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A STUDY TO ASSESS KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING MENSTRUAL CYCLE, MENSTRUAL HYGIENE, SEXUAL PROMISCUITY AND USE OF EMERGENCY CONTRACEPTIVES AMONG ADOLESCENT SCHOOL GIRLS IN URBAN POPULATION OF BHOPAL (MP) INDIA

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Abstract:

Background:

Menstruation is a natural physiological process that requires proper management (1) .Appropriate menstrual hygiene management (MHM) is impeded by taboos and secrecy surrounding menstruation. Unhygienic menstrual practices and unpreparedness for managing menstruation has been associated with adverse health and social outcomes among adolescent girls(2).Many adolescent girls in low-income and middle-income countries lack appropriate facilities and support in school to manage menstruation

(3).Unwanted pregnancy followed by unsafe abortion is one of the major worldwide health problems, which has many negative consequences on the health and well-being of women. Information about women's knowledge, attitude and practice of emergency contraceptives plays a major role in the reduction of unwanted pregnancy(4).

Objective: To assess the knowledge, attitude and practices regarding menstrual cycle, menstrual hygiene, sexual promiscuity and use of emergency contraceptives amongst adolescent school girls.

Materials and Methods:

Since adolescence is the period when these habits related to menstruation start, the present study was undertaken amongst adolescent school girls in a urban area of Bhopal (MP) to assess their knowledge, attitude and practices regarding menstrual cycle, menstrual hygiene, sexual promiscuity and use of emergency contraceptives. Adolescent girls of class IX to XII were taken from 6 Government and private girl schools of Bhopal city in order to study knowledge, attitude and practices regarding menstruation, menstrual hygiene practices, sexual promiscuity and use of emergency contraceptives amongst adolescent girls. To get a representative sample schools exclusive for girls were chosen. All the students of class IX to XII were included in study. A cross-sectional study was carried out in Government and private schools of Bhopal exclusively for girls, drawing a sample of 2000 adolescent school girls studying in class IX to class XII through simple random sampling method. The sample size was calculated using the formula: 4PQ/L2 where P&Q were taken as 0.5 to get the maximum sample size and by accepting 7% permissible error and 15% as no response rate. Random number table was used for selection of adolescent school girls studying in Government and private schools, in class IX to class XII.

Results: The mean age at menarche was 13.5 years. 86% of the girls knew about menstruation before it occurred and the chief source of this information were mothers (77%) followed by friends (13%) and elder relatives (6%).Majority of the girls had correct idea about menstruation being a physiological process. However, their hygienic practices during menstruation were not satisfactory as almost half of them used cloth during periods and 38 reused cloth without adequate cleaning. Most of them did not use sanitary pads as they thought the same to be tooexpensive.90.5% of the adolescent school girls were aware about emergency contraceptive pills i.e. pills to prevent pregnancy after unprotected sex. 69.8% knew that these pills are available at pharmacy/chemist shops while 40.2% knew about their availability at private clinics of doctors while a lesser than a third (28.6%) of the women were aware that these pills are available at Government health centres and hospitals. Almost a third of the women had apprehensions regarding possible health problems(38.7%) with the use of these pills, side effects to the fetus incase of failure of emergency contraceptive(24.1%),effectiveness of these pills(15.1%) and problems in conceiving later on(33.7%).However, 11.1% also feared that the use of these pills might have more women suffering from sexually transmitted infections/HIV and almost half (49.2%) of the adolescent school girls felt that these pills may result in a casual approach towards sex among adolescent school girls. A total of 14 (1.4%) adolescent school girls had

used ECPs during the last year.7 girls had used once, 4 had usedtwice and 3 had used it for 3 or more times during the last one year.

Conclusion: Correct knowledge of the girls was assessed by asking about cause of menstruation, age of menopause and whether menstruation occurs during pregnancy. 83.2% of the girls correctly knew about all the three. The knowledge was significantly associated with the age and number of years of schooling of the girls.90.5% of the adolescent school girls were aware about emergency contraceptive pills i.e. pills to prevent pregnancy after unprotected sex. The source of this information for most of them (75.9%) was through Television / Internet followed by relative / friend / spouse (10.6%). Only 40.7% women correctly knew about the time interval from unprotected sexual intercourse up to which these pills can be taken i.e. 72 hours. Alarmingly, 8.5% believed that these pills would also work in case of menstrual delay which can lead to these pills being unsuccessfully used to abort early pregnancies and may cause serious health problems.

Keywords: Menarche, Menstruation, Menstrual health, Menstrual hygiene management, Adolescent school girls, Taboo, School Absenteeism, Emergency contraceptive pills (ECP), Reproductive Tract Infections (RTI) and Coercion.

Introduction

Universally improved parent adolescent communication in promoting healthy menstrual hygiene and healthy sexual behaviour among adolescents girls is very important. Menstruation is a natural physiological process that requires proper management. Unlike other normal bodily processes, menstruation is linked with religious and cultural meanings that can affect the perceptions of young girls as well as the ways in which the adults in the communities around them respond to their needs [(1)].Appropriate menstrual hygiene management (MHM) is impeded by taboos and secrecy surrounding menstruation. Unhygienic menstrual practices and unpreparedness for managing menstruation has been associated with adverse health and social outcomes among adolescent girls [(2)].Many adolescent girls in low-income and middle-income countries lack appropriate facilities and support in school to manage menstruation. Little research has been conducted on how menstruation affects school absence. This study examines the association of menstrual hygiene management knowledge, facilities and practice with absence from school during menstruation [(3)].Adolescent girls who have a positive relationship with their parents are known to be less likely to suffer from poor menstrual hygiene related disorders and in initiating sex early in life.

Unwanted pregnancy followed by unsafe abortion is one of the major worldwide health problems, which has many negative consequences on the health and well-being of women. Information about women's knowledge, attitude and practice of emergency contraceptives plays a major role in the reduction of unwanted pregnancy [(4)]. There is growing evidence, showing that various parenting dimensions like connectedness, love, material support, behavioural control, monitoring and parent adolescent communication are positively associated with reduced levels of risk taking among adolescent girls.

The onset of menstruation is one of the most important physiological changes that occur in a woman's body during the adolescent years. The menarche or the time of onset of menstruation varies with race and family, but the average for most girls is from 10 to 14 years. It repeats itself every month till the age of 45-50 years unless interrupted by pregnancy or any other medical complication. It is estimated that every woman will have approximately 500 periods in her lifetime.

Although it is a normal physiological phenomenon, it is not an easy phase for an adolescent to go through. Most girls only have a vague idea, if any, about it before they get their first period. Hesitation to discuss it with elders because of socio- cultural restrictions results in their having poor knowledge about this important phenomenon. This in turn leads to poor hygienic practices being followed by these girls making them more prone to reproductive tract infections. Financial constraints also play a role in adoption of unhygienic practices by these girls.

The World Health Organization estimates that 8 million unwanted pregnancies occur annually worldwide. Around 42 million abortions take place every year; 20 million of them are unsafe. Almost 97% of the overall unsafe abortions take place in the developing world. Approximately 13% of pregnancy-related mortality worldwide is due to unsafe abortions [(5,6)]. Emergency contraception is used to prevent pregnancy within 72 hours of unprotected sexual intercourse. Emergency contraceptive pills (ECP) can reduce unwanted pregnancy and unsafe abortions. In India, 78% of the pregnancies are unplanned and at least 25% are

unwanted. Every year 11million abortions take place and at least half of these are unsafe and associated with a high morbidity and mortality. At least 20,000 women are dying annually due to abortion related complications [7, 8].

It is very important to address the hurdle of socio-cultural barriers. The 14-<18 years age range is a time of change, vulnerability and opportunity for adolescents girls to learn and develop skills to help them build patterns of health-maintaining behaviours. It is a time when adolescent girls can best be protected from potential risks by parents or caregivers who are closely involved in their lives. Unintended and unplanned sexual experience resulting in unwanted pregnancies, pose a major challenge to the reproductive health of young adolescent girls. Sexual and reproductive health needs of all adolescent girls, recognizes links between health, gender equality and girl's empowerment.

Objective:

To assess the knowledge, attitude and practices regarding menstrual cycle, menstrual hygiene, sexual promiscuity and use of emergency contraceptives amongst adolescent school girls.

Materials and Methods:

Since adolescence is the period when these habits related to menstruation start, the present study was undertaken amongst adolescent school girls in an urban area of Bhopal (MP) to assess their knowledge, attitude and practices regarding menstrual cycle, menstrual hygiene, sexual promiscuity and use of emergency contraceptives.

A reproductive & sexual health questionnaire survey was organized by Army Corps Headquarter of Bhopal for the adolescent school girls of Bhopal, during one year period, from 01 May 2015 to 30 April 2016. In Army there is a welfare organization, called Army Wives Welfare Association (AWWA) which constantly monitors and supervises optimal healthcare of all Army and civil population who are staying on the fringes of Bhopal Army Cantonment. Periodically, health promotion, specific protection, screening programs and health questionnaire survey are conducted to ensure optimal healthy status of the civil population too. Uniform instructions for screening were given from the medical branch of Army Corps Headquarters after obtaining requisite go-ahead (Ethical Approval and concurrence) from the wife of Bhopal Army Corps Commander. All eligible adolescent school girls were interviewed after obtaining informed consent to suffice the requirement of Ethical Approval.

Study Population:

Adolescent girls of class IX to XII were taken from 6 Government and private girl schools of Bhopal city in order to study knowledge, attitude and practices regarding menstruation, menstrual hygiene practices, sexual promiscuity and use of emergency contraceptives amongst adolescent girls. To get a representative sample schools exclusive for girls were chosen. All the students of class IX to XII were included in study. A cross -sectional study was carried out in Government and private schools of Bhopal exclusively for girls, drawing a sample of 2000 adolescent school girls studying in class IX to class XII through simple random sampling method.[6]

The sample size was calculated using the formula: $4PQ/L^2$ where P&Q were taken as 0.5 to get the maximum sample size and by accepting 7% permissible error and 15% as no response rate. Random number table was used for selection of adolescent school girls studying in Government and private schools, in class IX to class XII.

All the selected adolescent school girls in the selected schools, who had attained menarche, and gave consent to participate were included in the study. An educational diagnosis was made by a thorough anonymous self-administered questionnaire prepared using WHO guidelines, adolescent chapter guidelines to conform to the cultural sentiment. It was pretested in one of the section covering 50 adolescent school girls and it was suitably amended accordingly. The instrument was initially designed in English and then all the questions were translated to Hindi to avoid any misinterpretation and subsequently validation of Performa was done. Questions were divided into social and demographic variables and all the aspects of menstrual cycle, menstrual hygiene, sex, sexuality, reproductive health and use of

emergency contraceptive in the age group 14-<18 years were formulated. The adolescent school girls were interviewed by a team comprising of two lady medical officers using this pre-tested, semi-structured interview schedule.

The data was entered in MS Excel and analyzed using SPSS ver. 17. The results were presented as percentages and Chi square test was used to assess the association. 'p' value less than 0.05 was taken as significant.

Results:

Majority of the girls had correct idea about menstruation being a physiological process. However, their hygienic practices during menstruation were not satisfactory as almost half of them used cloth during periods and 38 % reused cloth without adequate cleaning. Most of them did not use sanitary pads as they thought the same to be too expensive.

The mean age at menarche was 13.5 years. 86% of the adolescent school girls knew about menstruation before it occurred and the chief source of this information were mothers (77%) followed by friends (13%) and elder relatives (6%).

Table 1: Perceptions of the adolescent girls regarding menstruation

Questions asked	Number	%	95% C.I.
Why does menstruation occur? (N=2000)			
Physiological process	1780	89.0	83.9-92.7
Caused by sin/curse	160	8.0	4.9-12.7
Disease	60	3.0	1.2-6.5
Does a woman have periods during pregnancy?(N=2000)			
Yes	130	6.5	3.7-10.9
No	1760	88.0	82.7-91.9
Don't know	110	5.5	2.9-9.7
At what age woman stops getting periods?			
(N=2000)			
>45 years	1790	89.5	84.4-93.1
<45 years	210	10.5	6.9-15.6
What activities are restricted during periods?*			
Visit relatives / friends / neighbour (N=1480)	60	4.1	0.9-7.2
Household work (N=2000)	1880	94.0	89.7-96.6
Perform religious activities (N=2000)	1930	96.5	92.8-98.4
Do you think it is a good practice to take bath during Periods? (N=2000)			
Yes	1920	96.0	92.2-98.1
No	80	4.0	1.9-7.8

Majority (89%) of the girls correctly knew that menstruation was due to a physiological process in a girl's body. Almost, similar proportions (88%) were aware that it ceases during pregnancy and almost 90% knew that women stop menstruating after a certain age i.e. after the age of 45 years. All girls reported been restricted from some activities during this period, most commonly from performing religious activities like visiting temples, performing pujas etc. and also doing household work. However, only a few (4%) were restricted from visiting friends, relatives etc. Majority (96%) of the girls think it is a good practice to take bath during periods.

Table No. 2: Responses of the adolescent school girls about duration of Menstrual Period

Age group	How long a normal period lasts?				Total
	2-3 days	3-7 days	>7 days	Don't know	
Mid Adolescent (14-<16 years)	96 17.2% of 556	371 66.7% of 556	37 6.7% of 556	52 9.4% of 556	556 27.8% of 2000
Late Adolescent (16-<18 years)	245 16.9%	1084 75.1%	36 2.5%	79 5.5%	1444 72.2% of 2000
TOTAL	341 17.1%	1455 72.75%	73 3.65%	131 6.5%	2000 100%

χ^2 =654.59, p<0.001

Out of total 2000, 1455 (72.75%) responded correctly i.e. 3-7 days, 341 (17.1%) answered 2-3 days, 73 (3.65%) said it is >7 days, 131 didn't know about the duration menstrual cycle. The knowledge about correct duration (i.e. 3- 7days) of menstrual cycle had increased in girls with the age 66.7% in mid adolescent girls to 75.1% in late adolescent girls.

Table3: Menstrual hygiene practices amongst adolescent school girls

Questions asked	Number	%	95% C.I.
What do you use during your periods?			
(N=2000)			
Sanitary pads	1050	52.5	45.6-59.3
Cloth	300	15.0	10.6-20.6
Cloth with Cotton	450	22.5	17.2-28.8
Both cloth and sanitary pads	200	10.0	6.5-15.0
How often do you change cloth/pad in a day? (N=2000)			
1 time	400	20.0	14.5-25.5
2-3 times	1460	73.0	66.9-79.2
>3 times	140	8.0	4.2-11.8
In what do you wrap the used cloth/pad for disposal? (N=2000)			
Paper	1680	84.0	78.3-88.5
Polythene bags	220	11.0	7.3-16.2
Dispose without wrapping	100	5.0	2.6-9.1
Where do you dispose of the used cloth/pad? (N=2000)			
Dust bin	1682	80.0	73.9-84.9
Throw on road	176	8.5	5.3-13.3
Burn	54	2.5	0.9-5.9
Flush in the toilet	88	4.0	1.9-7.8
If you use cloth, how do you wash the used cloth? (N=300)			
Only water	20	6.3	2.7-13.4
Soap and water	218	73.7	63.9-81.5
Throw after one use	62	20.0	13.1-29.2
Where do you dry the washed cloth before re-using?(N=300)			
House corner	118	39.5	29.2-50.7
Sundry	182	60.5	49.3-70.8

52.5% girls used sanitary pads during their periods. However, almost half used cloth with or without cotton and sanitary pads. All girls changed cloth/pad at least once a day. Out of the girls using cloth, 6.3% re-used cloth by washing just with water and 73.7% washed the cloth with soap and water. Among the girls reusing cloth, 58% washed used cloth with soap and water followed by sun-drying for adequate hygiene/ disinfection. For disposal of used cloth/pad, most (80%) wrapped it in paper and threw it in a proper place meant for solid waste disposal.

Table 4: Reason given by the adolescent school girls for not using sanitary pads during periods

Reason	Number	%
Sanitary pads too expensive	68	71.5
Hesitation to go and buy	11	11.6
Family doesn't allow to buy	7	7.4
Don't feel the need to use	6	6.3
Can't say	3	3.2
total	95	100

Amongst the girls who used cloth, majority (72 %) stated financial problem in buying sanitary pads, while 11 % felt hesitant to go and buy sanitary pads. The rest either did not feel the need to use pads or the family did not allow them to use pads.

Table 5: Knowledge of adolescents' girls regarding menstruation

Socio-demographic Variables	Correct Knowledge			χ^2 (d.f.)	P value
	Yes (%)	No (%)	Total (%)		
Age					
14-15 years	253 (45.5)	303 (54.5)	556 (27.8)	12.92(1)	P<0.001
16-18 years	1123(77.8)	321 (22.2)	1444(72.2)		
No. of years of schooling					
9-10 years	169 (30.3)	387 (69.7)	556 (27.8)	53.03(1)	P<0.001
11-13 years	1279(88.6)	165 (11.4)	1444(72.2)		
Family income (in Rs/month)					
<50000	330 (36.7)	570 (63.3)	900 (45.0)	5.46 (1)	P<0.05
>50000	646 (58.7)	454 (41.3)	1100(55.0)		
Total	976 (48.8)	1024(51.2)	2000 (100)		

Correct knowledge of the girls was assessed by asking about cause of menstruation, age of menopause and whether menstruation occurs during pregnancy. 83.2% of the girls correctly knew about all the three. The knowledge was significantly associated with the age and number of years of schooling of the girls.

Table 6: Response of the adolescent school girls about Sexual Attraction

Age group	Response about attraction				Total
	Opposite Sex	Both Sex	Same Sex	Not attracted to any sex	
Mid Adolescent (14-<16 years)	61	26	48	421	556
	10.9% of 556	4.6% of 556	8.8% of 556	75.8% of 556	27.8% of 2000
Late Adolescent (16-<18 years)	186	87	102	1069	1444
	12.9% of 1444	6% of 1444	7% of 1444	74.1% of 1444	72.2% of 2000
TOTAL	247	113	150	1490	2000
	12.35%	5.65%	7.5%	74.5%	100%

χ^2 = 94.63, P value < 0.001, which is highly significant

Out of total 2000 adolescent school girls, 247 (12.35%) found them attracted to opposite sex, 150 (7.5%) to same sex, 113(5.65%) to both sexes and 1490 (74.5%) were not attracted to any. Further according to age group, increase is seen in attraction towards opposite sex from 10.9% in mid adolescent age group to 12.9% in late adolescent age group.

Table 7: Response of the adolescent school girls about coercion (sexual attempt) by others on them

Age group	Coercion (Sexual attempt by others on you)			Total
	YES	NO	DON'T KNOW	
Mid Adolescent (14-<16 years)	6(1.1%) of 556	546(98.2%) of 556	4(0.7%) of 556	556 27.8% of 2000
Late Adolescent (16-<18 years)	28(2%) of 1444	1409(97.5%) of 1444	7(0.5%) of 1444	1444 72.2% of 2000
TOTAL	34(1.7%) of 2000	1955(97.75%) of 2000	11(0.55%) of 2000	2000 100%

χ^2 =28.90,
p=<0.001

Out of total 2000 adolescent school girls, 97.75% (1955) said "**NO"**, and 34 (1.7 %) said "**YES",** rest 0.55% said **"DON'T KNOW"**

Table 8: Knowledge among the adolescent school girls regarding Emergency Contraception

Questions	N (%)	95% C.I.
Have you heard about any pill(s) to prevent pregnancy after unprotected sex? (N=2000)		
Yes	1810 (90.5)	86.4 - 94.5
No	190 (9.5)	5.7 - 13.4
If Yes, when was the first time you heard about emergency contraceptive pills? (N=1810)		
< 6 months	219 (12.1)	7.5 - 16.5
6-11 months	255 (14.1)	9.2 - 18.9
1-5 years	882 (48.7)	41.8 - 55.7
Don't remember	454 (25.1)	19.1 - 31.2
Where did you hear about it? (N=1810)		
Clinic/ Health Centre/ Hospital	109 (6.0)	2.7 - 9.3
Friends/ Relative/ Spouse	192 (10.6)	6.3 - 14.8
Newspaper/ Magazines	135 (7.5)	3.9 - 11.2
Radio/ Internet/ Television	1374 (75.9)	65.6 - 78.1
Others	8 (4.0)	1.3 - 6.7
Do you know where a woman can obtain emergency contraceptive pills? (N=1810)		
Govt Hospital/Health Centre	517 (28.6)	22.4 - 34.9
Private Clinic	728 (40.2)	33.4 - 47.0
Pharmacy/Chemist Shop	1263 (69.8)	63.5 - 76.2
Don't know	418 (23.1)	17.3 - 28.9
Would these pills work if there is a menstrual delay?(N=1810)		
Yes	154 (8.5)	4.7 - 12.4
No	219 (12.1)	7.5 - 16.6
Don't know	1437 (79.4)	73.8 - 85.1
How long after unprotected sex should emergency contraceptive pills be taken? (N=1810)		
Within 24 hours	282 (15.6)	10.5 - 20.6
Within 72 hours	737 (40.7)	33.9 - 47.5
Don’t know	791 (43.7)	36.8 - 50.6
Can these pills be used for regular contraception?(N=1810)		
Yes	163 (9.0)	5.1 - 13.0
No	646 (35.7)	29.0 - 42.3
Don't know	1001 (55.3)	48.3 - 62.2
Awareness about the possible concerns with the use of pills. (N=1810)		
It may cause health problem	701 (38.7)	31.9 - 45.5
It may hurt the baby if a woman conceives despite	436 (24.1)	18.2 - 30.1
taking these pills		
It may result in complication to get pregnant in future	610 (33.7)	27.1 - 40.2
Are not effective	273 (15.1)	10.1 - 20.1
Can’t say	201 (11.1)	6.7 - 15.4

90.5% of the adolescent school girls were aware about emergency contraceptive pills i.e. pills to prevent pregnancy after unprotected sex. 48.7% of those who had heard of these pills have been aware of the same for duration of one year or more. The source of this information for most of them (75.9%) was through television/internet followed by relative / friend / spouse (10.6%).69.8% knew that these pills are available at pharmacy/chemist shops while 40.2% knew about their availability at private clinics of doctors while a lesser than a third (28.6%) of the women were aware that these pills are available at Government health centres and hospitals. Only 40.7% women correctly knew about the time interval from unprotected sexual intercourse up to which these pills can be taken i.e. 72 hours. Alarmingly, 8.5% believed that these pills would also work in case of menstrual delay which can lead to these pills being unsuccessfully used to abort early pregnancies and may cause serious health problems. Almost a third of the women had apprehensions regarding possible health problems(38.7%) with the use of these pills, side effects to the fetus incase of failure of emergency contraceptive(24.1%),effectiveness of these pills(15.1%) and problems in conceiving later on(33.7%).

Table 9: Attitude of the adolescent school girls towards emergency contraceptive pills

Questions Asked (N=1810)	**N (%)**	**95% C.I.**
Do you think you would ever use emergency contraceptive pills or recommend it to a friend / relative in case of need?		
Yes	701 (38.7)	31.9 - 45.5
No	436 (24.1)	18.2 - 30.1
Can’t say	673 (37.2)	30.5 - 43.9
It may result in more women suffering from Sexually Transmitted Infections or AIDS?		
Yes	201 (11.1)	6.7 - 15.4
No	192 (10.6)	6.3 - 14.8
Don't know	1417(78.3)	72.7 - 84.1
It may result in casual approach towards sex?		
Yes	890 (49.2)	42.3 - 56.2
No	201 (11.1)	6.7 - 15.4
Can’t say	719 (39.7)	32.9 - 46.5

38.7% of the adolescent school girls showed a positive attitude towards the use of ECPs, replying in the affirmative whether they would ever use the pill themselves or recommend it to a friend/ relative. 37.2%of the adolescent school girls were not sure of using or recommending ECPs. However, 11.1% also feared that the use of these pills might have more women suffering from sexually transmitted infections/HIV and almost half

(49.2%) of the adolescent school girls felt that these pills may result in a casual approach towards sex among adolescent school girls.

Table 10: Practices of adolescent school girls regarding emergency contraception

Questions	N (%)	95% C.I.
Have you ever used emergency contraceptive pill?(N=1000)		
Yes	14 (1.4)	0.7–2.2
No	986 (98.6)	92.5 – 99.9
How many times have you used this in the last year? (N=14)		
1 time	7 (50.0)	23.8 - 76.2
2 times	4 (28.6)	49.1 - 5.2
>/ = 3 times	3 (21.4)	6.6 - 42.3
Why did you use it?(N=14)		
Didn't use contraceptive	10 (71.4)	47.8 - 95.1
Condom broke / Slipped	4 (28.6)	49.1 - 5.2
What side effects did you experience with Emergency contraceptive pills?(N=14)		
Nausea/ Vomiting	11 (78.6)	57.1 - 98.9
Bleeding	3 (21.4)	6.6 - 42.3
None	-	-
Who recommended it?(N=14)		
Friend/ Relative	6 (42.9)	16.9 - 68.8
Spouse/ Partner	5 (35.7)	10.6 - 60.8
Radio/ Television	3 (21.4)	6.6 - 42.3

A total of 14 (1.4%) adolescent school girls had used ECPs in the last year.7 girls had used once, 4 had used twice and 3 had used it for 3 or more times in the last one year. 10 girls (71.4%) used it because no contraceptive was used before / during coitus while 4 (28.6%) used ECPs as condom tore or slipped off during coitus.

The most common side-effects reported after use of ECPs were nausea (78.6 %) and bleeding (21.4%) .Among those having used ECPs, 3 (21.4%) used it based on their knowledge from TV, 5 (35.7%) on recommendation of spouse / partner and 6 (42.9%) on recommendation of a friend / relative.

DISCUSSION

Adolescent school girls are often uninformed and unprepared for menarche. Information is primarily obtained from mothers and other female family members who are not necessarily well equipped to fill gaps in girl's knowledge. Exclusion and shame lead to misconceptions and unhygienic practices during menstruation. Rather than seeking medical consultation, girls tend to miss school, self-medicate and refrain from social interaction. All but one study of girls in rural parts of seven Indian states reported greater proportions of girls using cloth compared to sanitary pads. Sanitary pad use was significantly higher among urban-living girls in India as was use of sanitary pads or new cloth among school-going girls in India. (p-value < 0.01). A quasi-experimental study testing village-based meetings for girls in India as a platform for disseminating health messages contributed to significant increases in the use of sanitary pads and a decrease in the reuse of cloth (p-value < 0.05). While fewer girls using sanitary pads in one study in rural India reported poor fit and rashes than did girls using cloth, the cost of sanitary pads were a concern for some girls questioned in other studies in India. Activities of daily living or daily routines were restricted by menstruation among a quarter of

girls in rural India, a third of female students in Brazil and Egypt, and among 60.0% of slum dwellers in India. In urban Sri Lanka, school girls with premenstrual syndrome had significantly more disruptions to their daily routines than those without. Daily activities are further limited by taboos related to what and who menstruating girls are able to come in contact with. Menstruating girls in India and Nepal are sometimes limited from entering kitchens or bedrooms to ensure menstrual blood does not contaminate food or others. Household work such as cooking was often cited as 'not allowed' for girls having menstruation in India, Kenya and Nepal. In this present research study 94% adolescent school girls stated restriction on household work. Female students from a mix of rural and urban settings in India reported limitations on which all things they could touch while menstruating. Other social limitations frequently reported include avoiding physical or social activities (e.g. sports and functions), abstaining from religious activities or missing school. In this present research study 96.5% adolescent school girls stated restriction for religious activities. Methods for disposing of materials beyond throwing them away with other trash included burning, burying, and flushing materials. Very few (2.5%) girls in Egypt dispose of absorbents by burning them compared to 17.0–76.0% in India and Nigeria. Indian girls in rural settings were significantly more likely to report burning materials than those in urban settings (p-value < 0.05). Of those who reuse cloth, drying washed materials in sunlight rather than in hiding varied from 30.7% of girls in urban Pakistan to 44.3–72.4% of schoolgirls in India. School-based health education in India led to significant improvements in washing cloth with soap, in drying them in the sun and in disposing of them safely. Bathing practices in India ranged from all 200 rural-living girls in one state abstaining during menstruation to nearly all 3,443 girls bathing in urban areas of another state. One study found that the practice of daily bathing was significantly higher among urban-living girls than rural-living girls ($p < 0.05$). In Turkey and Nigeria, 11.9% and 72.5% of urban-living girls reported increasing the number of baths they take. In this present research study 96% adolescent school girls stated the practice of daily bathing. Girls in rural Kenya revealed that they wanted to bathe more frequently during their period, but were concerned about using limited water supplies and feared revealing to their family that they were undergoing menstrual cycle[1].

The mean age at menarche in this research study was found to be 13.5 years which has similarly been reported by Nair P. et al among adolescents in rural area of Delhi (13.6 years). But a higher percentage (86 %) knew about menstruation before it occurred as compared to that reported by Nair P. et al (41%) and a higher percentage (77%) received this information from their mothers in the present research study than reported by Nair (41%)[5]. These adolescents' girls also observed certain restrictions during periods such as performing religious activities, doing household work etc. which has also been reported by Nair P. et al. However, only a small percentage (4%) reported restriction from going to school / college during periods, which is quite lesser than reported by Drakshyani Devi among rural adolescents (20%). Almost all girls (98%) girls knew about sanitary pads, just about half (52%) of the girls were using sanitary pads during their periods while 48% used cloth alone or with cotton [6]. However, Verma P.B. et al[7] and Dasgupta et al [8] have reported, in a study among schoolgirls in Bhavnagar city and rural area of West Bengal respectively, that only around 10% of the girls use sanitary pads. Omidvar S. et al[9] have reported among girls from educational institutions in urban areas of South India that 68% use sanitary pads. The difference in the findings can be due to the current research study being carried out in an urban area. Majority of the girls (73%) changed the pad / cloth 2-3 times a day. Most of the girls (68%) dispose of the used cloth / pad by wrapping in paper / polythene and throwing it into dustbin meant for solid waste disposal which is higher(80%) than reported by Dasgupta et al (57%)[8]. However, 48% of the girls use cloth along with cotton / sanitary pads during their periods and most (70%) of them reuse the cloth. 74 % wash cloth with both soap and water while 60% sundry the washed cloth. Cloth, if reused, should be washed with soap and water and dried in direct sunlight. The unhygienic practices of these girls can make them prone to RTIs. Almost (99%) all girls knew about use of sanitary pads. The chief reason given by these girls for using cloth during periods was financial constraints in buying sanitary pads (72%) followed by hesitation to go and buy pads (11%) while in a study in Nepal, lack of awareness (41%), high cost (39%) and non-

availability of pads (31%) were reported as chief reasons of not using pads [10].

Of the total, 660 respondents of Adama University, 194 (29.4%) were sexually active, 63 (9.4%) had history of pregnancy and 49 (7.4%) had history of abortion. About 309 (46.8%) of the students had heard about emergency contraceptives and from those who heard emergency contraceptives, 27.2% had good knowledge. In this present research study, 90.5% adolescent school girls had heard about emergency contraceptives. Majority, four hundred fifteen (62.9%) of the students had positive attitude towards it. However, only 31(4.7%) had used emergency contraceptive methods. In this present research study, only 14 (1.4%) adolescent school girls had used emergency contraceptives. Adama University study demonstrated lack of awareness, knowledge and utilization of emergency contraceptives among female students [4]. Hence behavioural change strategies should be considered by responsible bodies to improve knowledge and bring attitudinal change on use of emergency contraception

W Tamire et al in Ethiopia observed that about 43.5% (95% CI 40.0 - 47.0%) of the students said that they have heard about emergency contraceptives, whereas in this present research study, 90.5% adolescent school girls had heard about emergency contraceptives. When asked about specific types of emergency contraceptives, among those who have ever heard of emergency contraceptives, 279 (82.8%) mentioned pills and 115 (34.1%) mentioned intrauterine contraceptive devices (IUCDs). About 53% (95% CI 49.1-56.1%) of the students had positive attitude towards emergency contraceptives and only 4.9% (95% CI 3.4-6.4%) respondents reported that they had used emergency contraceptive methods previously. In this present research study, only 14 (1.4%) adolescent school girls had used emergency contraceptives earlier. Ethiopia study also showed that there is low level of knowledge and practice of emergency contraceptives among female University students [20].

The awareness regarding emergency contraceptive pills among the students (90%) is quite similar to that reported by Relwani N, Saoji A et al [15] among engineering students in Nagpur city, while it is much more than reported by Puri S, Bhatia V et al among College students in Chandigarh (7.3%) [16]. However, almost no awareness about emergency contraception has been reported by Tripathi R et al [17] among abortion seekers at family planning clinic in Delhi. This may be due to the reason that the study population consists of graduate students who are more exposed to various media and hence most of National Journal of Community Medicine|Volume 4|Issue 2|Apr – June 2013 Page 2846 (42.9) 16.9 - 68.85 (35.7) 10.6 - 60.83 (21.4) 6.6 - 42.311 (78.6) 57.1 - 98.93 (21.4) 6.6 - 42.3-14 (12.7) 6.5 - 18.996 (87.3) 81.5 - 93.5 Open Access Article|www.njcmindia.org p ISSN 0976 3325|eISSN 2229 6816 them know about ECPs and the source of this information for most of them (71%) was through Television / Internet. However Relwani N et al [15] have reported mass media and Internet to be the source of information among 90% of the students. The awareness about where these pills are available is more in the present study (70%) than reported in the study by Relwani N et al [15]. In Nagpur where 57% of girls knew that these pills are available at retail outlets. Although the knowledge regarding the correct time interval from unprotected sexual intercourse up to which these pills can be taken i.e. 72 hours is better in the current study (41%) than reported by Puri S and Bhatia V et al [16].

(14.1%), more than half of these women were not aware of this fact which makes these women more susceptible for consumption of these pills at incorrect time and puts them at risk of unwanted pregnancies.

38% of the women showed a positive attitude towards the use of ECPs which is similar to the attitude of female nursing staff in Sikkim as reported by Rahaman H, Renjhen P et al [18] while it is much less favourable than reported by Relwani N et al [15] where more than 70% students agreed or strongly agreed that they would either themselves use or recommend emergency contraceptive pills in case of need. A total of 14 (12.7%) women had used ECPs during the last year. 7 women had used once, 4 had used twice and 3 had used it for 3 or more times during the last one year. Relwani N et al [15] have reported 5.7% of the girls as having used ECPs in the past.The use amongst women in the Relwani N et al [15] study may have been higher due to the inclusion of both married and unmarried subjects in the study. Most of them used ECPs on the recommendation of a friend or relative thereby

emphasizing the role of family and friends in choosing health care services. Many women had apprehensions regarding the side effects of ECP which could lead to non-usage of ECP even if needed by these women in the future.

CONCLUSION

Correct knowledge of the girls was assessed by asking about cause of menstruation, age of menopause and whether menstruation occurs during pregnancy. 83.2% of the girls correctly knew about all the three. The knowledge was significantly associated with the age and number of years of schooling of the girls. The mean age at menarche in this study was found to be 13.5 years which has similarly been reported by Nair P. et al among adolescents in rural area of Delhi (13.6 years). But a higher percentage (86 %) knew about menstruation before it occurred as compared to that reported by Nair P. et al (41%) and a higher percentage (77%) received this information from their mothers in the present study than reported by Nair et al[(5)]. These adolescent school girls also observed certain restrictions during periods such as performing religious activities, doing household work etc. which has also been reported by Nair P. et al[(5)].

However, only a small percentage (4%) reported restriction from going to school / college during periods, which is quite lesser than reported by Drakshyani Devi among rural adolescents (20%)[(6)]. Almost all girls (98%) girls knew about sanitary pads, just about half (52%) of the girls were using sanitary pads during their periods while 48% used cloth alone or with cotton.

However, Verma P.B. et al [(7)]and Dasgupta et al [(8)] have reported, in a study among school girls in Bhavnagar city and rural area of West Bengal respectively, that only around 10% of the girls use sanitary pads. Omidvar S. et al [(9)] has reported among girls from educational Institutions in urban areas of South India that 68% use sanitary pads. The difference in the findings can be due to the current study being carried out in an urban area. Majority of the girls (73%) changed the pad/cloth 2-3 times a day. Most of the girls (68%) dispose of the used cloth / pad by wrapping in paper / polythene and throwing it into dustbin meant for solid waste disposal which is higher than reported by Dasgupta et al (57%). However, 48% of the girls use cloth along with cotton / sanitary pads during their periods and most (70%) of them reuse the cloth. 74 % wash cloth with both soap and water while 60% sundry the washed cloth. Cloth, if reused, should be washed with soap and water and dried in direct sunlight. The unhygienic practices of these girls can make them prone to RTIs. Almost (99%) all girls knew about use of sanitary pads. The chief reason given by these girls for using cloth during periods was financial constraints in buying sanitary pads (72%) followed by hesitation to go and buy pads (11%) while in a study in Nepal, lack of awareness (41%), high cost (39%) and non-availability of pads (31%) were reported as chief reasons of not using pads [(10)].

90.5% of the adolescent school girls were aware about emergency contraceptive pills i.e. pills to prevent pregnancy after unprotected sex. The source of this information for most of them (75.9%) was through Television / Internet followed by relative / friend / spouse (10.6%). Only 40.7% women correctly knew about the time interval from unprotected sexual intercourse up to which these pills can be taken i.e. 72 hours. Alarmingly, 8.5% believed that these pills would also work in case of menstrual delay which can lead to these pills being unsuccessfully used to abort early pregnancies and may cause serious health problems.

Our present research study adequately demonstrates that almost half of the girls use cloth during their period and that too, without adequate cleaning, which makes them prone to Reproductive Tract Infections. The scheme to provide adolescent girls with inexpensive sanitary pads should be promoted more vigorously and these should be made available at points where these girls can approach easily like ASHAs, Anganwadis, school teachers etc. Affordable sanitary napkins should be provided to adolescent girls at easy to access points so that they can maintain menstrual hygiene.

Awareness about emergency contraceptive pills is high, the knowledge about the correct timing, side-effects of ECP is poor and misconception is high among these adolescent school girls. They had apprehensions regarding ECP and despite widespread availability for several years, the method is still underused, hence it is very strongly recommended that further research studies should be encouraged to assess the knowledge, attitude and practices of adolescent school girls about reproductive and sexual health to recommend

strategies to promote ECP use, with focus on spreading accurate information through Health Education to decrease Reproductive Tract Infection morbidity and mortality.

Strength and Study Limitation:

Strength of the study was that we could successfully assess the knowledge, attitude and practices of adolescent school girls, comprising of healthy adolescent school girls of Bhopal, who adequately represented the general population of adolescent school girls of Bhopal.

The elicited details regarding menstrual cycle, menstrual hygiene, sexual promiscuity and use of emergency contraceptives amongst adolescent school girls might have been less in our research study as there might have been hesitancy on the part of adolescent school girls in divulging details of knowledge, attitude and practices to the Lady Medical Officers of Army conducting the study. The eligible participants in our research study were adolescent school girl population of Bhopal so, this may not limit the generalization of the results to other subgroups, and the present findings are consistent with findings from other studies involving different subgroup, of people. We strongly recommend conduct of future prospective multi - centric studies to have clear estimates for future interventions and implementation of preventive strategies.

References

1. Venkatraman Chandra-Mouli [#1] and Sheila Vipul Patel[#2]Mapping the knowledge and understanding of menarche, menstrual hygiene and menstrual health among adolescent girls in low- and middle-income countriesReprod Health. 2017; 14: 30.
2. Shah V et al A rite of passage: a mixed methodology study about knowledge, perceptions and practices of menstrual hygiene management in rural Gambia. BMC Public Health. 2019 Mar 7;19(1):277. doi: 10.1186/s 12889-019-6599-2.
3. Alam MU et al Menstrual hygiene management among Bangladeshi adolescent schoolgirls and risk factors affecting school absence: results from a cross-sectional survey. BMJ Open. 2017 Jul 9;7(7):e015508. doi: 10.1136/bmjopen-2016-015508.
4. D Tilahun et al Knowledge, Attitude and Practice of Emergency Contraceptives among Adama University Female Students, Ethiopia. Ethiopian Journal of Health Sciences Journal Home > Vol 20, No 3 (2010) > http://dx.doi.org/10.4314/ejhs.v20i3.69449
5. Nair P., Grover V., Kannan A.T. Awareness and practices of menstruation and pubertal changes amongst unmarried female adolescents in a rural areaof East Delhi. Indian J.Community Med. 2007;32 :156-57
6. Drakshyani Devi K., VenkataRamiah P. A study on menstrual hygieneamong rural adolescent girls Ind J. Med. Sci. 1994;48(6):139-432.
7. Verma P.B., Pandya C.M., Ramanauj V.A. et al Menstrual Pattern ofAdolescent School girls of Bhavnagar (Gujarat) NJIRM 2011;2(1):38-40
8. Dasgupta A., Sarkar M. How Hygienic is the Adolescent Girl? Indian J.Community Med. 2008; 33(2);77-80
9. Omidvar S., Khyrunnisa Begum Factors influencing hygienic practices duringmenses among girls from South India – A cross sectional study. Int. J. ofCollaborative Research on Int. Med. & Public Health 2010;2(12):411-423
10. WaterAid in Nepal (2009a)-Is Menstrual Hygiene and Management anIssue For Adolescent Girls? A Comparative Study of Four Schools InDifferent Settings Of Nepal, Water Aid in Nepal – A Report
11. World Health Organisation, Deptt. of Reproductive Health and Research. Unsafe abortion: global and regionalestimates of the incidence of unsafe abortionand associated mortality in 2008 Sixth edition. Geneva:WHO; 2011. p1-2.
12. Sedgh G, Henshaw S, Singh S et al. Induced abortion:estimated rates and trends worldwide. Lancet. 2007;370(9595):1338-45.
13. Mehra R, Goel P, Dua D, Huria A. Knowledge ofemergency contraception among women coming for inducedabortion. J ObstetGynecol India. 2006;56(3):233-35.
14. International Institute for Population Sciences (IIPS)and Macro International. National Family HealthSurvey (NFHS-3), 2005-06. Available athttp://pdf.usaid.gov/pdf_docs/PNADK385.pdf .Accessed January 3rd, 2013.
15. Relwani N, Saoji A, Kasturwar N.B. et al. Emergency Contraception: Exploring the

knowledge, attitude andpractices of engineering college girls in Nagpurdistrict of central India. National Journal ofCommunity Medi-cine. 2012; 3(1):14-19.

16. Puri S, Bhatia V, Swami H M et al. Awareness ofemergency contraception among female collegestu-dents in Chandigarh, India. Indian J Med Sci.2007; 61(6):338-346.
17. Tripathi R., Rathore AM, Sachdeva J. Emergencycontraception: Knowledge, attitude and practicesamong health care providers in North India. J ObstetGynaecol Res. 2003;29(3): 142-146.
18. Rahaman H, Renjhen P, Kumar A et al. A study onemergency contraceptive practice among nursing staffin Sikkim, India-A cross sectional study. AustralianMedical Journal. 2010; 3(10):667-671.
19. K Park. Park's textbook of Preventive and SocialMedicine, 21st ed. Jabalpur: Bhanot Publishers;2011. p515-517.
20. W Tamire, Enqueselassie. Knowledge, attitude, and practice on emergencycontraceptives among female university students in Addis Ababa, Ethiopia. The Ethiopian Journal of Health Development Vol. 21 (2) 2007: pp. 111-116.