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ORIGINAL RESEARCH

Menstrual hygiene practices and its determinants among Adolescent girls residing in Urban Slums of Faridkot: A cross sectionalstudy

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ABSTRACT:
Background: Menstruation is a natural phenomenon which is linked to health, well-being, dignity and empowerment of women. It is linked to many taboos which lead to promotion of dangerousmenstrualhygienepracticesandthestigmaattachedcancauseincreased schooldropoutrates. Due to lack of knowledge many women are unaware about the source of menstrualblood. **Objectives**: Todeterminethepracticesofmenstrualhygiene& itsassociatedfactorsamong adolescent girls of urbanslums and to educate adolescent girls regarding good menstrualhygiene. **Study design**: Cross-sectional study. **Material and Methods:** The study was carried out for 2 months on 200 adolescent girls of urban slums who had attained the age of menarche. Data was collected using self-structured pre-tested and validated tool and analyzed using suitable statistical software. **Results:** The mean age of girls was 15.4±2.02years. 60% of girls had attained menarche by age of 13 years. 125 (62.5%) used disposable absorbent sanitary napkins. 75(37.5%) were using household non-disposable, non-absorbent cloth (linen) materials. 99(49.5%) were using 2 to 3 pads/day during their menstrual period. **Conclusion**: The study concluded that awareness regarding menstruation is required. Sanitarypadsshouldbemadeavailabletoslum areas at affordable prices.

Introduction

Menstruation is a natural phenomenon which is linked to health, well-being, dignity and empowerment of women. It is linked to many taboos which lead to promotion of dangerousmenstrualhygienepracticesandthestigmaattachedcancauseincreased schooldropoutrates.Accordingtoastudy9outof10girlsmissedschooleverymonth duringmenstruationinruralareasofBiharandJharkhand[1].Inruralareasadolescent girlsarefacedwithmanytaboosrelatedtosocioreligiousrestrictions.Manyruralgirls arerestrictedfromhouseholdwork,takingpartinreligiousactivitiesandplayingduring menstruation.Mostofthepeoplefeeluncomfortabletodiscussaboutthesubject.Due to lack of knowledge many women are unaware about the source of menstrualblood. In a survey it was found that 79% of adolescent girls used pads and 21% used cloth napkins.[2]Insomeregionstheyevenusesawdust,cowdungandmud.[3]Highcost and unavailability are the major reasons for not using sanitary pads among the poorstrata.[4] Moreover, some girls feel shy in going to shops for buying sanitary napkins. Safe disposal of sanitary pads is also a major problem. Menstrual Hygiene Day is celebrated on 28th May every year to create awareness about the good menstrual hygiene management. Menstrual hygiene is a part of Swachh Bharat Mission[5]. MinistryofDrinkingWaterandSanitationhasissuedmenstrualhygienemanagement guidelines to

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support adolescent girls and women.[5]Under RMNCHA there is a scheme for promotion of menstrual hygiene in rural India. Through this scheme high quality and safe products are made available to the girls.[6] The sanitary napkins are provided under NRHM brand 'Free Days'. These are sold by ASHA workers to the adolescent girls. So the need of the hour is to provide every women access to clean andsoftabsorbentsanitarypadsatreasonableprices.Theyshouldbeacknowledged about the Urinary Tract Infections and Pelvic Inflammatory Diseases that are caused due to use of cloth napkins and inadequate personalhygiene.[7]

Aims and Objectives

1. Todeterminethepracticesofmenstrualhygieneanditsassociatedfactorsamong adolescent girls of urbanslums.
2. To educate the adolescent girls regarding good menstrualhygiene.

Materials and Methods Study setting

The study was conducted in four urban slums of District Faridkot, Punjab

Study Population

The study included the adolescent girls of urban slums who have attained the age of menarche.

Study Period

Thestudywascarriedoutoveraperiodoftwomonths.Duringthisperiodfieldsurvey, data collection and analysis wasdone.

Study Design

A cross sectional study design was adopted for studying the knowledge and practice of menstrual hygiene among the adolescent girls who have attained menarche.

Sampling

Systematic random sampling technique was used for sample collection. The sample size has been decided taking into account the: -

1. Proportion of adolescent girls using sanitarypads.
2. Confidence limit of95%
3. Margin of sampling error7%
4. Nonresponse rate is taken to be 10%

To work out the required sample size the following equation has been applied $n=4pq/L^2$
Where,
n=Minimum Sample size required p=expected prevalence rate (%) q=100-p
L=Allowable Error in %

Literature review revealed that the proportion of adolescent girls using sanitary pads in district Amritsar is 68.7% [17]. As the data on proportion of adolescent girls using sanitary pads for district Faridkot was not available, the sample size was calculated bypresumingtheproportionofadolescentgirlsusingsanitarypadsindistrictAmritsar as 68.7% and as such the sample size for the study came out to be175.
Taking 10% as the non-response rate the final sample size came out to be 193 approximately 200.

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Study Tool

A self-designed pretested questionnaire was used to determine the knowledge regarding menstrual hygiene and practices among adolescent girls.

Methodology

There are four urban slums in district Faridkot with different population which are as follows:

1. Jot Ram Colony:3500
2. Gobind Nagar Basti:2800
3. Railway Station Basti:850
4. JogiyanBasti:1550

Toadjustforthedifferenceinthepopulationsprobabilityproportionforsize(PPS)was applied and adolescent girls were proportionately allocated in the slums to get the desired sample size of 200. List of total households in the slums was procured from District Hospital. Systematic Random sampling technique was used for the allocation ofhouseholds.

House to house survey was carried out. The adolescent girls were interviewed with thehelpofthequestionnaireafterobtainingthepriorconsentorassent.Thedatawas collected and interpreted for theconclusion.

Data Analysis

The data collected was compiled in MS Excel and appropriate statistical tests including chi-square test were applied wherever needed.

Observations and Results

A total of 200 adolescent girls were interviewed in the present study. The age of girls ranged between 11 to 19 years with mean age of 15.4±2.02years.

Table 1 depicts that maximum (45.5%) number of girls were in the age group of 13 to 16 years. Out of total 200 girls, 68(34%) were not enrolled in the school, whereas 73(36.5%)ofgirlswerestudyingatsecondarylevel.AccordingtomodifiedBGPrasad classification (March 2016 AICPI), maximum (45.5%) number of families belonged to ClassIVofsocioeconomicscalefollowedby41%familiestoclassVi.e.BPLcategory By recall method, the lowest and the highest age at menarche was found to be 9 and 17 years respectively with mean age of attaining menarche being 12.8±1.5 years. All the girls attained menarche by the age of 17 years of which 60% had attained menarche by the age of 13 years. Out of the total 200 girls, 184(92%) had history of moderate flow during menstrual cycle and maximum girls (53%) had menstrual flowlasting 4 to 5days.

According to table 3, it is evident that out of total 200 girls interviewed 125(62.5%) used disposable absorbent sanitary napkins, however, 75(37.5%) were still using household non-disposable, non-absorbent cloth (linen) materials. Higher percentage of girls, 99(49.5%) were using 2 to 3 pads per day during their menstrual period.

Outofthetotal75girlswhousedabsorbentlinenonly4(2%)girlsreusetheclothand all of them use soap (detergent) and water to clean the cloth material. All girls were drying the cloth material in the sunlight outside the house. Higher percentages ofgirls

i.e. 72.5% were practicing an insanitary method of disposal of materials and only 51(25.5%) of girls were using public bins for the disposal of the material as shown in figure 1. Maximum girls153(76.5%) were using plastic bags to wrap the pads before disposing off the material.

Table 4 shows the practices of personal hygiene i.e. frequency of pad change is maximum(49.5%)twotothreetimesinadayfollowedby80(40%)girlswhochanged three or more times in a day followed by 21(10.5%) girls who change pad only once in a day. Out of 200 girls maximum 189(94.5%) do not change their panty in aday.

Whenitcomestotakingbathduringmenstruationmaximum160(80%)takebathdaily followed by

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32(16%) who take bath on second day followed by 5(2.5%) and 2(1%) who take bath only on first day or take no bathrespectively.

The practice of cleaning of external genitalia was practiced by 197(98.5%) girls out of which 137(66%) used soap and water, 65(32.5%) used only water while only3(1.5%) girls do not clean external genitalia duringmenstruation.

As shown in table 5 maximum 120(60%) of girls had information about menstruation before menarche out of which 75(62.5%) girls received this information from mothers followed by 29(24%) and 13(11%) from friends and teachers respectively.

Most of the girls 189(94.5%) didn't know the cause behind menstruation and only 8(4%) girls knew that uterus is the organ associated with bleeding during menstruation.38.5% of the girls experience interference in school performanceduring menstruation which may be due to the accompanyingsymptoms.

Figure2showsthatmajorityofthegirlsexperiencedabdominal(66.5%)andbackpain (56%)duringmenstruation.However,weakness(45%),anorexia(3.5%)andvomiting (2.5%) are the other symptoms which areexperienced.

Table6showsthatuseofsanitarynapkinsaresignificantlyassociatedwitheducation in slum adolescent girls as indicated by chi-square test and p value as 54.206 and 0.00*. Practices of sanitary disposal of materials are significantly associated with education and economic class indicated by chi-square test and p value as 33.35, 0.001* and 21.26, 0.012* respectively. Age of girls has been significantly associated (10.147, and 0.038*) with frequency of pad change among slumadolescents.

Table 1: Demographic distribution of adolescent girls (n= 200).

Demographic distribution	**Frequency**
Age(years)	
<13(Early adolescents)	38(19%)
13-16(Adolescents)	91(45.5%)
>16(Late Adolescents)	71(35.5%)
Education	
No schooling	68(34%)
Primary	3(1.5%)
Secondary	73(36.5%)
High secondary	51(25.5%)
Family Income per Month(According to BG Prasad Modified)	
Class V	82(41%)
Class IV	91(45.5%)
Class III	19(9.5%)
Class II	8(4%)
Class I	0(0%)

Table 2: Distribution of adolescent girls according to age at menarche and pattern of menstrual cycle.

Menstrual variables	**Frequency**
Age at menarche(years)	
≤11	36(18%)
12	47(23.5%)
13	37(18.5%)
14	36(18%)

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≥15	24(12%)
Don't know	20(10%)
Menstrual Flow	
Moderate	184(92%)
Heavy	16(8%)
Duration of Menstrual Flow(Days)	
≤3	59(29.5%)
4-5	106(53%)
≥ 5	35(17.5%)

Table 3: Distribution of adolescent girls according to absorbent material used and associated practices during menstruation.

Hygienic practices	**Frequency**
Material Used	
Sanitary Napkin	125(62.5%)
Non Disposable Linen	75(37.5%)
Number of pads/cloth changed per day	
1	21(10.5%)
2-3	99(49.5%)
>3	80(40%)
Re use of cloth (n=75)	
Yes	4(5.33%)
No	71(94.67%)
Material used for washing (n=4)	
Water and soap	4(100%)
Only with water	0
Place of Drying (n=4)	
Outside house in sunlight	4(100%)
Inside house	0
Material used for wrapping before disposal	
Papers	9(4.5%)
Plastic bag	153(76.5%)
None	34(17%)
Other	4(2%)

Table4:Distributionofadolescentgirlsaccordingtopersonalhygienepracticesduring menstruation

Hygienic practices	**Frequency**
Frequency of pads changed per day	
Once	21(10.5%)
Two to three times	99(49.5%)
Three or more	80(40%)
Frequency of panties changed during menstruation	
Once	9(4.5%)
Twice	1(0.5%)
Do not change	189(94.5%)
Once in two days	1(0.5%)

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Cleaning of external genitalia	
Yes	197(98.5%)
No	3(1.5%)
Material used to clean external genitalia	
Soap and water	132(66%)
Only with water	65(32.5%)
Do not clean	3(1.5%)
Bathing during menstruation	
Daily	160(80%)
First day only	2(1%)
Second day	32(16%)
Do not bathe	5(2.5%)

Table 5: Distribution of adolescent girls according to knowledge about normal menstruation

Knowledge	**Frequency**
Information about menstruation before menarche	
Yes	120(60%)
No	80(40%)
Source of information	
Mother	75(37.5%)
Friends	29(14.5%)
Teachers	13(6.5%)
others	3(1.5%)
No information	80(40%)
Any knowledge about menstruation before menarche	
Physiological process	8(4%)
Don’t know	192(96%)
Cause behind menstruation	
Curse of god	3(1.5%)
Physiological changes	8(4%)
Don’t know	189(94.5%)
Organ associated with menstruation	
Abdomen	30(15%)
Bladder	93(46.5%)
Uterus	8(4%)
Don’t know	69(34.5%)
Interference in school performance	
No	123(61.5%)
Yes	77(38.5%)

Table 6: Association between socio-demographic factors and menstrual hygiene practices

Variables	Use of Sanitary absorbent napkins	Sanitary disposal of materials	Ideal frequency of pad change
Age	N= 125	N= 51	N= 80
<13 : Early adolescents	22	12	14

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13-16: Adolescents	54	17	39
>16:Llate Adolescents	49	22	27
χ^2 , P value	5.455, 0.065	6.495, 0.370	10.147, 0.038*
Education			
No schooling	21	5	27
Primary	0	0	1
Secondary	55	27	28
High secondary	45	19	21
College	4	0	3
χ^2 , P value	54.206, 0.00*	33.354, 0.001*	2.679, 0.953
Socio–economic status			
Class V	51	18	32
Class IV	55	25	38
Class III	12	6	9
CLASS II	7	2	1
χ^2 , P value	2.305, 0.512	21.264, 0.012*	6.727, 0.347

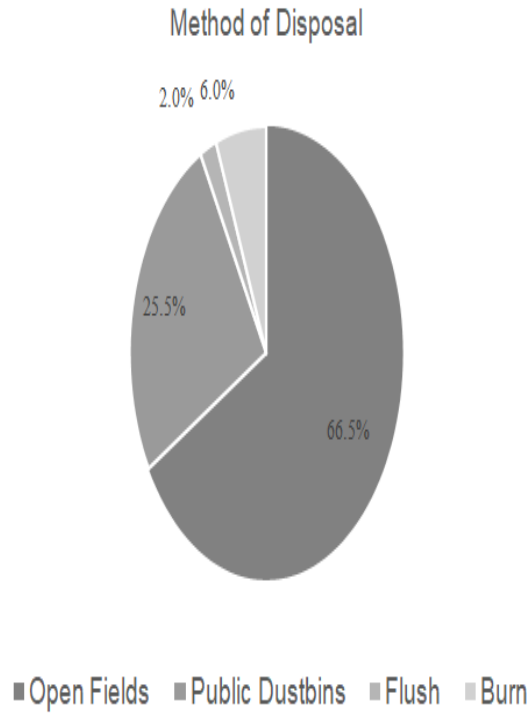

Figure1:Distributionofadolescentgirlsusingdifferentmethodsofdisposalofsanitary pads/cloth

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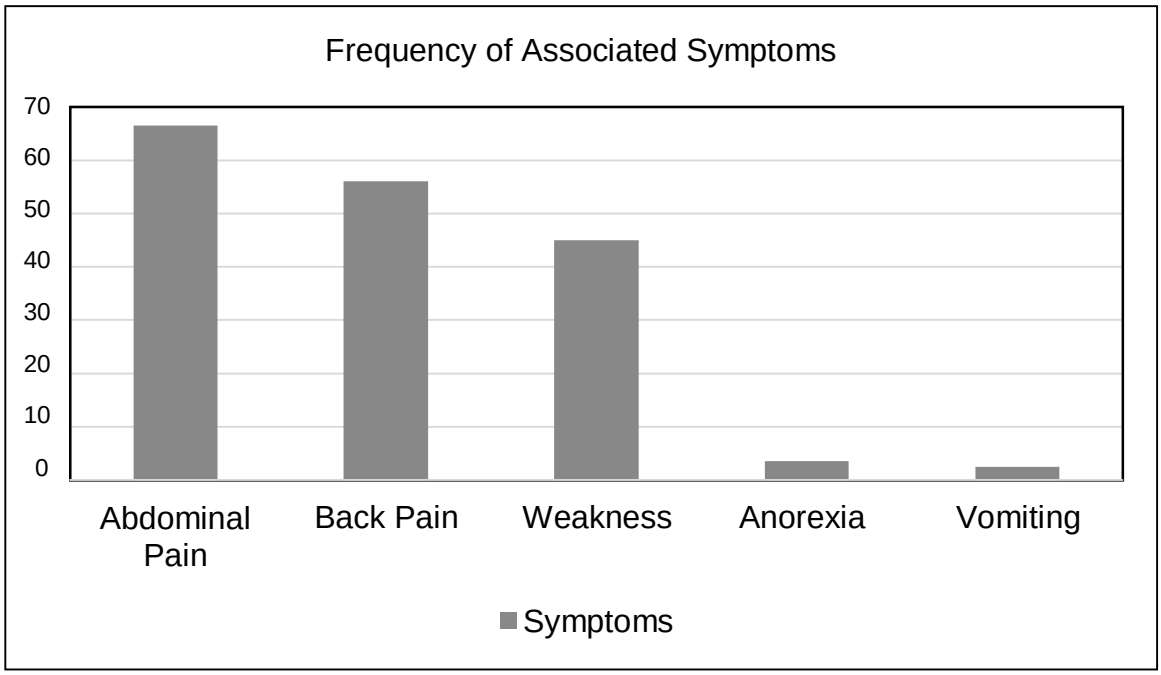

Figure 2: Distribution of frequency of symptoms associated with menstruation

Discussion

In the present study, the mean age of menarche in the girls ranging from 12 to 19 years of age is 12.8±1.5 years. It is similar to the study of Kapoor G et al. and Sultan S et al. where the mean age of menarche was found to be 13.43 and 13.2 years respectively [9,8]. 60% of the girls attain menarche between 12 to 14 years of age which is similar to a study done in Gandhinagar by Jagruti et al[11]. The amount ofblood flow during menstruation is moderate in 92% of the girls. A study in rural areas ofChandigarhandHimachalPradeshshowssimilarfindingwith82.8%ofthegirlswith normal blood flow during menstruation [12]. It is evident from our study that 53% of the girls have menstruation for 4 to 5 days followed by 29.5% of the girls having menstruationfor≤3dayswhereas17.5%ofthegirlshavemenstruationformore than 5 days. The results of duration of menstruation follows normal pattern in most of the girls which is also reported by the earlier studies i.e. Kapoor G et al. and Jagruti et al [9,11]. The hygienic practices during menstruation are important for maintaining a proper reproductive as well as general heath. Though 62.5% of the girls use sanitary napkinsbut37.5%ofthegirlsstillusenon-disposablelinenduringmenstruation.While it was observed that in the study done in Nagpur district by Thakre et al 49.35 % of the school going girls used sanitary napkins and the remaining used cloth either new or old[15]. The difference may be due the time period of the study as now sanitary napkins are being easily available in the schools under school health programme. Majorityofthegirlschangethesanitarynapkinorcloth2to3timesinaday.Itisseen that out of the girls who use non- disposable linen, 94.67 % of the girls do not re-use it. Remaining girls who re-use the non-disposable linen all of them wash it with soap and water and dry it outside in the sunlight. Open fields (66.5%)were the main site of disposal of used sanitary napkin or linen followed by disposal in publicdustbins(25.5%). However, 6% of the girls burn the used sanitary napkins and 2% of them flush it in the toilet. Kapoor G et al had similar findings in their study where 70.45% of the subjects throw their used sanitary napkins in routine waste, 7.58% of subjects burn it and the remaining 21.97% used other methods of disposal (flush, hide)[9]. Disposal of sanitary napkins remains an important issue regardingsanitation in major parts of the country. It is found that 98.5% of the girls clean their

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external genitalia during menstruation. The material for cleaning the external genitalia was soap and water in 66% of the girls whereas 32.5% of the girls use only water for this purpose. It is evident that a higher percentage of girls are concerned about the cleaning of external genitalia when compared with the findings of the study of KapoorG et al where 65.91 % of the girls regularly clean their external genitalia and almost same percentage of girls(66.67%) used soap and water[9]. Bathing during menstruation is another good hygienic practice to be adopted. 80% of the girls take bath daily during menstruation whereas according to the study by Kapoor G et al 93.18%ofthegirlsbathedailywhichisahigherpercentagethanthepresentstudy[9].Nottakingbathdailyduringmenstruationmightbeassociatedwithcertaincultural beliefs and availability of bathing facilities in slumareas.

Knowledge about menstruation before menarche is important for the adolescent girls tomakethemawareaboutthebodilychangestheyaretoexperienceinthefutureand how good menstrual hygiene practices will help them lead a healthy life. It is evident fromthestudythat60%ofthegirlswereawareaboutmenstruationbeforemenarche. The source of information to these girls was mainly mother in 62.5% of the cases followed by friends(24%) and teacher(11%). Similar findings were reported byThakre etalintheirstudywheremother(71.33%)wasthemainsourceofinformationfollowed by sister(23.78%), friends(18.18%) and teachers(11.89%)[15]. Most of the girls(94.5%) don't know about the cause behind menstruation whereas only 4% of them consider it to be a physiological process. However 1.5% of the girls consider it as a curse of God. Such findings signify lack of education among the girls which can be supported by the significant proportion(34%) of girls not going to school. The findings are in accordance with the study in Gandhinagar where 51.1% of the girls didn't know the cause behind menstruation[11]. In present study 46.5% of the girls considered bladder to be the organ associated with menstruation followed by abdomen(15%) and uterus(4%) and the remaining 34.5% didn't have any knowledge regarding this. Similar findings were reported by Jagruti et al in their study where bladder(27.3%) was considered to be the organ associated, however, 51.1% did not know about it[11]. The adolescent girls face many problems doing daily activities duringthemenstruation.Inthestudyitwasseenthatmenstruationinterferesinschool performancesin38.5%ofthegirlswhichmaybeduetotheaccompanyingsymptoms or the cultural taboos prevalent in thesociety.

Conclusion

This study concludes that there is an urgent need to make the adolescent girls aware about the physiological process of menstruation. Education regarding menstrual hygiene should be made a part of the school curriculum. Mothers are the most important source of information but in most families mother are reluctant to discuss thistopicwiththeirdaughtersbeforetheageofmenarche.Availabilityofsanitarypads isanotherhindrancetoitsusage.So,sanitarypadsshouldbemadeavailabletoslumareas at an affordable price. Besides, proper facilities for disposal of sanitary pads such as incinerators should be made available in the slum areas.

Summary

Menstruation is a normal physiological process. Lack of knowledge and awareness among adolescent girls in the slum areas leads to poor hygiene which further leads on to reproductive tract infections. Many girls miss school during menstruation due to discomfortandsocialstigma.Duetoilliteracypeopleintheslumsarereluctanttoopen up on this topic. Disposal of sanitary pads is another important issue. The purpose of this study was to educate adolescent girls about the proper menstrual hygiene and bring them out of several

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misconceptions regarding menstruation. The study was conducted among adolescent girls in the urban slums of Faridkot to determine the menstrual hygiene practices among them. The study was based on pre-designed questionnaire to be answered by the girls through house to house survey. The collected data was then compiled and the results interpreted. It was evident that out oftotal200girlsinterviewed125(62.5%)useddisposableabsorbentsanitarynapkins, however, 75(37.5%) were still using household non-disposable, non-absorbent cloth (linen) materials. Open fields (66.5%)were the main site of disposal of used sanitary napkin or linen followed by disposal in public dustbins (25.5%). 120(60%) of girls had information about menstruation before menarche out of which 75(62.5%) girls receivedthisinformationfrommothersfollowedby29(24%)and13(11%)fromfriends and teachers respectively. It was evident that there is a need to create awareness among the adolescent girls in slums about the good hygiene practices during menstruation.Sanitarypadsshouldbemadeavailableataffordablepricesandproper disposal facilities should be provided.

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