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KNOWLEDGE, ATTITUDE AND PRACTICE (KAP) OF MEDICAL AND NON-MEDICAL STUDENTS TOWARDS MENSTRUATION

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ABSTRACT

Background: Menstruation is a normal physiological process in the female reproductive life that signifies a transition from girlhood to womanhood. However this transitional period is accompanied by a change in the physical, psychological and social aspects of a woman's life reflecting the culture, beliefs and menstrual-related misconception of Arab societies. ***Objectives:*** The study was conducted to assess the knowledge, attitude, and practice (KAP) towards menstruation among medical (MS) and non-medical (NS) students of Ajman University of Science and Technology, UAE and whether there are differences in knowledge, attitude and behaviors (KAP) towards menstruation between them ***Materials & Methods:*** *A* self-reported questionnaire was administered to a random sample of 300 students in Ajman University, divided into two groups (medical and non-medical) giving 150 participants each group. SPSS version 20 was used for data entry and analysis. ***Results:*** The results of this study demonstrated a good level of knowledge towards menstruation among students, yet there is a gap on the knowledge on some points where only 27% of students identified that menstruation is associated with weight gain. Mothers were found to be the major source of information on menstruation and this reflects the need to include mothers as a part of menstrual educational programs. As regards to student' attitude toward menstruation, students didn't perceive menstruation as a debilitating event (2.5 ± 0.45) and bothersome event (2.45 ± 0.66) but on the other hand they didn't perceive as a natural process (2.23± 0.76). Furthermore, they didn't agree that they can anticipate their menstruation (2.3±0.64) and they have no strong feelings or that they have insufficient knowledge to deny the effect of it (3.02 ± 0.45). Concerning the practices and behaviors related to menstruation, self-medication with medicines and herbs is widely practiced by the study participants to control menstrual discomfort. Moreover, this study revealed that the role of health care providers in providing reproductive health information is underutilize where only 4.7% of the study participants consult a doctor or seek medical advice when they experience menstrual problems. Findings from this study showed that there was no significance difference between medical (MS) and non-medical students (NS) on knowledge, attitude and practice toward menstruation ***Conclusion:*** The results of the study emphasized the importance of introducing reproductive health education at the university level to help adolescent students manage menstrual symptoms, to enhance their awareness about the proper use and selection of OTC menstrual products and to advise them to seek medical advice when they experience menstrual problems

KEYWORDS: *Menstruation, knowledge, Attitudes, Practice, medical students, non-medical students.*

1. INTRODUCTION

Menstruation is an important transition and a turning point in women's life cycle. It also causes a lot of difficulties and discomforts for them. Cultural belief and menstrual-related misconception play a key role in the formation of expectations and perceptions towards menstruation. For example, in India menstruating girls are not allowed to practice in any religious or social event because they are considered impure.[1] Bangladeshi woman would skip school at the time of menstruation.[2] In addition, American women were advised to avoid sexual contact with others when menstruating.[3] A woman menstruating may experience some discomforts or what they call menstrual disorder. It can be caused by several factors depending on the health, lifestyle, economic status etc. of the person. Menstrual disorders are divided into four types: I - deals with the intensity of menstruation (menstrual disorders of intensity) and includes poly or oligo menorrhea and hyper or hypo menorrhea. II- considers the frequency of menstruation (disorders of frequency) and includes poly menorrhea, oligo menorrhea III- considers the duration of menstruation (disorders of duration) and includes amenorrhea, menorrhagia. IIII- considers the pain (disorders of pain) and includes dysmenorrheal and premenstrual syndrome.

Since the young women of today are going to be mothers

of the future, it is crucial to invest in educating them about menstruation in order for them to know the proper way of handling and understanding the changes in their bodies. Also, how they can apply the knowledge that they learn by having the correct attitude and practice during these difficult periods in their lives (KAP as aptly termed by researchers). In this regard, several studies have tried to assess and address the KAP of students towards menstruation. One study among adolescent school girls in Kano, Nigeria reported poor knowledge on the physiological aspects and psychology of menstruation.[4] This was consistent with findings of ***Dhingra et al (2009)*** who reported a lack of conceptual clarity about the process of menstruation.[5] This is in agreement with another study among 400 female nursing students in KSA where lack of knowledge and misconception regarding menstruation was reported. Several studies likewise showed low level of awareness regarding menstruation.[6-8] A cross sectional study among 87 nursing female students in Kufa University, Iraq identified a fair level of awareness towards menstruation[9] and this is in accordance with the studies of ***Nagar and Aimol (2010) and Bhattacherje et al.(2013)*** who showed that the respondents had an average level of awareness regarding menstrual aspects.[10,11] On the other hand; *Kumar et al. (2015) in a study among* 200 students from different grades to assess the knowledge, problems and practices during menstruation found that the majority had good knowledge about menstruation.[12] Similar responses were reported in the studies by ***Titilayo et al. (2009)*** and ***Olowokere et al.(2014).***[13,14]

Reported findings on the attitude of adolescent girls towards menstruation were inconsistent. A study performed in china to evaluate the perceptions toward menstruation among 476 Chinese premenstrual teens found that 43.6% and (42.6%) of the respondents respectively feel embarrassed and annoyed at the time of menarche. Moreover, more than 30% of the study participants were scared, worried, surprised and confused.[15] Another study in Turkey among 181 female athletes and 148 female college student showed that 34.2% of college athletes reported that their menstruation adversely affected their physical performance.[16] Furthermore 71.5% of healthy white American college students sees menstruation as a nuisance and 36.6% feel unclean during menstruation.[17] Additionally, a perception of menstruation as debilitating and bothersome event was reported among women in a study of ***Anson(1999).***[18] In contrast to these findings, the results reported by ***Busari(2012)*** in Nigeria among 1500 adolescents showed that 62% of the participants had positive attitude towards menstruation.[19] This finding was reasonably similar to a study conducted in Turkey to examine the menstrual attitudes among female collegiate athletes and female college students, where both groups have positive attitudes toward menstruation.[16] Previous studies likewise have reported positive views towards menstruation[20,21] Various remedial methods were practiced by adolescent's girls when experiencing menstrual problems. These can help ease menstrual discomforts. In Nigeria the study of (***Busari. et al 2012)*** revealed that 18% of respondents used herbs to control menstrual pain, 25% of them consult their mothers and 10% endure and tolerate the pain.[19] Furthermore, applying heat pads to the abdomen and performing physical exercise among other behaviors was practiced by women.[14,22,23,24] Seeking medical advice or counseling by a doctor can help in the management of menstrual problems. However, only 7% in ***Busari et al.(2012)*** and 5.3% in ***Gupta et al.(1999)*** studies shared this view.[19,25] Several studies have shown that using analgesic will help in the control and pain management during menstruation.[19,26,27,28,29]

The aim of the current study is to assess: 1) the knowledge, attitude and practice of medical and non-medical students towards menstruation 2) whether there are differences in knowledge, attitude and practice (KAP) towards menstruation between medical and non-medical students.

2. MATERIALS AND METHODS

Study design and study setting.

The study design was a cross-sectional, questionnaire based survey. Data collection was conducted during the period from January 2015 to August 2015 This study was carried out among female undergraduate medical (MS) and non-medical (NS) students of Ajman University of science and technology (AUST), United Arab Emirates (UAE). The medical participants were from first to final year's female students of the colleges' pharmacy and dentistry (AUST). Non-medical participants were chosen from first to final years female students of non- medical colleges (AUST).

Inclusion/Exclusion criteria

All female undergraduate students from 1st to 5th year of medical colleges (pharmacy and dentistry) and from 1st to 5th year of non-medical colleges were eligible and enrolled in the study. Postgraduates of the university were excluded.

Study Participants

The sample (Participants) in this study includes both female students and pharmacists. A total sample of 300 students including 150 MS and 150 NS were randomly recruited from Ajman University.

Data collection (study tool).

self-administered questionnaires were used to collect the data from the participants. The questionnaires were written in English and Arabic and the participation was voluntary and no benefits or incentives were given to participants who filled the questionnaire forms**.** The questionnaire was distributed to female students attending regular class sections in both medical and non-medical colleges, after obtaining the instructors' permission. The first questionnaire was designed for two

objectives: 1) to investigate students' KAP in relation to menstruation and 2) to compare the responses toward KAP between MS and NS. The questionnaire was structured as follows:

The first part included questions related to demographic information such age, major, social status, financial status and educational level.

The second part covered knowledge about menstruation including definition, signs and symptoms, menarche age, main source of information and when to seek medical advice**.**

The third part assessed the attitude of respondents towards menstruation through menstruation attitude questionnaire (MAQ) that was developed by Brooks and Ruble (1980). The MAQ contains 33 questions distributed in five subscales and items are scored on five point Likert scale of 1 (Strongly disagree) to 5 (Strongly agree). The 5 subscales are: Menstruation as a debilitating event (DEBILITATING-12 items), Menstruation as Bothersome event (BOTHERSOME-6 items), Menstruation as a natural event (NATURAL-4 items), Anticipation and prediction of the onset of menstruation (PREDICTION-4 items), Denial of any effects of menstruation (DENIAL-7 items). A composite score (sum and mean) from each subscale items was calculated.

The fourth part explored behaviors, self-medication and herbal remedies towards menstrual pain and contains 5 questions.

Validation and Pre-testing of questionnaire

Prior to the study the validity of the questionnaires for their content and relevance was assured by subject experts consisting of faculty at the college of Pharmacy at Ajman University. Then they were translated into Arabic language and validated for the readability by distributing them on a pilot sample of 20 students to clarify any ambiguities.

Ethical Principles

Approval letter to conduct the study was obtained from AUST to allow the researcher to distribute and collect the questionnaires among AUST students. The participation in this study was voluntary and confidentiality of the participants was maintained at all time. Before the administration of questionnaires the background of the survey was explained and written informed consent forms were signed prior to data collection.

Statistical Analysis

Upon the receipt of completed survey forms, the data were analyzed using the statistical package for Social Sciences (SPSS) version 20. Descriptive analysis was employed and the results were expressed in frequency, percentage, bar chart and pie chart. The statistical analyses of categorical variables (responses to questions on knowledge, attitude and practice) were done using Chi square test to assess the association between specialization and KAP towards menstruation. The independent t-test was preformed to find the overall score of the students in knowledge, attitude and practice. A p value of < 0.05 was considered statistically significant.

3. RESULTS

Socio-demographic characteristics of the Students

Socio-demographic characteristics of the participant are given in Table 1. 19-21 years were the highest frequency that participated in the study. Our questionnaire distributed among 150 medical, 150 non- medical students. Regarding social status only 6.7% of the participants were married. 62% of mothers of the students were university graduates. were in university degree regarding mother education level. The majority of students stated that 12-14 years were the age of their menarche.

Medical & non-medical students' knowledge towards menstruation

Table 2 showed the participants knowledge about menstruation, 76% of the participants reported that menstruation is an event that happens to the girl during puberty, that occurs monthly and the body get rid of spoiled blood. Eighty percent (80.3%) reported that it is associated with pain while only (27%) of them reported that it is usually associated with weight gain. According to the knowledge mean score no significant correlation was found between MS and NS towards menstrual knowledge ($P = 0.243$).

Medical and non-medical students' attitude on menstruation

Table 3 shows the participants attitude score towards menstruation. Based on the result shown the participants didn't perceive menstruation as a debilitating event (2.5 ± 0.45) and bothersome event (2.45 ± 0.66). A mean of 2.23 and standard deviation of $\pm$ 0.76 was obtained for menstruation as a natural event which indicates that participants didn't perceive menstruation as a natural process. Furthermore, they didn't agree that they can anticipate their menstruation (2.3 ± 0.64). However they had no strong feelings or that they had insufficient knowledge or experience to deny the effect of it (3.02 ± 0.45).

Relationship between the menstrual attitude and the major

Table 4 shows the correlation between subjects mean scores of attitude about menstruation and their major. It can be seen from the table that there was no statistically significant correlation found between the female attitude and their major (medical and non-medical).

Medical & non-medical students' practice towards menstruation

It is seen from table 5 that there was a highly significant

difference between medical and non medical students in physical exercise during menstruation. However, there was no significant difference among students for other practices during menstruation.

Medical & non-medical students' Self medication and home remedies

Table 6 shows the type of the over the counter drugs (OTC) and herbs used in management of menstrual disorder. Moreover, there was no significant difference among students in the type of used herbs and OTC.

Table 1: Socio-demographic characteristics of the Students

Socio-demographic (N=300).	Frequency (%)
Age	
(16-18)	**45 (15%)**
(19-21)	**161 (53.7%)**
(22-25)	**82 (27.3%)**
(25-30)	**12 (4%)**
Specialization	
Medical	**150 (50%)**
Non-medical	**150 (50%)**
Study Year	
1st year	**72 (24%)**
2nd year	**63 (24%)**
3rd year	**53 (17.7%)**
4th year	**71 (23.7%)**
5th year	**41(13.7%)**
Social status	
Single	**280 (93.3%)**
Married	**20 (6.7%)**
Financial status	
Good above (10,000 DHS)	**176 (58.7%)**
Middle(5000-7000 DHS)	**112 (37.3%)**
Bad bellow(5000 DHS)	**12 (4%)**
Mother education level	
University	**186 (62%)**
Secondary	**76 (25.3%)**

Illiterate	**13 (4.3%)**
Age of menarche **9-11years 12-14years 15-17years**	**38 (12.7%)** **201 (67%)** **61 (20.3%)**

Table 2 Medical & non-medical students' knowledge towards menstruation

Knowledge Correct Response	Total	MS	NS	*P*
Menstruation is event that happens to the girl during puberty, that occurs monthly and spoiled blood that body get rid of it? (Yes)	**228 (76%)**	**113(75.3%)**	**115(76.7%)**	**0.787**
Menstruation is associated with abdominal colic, headache, back pain? (Yes)	**241 (80.3%)**	**131(87.3%)**	**110 (73.3%)**	**0.002**
Menstrual associated with weigh gain? (Yes)	**81 (27%)**	**42 (28%)**	**39 (26%)**	**0.696**
Regulating the intake of sugary foods can help control of some menstrual problems? (Yes)	**189(63%)**	**91 (60.7%)**	**98 (65.3%)**	**0.403**
Iron supplements can control help menstrual pain? (No)	**187 (62.3%)**	**96 (64%)**	**91 (60.7%)**	**0.551**
Knowledge mean score	**3.1 ± 0.98**	**3.2 ± 1**	**3.02 ± 0.97**	**0.243**

MS: medical students; NS: non-medical students; n: number, %: percentage; *p <0.05; #Significance

Table 3: Medical and non-medical students' attitude on menstruation

Attitude Subscales	Total		Medical students		Non-medical students	
	Range	Mean ±SD	Range	Mean ±SD	Range	Mean ±SD
DEBILITATING Total score	**(16-46)**	**30.5± 5.4**	**(17-46)**	**30.2 ±5.6**	**(16-41)**	**30.7±5.22**
Average	**(1.33-3.83)**	**2.5±0.45**	**(1.42-3.83)**	**2.5±0.46**	**(1.33-3.42)**	**2.56±0.43**
BOTHERSOME Total score	**(7-25)**	**14.95 ± 3.55**	**(8-25)**	**15.1±3.6**	**(7-23)**	**14.8±3.52**
Average	**(1.2-4.2)**	**2.49±0.59**	**(1.33-4.2)**	**2.5±0.599**	**(1.17-3.8)**	**2.44±0.586**
NATURAL Total score	**(4-20)**	**8.9± 3.0**	**(4-20)**	**8.7±2.6**	**(4-20)**	**9.2±3.4**
Average	**(1-5)**	**2.23±0.76**	**(1-5)**	**2.2±0.65**	**(1-5)**	**2.3±0.84**
PREDICTION Total score	**(4-18)**	**9.1± 2.57**	**(4-18)**	**8.9±2.6**	**(4-16)**	**9.3±2.5**
Average	**(1-4.5)**	**2.3±0.64**	**(1-4.5)**	**2.2±0.66**	**(1-4)**	**2.3±0.62**
DENIAL Total score	**(11-32)**	**21.13± 3.14**	**(14-29)**	**21.5±2.9**	**(11-32)**	**20.8±3.32**
Average	**(1.57-4.57)**	**3.02±0.45**	**(2-4.14)**	**3.1±0.42**	**(1.57-4.57)**	**2.97±0.47**

Table 4: Medical & non-medical students' practice towards menstruation

Practice	Total	Medical student (MS)	Non-medical student (NS)	*P- value*
Ignoring the pain Yes No	**54(18%)** **246(82%)**	**33(22%)** **117(78%)**	**21(14%)** **129 (86%)**	**0.71**
Physical exercise Yes No	**28 (9.3%)** **272(90.7%)**	**6 (4%)** **144 (96%)**	**22 (14.7%)** **128 (85.3%)**	**0.001**
Appling heat pad Yes No	**57 (19%)** **243 (81%)**	**32 (21.3%)** **118 (78.7%)**	**25 (16.7%)** **125(83.3%)**	**0.303**
Rest and sleep Yes No	**80 (26.7%)** **220 (73.3%)**	**47 (31.3%)** **103 (68.7%)**	**33 (22%)** **117 (78%)**	**0.7**
Doctor and pharmacist consolation Yes No	**14 (4.7%)** **286 (95.3%)**	**3 (2%)** **147 (98%)**	**11(7.3)** **139 (92.7%)**	**0.3**
MS: medical students; NS: non-medical students; *p <0.05; #Significance				

Table 6: Medical & non-medical students' Self medication and home remedies

Self medication	Total	edical student (MS)	Non-medical student (NS)	*P- value*
Medication Paracetamol Ibuprofen Hyoscine Diclofenac Mafenamic acid Naproxen Not using	**56 (18.7)** **81 (27%)** **23 (7.7%)** **16 (5.3%)** **35 (11.7%)** **3 (1%)** **86 (28.6%)**	**27 (18%)** **48 (32%)** **11 (7.3%)** **7 (4.7%)** **16 (10.7%)** **3 (2%)** **38 (25.3%)**	**29 (19.3%)** **33 (22%)** **12 (8%)** **9 (6%)** **19 (12.7%)** - **48 (32%)**	**0.272**

Home remedies Fenugreek	**4 (2.7%)**	**8 (5.3%)**	**12 (4%)**	**0.352**
Peppermint Aniseed	**19 (12.7%)**	**16 (10.7%)**	**35 (11.7%)**	
Green tea Sage herb Cinnamon	**7 (4.7%)**	**12 (8%)**	**19 (6.3%)**	
Chamomile Not using	**21 (14%)**	**16 (10.7%)**	**37 (12.3%)**	
	22 (14.7)	**16 (10.7%)**	**38 (12.7%)**	
	20 (13.3%)	**32 (21.3%)**	**52 (17.3%)**	
	11 (7.3%)	**9 (6%)**	**20 (6.7%)**	
	46 (30.7)	**41 (27.3%)**	**87 (29%)**	
MS: medical students; NS: non-medical students; *p <0.05; #Significance				

4. DISCUSSION

Menstruation is a normal physiological process in the female reproductive life that signifies a transition from girlhood to womanhood. However this transitional period is accompanied by a change in the physical, psychological and social aspects of a woman's life reflecting the culture, beliefs and menstrual-related misconception of Arab societies. Teaching female undergraduates how to adequately prepare themselves for menstruation requires a multifaceted approach with knowledgeable and engaged health-care professionals, pharmacists, health authorities and such approach can be obtained by means of so called KAP-surveys (Knowledge, Attitude and Practice). To our knowledge, no study has been carried out in UAE to assess: 1) the knowledge, attitude and behaviors of medical (pharmacy & dentistry) and non- medical students (business, law, engineering, information technology, mass communication and humanities) towards menstruation. 2) Whether there are differences in knowledge, attitude and behaviors (KAP) towards menstruation between medical and non-medical students.

Regarding the age of menarche, the majority (67%) of the study participants reported having their menarche between the age of 12 to 14 years while the rest subjects reported their menarche between the age of 15 to 17 years (20.3%) and between the age of 9 to 11 years (12.7%). Previous studies have likewise reported that the menarche age ranged between 12 to 14 years.[29-31] However it was between 10 to 12 years in the study by *Dhingra et al., (2009).*[5] This reflected an association between various factors such as socio-economic status, body mass index, place of residence and the age of menarche.

In terms of menstrual knowledge, previous studies were conducted throughout the world in different regions to assess knowledge about menstruation among adolescent girls. In Saudi Arabia studies, only 24.1% of Saudi girls in Al Khobar city had good scores regarding menstrual knowledge and beliefs[26] and 43.8% of Saudi girls in Taiif were below the standard level of menstrual knowledge[32] While on a Jordanian study, 82.4% of respondents lacked knowledge of pre-menarcheal menstruation.[33] According to Egyptian studies, the level of awareness towards menstruation was fair and 85% of girls had satisfactory knowledge about menstruation.[9, 34] Moreover, several research studies have revealed gaps in the level of knowledge about menstruation among female adolescents.[6,8,35,36] These findings run similarly with the findings of *Dhingra et al., (2009)* who showed that none of the sample girls had complete knowledge about the process of menstruation before they started menstruating.[5] In contrast to most of the previous findings, our result reported good level of knowledge about menstruation among studied sample. About 76% of respondents in our study identified that menstruation is event that happens to the girl during puberty, that occurs monthly and the body gets rid of spoiled blood. Moreover 80.3% of the respondents were aware of that menstruation is associated with abdominal colic, headache and back pain. In a study carried out by *Eswi et al., 2012* among 200 female students, similar results on the knowledge towards menstruation were reported.[37] The present results are in agreement with the studies conducted in Nigeria by *Titilayo et al., (2009)* and *by Olowokere et al.,(2014)* that found good knowledge about menstrual disorders and associated risk factors among studied sample.[13,14]

It is worthy to note that only 27% of respondents in our study indicated that menstruation is associated with weight gain and this was consistent with the percentage of 22.5% reported by *Eswi et al., (2012).*[37] This later factor may produce anxiety and worry, which in turn further lead to negative expectations toward menstruation.

Notably, mothers were reported to be the most common source of information about menstruation (70.33%), which correlates with results obtained by *Santina et al., 2013* (86.9%.), *Najwa Karout., 2016* (58.8%), *Pourislami., 2002* (55%), *Omidvar et al., 2010* (54%)[23,26,38,39] This may reflect good communication between mothers and daughters, therefore including in the menstrual educational programs is important. Previous studies likewise were consistent with this view, where information and beliefs towards menstruation are transferred from generation to generation by mothers no matter what the educational level of the participants were.[23, 33, 38, 40]

More than third (37%) of studied subjects incorrectly identified that iron supplements can control menstrual pain and 37.7% of them had incorrect knowledge regarding the effect of regulating the intake of sugary foods on menstrual problems. This area shows management application gap which needs reinforcement.

Experiences towards menstruation plays an important role in the perception of menstrual distress and influence on how a woman views her period. In the present study Menstrual Attitude Questionnaire (MAQ) was used to assess the students beliefs and attitudes towards menstruation. Examining the subscales of "menstruation as a debilitating event" (2.5 ± 0.45) and bothersome event (2.45 ± 0.66) it becomes clear that the surveyed participants have positive response as they don't perceive menstruation as a debilitating and bothersome events. However, menstruation was most debilitating and bothersome among Israeli women in the study carried out by *Anson., (1999).*[41] Moreover, about 35% and 25.3% of Taiwan women perceived that menstruation as a debilitating and bothersome event respectively[42], whereas, higher percentages of 41.5% and 33.7% respectively were reported in a study conducted in Indian.[11] These reported differences may be attributed to the cultural differences between these countries.

One alarming finding was the one related to the attitude for the subscale menstruation as a natural event, where the participants didn't perceive that menstruation as natural a process (2.23±0.76). However, this finding is in good agreement with the results reported by *Eswi et al, (2012)* who found that participants slightly agreed that menstruation is a natural event[37] and in contrast with findings of previous studies conducted in Spin and Germany where participants perceive menstruation as a natural process.[20,21] The possible explanation of this negative attitude in our study might be due to the fact that female students considered menstruation a personal matter and feel uncomfortable in discussing it with other people which may produce confusion and a sense of inadequacy, leading to negative attitude towards menstruation. This is consistent with the results of other studies which revealed that discussing menstrual problems among the closest family members does not exist and is considered shameful and embarrassing.[43,44]

Furthermore, we found negative response to prediction and anticipation of the onset of menstruation. Students didn't agree that they can anticipate their menstruation (2.3±0.64), this was consistent with the 55% obtained from the study of the *Bhattacherjee et al., (2013).*[11] In addition, the study findings showed that the respondents didn't have strong feelings or they lack knowledge or experience to deny the effect of it (3.02 ± 0.45). In all cited cases, the difference in the attitudes towards menstruation reflected ethnic differences which are known to be influenced by a variety of factors such as genetic characters, environmental conditions, family demography, nutritional and health status.

Menstrual disorders are problems that affect a woman's' normal cycle. They often include discomforts which may affect women's health and academic activities of students. Female students should know the ways to control and mange the painful menstruation, since proper health behavior against this distress is the primary way, which is to improve the management of menstrual disorders. Concerning behaviors to relieve the painful menstruation, 18% of the study participants ignore the pain, 26.7% rest and sleep, 19% applied heating pad to the abdomen. This study supports the findings of *London et al., 2007*, who stated that, heat application can promote blood flow while regular exercise can ease menstrual pain.[22]

In this study performing physical exercise during menstruation was not found as common practice among respondents, where only 9.3% practice exercise during menstruation. However this is much less than the percentages of 57% in Saudi Arabia[26] and 70.3% in Lebanon.[23]

The present study indicated that self-medication is widely practiced (71.4%) by the study participants to control menstrual discomfort. This high prevalence reflected how adolescent females hesitate in seeking medical help because they consider menstruation a personal matter and feel uncomfortable in discussing it with other people. Previous studies likewise consistent with this view. In *Busari., 2012* study among 1500 adolescents, about 40% of the participants engaged in self medication[19] which correlates with findings of *Singh, Devi & Gupta (1999)* who found that 22.4% preferred to take over the counter medication from pharmacies.[25] On the other hand using of analgesics play an important role in the management of menstrual problems. In *(Najwa Karout., 2015)* study about menstrual knowledge and beliefs in Saudi Arabia; it was found that 55.3% of participants believed in utilizing analgesia when experiencing dysmenorrheal.[26] This runs similarly with another study conducted by *Bata SM. et al., (2012)* in Jordan where 37.7% share this view.[27] These findings were parallel to the findings by *(Adinma & Adinma., 2008) and (Olowokere et al., 2014)* where the majority of the participants in their studies using analgesic for the management of dysmenorrhea.[14,28]

Moreover, other studies reported that adolescent girls do not consult a health care provider for prescription of drugs for menstrual disorders management.[14,19,46] On the other hand, these findings were in contrast to the results reported in Iraq, where (82.8%) of the study participants had regular menstrual cycles and without using of medication to manage it.[9]

The drugs which frequently used for self-medication in our study were, Ibuprofen (27%), Paracetamol (18.7%), Mafenamic acid (11.7%), Hyoscine (7.7%), Diclofenac (5.3%) and Naproxen (1%). This was in agreement with the study of *Olowokere et al., 2014* which showed that paracetamol and non-steroidal anti inflammatory drugs such as ibuprofen and felden were the most common used analgesic.[14] In another study conducted in Nigeria, 38% of the study participants used paracetamol to control the menstrual pain.[19] The implication of this practice may result in misuse of drugs.

The result of present study also showed that self-medication with herbs was highly prevalent (69.3%) among participants. This was consistent with the finding of *Yassin., 2012* who found that 78% of adolescent students had used herbal remedy for treatment of menstrual problems.[45] Also, in *Yassin., 2012 study*, fenugreek followed by peppermint, aniseed, green tea and cinnamon were the most common used herbs to manage premenstrual syndrome and dysmenorrheal.[45] On the other hand a lesser proportion was reported by *Busari., (2012)* study where there was only 18% engaged in the use of herbs when experiencing menstrual problems.[19]

The present study showed that the common herbs used by respondents include: Sage herb (14.7%), Green tea (14%), Cinnamon, (13.3%) Peppermint (12.7%), Chamomile (7.3%), Aniseed (4.7%) and Fenugreek (2.7%).

It's worth mentioning that only 4.7% of study participants consult a doctor or seek medical advice when they experience menstrual problems. This was in accordance with the reported 7% of Nigerian adolescents in (*Busari et al., 2012)* study.[19] Whereas only 2% of the participants in *Houston et al. (2006) study* shared this view (47). In addition, 50% of the participants stated that they must seek medical advice during severe bleeding, 25% when menstruation is irregular and 21% during sever pain.[37]

The present study offered the opportunity to compare the knowledge, attitude and practice of menstruation among medical students (MS) and non-medical students (NS). Our study showed that there was no significance difference between medical and non-medical students on knowledge towards menstruation *(P= 0.243).* The same pattern of results was observed on subscales of attitude towards menstruation as *debilitating (P =0.45),* bothersome *(P =0.79),* natural event*(P =0.137)* prediction *(P =0.225),*denial *(P=0.75),*as well as on the questions of menstrual practices.

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