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Nursing Students, Practicing, Attitude about Menstrual Hygienic Care at El-Nasr Health Insurance Hospital

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Abstract: **menstruation is a natural process, it is linked with several misconceptions and practices, which sometimes result into adverse health outcomes. Hygiene-related practices of women during menstruation are of considerable importance. The aim of this study is to assess female students' knowledge and attitude regarding menstruation, observe general wellbeing of female student and investigating the relationship between current knowledge of female students about menstruation and menstrual hygienic practices. A descriptive research design was utilized to fulfill the aims of the study. The sample consist of 200 nursing student at El-Nasr Insurance Health Hospital in Helwan City. The researcher met the students through studying day in break time to illustrate the nature of study and gather data. The result revealed that the majority of nursing students has a poor knowledge and attitude of menstruation hygiene. So this study recommends to spot attention on reproductive system hygienic care as a part of fixed curriculum in infection control.**

Keywords: **menstruation, menarche, reproductive system, hygienic care, infection control.**

1. INTRODUCTION

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. Although menstruation is a natural process, it is linked with several misconceptions and practices, which sometimes result into adverse health outcomes **(Dasgupta, & Sarkar, 2011).** Hygiene-related practices of women during menstruation are of considerable importance, as it has a health impact in terms of increased vulnerability to reproductive tract infections (RTI). The interplay of socio-economic status, menstrual hygiene practices and RTI are noticeable. Today millions of women are sufferers of RTI and its complications and often the infection is transmitted to the offspring of the pregnant mother. Studies have shown that although most girls viewed themselves as being prepared for menarche, having 'discussed this with their mothers', obvious misconceptions on the true physiological process and characteristics of menstruation and the menstrual cycle is evident from these studies **(Lee, et. al., 2012)**.

Menstruation is the cyclical shedding of the inner lining of the uterus, the endometrium, under the control of hormones of the hypothalamo-pituitary axis. Menarche, or the onset of menstruation, is a landmark feature of female puberty and signals reproductive maturity. Anxiety, fear, confusion, and even depression are frequently reported experiences of menarche **(Deo, 2011)**.While the anatomy of the genital tract and physiology of menstruation are taught in Egyptian schools, the practical management of menstruation has often been regarded as inappropriate for public discussion **(El-Gilany, et.al., 2011)**.

Girls tend to receive information about menstruation from a variety of sources including parents, school, friends, and the media despite the many sources of information, girls often report that the education they receive is insufficient in preparing them for menstruation. Current educational practices often present girls with primarily biological information such as the role of the ovarian and menstrual cycles in reproduction. Often lacking is more practical information about what to do when a period comes or about what menstrual bleeding feels like **(Lauren &Marianne, 2012)**

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Menarche is an important event during adolescence. For most girls, it marks completion of puberty and the onset of reproductive capability. Menarche usually occurs when both breast and pubic hair development are at Tanner stage 4. Menstrual problems are common during adolescence due to slow maturation of the hypothalamic-pituitary-ovarian axis and can last 2 to 5 years after menarche. Although most problems are explained by an ovulation. Frequently, the bleeding problems observed in adolescence require evaluation and intervention **(Midwifery Women's Health, 2011)**

Menstruation is a phenomenon unique to the females. The onset of menstruation is one of the most important changes occurring among the girls during the adolescent years. The first menstruation (menarche) occurs between 11 and 15 years with a mean of 13 years **(Stoker et al., 2011)**. Adolescent girls constitute a vulnerable group, particularly in Egypt where female child is neglected one. 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. Although menstruation is a natural process, it is linked with several misconceptions and practices, which sometimes result into adverse health outcomes **(El-Gilany et al., 2010).**

Hygiene-related practices of women during menstruation are of considerable importance, as it has a health impact in terms of increased vulnerability to reproductive tract infections (RTI). The interplay of socio-economic status, menstrual hygiene practices and RTI are noticeable. Today millions of women are sufferers of RTI and its complications and often the infection is transmitted to the offspring of the pregnant mother **(Dasgupta, 2010).**

2. AIMS OF THE STUDY

This study aims to assess female students' knowledge and attitude regarding menstruation, observe general wellbeing of female student and investigating the relationship between current knowledge of female students about menstruation and menstrual hygienic practices.

Research Questions:

1. What is the female students' knowledge about menstruation?
2. What is the practice of female students during menstruation?
3. What is the female students' attitude toward menstruation?
4. What is the relationship between female students' knowledge about menstruation and their menstrual hygienic practices?

3. SUBJECT & METHOD

Design:

A descriptive research design was utilized to fulfill the aims of the study.

Setting :

The study was conducted in a governmental female's preparatory school at Elnasre hospital Nursing school Helwan district.

Subjects:

The student girls were chosen according to the inclusion criteria: female menstruated girls, adolescent stage age (11- 16 years) and were exclude un-menstruated girls in 1st, 2nd, and 3rd grades of preparatory school ,until the sample size reached 200 students. The purposive sample of 200 female students was recruited randomly from a governmental females' preparatory school at Elnasre Hospital Nursing school Helwan district.

Tools:

Self-administrated interview sheet and observational checklist were designed by the investigators and used to collect the necessary data.

The first part was a self-administrated interview sheet that consists of:-

- Socio-demographic data which include age, gender, parent education and occupation etc.

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- Knowledge about female reproductive system such as: function of the ovary, ovarian hormones etc.
- Knowledge about puberty as: age of puberty, symptoms of puberty etc.
- Knowledge about menstrual cycle as: age at menarche, days of period etc.
- Menstrual hygienic practices of girl during menstruation.
- Female's attitude during menstruation.

The second part was an observational checklist which assesses the general wellbeing of the girl student. All data were collected through the academic year February –March 2011.

Field work:

- Tools were reviewed by experts in different fields of nursing and medicine.
- Official letters from the Faculty of Nursing, Helwan University were forwarded to the Ministry of Education to obtain their permission to visit the schools and collect data.
- Each student was interviewed after explaining the purpose of the study and data collection methods to obtain her approval to participate in the study. Students were assured about confidentiality of data collected which will be used only for the purpose of the study and their benefits.
- A pilot study was conducted on 10% of the studied sample to test clarity and applicability of the tools.
- Accordingly, appropriate modifications on the tools were done prior to data collection for the actual study.
- Each student was physically assessed for general wellbeing by the investigators.
- Each interview took approximately 10-15 minutes to complete filling in the study tool depending on the understanding and responses of each student.
- A lecture about menstrual hygienic practices was given by the investigators to the participant students.

All data collected through the academic year 2010-2011 in six months.

Statistical analysis:

After data were collected, they were coded and transferred into specially design formats to be suitable for computer feeding. The statistical package for social science (SPSS), version14 was utilized for data analysis and tabulation. All the entered data were manually confirmed for errors. Mean, Standard Deviation, Chi square and Fisher exact test (if expected value of Chi square test was less than 5) were used. The P-value < 0 .05 was used as the cut of value for statistical significance.

4. RESULTS

Table (1): Distribution of socio-demographic characteristics of females students (n=200).

Variables	Frequency n=200	
	No	%
Age (in years):-		
12-14	167	83.5
> 14	33	16.5
Mean ± SD		16 ± 13.4
Mother's education:-		
Illiterate	43	21.5
Read and write	32	16.0
Secondary education	85	42.5
University education	40	20.0
Mother's occupation		
House wife	141	70.5
Working	59	29.5

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Having girl friends :-		
Yes	196	98.0
No	4	2.0
Started of menstruation		
Yes	125	62.5
No	75	37.5
at menarche in years (n=125) :-		**n=125**
9 - < 13	60	48.0
13 - 15	65	52.0

Table (1) shows that, age for the majority of the studied sample (83.5%) ranged from 12-14 years, while for only 16.5%, it was over 14 years old. Regarding to educational level of the studied sample's mothers, 42.5% of mothers had secondary education, while only 16.0% of them read and write. As for mothers' occupation, less than three quarters (70.5%) were housewives. In addition, 98.0% of studied sample had girl friends. Regarding age at menarche for more than half (52.0%) of them their first menstruation was at age from 13-15 years.

Table (2): Distribution of studied sample according to their knowledge about menstruation and its sources (n=200).

Variables	Frequency	
	No	%
Knowledge about menstruation:		
Yes	77	38.5
No	123	61.5
Source of knowledge (n=77) :-	**n=77**	
Mother	53	68.8
Grandmother	3	3.9
Sisters	3	3.9
Friends	7	9.1
Magazines	2	2.6
T.V. and radio	5	6.5
All of them	4	5.2

Table (2) reveals that near three fifths (61.5%) had no knowledge about menstruation, while more than two thirds (68.8%) of girls their source of knowledge was taken from their mothers.

Table (3): Distribution of studied sample according to their reported needs for information and preferred sources (n=200)

Variables	Frequency	
	No	%
Reported need for information about specific subjects:		
Female reproductive system	33	22.0
Puberty	55	25.0
Menstrual cycle	95	44.5
Healthy food	17	8.5
Preferred sources of students information :		
Mother	109	54.5
School curiculum	28	14.0
Television & radio	21	3.5
Books & magazines	26	20.0
Special pamphlets	16	8.0

Table (3) shows that for 44.5% of female students, their reported needs for information were about menstrual cycle, while only for 8.5% of them their need for reported information was about healthy food as for preferred sources of students' information, for more than half (54.5%), it was the mother.

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Table (4): Number and percent distribution of female students regarding some practices during menstruation

Variables	Frequency	
	No	%
I.Practice:		
General hygienic practices:		
Good	101	80.8
Bad	24	19.2
Take hot shower during menstruation :-		
Yes	85	68.0
No	40	32.0
Type of used underwear's clothes:		
Cotton clothes	74	59.2
Synthetic clothes	51	40.8
Type of used pad:		
Cotton cloth pad	26	20.8
Reused sanitary pad	89	71.2
Pad from medical cotton and gauze	10	8.0
Number of used pads /day:		
1-2 pads	100	80.0
3-5 pads	20	16.0
≤ 6 pads	5	4.0
Reported use of pharmacological measures :		
Anti-Spasmotics	2	1.6
Analgesics	20	16.0
Sleeping pills	1	0.8
Do not use pharmacological measures	102	81.6
Reported use of non-pharmacological measures (drinking hot fluids):		
Cinnamon	36	28.8
Fenugreek	39	31.2
Peppermint	40	32.0
Tea/ coffee	10	8.0
II. Reported activities avoided during menstruation:		
Going to school	6	4.8
House works	19	15.2
Physical exercises	65	52.0
All of them	35	28.0

Table (4) demonstrates that 80.8% of female students had good general hygienic practices; more than two thirds of them (68.0%) took hot shower during menstruation. Regarding the used pads for near three quarters (71.2%), it was re-used sanitary pads, and for only 8.0% it was medical cotton and gauze. Girls reporting not using pharmacological measures represented 81.6%, and 32.0% of them were drinking hot peppermint as a non-pharmacological measure to relieve menstrual pain.

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Table (5): Relationship between weight and complaints before/during menstruation, and age of menstruation, for menstruated females students

Variables	Weight n=125						P-value
	Less than normal (n=24)		Normal (n=76)		More than Normal (n=25)		
	No	%	No	%	No	%	
Complaints before menstruation:							
Back pain	4	16.7	12	15.8	5	20.0	
Abdominal pain	11	45.8	40	52.6	11	44.0	
Headache	3	12.5	5	6.6	0	0.0	P> 0.05
Worrying & stress	4	16.7	4	5.3	1	4.0	
All of them	2	8.3	15	19.7	8	32.0	
Complaints during menstruation:							
Back & abdominal pain	9	37.5	30	39.5	14	56.0	
Nausea	0	0.0	3	3.9	1	4.0	
Anorexia	4	16.7	8	10.6	0	0.0	
Feeling coldness	1	4.2	6	7.9	1	4.0	P> 0.05
Feeling tiredness	7	29.2	20	26.3	7	28.0	
All of them	3	12.4	9	11.8	2	8.0	
Age at menarch (in years) :							
9 - < 13 years	8	11.9	37	62.7	15	25.4	P> 0.05
13 - 15 years	16	25.7	39	59.1	10	15.2	

Table (5) indicates that for 44.0% of female students their main complaints before menstruation was abdominal pain, while for 56.0% of them it was back and abdominal pain during menstruation.

Table (6) pre, post and retention knowledge about reproductive system , menstruation , menstruation occurrence and pregnancy for intervention group

Variable	Intervention Group n=71						P-value
	Pre Mean ± SD		Post Mean ± SD		Retention Mean ± SD		
Knowledge about internal female reproductive system:							
	3.5 ± 3.1		27.5 ± 1.9		24.5 ± 9.5		P<0.001
Knowledge about external female reproductive system:							
	1.2 ± 1.3		3.8 ± 0.6		3.3 ± 0.9		P<0.001
Knowledge about menstruation:							
	9.4 ± 4.3		34.9 ± 2.8		24.1 ± 7.2		P<0.001
Knowledge about puberty:							
	11.8 ± 4.5		26.7 ± 1.4		20.5 ± 4.4		P<0.001
The relationship between menstruation's occurrence and pregnancy:							
	5.5 ± 4.9		19.6 ± 0. 9		13.0 ± 6.2		P<0.001
Menstruation is indicator for girl's body readiness for pregnancy:							
Yes	22	31.0	71	100.0	55	77.5	
No	49	69.0	0	0.0	16	22.5	P< 0.001
Menstruation's regularity is one of causes of the success of pregnancy opportunity in the future:							
Yes	41	57.7	71	100.0	60	84.5	
No	30	42.3	0	0.0	11	15.5	P< 0.001
Menstruation's regularity influence on the role as mother in the future:							
Yes	14	19.7	63	88.7	43	60.6	
No	57	80.3	8	11.3	28	39.4	P< 0.001

Table (6) reveals that there were highly statistically significant differences between pre, post and retention of knowledge ----about girls reproductive system (internal & external), puberty, menstruation and the relationship between menstruation's occurrence and pregnancy for intervention group (P<0.001).

5. DISCUSSION

A variety of researches over the past several years has reported that the most female adolescents are ignorant or misinformed about menses, even when they consider their preparation positively (7).Therefore, learning about hygiene during menstruation is a vital aspect of health education for female adolescent, as patterns that are developed in female adolescence are likely to persist into adult life (8).

Regarding age, the finding of the present study reveal that, more than two thirds of studied sample (83.5%) ranged from (12-14 years old). This result comes in agreement with ***Lee, Chen and Kaur (20011)*** they mention that the age of studied sample in their study ranged from 12-19 years old. In addition to ***EL-Meshad (20012)*** find that the sample's age ranged from 11-14.5 years old. This contradicted with our study were ***Marvan, and Bejarano (20011)*** find that girls ranged in age from 9-12 years old. Also, ***EL-Gilany, Badawi and EL-Fedawy (20012)*** find, the (664) school girls were aged 14-18 years old.This results related to different sitting and sample size. ***EL-Meshad (2006)*** prove that the highest percentage (41.9%) of the student girls' mothers had secondary education level and three fifths of them were housewives (63.3%),our study also confirme this finding were the highest percentage (42.5%) of the studied sample 's mothers had secondary education level and the majority of them were housewives (70.5%) .

Concerning the age at menarche, the present study finding indicate that the age of the studied sample at menarche ranged from (9-15) years old .This result comes in agreement with the findings of other studies as age at menarche as reported by ***EL-Gilany et al., (2011)***, was 12.6 years old, while, ***Hosy et al., (2011)*** find that the mean age of menarche was 12.4 between girls in Egypt and also this result supported by ***EL-Meshad (2012)*** who find that the age at menarche of the studied sample ranged from (8-14) years old.

Similarly, ***Badrinath et al., (2012)*** support also the current study as age at menarche was 12.6 years old among AL-Emirate girls . However, ***Ammari et al., (2004)*** was not in accordance with the current study finding as age of menarche was higher among Jordanian girls (13.8), and (13.85) in Jammu, India as stated by ***Sharma et al., (2012)***. This difference may be due to environmental conditions.

Marvan, L., and Bejarano, J. (2011) and our study prove that the majority of the studied sample reported that curriculum not contain information about menstruation . Also, ***Beausang and Razor (2011)*** examine 85 stories written by adult women about their menstrual education at school, and they find that most women reported they had been introduced to the topic of menstruation but the exposure was limited at best.

Considering girls' preparation for menarche, our study indicate that more than third of the studied sample reported that they were prepared for menarche and more than half of females adolescents mentioned that they were completely un prepared for menarche .This finding was in agreement with ***Moawed et al., (2011)*** who report that two-fifths of the girls had not discussed menstruation with anyone and had not received any information about it. Also, ***Marvan and Bejarano (2011)*** mention that the girls felt completely un prepared and need for more information about menstruation. This comes in contrast with ***EL-Meshed (2012)*** who clarifie that more than three quarters (78.5%) of student girls reported that they were prepared for menarche. And in the study done by ***Chrisler and Zittel (2011)*** (78%) of Sudanese report that they were prepared for menstruation , (22%) of them un prepared for menstruation and did not know what it is when they first menstruated. In addition to ***Hoerster et al., (2011)*** report that almost all of the American girls (96.8%) had been prepared for menarche both emotionally and with information. From the researchers point of view, this difference could be refered to cultural, education and environmental differences.

Concerning the source of information about menstruation, the present study report that, most studied sample learned about menstruation from mothers followed by school and last from t.v and radio . This result comes in agreement with ***Ammar (2009)*** who mention that the most likely source of information of the majority of girls were their mothers (94.9%). Also, ***Marvan et al., (2010)*** state that most girls learned about menstruation both from mothers and at school (77%).In additional to ***EL-Shazly, Hassanein, Ibrahim and Nosseir (2010)***, report that mothers were the most common source of

information on the physiology of menstruation before and after menarche, with school curricula and the media having a limited role.And, in accordance with ***Erosy et al., (2011); Keri et al., (2010) and Tiwari et al., (2006)*** they report that mothers were find to be the main source of information about menarche .

This contradicted with our study were ***Ayatollahi et al., (2012)*** find that school nurse were the first source of information in Iran. Also, in the Saudi study done by ***Moawed et al., (2011)***, they finnd that about two-fifths of the girls had not discussed menstruation with anyone and had not received any information about it. In additiona to ***Singh et al., (2012)***, they find that the major source of information about menstruation and reproductive health were media (television & radio) (73.1%).

EL-Gilany et al., (2010) add that they found almost the girls (92.2%) reported the mass media as their source of knowledge about menstrual hygiene, followed by mothers (45%) .While ,media in the present study represented only (6.5%). This result could be related to girls are embarrassed to watch these programs that discuss menstrual issues in the presence of other family members or there is no specific programs discussing adolescent physical changes including menarche.

Marvan and Bejarano (2010) report that girls would like to know more about the following topics; how a women feels during her periods and practical aspects during menstruation. Our study also confirmed this finding where more than third of females adolescents need information about menstruation, followed by puberty, female reproductive system and lastly healthy nutrition.

The present study indicat that more than one third (44.5%) reported that, they are need information about menstrual cycle and one quarter need information about puberty and who lived at urban or rural areas had poor knowledge about puberty, female reproductive system and menstruation .This study comes in agreement with ***Ammare (2010)*** who tell that the majority of the students have no information about the genital organs also the results indicated the lack of girls' knowledge regarding the scientific information about menstruation. In additional to, ***EL-Meshed (2012)*** support the present study, and mention that, (15.5%) of girls correctly reported that uterus was the origin of menstrual blood, and (4.5%) of them as well knew the correct cause of blood during menstruation. Also , ***EL-Gilany et al., (2012)*** in Mansoura city which state that only (12.5%) of girls correctly reported that the cause of bleeding was non fertilization of the ovum and only (17.1%) of girls correctly reported that uterus is the origin of menstrual blood. This reflects that the majority of studied sample had poor information about anatomy and function of female reproductive system. In the same line, ***Narayan et al., (2011)*** find that adolescent girls' knowledge of anatomy is weak as slightly more than one quarter of the girls (28%) identified that uterus is the source of menstrual bleeding. Also, in a study among female adolescents in Hawaii, ***Havens and Swenon (2011)*** observe many girls were first informed about menstruation when they started menstruation. ***Korah (2011)*** in India find that pre-menarcheal girls had mush less knowledge than post- menarcheal girls. Also, ***Koff and Rierdan (2011)*** find that most girls were inadequately informed, misinformed or ignorant about menstruation. In addition to, the study done by ***Tiwari, Oza and Tiwari (2012)*** support the present study that they state that a large proportion of girls (37.2%), all of whom are in school do not have prior knowledge about menstruation.

Concerning the studied sample's pre-knowledge about menstruation's occurrence and pregnancy, the present study finding reveal that the majority of studied sample had poor knowledge . This study comes in agreement with the study done by ***Bauga, Amoko and Ncayiyana (2012)*** they prove that females adolescents' knowledge of reproduction was low, with only (19%) of them able to identify the fertile phase of menstrual cycle.

With respect to some practice made during menstruation, the present study finding reveal that, (68.0%) of menstruated females adolescents took hot shower during menstruation .This result comes in agreement with ***EL-Gilany et al., (2010)*** who mention that, (70.9%) of girls took showers (baths) during menstruation. This contradicted with our study where ***EL-Meshed (2012)*** report that avoiding shower is common among almost two fifths (39.1%) of girls during menstrual period due to more than quarter (29.6%) of these girls had misbelief that it might increase menstrual flow and a minority (11.2%) of them think that shower may cause retention of blood. Also,with a study done in Alexandria, by ***EL-Shazly et al., (2010)***, who report about one quarter of girls avoided bathing during menstruation due to belief that body is open during menstruation and that cold shower or bath may cause retention of blood while hot shower may increase bleeding. & ***Badr (2011)*** in Egypt find that avoiding shower during menstruation is common among more than quarter of the study sample .In similar studies, other researchers find that bad habit among women or girls during menstruation such as in Saudi

Arabia, (62.3%) of females adolescent had bad habit as they believed that showering during menstruation might stop menstrual flow or increase the intensity of pain, that reported by ***Moawed (2011)***. Moreover, in Teharn, ***Poureslami and Ashtiani (2012),*** find that (51.9%) of the study sample reported not taking a bath for (8) days after the onset of their menstrual period. From the researchers point of view, the menstruated females adolescents in the current study had awareness of the importance of taking hot shower in relieving the menstrual pain and easily menstrual's flow.

Concerning practice of the menstruated females adolescents during menarche, the present study's find more than half of the girls used sanitary pads and only a few number of them used cotton pad. These come in accordance with the study done by ***EL-Gilany et al., (2010)*** on school girls at Mansoura city they find that, two thirds of girls used sanitary pads while less than one fifth used old clothes. Also, this finding was support by the study carry out by ***EL-Meshad (2012)*** as more than two third of girls used sanitary pads and only less than one fifth used cotton pads. The present study finding comes in contrast with a study done in Peru by ***Chung etal., (2011)*** they identify that, no one in their study reported that they used sanitary pad and the most accessible options in their precoulous economy are old clothes. This difference can be related to different socioeconomic conditions.

The present study reveal that more than two thirds of menstruated females adolescents used (1 - 2) pads per day and a few of them used (3 - 5) pads per day. This result is supported by ***EL-Meshad (2012)*** who mention that two thirds of the study sample were more likely to chang their perineal pads for (1 - 2) times per day, a few of them, nearly one third change it three or more times per day. In accordance also, ***Hussan (2012)*** find most of the study sample in Tanta and Alexandria were more likely to change their pads once daily during menstruation, this is because the girls report the pad should not be changed unless it becomes soaked with blood. In the same line, the study done about menstrual hygiene among females adolescent in Mansoura, by ***EL-Gilany et al., (2010)*** reveal that more than half of adolescent girls change their perineal pad (1-2) times per day and only (43.5%) of them change it three or more times per day.

In relation to methods used to relieve menstrual symptoms, this study reflect the majority of menstruated females adolescents drink hot drinks, take hot showers and a few of them use analgesics and anti-spasmodics drugs .These comes in agreement with ***EL-Gilany et al., (2010)*** clarify that herbal/home remedies, take hot shower, take analgesics and anti-spasmodics drugs were the lines of management in (42.6%), (36.7%) and (34.7%) respectively of females adolescents. Also, ***Davis and Westhoff (2011)*** mention that, in a total of (192) students (32%) report taking warm bath and (67%) were self medicated with analgesics.

Regarding the effect of menarche on menstruated females adolescents daily activities, the present study finding indicated that more than one third of menstruated females adolescents limited their normal activity during menstruation as going to school and house works .This result comes in agreement with **EL-Meshed (2012)** who told that about two thirds of girls limited their normal activity during menstruation. Also, this agreed with the study done by ***Moawed (2011)***, who reported that about two thirds (62.6%) of girls limited their normal activity during menstruation such as visiting relatives or friends, studying, washing clothes and shopping.

As regards exercising during menstruation the result indicat about half of the menstruated females adolescents refrain from any exercise during this period but this finding was consistent with ***Soby et al., (2012)*** they state the majority of students did not practice any type of exercise during menstruation. ***Ling and Lawbe (2012)*** also find that students considered the menstrual period as a period of sickness and the different activities during this period must be prohibited. In same line, ***Poureslami and Ashtiani (2012)*** report (33%) of women avoid any physical activity and mild exercise during menstrual period. In the end ***EL-Meshed (2012)*** add about one third of the sample refrain from any exercise or excess movement during their period.

This study reveal that menstruated females adolescents who are more than normal weight suffer from abdominal pain before menstruation and back and abdominal pain during menstruation This study comes in agreement with ***Lee, Chen and Haur (2012)*** they report pre-menstrual syndrome (PMS) was significantly more common among female adolescents who were overweight. There is an association between PMS and increasing body mass index (BMI) ***Rowland, Baird and Stuart (2012); Harlow and Park (1997); Sundell and Milson (2011) and Roberts, Glen and Kreipe (2009)***. Also, the present study supported by ***Srine, Chapman and Ahluwalla (2010)*** prove that overweight or obese women associated with menstrual-related problems.

Regarding the relationship between obesity and age of first menstruation for menstruated females adolescents it indicat the age of first menstruation for menstruated females adolescents with more than normal weight was from (9 - 12) years old while the age of first menstruation for menstruated females adolescents with less than normal weight was (12 - 15) years old .These come in agreement with studies done by ***Carlsson, Ankarberg, Rosberg, Norjavaara, Albertsson and Carlsson (2011); Matkovic, Ilich and Skugor (2011)*** report that childhood obesity influences both menarcheal age and adult obesity.

The present study indicate there is a statistical significant difference between pre, post and retention of knowledge about female reproductive system, puberty, menstruation . Also, the relationship between menstruation's occurrence and pregnancy for intervention group.This study comes in agreement with the study done by ***Ammar (2010)*** who mention that the majority of the sample gave correct answers about the age of menarche, duration of menstruation and frequency of menstruation at AI azhar pre-paratory institute after distributing of self-learning package. In additional to high percentage (99%) of the sample know the source of menstrual blood, its characteristics very well after distributing of self-learning package. Similarly, ***Rusakaniko, Mbizyo, Kasule, Gupta, Kinoti, Mpanju-Shumbushu, Sebina-Zziwa, Mwateba and Padayachy (2011*)** report that there was an overall increase in knowledge on menstruation and students from the intervention schools were more likely to have correct knowledge over time on aspects of reproductive biology.

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