly 74% of the girls washed their hands with soap after changing the sanitary napkin compared to 41% before the intervention. There was a significant improvement in a number of students washing their genitals every time using the toilet (30% at baseline to 66% during follow-up).^[11]

In a study conducted by Mohamed *et al.*, where most of the students had a healthy practice score level regarding all aspects related to menstrual hygiene in the posttest

compared to the pretest, the majority of them abstained from performing normal activities in the pretest. Meanwhile, in the posttest, highly statistically significant differences were seen with regard to the previous items, where $P = 0.001$.^[12]

The study by Dahal and Acharya revealed that 8.9% of the respondents had high knowledge during pretest which was significantly increased to 60.7% during posttest and 27.7% of the respondents had good practice during pretest which was significantly increased to 51.8% during posttest.^[13]

In a study by Prema *et al.*, it was observed that in pretest, 93.34% of the visually impaired adolescent girls had average knowledge regarding menstrual hygiene and 3.33% had good as well as poor knowledge each. In posttest, all visually impaired adolescent girls were (100%) having good knowledge. In relation to self-reported practices, the majority (29, 96.67%) of the visually impaired adolescent girls were showing good self-reported practices. There was a highly significant difference between pre- and posttest knowledge scores. The planned health teaching was highly effective in improving the knowledge regarding menstrual hygiene among visually impaired adolescent girls.^[14]

Furthermore, a study done by Deepalakshmi *et al.* showed that prior to intervention, nearly half of study population (45.66%) responded cloth as the most hygienic menstrual absorbent material, followed by sanitary pad (34.0%) and reusable sanitary pad (13.33%), but after menstrual hygiene educational intervention nearly all participants (95.66%) responded sanitary pad as the most hygienic menstrual absorbent material. Prior to intervention, more than four fifth of girls (83.33%) were aware that poor hygiene practices can lead to infections but after intervention nearly all girls (98.66%) were aware that poor hygiene practices can lead to infections. Results showed that the health education had a relatively high impact on the improvement of knowledge about menstrual hygiene practices.^[15]

Thus, all above-discussed studies support the observation that health education is effective in increasing the overall knowledge and practices related to menstrual hygiene and recommend that all adolescent girls should make aware about the best menstrual health management practices.

Conclusions

This study reveals that menstrual hygiene is far from satisfactory among most of the school girls. The DLs and FGD have improved the menstrual hygiene knowledge and practices among school girls. Improving educational methods for menstrual hygiene at the level of the adolescents can go a long way in improving menstrual hygiene practice, so teachers/Anganwadi workers/nearby medical college faculty should be trained to give special DLs and also arrange FGDs regularly to increase the knowledge and correct practices related to menstruation among the school girls.

Limitations

The present study was done in one of the aspirational districts of Haryana among more than 600 participants, but the participation from private school girls was lacking, so the findings of the study might not represent the generalizability in that expected manner.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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