

Impact of educational Program about menarche on improving student's self- concept at Assiut governorate.Salwa A.Marzouk¹, Hamida Alam El- dien² Reda Abd Elaal Thabet³ and Abd Allah M. El Zaher⁴¹ Pediatric Nursing, ² Obstetrics and Gynecology Nursing, ³ Psychiatric Nursing, Assiut Faculty of Nursing, ⁴ Educational Psychology, Assiut Faculty of Education.

Abstract: The menarche is both an obvious and unique marker of sexual maturity and biological change. Researchers have suggested that the menarche has varying effects on the development of the self. The aim of this study is to improve students' self-concept through assessing female students' knowledge, and practice about menarche and self-concept and designing and implementing an educational program to improve students' knowledge and practice about menarche. This quasi-experimental study design was carried out at four preparatory and secondary schools (two schools were urban and the others were rural) in Assiut governorate. The subjects included 438 students. Data collection tools were a knowledge questionnaire and an self-concept scale used in pre-post testing of the effect of a training program. The study revealed deficiency in pre-intervention knowledge and practice in the students and negative self concept. Statistically significant improvements of knowledge, practice and self-concept were demonstrated at the post-intervention assessment of students in the study . Statistically significant relations were shown between knowledge and practice about menarche and self concept. the study was concluded that positive self concept was correlated with satisfactory knowledge and practice about menarche. It is recommended that the developed program and its booklet be applied in all similar settings.

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1. Introduction

Adolescence in girls is a phase of transition from girlhood to womanhood and marks the onset of female puberty. This period of attaining reproductive maturity between the ages of 10-19 years is marked by a number of physiological, behavioral and psychological changes, the most notable being the onset of menstruation. (Adrija Datta *et al*, 2012).

Girls experience menarche at different ages. The timing of menarche is influenced by female biology, as well as genetic and environmental factors, especially nutritional factors. The average age of menarche has declined over the last century but the magnitude of the decline and the factors responsible remain subjects of contention. The worldwide average age of menarche is very difficult to estimate accurately, and it varies significantly by geographical region, race, ethnicity and other characteristics. Various estimates have placed it at 13.0 years (Anderson *et al*, 2003).

Menstrual health is an important part of life cycle approach to women's health, so loud and clear messages and services on this issue must reach adolescent girls. Menstrual hygiene deals with a woman's special health care needs and requirements during her monthly menstruation or menstrual cycles. These areas of special concern include choosing the best period protection, or feminine hygiene products, how often and when to change her feminine hygiene products, bathing, care of her vulva and vagina, as well

as the supposed benefits of vaginal douching at the end of each menstrual period (Lawan *et al*, 2010). Primarily poor personal hygiene and unsafe sanitary conditions result in gynecological problems. Infections due to lack of hygiene during menstruation are often reported (Adinma, 2009)

Self-concept is the way individuals perceive themselves in relation to the world and the social interactions in which they are involved. It is a system of either positive or negative self-evaluation .The menarche is both an obvious and unique marker of sexual maturity and biological change. Researchers have suggested that the menarche has varying effects on the development of the self, however, they have produced inconsistent results. The reaction to menstruation depends upon awareness and knowledge about the subject. The manner in which a girl learns about menstruation and its associated changes may have an impact on her response to the event of menarche. (Dasgupta and Sarkar, 2008).

As girls, they had wanted to know not only about menstrual physiology and menstrual hygiene—facts that are usually included in menstrual education materials—but also about menstruation as a personal event. The feelings of fright and embarrassment that girls experience at menarche need to be acknowledged and the negative aspects of the menstrual experience need to be discussed in order to provide a balanced view of menstruation (Tiwari *et al*, 2006).

Many young girls in our country may lack appropriate and sufficient information regarding menstrual hygiene, causing incorrect unhealthy behavior during their menstrual period. This study therefore emphasized on assessing the knowledge and practice of the students about menarche and the role these might play in contributing to young girls' understanding and acceptance of themselves.

Aim of the study

The aim of this study is to improve students' self-concept through assessing female students' knowledge, and practice about menarche and self-concept and designing and implementing an educational program to improve students' knowledge and practice about menarche.

2. Subjects and method

Design: A quasi-experimental study design was used in carrying out this study

Sample: The target population of this research consisted of all the female students enrolled in the schools in the study settings.

Setting: The study was conducted at 4 preparatory and secondary schools (two schools were urban and the others were rural) in Assiut governorate. These include Preparatory School (El-Nahada (urban) and El- Ebour (rural)) and Secondary School (Secondary Nursing School (urban) and El-Shaheed Abd-elraheem (rural)).

Tools of the study: The following tools were utilized to collect data pertinent to study. These were namely:

I. Self-administered knowledge questionnaire:

this included two parts:

- **Socio-demographic characteristics:** as age, residence, parents' education and parents' occupation, etc.
- **Assessment of knowledge:** This part was developed by the researcher to assess student's knowledge about menarche. It included??? Questions of different forms: open, closed, multiple choice, etc.
- **Scoring:** for knowledge items, a correct response was scored, and the incorrect zero. For each area of knowledge, the scores of the items were summed-up and the divided by the number of the items, giving a mean score for the part. Knowledge was considered satisfactory if the percent score was 60% or more and unsatisfactory if less than 60%.

II. Self- concept scale :

This scale was developed by **El Behary (2012)** for evaluation adolescent self-concept. It consisted of 28 statements, both positive and negative which divided into three domains (general, personal and social). **Scoring:** The responses "yes" and "no" were respectively scored 1 and zero. The scoring was reversed for negative statements. The scores of the items were summed-up. The self-concept was

considered positive if score was 21 or more and negative if less than 21.

Methods of data collection:

An official permission was granted from responsible personnel to carry out the study after explaining the purpose of study. Meetings with school managers to explain the objectives and contents of the program and the methods for applying the program were held to gain their cooperation and to allow the release of students to attend the program during minimal workload activities. Complete confidentiality of any obtained information was ensured. The study maneuver could not entail any harmful effects on participants.

A pilot study was carried out on a sample of 25 students. The aim of the pilot was to test the feasibility and clarity of the study tools. It also helped to determine the time needed for filling up the sheets. The time needed to fill out the sheet in one session was 25-30 minutes. Following the pilot study, the questionnaire was finalized and made ready for use.

Initial assessment stage : This stage served to assess knowledge and practice about menarche and self-concept among female students who agreed to participate in the study were informed about the nature and purpose of the study before implementation of the program by the tools were used at this stage (*Self-administered knowledge questionnaire* and *Self-concept scale*). The interview was carried out in a class room. The two tools for data collection were used in both pre & post test of the training program, in order to measure the knowledge level of the trainers about menarche and its effect on their self-concept and evaluate the gaining knowledge after the program. It takes time from 30-45 minutes for each group

Program development stage: Based on the information obtained from initial assessment, in addition to literature, the researcher designed the training program. Its main aim was to improve knowledge and practice about menarche and self-concept among female students. The methods of teaching used in program were lecturing followed by focused group discussions. The program includes 4 sessions (3 sessions related to menarche and one about self concept). The details of program and content were included in booklet Arabic version of the program.

Implementation stage: After preparation of the program and the practical arrangements, the researcher started its implementation. The program was implemented for students who have low scores of knowledge and negative self-concept in the form of scheduled sessions. There was a total of 4 sessions. This was done in the class room at the schools. The 74 students were divided into 4 subgroups. The program was administered to each group in short session of about one hour and filling out the questionnaire to

measure the student' knowledge (pre& post) test consumed on average about 30 minutes. The duration of the program was 4 days per week for each school.

Evaluation stage: In order to assess the impact of the program, a post-test was done using the same two tools (*Self-administered knowledge questionnaire* and *Self-concept scale*). The results were compared to the pre-test results.

The collected data will be coded, tabulated and analyzed by computer statistical programs (SPSS). Descriptive statistics will be used such as frequency, percentages and standard deviation. Also, some inferential statistics will be done to correlate variables related to the study problem. The chi-square test of significance was used to compare results from different groups. $P < 0.05$ was considered to be statistically significant.

3.Results

A total of 438 students were recruited into the study, 41.1% students from preparatory school, and 58.9% from secondary school. Their demographic data were presented in **Table 1**. As the table shows, the mean age group was 16.1 years . Most of the students (73.1%) were from rural areas. According to father's education high percentage of them were Secondary level. Regarding to mother's education and occupation, nearly to half of their mothers were illiterate and the majority of them were house wives. As the table illustrates, the 68.9% reported that the mean age of menarche was 13.1 years and their knowledge about menarche obtained from their mothers.

Comparison between Pre-Post intervention knowledge about menarche among students in the study is displayed in **Table 2**. It points to differences of statistical significance between the two groups in all areas of knowledge, except those related to age at menarche, care of cloth pads, duration of Menstruation and types of sanitary pad used. As the table illustrates, the percentages of students with satisfactory knowledge were always higher in the post-intervention.

Table (3) shows Comparison between Pre-Post intervention practice about menarche among students in the studied group. There was statistical significance differences between total score of the pre and post intervention related to practice about menarche ($P \leq 0.001$). It indicates that students in the post-intervention group had better practices in all areas. Also, regarding taking medication, taking warm drinks and taking bath during menstruation, the tables revealed that high percentages of students (80.8%, 80.3% and 70.3% respectively) taking medications, hot drinks and hot bath during menstruation.

Table(4). Comparison between Pre-Post intervention students Self concept score. It indicates generally high percentages of positive self concept in post-intervention than pre-intervention with statistically significance difference.

Table (5) Comparison between Pre-Post intervention total knowledge, practice and Self concept scores among students in the study. As the table indicates, statistically significant improvements were revealed in total knowledge, practice and self concept.

Table 1: Distribution of sample by Socio-demographic characteristics.

Item	No. (438)	%
Schools:		
Preparatory school	180	41.1
Secondary school	258	58.9
Age of student:		
Range	15.0 – 19.0	
(Mean±SD)	16.1±0.63	
Residence		
Rural	320	73.1
Urban	118	26.9
Father education		
Illiterate	86	19.6
Read and write	56	12.8
Primary	80	18.3
Preparatory	22	5
Secondary	154	35.6
University	38	8.7
Mother education		
Illiterate	206	47
Read and write	38	8.7
Primary	32	11.9
Preparatory	28	6.4
Secondary	104	23.7
University	10	2.3
Mother occupation		
House wife	382	87.2
Work	56	12.8
Source of information about menarche:		
Mother	302	68.9
Sisters	54	12.4
Friends	38	8.6
Mass media	44	10.1
Age at onset of menarche:		
Mean ± SD (range)	13.1±1.12 (11-16)	

Figure 1. displayed the relations between post-intervention students' knowledge, practice and self concept . A statistically significant relation is noticed between students' knowledge and practice about menarche and their self concept. It obvious that most students with satisfactory knowledge and practice had positive self concept.

Table (6) describes the relation between baseline pre- intervention knowledge of students in the study and their socio-demographics characteristics. Significant relation could be detected between students' knowledge and their mother's education, the percentages of poor knowledge were higher in the students with illiterate mothers (51%).

Table(7): illustrates the relation between pre-intervention students' practice and their socio-demographics characteristics. It indicates that students whom their mothers not worked had better practices(89.1%) with no statistically significant difference.

The relation between pre-intervention students' self concept and their socio-demographics

characteristics is presented in **Table(8):** Statistically significant relations are noticed between students' self concept and their residence ($p=0.03$), mother's occupation ($p=0.001$) and their source of information about menarche. It is evident that most of those with positive self concept from the rural and their mothers were house wives.

Table 2. Comparison between Pre-Post intervention knowledge about menarche among students in the study .

Items	pre		Post		p. value
	No. (438)	%	No.(74)	%	
Average age at menarche					
Incorrect	0	0.0	0	0.0	NA
Correct (10 -16 yrs.)	438	100.0	74	100.0	
Duration of Menstruation					
Incorrect	150	34.2	24	32.4	0.761
Correct(3-7 days)	288	65.8	50	67.6	
Frequency of changing sanitary pad					
1-2 times	270	61.6	25	33.8	0.001
3 or more	168	38.4	49	66.2	
Sanitary pad used					
Yes	356	81.3	54	73.0	0.098
No	82	18.7	20	27.0	
Types of under wear					
Incorrect	156	35.6	12	16.2	0.001
Correct (cotton)	282	64.4	62	83.8	
Care of cloth pads					
Incorrect	394	90.0	70	94.6	0.205
Correct	44	10.0	4	5.4	
Factors affected flow of menstruation:					
1.Physical factors					
Correct	168	38.4	52	70.3	0.001
Incorrect	270	61.6	22	29.7	
2. psychological factors					
Correct	244	55.7	50	67.6	0.051
Incorrect	194	44.3	24	32.4	
3. Social factors					
Correct	134	30.6	52	70.3	0.001
Incorrect	304	69.4	22	29.7	
If amenorrhoea occur, what are you doing.					
Incorrect	230	52.5	18	24.3	0.001
Correct(asking doctor)	208	47.5	56	75.7	
Total knowledge score					
Satisfactory	192	43.8	52	70.3	0.001
Poor	246	56.2	22	29.7	

Table 3: Comparison between Pre-Post intervention practice about menarche among students in the study.

Item	Pre		Post		P. value
	No(438)	%	N(74)	%	
Staying at home in the first day of menstruation					
Yes	320	73.1	40	54.1	0.001
No	118	26.9	34	45.9	
Taking medication					
Yes	354	80.8	66	89.2	0.082
No	84	19.2	8	10.8	
Taking warm drinks					
Yes	308	70.3	54	72.9	0.345
No	130	29.7	20	27.1	
Foods constituting increased					
Incorrect	330	75.3	32	43.2	0.001
Correct	108	24.7	42	56.8	
Performing daily activity					
Yes	194	44.3	38	51.4	0.259
No	244	55.7	36	48.6	
Taking bath during menstruation					
Yes	308	70.3	52	70.3	0.345

No	130	29.7	22	29.7	
Reason of Taking bath(n=308)					
Incorrect	98	22.4	10	13.5	0.083
Correct(cleaning and improving circulation)	210	77.6	38	86.5	
Reason of No Taking bath (n=130)					
As a habit	24	18.4	2	7.7	0.414
Fear of hair loss	36	27.7	12	46.2	
Fear of bleeding	32	24.6	4	15.3	
Fear of stop menstruation	10	7.7	2	7.7	
Not correct during menstruation	28	21.6	6	23.1	
Total Practice score					
Satisfactory	238	54.3	60	81.1	0.001
Poor	200	45.7	14	18.9	

Table 4: Comparison between Pre-Post intervention students Self concept score.

	Pre		Post		P. value
	No(438)	%	No(74)	%	
Total self concept					
Negative	338	77.2	28	37.8	0.001
Positive	100	22.8	46	62.2	

Table 5: Comparison between Pre-Post intervention total knowledge, practice and Self concept scores among students in the study(n=74).

Item	Pre		Post		p. value
	No	%	No	%	
Total Knowledge Score					
Satisfactory	0	0	52	70.3	0.001
Poor	74	100	22	29.7	
Total practice Score					
Satisfactory	0	0	60	81.1	0.001
Poor	74	100	14	18.9	
Total Self Concept Score					
Negative	74	100	28	37.8	0.001
Positive	0	0	46	62.2	

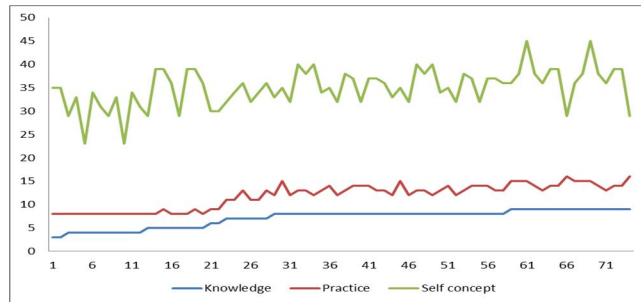


Figure 1: Relations between post-intervention students' knowledge, practice and self concept

Table 6:Relation between student's total knowledge score and their socio-demographic characteristics (n= 438)

	Satisfactory (192)		Poor (246)		P. value
	No	%	No	%	
Residence					
Rural	128	67	192	78	0.05
Urban	64	33	54	22	
Mother education					
Illiterate	80	42.6	126	51	.001
Read and write	16	8	22	9	
Primary	12	6.2	40	16	
Preparatory	14	7	14	6	
Secondary	64	33	40	16	
University	6	3.1	4	2	
Mother occupation					
Hose wife	160	83	222	90	.016
Worked	32	17	24	10	
Source of information about menarche:					

	Satisfactory (192)		Poor (246)		P. value
	No	%	No	%	
Mothers	136	71	166	67	.072
sisters	24	13	30	12	
friends	14	7	34	14	
Mass media	18	9	16	7	

Table 7: Relation between student's total score practice and their socio-demographic characteristics (n= 438)

	Satisfactory (238)		Poor (200)		P. value
	No	%	No	%	
Residence					0.050
Rural	182	76.5	138	69.0	
Urban	56	23.5	62	31.0	
Mother education					0.825
Illiterate	114	47.9	92	46.0	
Read and write	20	8.4	18	9.0	
Primary	28	11.8	24	12.0	
Preparatory	18	7.6	10	5.0	
Secondary	52	21.8	52	26.0	
University	6	2.5	4	2.0	
Mother occupation					0.059
Hose wife	170	89.1	216	85.0	
Worked	22	10.9	30	15.0	
Source of information about menarche:					0.398
Mother	156	65.5	146	73.0	
Sisters	30	12.6	26	13.0	
Friends	30	12.6	16	8.0	
Mass media	22	9.3	12	6.0	

Table 8: Relation between student's total self concept score and their socio-demographic characteristics (n= 438)

	Negative (338)		Positive (100)		P. value
	No	%	No	%	
Residence					.003
Rural	236	69.8	84	84.0	
Urban	102	30.2	16	16.0	
Mother education					.122
Illiterate	150	44.4	56	56.0	
Read and write	30	8.9	8	8.0	
Primary	38	11.2	14	14.0	
Preparatory	24	7.1	4	4.0	
Secondary	86	25.4	18	18.0	
University	10	3.0	0	0.0	
Mother occupation					.001
House wife	294	87.0	88	88.0	
worked	44	13.0	12	12.0	
Source of information about menarche:					.002
mother	240	71.0	62	62.0	
sisters	38	11.2	16	16.0	
friends	40	11.8	8	8.0	
Mass media	20	6.0	14	14.0	

4. Discussion

Menstruation is a cyclical bleeding through the vagina in woman and this is the preparation of a woman by the nature for motherhood. Although menstruation is a natural process, it is linked with several misconceptions and practice, which sometimes result into adverse health outcomes. Every girl should be prepared for her first menstruation as it is preceded by the general development and changes (Dasgupta and Sarkar, 2008).

The present findings revealed that most girls (68.9%) reported their mothers as a principal source of information. This observation may be explained according to our Egyptian tradition by the fact that young girls usually propound their emotional and psychological problems with their mothers. On the same line of these results, Abd El-Hameed *et al*, (2011) found that the main source of information about menstruation (59.4%) were mothers and also,

Tiwari et al, (2006) found that high percentage of the sample studied (60.7%) reported they got information from their mothers. On the other hand, **Rajni et al, (2009)** found that friends were the most important source of information (83%). As many young girls identified their peers as the best source for sharing, and talking about their problems. Moreover, students spend most of their daily time at schools.

In the present study, the mean age of menarche of the students was 13.1 years this is in agreement with the study by **Abd El-Hameed et al, (2011)** who represented that the age of menarche was 13.2 years among Egyptian girls and the study conducted in Rajasthan by **Khanna et al, (2005)** who found that the mean age at menarche is 13.2 years,

According to parent education and occupation, the present study revealed to high percentage of father's education were Secondary level. Regarding to mother's education and occupation, nearly to half of their mothers were illiterate and the majority of them were house wives. This result is strongly supported by the results by **Abd El- Hameed et al, (2011)** who found that, about half of their mothers were illiterate and the majority were housewives

Considering the effect of menstruations on daily activities of students' girls approximately more than half of study sample (55.7%) abstain from performing normal activities (house hold activities, studying, visiting, friends or relatives and sporting) during menstruation. This result agreed with (**Liliwati et al, 2007**). In contrast, a study in Egypt found that two thirds of study sample (64.2%) not affected by menstruation and practiced normal activity during menstruation and only 33% of students even avoided any kind of physical activities during their menstrual period (**Abd El-Hameed et al, 2011**).

As regards taking rest at home during menstruation it was found that (73.1%) from sample taken rest at home (absences from schools) for fearing of hemorrhage, pain and as a habit. This finding agreement with **Parker et al, (2010)** in their study of teenagers in high schools in the Australian, they found that (70%) from the sample were absences from the schools.

This study reflects that intake of medication, hot drinks and bath (The main reasons of taking hot bath was cleaning and improving circulation), were (80.8%, 80.3% and 70.3% respectively) this finding was consistent with studies done by **Davis and Westhoff (2001)** mentioned that in total of 192 students there was 67 % were self medicated with analgesics and **Hassanen et al, (2004)** who found that three quarters of the students mentioned that taking bath was necessary during menstruation. On the other hand, the present study found that The main reason

for not taking bath during menstruation were fear of hair loss (27.7%) and fear of bleeding (24.6%). Similar finding were reported by **Hassanen et al, (2004)**. In contrast study done by **Abd El-Hameed et al, (2011)** in El-Minia city it was found that (22.5%) of girls take medication.

As regards the use of sanitary pads, the present study found that 81.3% of students using sanitary pads. This strongly supported by **Adrija Datta et al, (2012)** who documented that use of sanitary napkin is 73.5% of the studied girls. Also, about two thirds of the study sample were changed their perineal pads 1 to 2 times per day. This is may be due to that the girls reported that they changed pad when it becomes fully soaked with blood. Conversely, **Abd El- Hameed et al, (2011)** revealed that more than two thirds (69.4) of the study sample were changed their perineal pads for three or more times per day.

Concerning factors affecting flow of menstruation, the present study showed that high percentages of the student don't know any physical, psychological or social factor (60.6%, 44.3% and 69.4% respectively). these finding supported by **Farouk (1998)** who mentioned that the majority of the sample (72.5%, 60% and 79.5% respectively) didn't know any physical, psychological or social factors affecting flow of menstruation.

Our results showed that about half of studied sample had poor scores of knowledge and practices about menarche. The pre-intervention poor level of knowledge and practices about menarche among students is expected which could be mainly due to some cultural restrictions preventing the flow of correct and sufficient information given to youngsters. These findings supported by **Poureslamii and Osati-Ashtian (2002)** who found that many of the studied females did not have appropriate and sufficient information about menstruation and associated hygienic practices.

The third area addressed in the present study was related to self-concept. The pre-intervention assessment of students' self-concept revealed that (77.2%) of the studied girls had negative self concept. The increase in negative self concept that might be attributed to the effectiveness of the inadequate knowledge and practice about menarche on self-concept. The finding is quite close to this of **Tiwari et al, (2006)** who found that the majority of girls (61.5%) have negative feelings about menarche and poor self perception. Conversely, **My Trinh Ha (2002)** found that the menarche was shown to have little effect on either current or future conceptions of the self

The present study found that a significant relation could be detected between students'

knowledge and the mother's education, the percentages of poor knowledge were higher in the students with illiterate mothers (51%). Similar findings have been reached by **Adrija Datta, et al, (2012)**. Also, this finding is supported with **Farouk (1998)** who revealed that when parents were more educated, their daughters were better informed about menstrual hygiene. As regards the residence, our study finding did not show much difference for knowledge and practice regarding menstruation between urban and rural areas.

The present study found that, there was statistically significant improvements in total knowledge and practice about menarche between pre and post test. This result is strongly supported by **Hassanen et al, (2004)** who found that, there were highly statistically significant differences regarding the level of students knowledge and practices between the pre and post test.

It was also noticed that the post-intervention self-concept improved in students of the present study. Therefore, the increase in self-concept score that might be attributed to the effect of the improving of knowledge and practice about menarche. This finding agrees with **Tang et al, (2003)** who found that positive self-esteem were correlated with adequate preparation for menarche.

5. Conclusion:

The study findings lead to the conclusion that students have deficient knowledge and inadequate practice regarding menarche. Their self-concept is mostly negative. Implementation of the training program based on assessment of their needs led to statistically significant improvements in the post-intervention knowledge and practice of students in the study. Students' knowledge and practice are affected by mothers' education. The scores of knowledge and practice about menarche and self-concept are inter-related. Hence, the training program was successful in achieving its goals of improving students' self-concept.

Recommendations:

Based on the findings of the present study it was recommended that:

- Replication of the study on large sample selected from different geographical areas of Assiut is recommended to obtain more generalizability of the problem of study.
- Establishment of teaching classes in each school to provide guideline for students about menarche.
- Menstrual health is an important part of life cycle approach to women's health, so loud and clear

messages and services on this issue must reach adolescent girls.

- Adequate books and magazines, which include materials related to menstruation and menstrual hygiene should be available to the school students
- Implementation of health education program for mother to modify and change their misbeliefs, misconceived ideas, malpractice and negative attitudes related to menstruation and menstrual hygiene.

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