Correlation between Menstrual Problems and Socio-Academic Performance among Nursing Students

Nabaweya Saleh Shehata [(1)], Wafaa Gomaa Abdallah [(2)]
(1) Lecturer of Maternity and Neonatal Health Nursing, Faculty of Nursing, Ain shams University
(2) Lecturer of Maternity and Neonatal Health Nursing, Faculty of Nursing, Ain shams University

Abstract

Background: Menstrual symptoms play a major role in the socio- academic performance of some adolescent female students; menstruation related symptoms may have negative influences on their academic performance and social activities. **Aim:** assess the correlation between menstrual problems and socio- academic performance among nursing students at Ain Shams University. **Subject and Methods:** This study was descriptive correlation, A purposive sample was selected and performed on 400 students at faculty of Nursing Ain Shams University. **Tools of data collection:** Data was collected using 1) structured interviewing Questionnaire, 2) menstrual characteristics tools and 3) Pediatric quality of life Generic Core Scales. **Results:** The study shows that the majority of the studied sample had premenstrual syndrome and dysmenorrhea, one third had hypomenorrhea and twenty had oligomenorrhea three quarters had regular cycles, less than half had low level of social health and more than half had low level of academic performance, there were statistically significant correlations between menstrual cycle regularity, amount of blood loss, dysmenorrheal, premenstrual syndrome and their total academic performance. **Conclusion:** The current study concluded a significant correlation between menstrual problems and students' socio-academic performance. **Recommendation:** Conducting reproductive health programs for female undergraduates including information about menstrual hygiene, menstrual disorders, and their management.

Key words: students, menstrual disorders, academic performance, social health

Introduction

The period of adolescence is transition from childhood to adult life along with pubertal development and sexual maturation. During puberty, hormonal, psychological, cognitive, and physical changes occur simultaneously. The period of adolescence for a girl is a period of physical and psychological transformation for motherhood. One of the major physiological changes that take place in adolescent girls is the onset of menarche ***(Nazeema et al., 2017).*** Menstruation is a normal physiological phenomenon for females indicating her capability for procreation and abnormalities of menstruation are major gynecological problems in adolescence ***(Nooh et al., 2014).***

The most prevalent physical symptoms of the menstrual cycle include breast tenderness, diarrhea, back pain, vomiting and fluid retention. In humans, the length of a menstrual cycle varies greatly among women (ranging from 21 to 35 days), with 28 days designated as the average length. Many women may feel different kinds of pain, including sharp, throbbing, dull, nauseating, burning, or shooting pain. Dysmenorrhea may precede menstruation by several days or may accompany it, and it usually subsides as menstruation tapers off ***(Adebimpe et al., 2016).***

As an important health problem among university students, premenstrual disorders adversely affect academic performance Although most women experience negative effects during the menstrual period, some find that it positively influences their mood and mental status, Menstrual disorders can cause some consequences such as limitations on attendance at work and academic performance which hinder practical achievement and employment prospects. Early identification and management of those disorders will improve young adult woman's current health, sense of well- being and overall quality of life however may additionally lower her risks for future illness. ***(Oral E, Kirkan T, Yazici E, Cansever M, & Aydin N., 2012).***

Healthy life style modification incorporating the complementary components of health promoting & preventing health behavior toward reducing health risks by increasing the girl's level of well- being, self-actualization and personal fulfillment, thus it is important for all students

with menstrual disorders, Whether overweight or in the healthy weight range, adopting a healthy intake of nutrients, vitamins and minerals, in addition to focus exercise guidelines on process-a healthy lifestyle across the lifespan ***(Pillitter, 2013).***

Significance of the study:

Menstrual disorders are the greatest common gynecologic illnesses. The highest percentage is among20 to 24years old age group then it reduces increasingly afterword. They touch not only females they affect also public and general economy ***(Shiferaw et al., 2014).*** These disorders also have economic consequences in terms of health care costs due to the consumption of expensive hormonal drugs and laboratory tests ***(Bitzer et al., 2015).*** In Egypt, it was reported a highest prevalence rate of dysmenorrhea (94.4%) with (49.0%) for mild pain, 34.4% for moderate pain and 16.6% for severe pain (El Nagar et al., 2017). Prevalence of abnormal uterine bleeding is 11%–15% among non-gravid women of reproductive age. At least5-10% of females in reproductive age look for medical care for it. Prevalence of PMS is 30 -40% of the reproductive female population (**Nooh et al., 2016**)

The academic performance of girls varies during their menstrual cycle, in a way that the mental status is decreased during and several days before the period. However, some research on the performance of well academically qualified women has shown that they were less likely to be negatively affected by menses. As the menstrual period is known to affect the student's academic performance, the aim of our study was to determine the effect of menstrual symptoms on academic performance among nursing students.

Aim of the study

Assess the correlation between menstrual problems and socio-academic performance among nursing students.

Research Questions:

1. What are common types of menstrual problems among Nursing Students at Ain Shams University?
2. Is there Correlation between Menstrual Problems and Socio-Academic Performance among Nursing Students at Ain Shams University?

Research design:

Descriptive correlational study was used.

Research setting:

The study was conducted at Faculty of Nursing Ain Shams University. The faculty that founded on 2000s, it Has four degree awarded in nursing science; bachelor degree, diploma, master and doctorate, the faculty consists of four floors and there are 3 stadiums each well prepared for lecture, each one well ventilated and well lighted and prepared with data show for presentation. There are also six classrooms for group work that are well ventilated and lighted and there is data show in each classroom. There are also 3 labs skills for clinical application. Each lab well ventilated and lighted and well prepared with all required equipment for clinical application according to each department. The faculty also contains a rich library with recent sources of information needed by students.

Sample type and size:

A purposive sample was selected. The sample was included from all female students in the academic year 2018- 2019in the 1st, 2nd, 3rd, and 4th grades at the faculty of nursing Ain Shams University according to the following inclusion criteria

1. Female students that suffered from at least one or more menstrual problems
2. Their age group ranged from 18-21 years
3. Single females

Exclusion criteria:

Students diagnosed with endocrine disorders or any type of bleeding diseases which can cause bleeding disorders other than menstrual disorders and, the students who are using contraceptive method.

Sample size Equation: The researchers depended on the following equation to calculate the sample size: Steven Thompson Equation **(Khuanbai., 2019).** „h N =Sample size

$$n = \frac{Z1_{-\alpha/2}^2 P (1-P)}{d2}$$

- N =Sample size

- Z: Statistics for a level of confidence. (For the level of confidence of 95%, which is conventional, Z value is 1.96).
- P = the expected proportion in population based on previous studies.
- d=error percentage = (0.05).

Tools of data collection:

Data was collected using the following tools:

Tool 1: Structured interviewing questionnaire:

This tool is developed by the researcher based on review of related literatures to assess nursing students' sociodemographic data and their history.

It was consisted of four parts

- ***Part I: Sociodemographic data*** as: age, marital status, body mass index (BMI), place of residence and income, etc. (Q1- Q9)
- ***Part II: Medical / surgical history:*** included history about presence of any chronic diseases as renal failure … etc, use of any medications as hypertensive medications … etc and any previous surgeries as D&C … etc (Q10-Q12)
- ***Part III: menstrual history:*** include: age of menarche, the cycle length, duration of menses and associated symptoms as back pain,, vomiting, nausea etc. (Q13-Q19)

Tool II: Assessment of menstrual characteristics: adopted from ***Wyatt et al., 2001*** & Adapted from ***Andersh et al., 1982; Steiner, 2003 and Varni 2008,*** this tool consisted of three parts:

- ***Part I: The menstrual pictogram: (Adopted from Wyatt et al., 2001).***

Used to determine the amount of blood lost during menstruation. The chart consists of a series of diagrams representing lightly, moderately, and heavily soiled tampons or towels. In addition, passage of clots and episodes of flooding would also be recorded. A numerical scoring system was devised to coincide with the amount of blood lost.

The total scores of the menstrual pictogram based on related literature review

The amount of blood lost in ml	Degree of bleeding
Less than 30 ml	Mild
30 – 80ml	Moderate
More than 80 ml	Sever

- ***Part II: Verbal multidimensional scoring system for assessment of menstrual pain (Adapted from Andersch et al., 1982).***

This system grades pain from grad 0 to 3 according to the effect of pain on daily activity, symptoms perception and the need for analgesia

Grade
Grade 0: Menstruation is not painful and daily activity is unaffected
Grade 1: Menstruation is painful but seldom inhibits normal activity; analgesics are seldom required; mild pain
Grade 2: Daily activity is affected; analgesics required and give sufficient relief so that absence from school is unusual; moderate pain
Grade 3: Activity clearly inhibited; poor effect of analgesics; vegetative symptoms (headache, fatigue, vomiting, and diarrhea); severe pain

If the menstruation is painful (grade 1-3) assess the onset of pain:

- If it started before or with menstruation this indicate primary dysmenorrheal.
- If it started several days before the menstruation and last more than 48hrs this indicated secondary dysmenorrheal.

Part III: The Premenstrual Symptoms Screening Tool (PSST): (adapted from Steinner et al., 2003)

Questionnaire used for the diagnosis of Premenstrual syndrome. This test consists of two main parts and 19 items; the first part evaluates the psychological (Q1-Q9) and physical (Q10-Q14) symptoms, and the second part (last five questions) assesses the

impact of symptoms on the daily life of patients (Q15-Q19).

The items in PSST were scored with the 4-point Likert scale (0= non, 1= mild, 2= moderate, 3=sever).

Total scores of the PSST were:

Total scores	Degree of PMS
Up to 26 points	Mild
27- 52 points	Moderate
More than 52 points	Sever

Tool III: (PedsQL Generic Core Scales*: (Adapted from Varni, 2008).* Is a modular approach to measuring health-related quality of life (HRQOL) and it was modified by the researcher to be matched with the target age group and modify the relation between Generic Core Scales and menstrual disorders , the researchers used Scales that were designed to measure the , **social** health ("Q11-Q16"), as well as (academic functioning "Q17-Q23"). The items in PedsQL were scored with the 4-point Likert scale from o to 4 (0=never, 1=almost never, 2=sometimes, 3=often, 4=almost always).

Total scores of the PedsQL Generic Core Scales

Total score %	Total level
Less than 30%	High level
30 % - 60 %	Moderate level
More than 60 %	Low level

Procedures:

Preparatory phase:

- It included reviewing past, current, local, and international related literature, and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals, and magazines to develop tools for data collection.
- Assessment of timetable for each academic year to manage time of data collection.

Validity and reliability

Validity of the tool

It was ascertained by three expertise in the obstetric and gynecological health nursing department. They were from different academic categories, i.e., professor and assistant professor. To ascertain relevance, clarity and completeness of the tools, experts elicited responses, which were either agree or disagree for the face validity and content reliability. Necessary Modifications were done according to the experts' opinions.

Reliability of Tool

The reliability of the tool was assessed through measuring their internal consistency by Cronbach Alpha Coefficient test and its value was (0.86).

B- Pilot study:

The pilot study was conducted on 50 female students from all grads. They represented 10% of total sample to ensure the clarity, applicability and time needed. The necessary modifications were done as a result of pilot study that were in the verbal multidimensional scoring system specially in the onset of pain and also some modification made on the paraphrasing (restatement) of the grading of quality of life and in premenstrual syndrome screening tool; those students were excluded from the actual study sample.

Ethical considerations:

Ethical approval was obtained from the Scientific Research Ethical committee of Faculty of Nursing at Ain Shams University before starting the study. Informed consent obtained from participants after explaining the purposes of the study. No harmful methodology used with participants. Each participant had the right to withdraw from the study at any time. Human rights were granted. Data was confidential, and a coding system for data was used.

Field work:

- The actual fieldwork for the process of data collection has consumed three months (the second semester of the academic year 2018 -2019) started from February 2019 to the end of April 2019. Data was collected in 2 days per week average from 20-25 students per day.

Implementation phase:

- At the beginning of each interview the researchers explained the aim and objectives of the study.

- The students were asked to give oral consent to participate in the study.
- The students met in groups approximately 25 students in classrooms, the researchers clarify the most common menstrual disorders including (concept, causes, symptoms, and signs) for each one in brief manner to help students to understand tools and facilitate filling them and help them to diagnose themselves which one of disorders they had.
- Each interview lasted for 30-40 minutes approximately to fill all tools of data collection, this time was out of their official time of lectures and practice.

Limitations of the study:

Drop out of about 60 students that refused to participate in the study and 56 students were absent during data collection.

Administrative Design:

Official letters were issued by researchers to get permission from the Dean of faculty of Nursing Ain shams University for gathering data of research.

Statistical Design:

Data were revised, coded, tabulated, and analyzed using numbers and percentage distribution. Date entered and cleaned on a personal computer using SPSS program version 16. The following statistical techniques used: Percentage, Chi-Square, Mean, and Standard deviation. Also, r test used for testing correlation. Significance of the Results: - When $p > 0.05$, it is statistically insignificant. - When $p < 0.05$, it is statistically significant. - When $p < 0.01$ or $p < 0.001$ it is high statistically significant.

Results:

Table (1) reveals that the studied sample age ranged between (18 -21 years) with mean (20.54±1.33), and 90.5% of studied sample were single and 87.5% of them were living in rural areas. In addition, 86.8% had sufficient income and 94% were Muslim.

Table (2) proves that the studied sample age of menarche ranged between 11-15 years with mean (13±2) and their duration of menstruation ranged from 3-7 days with mean (4.5±1.6) and 76.5% of them their menstrual length ranged from 21 -35 days. As regard to the menstrual cycle regularity 74.3% of them had regular cycles. As regard to Number of pads changed per day 87.5% were changing the pads twice to three times per day. As regard to Use of any medicine regulating menstruation 92.5% of them didn't use any medication to regulate their menstruation. Finally, 42.5% of studied sample were suffering from headache during their menstruation

Table (3) Shows that 98.4 %of the studied students suffered from dysmenorrheal in different grads "grade 1, 2, 3" (43.3%, 36.3% and 18.8% respectively). As regarding to onset of pain 34.3 % of them pain started with menstruation and last for 24 hrs and 73.7% pain radiated to the lower back.

Figure (1) shows that 74% of studied sample lost moderate amount of blood during menstrual period while 20% of them lost mild amount of blood during period.

Table (4) represents that 53.7% of the studied sample had mild PMS, while 42.3% of them had moderate PMS and the remaining 4% of them had sever PMS.

Figure (2) reveals that the most common menstrual disorder among the studied sample were premenstrual syndrome (PMS), primary dysmenorrhea, hypomenorrhea, then oligomenorrhea (95.9%, 92%, 31%, 19.7% respectively) and the least common menstrual disorders were polymenorrhagia and secondary amenorrhea (3.8%, 1.7% respectively).

Table (5) shows that 51.5% of the studied sample had low level academic performance

Table (6) illustrates that 48.2% of the studied sample had low level of social health

Table (7) demonstrates that there is statistically significant correlation between amount of blood loss during menstruation and socio- academic performance.

Table (8) reveals that there is highly statistically significant correlation between grade of pain (dysmenorrheal) and socio-academic performance.

Table (9) shows that there is highly statistically significant correlation between premenstrual syndrome and socio- academic performance.

Table (1): Distribution of Studied sample According to Their Socio-demographic Characteristics (N= 400)

Items	No	%
Academic year		
First Grade	83	20.8
Second Grade	91	22.8
Third Grade	121	30.3
Fourth Grade	105	26.3
Age		
18 year	25	6.3
19 years	83	20.8
20 years	70	17.5
21 years	109	27.3
Mean ±SD	20.54±1.33	
Residence		
Rural	349	87.5
Urban	51	12.5
Income		
Sufficient	347	86.8
Insufficient	7	1.8
Hardly enough	46	11.5

Table (2): Distribution of Studied sample According to Their Menstrual History (N= 400)

Items		No
Age at menarche		
	Mean ±SD	**13±2**
Duration		
	Less than 3 Days	44
	3-6 days	316
	7 days or more	40
	Mean ±SD	**4.5±1.6**
Menstrual cycle length		
	Less than 21 days	15
	21 to 35 days	306
	35 to 90 days	72
	90 or more	7
Menstrual cycle regularity		
	Regular	297
	Irregular	103
Number of pads changed per day		
	One pad	48
	Two – three pads	350
	More than three pads	2
Use of any medicine regulating menstruation		
	No	370
	Yes	30
Associated symptoms with menstruation		
	Nausea	133
	Vomiting	81
	Headache	170
	Diarrhea	98
	Constipation	13
	Fainting	2

Table (3): Distribution of Studied sample According to the menstrual Pain

Items		No	%
Pain grade			
	Grade 0	7	1.8%
	Grade 1	173	43.3%
	Grade 2	145	36.3%
	Grade 3	75	18.8%
Onset of pain			
	Before menstruation	103	27.5%
	Start with menstruation and last for 24 hrs	135	33.8%
	Start with menstruation and last for 48 hrs	123	30.8%
	5 days before menstruation and lasts for 4 days	32	8.0%
Associated site of pain			
	Lower back	290	74.3%
	Lower extremities	165	41.3%

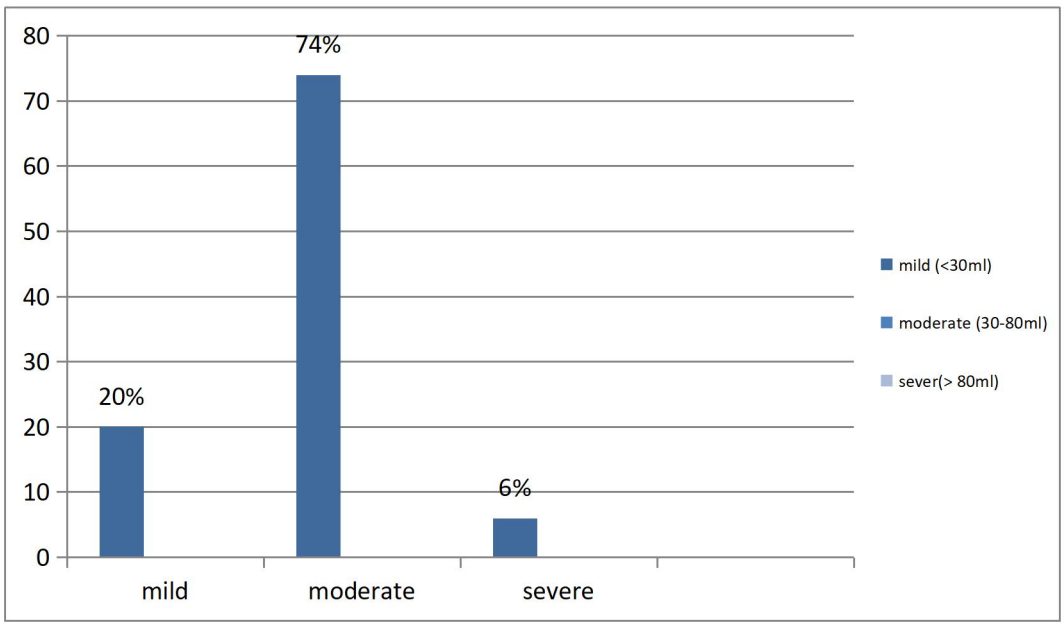

Figure (1): Figure showed amount of a Blood Loss during Menstruation (N= 400)

Table (4): Distribution of Studied sample According to degree of Premenstrual Syndrome (N= 400)

Items	None		Mild		Moderate		Severe
Psychological symptoms	**N**	**%**	**N**	**%**	**N**	**%**	**N**
Anxiety	71	17.8	129	32.3	116	29.0	84
Irritability	206	51.5	89	22.3	54	13.5	51
Mood Swings	57	14.3	100	25.0	100	25.0	143
Nervous Tension	89	22.3	105	26.3	103	25.8	103
Suspiciousness	208	52.0	88	22.0	60	15.0	44
Depression	132	33.0	117	29.3	88	22.0	63
Crying	169	42.3	121	30.3	74	18.5	36
Forgetfulness	210	52.5	116	29.0	46	11.5	28
Confusion	150	37.5	118	29.5	87	21.8	45
Insomnia	89	22.3	124	31.0	99	24.8	87
Physical symptoms							
Appetite Increase	245	61.3	107	26.8	32	8.0	16
Headache	152	38.0	112	28.0	87	21.8	49
Fatigue or Dizziness or Fainting	225	56.3	19	4.8	119	29.8	37
Palpitations	249	62.3	74	18.5	47	11.8	30
the impact of symptoms on the daily life							
Fluid Retention	274	68.5	81	20.3	34	8.5	11
Weight Gain	276	69.0	96	24.0	22	5.5	6
Swollen Extremities	338	84.5	44	11.0	15	3.8	3
Breast Tenderness	208	52.0	96	24.0	68	17.0	28
Abdominal Bloating	130	32.5	108	27.0	97	24.3	65
Other Symptoms							
Oily Skin	160	40.0	127	31.8	80	20.0	33
Acne	131	32.8	148	37.0	89	22.3	32
Constipation	267	66.8	63	15.8	48	12.0	22
Diarrhea	223	55.8	79	19.8	76	19.0	22
Backache	106	26.5	60	15.0	102	25.5	132
Hives	211	52.8	77	19.3	66	16.5	46
Radiation Down Thighs	171	42.8	87	21.8	77	19.3	65
Degree	**Mild**		**Moderate**		**Sever**		
	No	**%**	**No**	**%**	**No**	**%**	
Total score	215	53.7%	169	42.3	16	4	

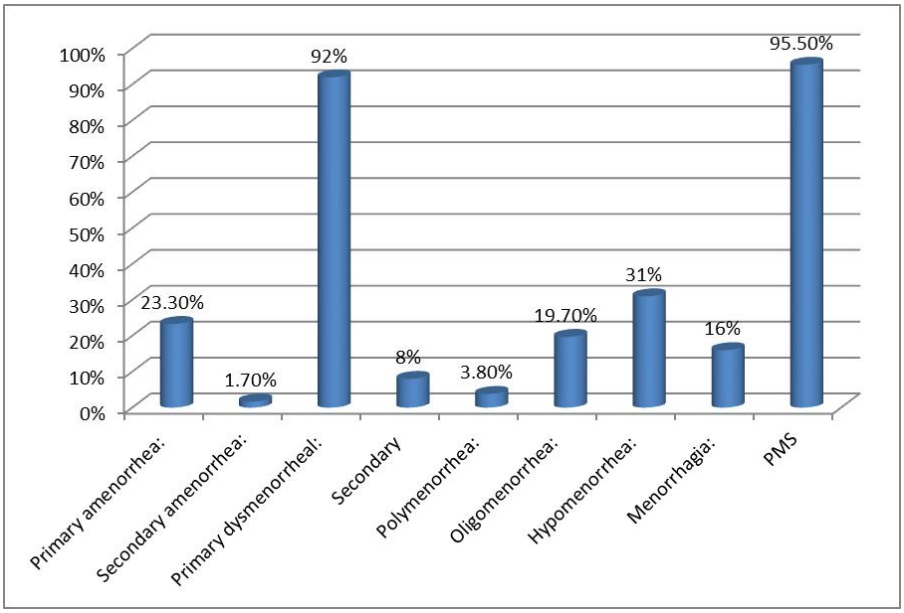

Figure (2): Figure showed menstrual disorders among studied sample according to their menstrual disorders history (N=400)

Table (5): Distribution of Studied sample According to their Academic Performance (N= 400)

Academic Performance	Never		Almost Never		Often		Almost Always		Always
	No	%	No	%	No	%	No	%	No
Absence from Lecture	129	32.3	100	25.0	100	25.0	37	9.3	34
Unable to Concentration and understanding	59	14.8	110	27.5	122	30.5	49	12.3	60
No Participation in discussion	73	18.3	87	21.8	115	28.8	61	15.3	64
Sleeping desire during lecture	92	23.0	100	25.0	84	21.0	51	12.8	73
Inadequate Practical performance	85	21.3	85	21.3	101	25.3	61	15.3	68
No Participation in activities	111	27.8	73	18.3	98	24.5	62	15.5	56
Missing exam	315	78.8	57	14.3	19	4.8	6	1.5	3
Total score	**No**					**%**			
High level	38					9.6			
Moderate level	156					39			
Low level	206					51.5			

Table (6): Distribution of Studied sample According to Social Health (N= 400)

Social problems	Never		Almost Never		Often		Almost Always		Always
	No	%	No	%	No	%	No	%	No
Having problems with family.	200	50.0	75	18.8	79	19.8	36	9.0	10
Not fulfilling family responsibilities	121	30.3	120	30.0	88	22.0	44	11.0	27
Unwilling to Participation in social events	94	23.5	93	23.3	99	24.8	69	17.3	45
Unwilling to talk with friends	110	27.5	95	23.8	99	24.8	51	12.8	45
Being irritable with others	81	20.3	101	25.3	86	21.5	59	14.8	73
Not being comfortable with others	108	27.0	89	22.3	84	21.0	52	13.0	67
Total score	**No**					**%**			
High level	48					12			
Moderate level	159					39.7			
Low level	193					48.2			

Table (7): Correlation between the amount of blood loss with total socio- academic performance

Items	Total socio-academic health						r
Amount of blood loss during menstruation	Low		Moderate		High		
	No	%	No	%	No	%	
Mild	12	13.3	39	43.3	39	43.3	0.49
Moderate	163	56.5	117	40.6	8	2.7	
Sever	18	81.8	3	13.6	1	4.5	

Table (8): Correlation between the dysmenorrhea with total socio-academic performance (n =400)

Grade of pain (dysmenorrheal level)	Total soc-academic performance						r
	Low		Moderate		High		
Grade 0	1	14.2	1	14.2	5	71.4	0.78
Grade 1	40	23.1	102	58.0	31	17.9	
Grade 2	101	69.6	34	23.4	10	6.8	
Grade 3	51	28	22	29.3	2	2.6	

Table (9): Correlation between premenstrual syndrome with total academic performance (n =400)

Items	Total socio-academic performance						r
PMS	Low		Moderate		High		
Mild	55	22.58	122	56.7	38	17.6	0.36
Moderate	127	75.1	34	20.1	8	7.4	
Severe	11	68.7	3	18.7	2	12.5	

Discussion

The present study is descriptive correlational one that examined the correlation between menstrual problems and socio-academic performance among nursing students.

The current study reveals that the studied sample experienced different menstrual disorders, and shows that almost of them had premenstrual syndrome, and dysmenorrheal, about one third had hypomenorrhea and about one quarter had oligomenorrhea. The previous results are in the same line with ***Aref et al. (2015)*** who assessed frequency of different menstrual Disorders among Female Medical Students at Taif Medical College and reported that the majority of their sample experienced Premenstrual syndrome and dysmenorrheal and one third had irregular menstruation. This similarity is due to the same

age group and exposure to similar academic stress conditions.

The pervious result is contrary to ***Karout, (2015)*** who assessed Prevalence and pattern of menstrual problems and relationship with some factors among Saudi nursing students and mentioned that more than one third of them had irregular menstruation, less than one quarter had oligo and poly-menorrhea, and less than tenth of them had hypomenorrhea and hypermenorrhea.

The menstrual disorders vary widely between different population and between different age groups within the same population such variation may be due to some factors as environmental, biological, nutritional, and physical health conditions.

Concerning the menstrual cycle regularity, the present study findings shows that three quarters of the studied students had regular cycle while one quarter had irregular cycle. The previous results are similar to ***Adebimpe et al. (2016)*** who assessed menstrual pattern and disorders and impact on quality of life among university students in South-Western Nigeria and postulated that slightly more than three quarters of their sample had regular monthly menstrual flow pattern and about one quarter had irregular cycle. This agreement is due to convergence of target population, age group and nutritional status and physical health.

The pervious result is contradicted with ***Shiferawet al. (2014)*** who studied menstrual problems and associated factors among students of Bahir Dar University and reported that near half of their sample had irregular menstruation this disagreement may be due to difference in the region.

Regarding to prevalence of dysmenorrheal, the current study reveals that nearly half of the studied students had mild pain, and more than one third of them had moderate pain and less than one quarter of them had severe pain.

The previous results are in harmony with ***Shah et al. (2013)*** who studied prevalence of primary dysmenorrhea in young students in India and reported that half of them had mild dysmenorrheal, less than one quarter had moderate level and one quarter had sever level of dysmenorrheal.

This result contradicts with ***Gebeyehu et al. (2017)*** that studied Prevalence, Impact, and Management Practice of Dysmenorrhea among University of Gondar Students, Northwestern Ethiopia and reported that twenty of students had mild dysmenorrhea, forty of them had moderate and forty of them had sever dysmenorrheal.

Moreover, according to the onset of pain in the current study reveals that the majority of the studied students started menstrual pain with menstruation and lasted for the first 24 hours and about three quarter of them pain radiated to lower back while nearly half of them pain radiated to lower extremities

The previous results are agreed with the findings of ***(Elnagar.,Elmashed.,Kheder.2017)*** who reported that the majority of their sample started pain with the menstruation and lasted for the first 24 hours of their period and three quarter of them pain radiated to lower back while nearly half of them pain radiated to lower extremities, this similarity may be due to similar age group.

This is in contrast with ***Karout, (2015)*** who found that less than one quarter pain was in the abdomen and one third of them pain extended down to the thighs. This difference may be due to cultural differences in pain perception and variability in pain threshold.

Furthermore, the amount of blood loss during menstruation**,** the current study shows that about three quarter of the studied students lost moderate amount of blood during their menstruation while less than one quarter lost mild amount of blood.

This is in the same line with ***Jailkhani et al. (2014)*** who assessed Patterns & Problems of Menstruation amongst the Adolescent Girls Residing in the Urban Slum and reported that one third of them had moderate blood flow and less than one quarter had mild blood flow. This similarity may be due to similar age group.

This is in contrast with ***(Mohite & Mohite, 2013)*** who assessed "Correlates of the menstrual problems among rural college students of Satara district" and reported thatmore than half of girls had mild bleeding, more than one third of them had moderate bleeding. The difference in results is due to different in region of study and also amount of blood lost during menstruation affected

by different factors as nutritional status and medical condition.

Regarding the prevalence of premenstrual syndrome, this study shows that more than half of the students had mild premenstrual syndrome this is approximately near to the results reported by ***Al-Batanony& AL-Nohair, (2014)*** who assessed Prevalence of Premenstrual Syndrome and Its Impact on Quality of Life among University Medical Students, Al Qassim University, KSA, and reported that near half of the studied sample had mild PMS.

In contrast with ***Al-Dabal et al. (2014)*** who studied Dysmenorrhea and Associated Risk Factors among University Students in Eastern Province of Saudi Arabia and reported that one third of them had moderate PMS, less than one quarter of them had mild PMS.

Difference in prevalence of PMS can be attributed to variable criteria used to classify the severity of the syndrome. The large variation in the prevalence rate is due to the usage of various diagnostic criteria for PMS and due to differences in study populations, age, and cultural and social norms.

According to social health among studied sample, the current study illustrated that near half of them had low level of social health in term of" family and friends' relationships and participation in social activities ". The present study reveals that near half of them had low level of social relationship during their menstrual period.

The previous results are on par with ***Khamdan et al. (2014)*** who assessed The Impact of Menstrual Periods on Physical Conditions, Academic Performance and Habits of Medical Students in Arabian Gulf University, who reported affected social relationships of female AGU students, as most of the students preferred to be alone and had disturbance in social relations with others.

This finding is in contrast with ***Unsal et al. (2010)*** who assessed Prevalence of dysmenorrhea and its effect on quality of life among a group of female university students in the west of Turkey and reported no differences on the social life of their studied sample, this may be due to difference in the region and culture and personal habits.

Regarding academic performance among studied sample, the present study illustrated that half of students had low level of academic performance in term of 'concentration, understanding and participation in lecture, sickness absenteeism and missing exams ", these results were in the same line with ***(Sharma P., 2018)*** *who conducted A study to assess the effect of menstrual symptoms on* academic performance among nursing students at selected colleges in Tamil Nadu, India found that, the majority of students were having more difficulty to cope up with the class room performance during menstruation. Although this study also stated that the students were having more difficulty to complete their assignments and even during examination with the menstrual symptoms.

On accordance**, (*Elnagar et al. 2017*)** studied incidence of menstrual disorders and its effect on students 'academic performance, the study concluded that menstrual disorders were common among students in the Faculty of Nursing which affect their academic performance in forms of lectures absence, loss of concentration and understanding, sleeping desire during lectures in addition to affecting the practical performance of the students.

As concerning to correlation between dysmenorrhea and socio-academic performance, this study reports that there is highly statistical correlation, in addition to poor academic performance and high prevalence of sickness absenteeism due to dysmenorrhea ".This relation is also found by ***Joshi et al. (2015)*** who studied Primary dysmenorrhea and its effect on quality of life in young girls and postulated that Dysmenorrhea was found to have significant effect on day-to-day activities, thus having negative effect on QoL, leading to absenteeism, reduced physical activity, loss of concentration, and poor social relationship. This clearly indicates that dysmenorrhea is disturbing the life of girls when compared with the lives of girls without dysmenorrhea.

Another study carried out by ***Karout, (2015)*** who reported that the impact of dysmenorrhea on their life, among those having dysmenorrhea, almost of them announced that having dysmenorrhea reduced their daily activity and more than two thirds of them became absent from

college. This similarity was due to similar age group.

Concerning to the correlation between amount of blood loss and socio- academic performance , The current study shows that there was statistical significant correlation between them, in the same line with ***Bitzer et al. (2013)***who assessed Women's attitudes towards heavy menstrual bleeding, and their impact on quality of life and reported that more than two thirds of women tend not to participate in social life , As well as the physical implications, and more than two thirds of women reported limited attendance at work and/or school and affected their performance .

In addition, the pervious result is in the same line with ***Karout, (2015)*** who reported that premenstrual syndrome had more impact on quality of life. it is usually reduced the social activities among half of the participants. Also, half of the participants reported that menstrual syndromes interfere with hobbies or social activities. In addition, less than half of the participants usually interfere with relationships with others.

Regarding to the correlation between PMS and students' quality of life, the current study reports that there is highly statistically significant correlation between premenstrual syndrome and socio-academic performance.

The pervious result is in the same line with **Karout, (2015)** who reported that PMS had more impact on QOL, it is usually reduced the productivity among half of the participants. Also half of the participants reported that PMS interfere with hobbies or social activities. In addition PMS among less than half of the participants usually interfere with relationships with others.

In contrast to **Al-Batanony & AL-Nohair, (2014)** who showed that the burden of PMS/PMDD on health-related quality of life was on mental and emotional health-related quality of life domains as well as on physical health-related quality of life domains. In addition to Yang et al. (2008) who studied Burden of premenstrual dysphoric disorder on health-related quality of life, was found that the burden of PMDD was greater on mental and emotional health-related quality of life domains than on physical health-related quality of life domains.

The current study finding emphasized that menstrual problems well play a discernible role in the socio- academic performance of some adolescent female students, causing many undesirable effects on the health and wellbeing of nursing students including their ability to engage in social relations as well as their academic function as a student

Conclusion

The current study concluded that: the studied sample experienced different menstrual disorders**,** almost of them had premenstrual syndrome and dysmenorrheal, about one third had hypomenorrhea and about one quarter had oligomenorrhea. Moreover, near half of them experienced low level of social health and half of them experienced low academic performance. In addition, there is statistically significant correlation between menstrual problems as amount of blood loss during menstruation, dysmenorrheal with total social - academic performance.

Recommendations:

In the light of these findings, it is recommended to:

1. Integrate self-care management of menstrual disorders into curriculum of women's health department.
2. Conduct reproductive health programs for female undergraduates including information about menstrual hygiene, menstrual disorders, and their management.
3. This study can be replicated on larger sample including all faculties of Ain shams University to assess effect of different knowledge, background, and studies on the relation between menstrual disorders and all aspects of quality of life

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