

## Prevalence of Dysmenorrhea and its Effect on Student's Quality of Life

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### Abstract

**Background:** Dysmenorrhea is the leading cause of gynecological morbidity in women of reproductive age and it was found to have significant effect on day-to-day activities. Present study **aimed to** assess prevalence of dysmenorrhea and its effect on Student's Quality of Life at Faculty of Nursing Beni-Sueff University. **Subjects and Methods:** This study was exploratory descriptive, A convenient sample was selected from 516 female students at faculty of Nursing Beni-suef University **Data collection tools:** 1) Socio-demographic Questionnaire 2) verbal multidimensional scoring system 3) Pediatric quality of life Generic Core Scales. **The results of the study revealed** that the majority of the studied students suffered from dysmenorrheal in different grads, most of them experienced grade 1, more than one third experienced grade 2 and eighty percent of them experienced grade 3. Forty had moderate level of quality of life in physical health while more than one third experienced low level in psychological health, less than half experienced low level in social health and more than half experienced low level in academic performance and there was highly statistical significant correlation between dysmenorrheal and quality of life. The study concluded that the majority of the studied students suffered from dysmenorrheal & it had negative effect on quality of life, leading to absenteeism, reduced physical activity, loss of concentration, and poor social relationship. So study **recommended** to conduct better quality population-based longitudinal studies on the natural history of dysmenorrhea and on the effect of its risk factors across the reproductive life course.

**Key words:** students, dysmenorrhea, quality of life.

### Introduction

Dysmenorrhea describes recurrent cyclic pain during the menstruation. The pain is usually cramp-like, colicky, located in the supra pubic area with radiation to the lower back and the legs and stays usually for 24–48 hrs. Often women describe associated symptoms such as vomiting diarrhea, nausea, bloating, headache, nervousness, dizziness and fatigue (Bernardi et al., 2017).

It is a very common gynecological problem that can affect as many as 50% of women, 10% of these women suffer severely enough to render them incapacitated for one to three days each menstrual cycle (Charu et al., 2012).

Dysmenorrheal is commonly divided into primary dysmenorrhea (pain without organic pathology) and secondary dysmenorrhea (pelvic pain associated with an identifiable pathologic condition, such as endometriosis or ovarian cysts) (Ju et al., 2014).

The estimated prevalence of dysmenorrhea is high, although it varies widely, ranging from 45 to 93% of women of reproductive age, and the highest rates are reported in adolescents. Because it is accepted as a normal aspect of the menstrual cycle and therefore is tolerated. (Charu et al., 2012).

Some women (3 to 33%) have very severe pain, severe enough to render them incapacitated for 1 to 3 days each menstrual cycle, requiring absence from school or work (Kural et al., 2015).

Risk factors of dysmenorrhea include a positive family history, early menarche (<12 years), young age (<30 years, low or high body mass index (<20 or >30) (Ayanet et al., 2012), smoking, nulli parity, longer cycles or duration of bleeding, irregular or heavy menstrual flow, premenstrual symptoms (Kural et al., 2015), clinically suspected pelvic inflammatory disease, history of sexual assault, and psychological symptoms such as depression and anxiety (Roberts et al., 2012).

NSAIDs are usually the first-line therapy for dysmenorrhea and should be tried for at least three menstrual periods (Zahradnik et al., 2010). If NSAIDs alone are not sufficient, oral contraceptive pills can be combined with it. Common NSAIDs (aspirin, naproxen, and ibuprofen) are very effective in relieving period pain (Marjoribanks et al., 2013).

QOL is also defined as a multi-scale, multidimensional concept that contains interacting objective and subjective elements. Studies on the QOL of individuals diagnosed with chronic illnesses are of interest to health care professionals. They allow them to learn about the subjective impact of the disease on the patients' life and wellbeing, as well

as its impact on care and the diagnostic and therapeutic interventions made (Theofilou, 2013).

The main complain of any woman or adolescent suffering from dysmenorrhea is pain so the first thing the nurse asks about is pain characteristics as type of pain, radiation, onset in relation to menstrual cycle and period (Emmanuel et al., 2015).

As a counselor and educator the nurse teachwomen different methods to manage pain as using different non pharmacological pain relief methods .

### **Significance of the problem;**

**The burden of dysmenorrhea** is greater than any other gynecological disorder. Dysmenorrhea is the leading cause of gynecological morbidity in women of reproductive age regardless of age, and economic status, nationality. The effects extend beyond individual women to society, resulting annually in an important loss of productivity. So, the World Health Organization estimated dysmenorrhea as the most important cause of chronic pelvic pain (Bernardi et al., 2017)

Generally dysmenorrhea is one of the major causes and possibly the most important single cause of school absence among adolescent girls (NurAzurah et al., 2013). An epidemiological study in Egypt reported that 75% of pubertal adolescents experienced dysmenorrhea, with 20.3% reporting absenteeism from school because of severity of symptoms (Gagua & McHedlish 2013)

So this study was conducted to evaluate prevalence of dysmenorrhea and its effect on student's quality of life.

**Aim of the Study**

Assess prevalence of dysmenorrhea and its effect on student's quality of life at faculty of nursing Beni-Suef university.

**Research question:**

1. What is the prevalence of dysmenorrhea among nursing students at faculty of nursing Beni-Suef University?

2. What is the effect of dysmenorrhea on student's quality of life?

**Subjects and methods****Technical Design:**

The technical design used for the study covered the following four main headings;

**Research design:**

Explorative descriptive research design.

**Settings:**

Faculty of nursing Beni-suef University.

**Sample type:**

A convenient sample was used.

**Exclusion criteria:**

Students diagnosed with endocrine disorders or any type of bleeding diseases which can cause bleeding disorders other than menstrual disorders.

**Sample size:**

The sample was included from all female students in the academic year 2017- 2018 in the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> grades at the faculty of nursing Beni-Suef University. Their number (516) female student.

**Sampling technique:**

The students met in groups approximately 25 students in class rooms, At the beginning of each interview the researcher explained the aim and objectives of the study then The students were asked to give oral consent to participate in the study and the researcher clarify the most common menstrual disorders including (concept, causes, symptoms and signs). Each interview lasted for 30-40 minutes approximately.

**Tools of data collection:**

Three tools were used for data collection;

**1-Structured Interviewing Questionnaire Sheet:**

This tool was developed by the researcher based on review of related literatures.

**It was consisted of Sociodemographic data** as: age, marital status, body mass index (BMI), place of residence and income, etc.

**• Tool II: Verbal multidimensional scoring system for assessment of dysmenorrhea pain (Adopted 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.

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

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

**Tool III: (Peds QL Generic Core Scales): (Adapted from Varni 1998)**, was a modular approach to measuring health-related quality of life (HRQOL) in children and adolescent and it was modified by the researcher to be matched with the target age group and modify the relation between PedsQL Generic Core Scales and grades of dysmenorhea. The 23-item PedsQL Generic Core Scales were designed to measure the core dimensions of health **physical, psychological, social** as delineated by the World Health Organization, as well as role (**academic**) functioning. The items in PedsQL were scored with the 4-point Likert scale from 0 to 4 (0=never, 1=almost never, 2=sometimes, 3=often, 4=almost always). To reverse score, transform the 0-4 scale items to 0-100 as follows: 0=100, 1=75, 2=50, 3=25, and 4=0. So that higher scores indicate better HRQOL.

**Total scores of The PedsQL Generic Core Scales**

Total score %	Quality of life level
Less than 30%	low level
30 % - 60 %	Moderate level
More than 60 %	High level

**Tool validity;**

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 Analysis;**

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

**Operational design:**

The operational design included preparatory phase, administrative design, implementation phase, pilot study.

**(A) 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 time table for each academic year to manage time of data collection.

**Ethical considerations;**

Informed oral consent was obtained from students after explaining the purposes of the study, no harmful methodology was used, each student had the right to withdraw from the study at any time, confidentiality was maintained and human rights were used.

**Administrative Design:**

Official letters were issued from Faculty of Nursing, Ain Shams University to get permission from the Dean of faculty of Nursing Beni-Suef University for gathering data of research.

**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; those students were excluded from the actual study sample.

**Data collection phase;**

- The process of data collection has consumed three months (the second semester of the academic year 2017 - 2018) started from February 2018 to the end of April 2018. Data was collected in 2 days per week average from 20-25 students a day.
- At the beginning of each interview the researcher 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 class rooms, the researcher 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 also help them to diagnose themselves which one of disorders they had.
- Each interview lasted for 30-40 minutes approximately. The time classified to (15

minutes)for the overview about menstrual disorders, the first tool will take (5-7 minutes), second tool part I (5 min), part II (3-5), part III (5 min). the third tool will take (5 min), this time out of their official time of lectures and practice.

**Limitations of the study:**

About 60 students were refused to participate in the study and 56 students were absent during data collection.

**Statistical Design:****Data Management and Analysis:**

The collected data was revised, coded, tabulated and introduced to a personal computer using statistical package for social sciences (IBM SPSS 20.0). Data was presented and suitable analysis was done according to the type of data obtained for each parameter.

**Descriptive Statistics:**

1. Mean, Standard deviation (+ SD) and, Frequency and percentage of non-numerical data.

**Analytical Statistics:**

**1- Chi square test** was used to examine the relationship between two qualitative variables but when the expected count is less than 5 in more than 20% of the cells; Fisher's Exact Test was used.

**P-value: Level of significance:**

- $P > 0.05$ : Non significant (NS)
- $P < 0.05$ : Significant (S)

-  $P < 0.01$ : Highly significant  
(HS)**Results**

**Part I: socio-demographic characteristic and studied students history.**

**Table (1)** revealed that the studied students age ranged between (18 -21 year) with mean ( $20.54 \pm 1.33$ ), and 90.5% of studied students were single and 87.5% of them were living in rural areas. In addition 86.8% had sufficient income and 94% were Muslim.

**Part II: dysmenorrheal level**

**Table (2):** Showed 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.

**Part III: That part represent studied students quality of life “physical, psychological, social and academic performance“**

**Table (3)** regarding to physical domain of QOL there were 42.2 % of the studied students experienced moderate level QOL during their **menstrual** period.

**Table (4)** Regarding to psychological domain of quality of life there were 37.7% of the studied students experienced low level QOL during their menstrual period.

**Table (5)** Regarding to the social domain of QOL there were 48.2 % of the studied students experienced low level QOL during their menstrual period.

**Table (6)** regarding to academic performance domain of QOL there were 51.5 % of the studied students experienced

low level QOL during their menstrual period.

**Figure (1)** regarding to total level of quality of life it was found that the studied **students** experienced different levels of QOL in different domains, 42.2 % experienced moderate level in physical domain while (37.7 %, 48.2 % and 51.5 %) experienced low level in psychological, social and academic domains respectively.

**Part IV: Correlation between the dysmenorrheal with total quality of life**

**Table (7)** revealed that there was highly statistical significant correlation between grade of pain (dysmenorrheal) and quality of life.

**Discussion**

Dysmenorrhea is the leading cause of gynecological morbidity in women of reproductive age regardless of age, and economic status, nationality. The effects extend beyond individual women to society, resulting annually in an important loss of productivity. So, the World Health Organization estimated dysmenorrhea as the most important cause of chronic pelvic pain (**Bernardi et al., 2017**).), so this study was conducted to assess the effect of dysmenorrheal on students quality of life .

Regarding to prevalence of dysmenorrheal, the current study revealed 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 were 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 severe level of dysmenorrhea.

This result contradicted 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 severe dysmenorrhea.

The prevalence of dysmenorrhea varies widely between different population and between different age groups within the same population such variation may be due to different etiologies, cultural differences in pain perception and variability in pain threshold.

Moreover the onset of pain in the current study revealed 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 were agreed with the findings from **Elnagar et al. (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 was 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.

Regarding level of QOL among the studied sample, the present study revealed that they had different levels of QOL in different domains of QOL, as forty of them had moderate level of QOL related to physical health, more than one third had low level of QOL related to psychological health, and near half of them had low level related to social health and half of them had low level related to academic performance.

The present study showed physical health of QOL in term of "sleep and eating patterns and ability to perform activities of daily living" was about forty of them had moderate level QOL during their menstrual period.

The results of the present study were in the same line 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 and reported the studied sample had affected physical health as about three quarter of them had disturbance in their sleep duration and quality, and about three quarter of them had disturbance in eating pattern and about one third of them their ability to perform activity of daily living fluctuated throughout the month, this similarity was due to similar age group.

Regarding psychological health of QOL in term of "feeling of fear, anxiety, depressed and loss of concentration" the results of the present showed that more than one third of them experienced low level QOL during their menstrual period.

These results were in the same line with **Titilayo et al. (2009)** who assessed Menstrual discomfort and its influence on daily academic activities and psychosocial relationship among undergraduate female students in Nigeria, and reported that half of the respondents had different

psychosocial problems as anxiety, irritability and different degree of depression, this similarity was due to similar age group and exposure to similar academic conditions or stressors.

Regarding the social health of quality of life in term of "family and friends relationships and participation in social activities". The present study revealed that near half of them had low level QOL during their menstrual period.

The previous results were 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 was 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 was may be due to difference in the region and culture and personal habits.

Regarding academic performance in term of 'concentration, understanding and participation in lecture, sickness absenteeism and missing exams ', the results of the present study showed that half of them had low level QOL during their menstrual period .

The previous results also reported by **Khamdan et al. (2014)** who revealed that more than half of their sample had loss of class concentration and more than one third had difficult participation in group activities and their practical performance,

Also the previous results were in accordance to **Omu et al. (2011)**, which showed that three quartet of the participants had difficult participation in class activities and had desire to sleep during lecture., this similarity was due similar age group and similar academic condition.

Regarding correlation between dysmenorrhea and quality of life, this study reported that there was highly statistical correlation, as "loss of physical activity, disturbance in sleep and eating patterns and social relations, confidence & concentration affected in addition to poor academic performance and high prevalence of sickness absenteeism due to dysmenorrhea ".

This relation was 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.

In addition, **Al-Jefout et al. (2015)** who assessed Dysmenorrhea: Prevalence and Impact on Quality of Life among Young Adult Jordanian Females, and reported that there was strong association between severity of dysmenorrhea and poor university attendance, poor social activities, poor relationships with family and friends and poor sport activities.

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.

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

Items	No	%
<b>Academic year</b>		
First Grade	83	20.8
Second Grade	91	22.8
Third Grade	121	30.3
Fourth Grade	105	26.3
<b>Age</b>		
18 year	25	6.3
19 year	83	20.8
20 year	70	17.5
21 year	109	27.3
<b>Mean <math>\pm</math>SD</b>	20.54 $\pm$ 1.33	
<b>Marital Status</b>		
Single	362	90.5
Married	38	9.5
<b>Residence</b>		
Rural	349	87.5
Urban	51	12.5
<b>Income</b>		
Sufficient	347	86.8
Insufficient	7	1.8
Hardly enough	46	11.5
<b>Religion</b>		
Muslim	376	94.0
Christian	24	6.0

**Table (2):** Frequency Distribution of Studied Students According to The menstrual Pain (dysmenorrhea)

Pain grade	N	%
Grade 0	7	1.8
Grade 1	173	43.3
Grade 2	145	36.3
Grade 3	75	18.8
<b>Onset of pain</b>		
Before menstruation	103	26.2. %
Start with menstruation and last for 24 hrs	135	34.3%
Start with menstruation and last for 48 hrs	123	31.2%
5 days before menstruation and lasts for 4 days	32	8.1%
<b>Associated site of pain</b>		
Lower back	290	73.7%
Lower extremities	165	41.9%

**Table (3):** Frequency Distribution of Studied Students According to The Quality Of Life (Physical Health) (N=400)

1) Physical health	Never		Almost Never		Often		Almost Always		Always	
	No	%	No	%	No	%	No	%	No	%
1. Inability to do activities of daily living	78	19.5	74	18.5	112	28.0	75	18.8	61	15.3
2. Insomnia	54	13.5	100	25.0	112	28.0	80	20.0	54	13.5
3. Disturbance in eating pattern	98	24.5	96	24.0	92	23.0	65	16.3	49	12.3
4. inability to Perform activities in spare time	78	19.5	99	24.8	85	21.3	72	18.0	66	16.5
5. inability to Go out for walk or a break	90	22.5	78	19.5	87	21.8	77	19.3	68	17.0
<b>Total score</b>				<b>No</b>						<b>%</b>
<b>High QOL</b>				100						25
<b>Moderate QOL</b>				169						42.2
<b>Low QOL</b>				131						32.7

**Table (4):** Frequency Distribution of Studied Students According to the Quality Of Life (Psychological Health) (N= 400)

Psychological Health	Never		Almost Never		Often		Almost Always		Always	
	No	%	No	%	No	%	No	%	No	%
6. Feeling fear and anxiety	107	26.8	91	22.8	93	23.3	53	13.3	56	14.0
7. Inability to concentrate and remember things	63	15.8	105	26.3	99	24.8	80	20.0	53	13.3
8. Feeling irritable	60	15.0	61	15.3	90	22.5	95	23.8	94	23.5
9. Feeling not comfortable	50	12.5	66	16.5	89	22.3	88	22.0	107	26.8
10. Feeling depressed	92	23.0	88	22.0	89	22.3	56	14.0	75	18.8
<b>Total score</b>				<b>No</b>						<b>%</b>
<b>High QOL</b>				99						24.8
<b>Moderate QOL</b>				150						37.5
<b>Low QOL</b>				151						37.7

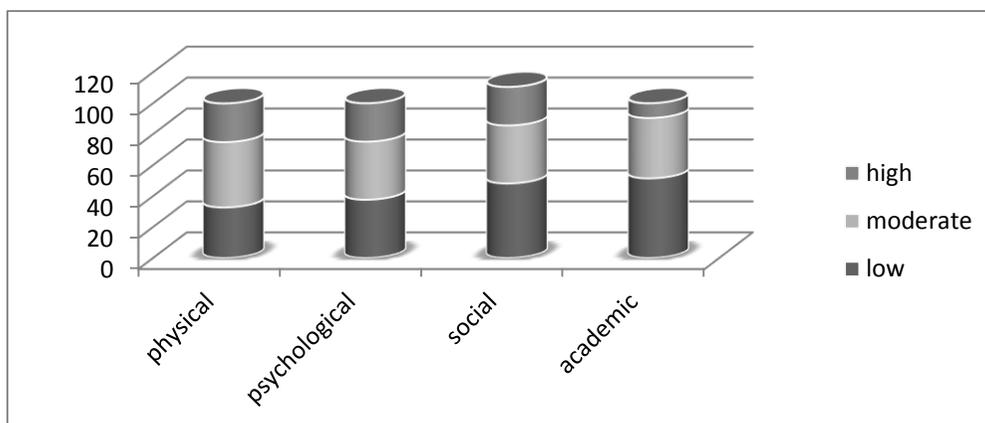
**Table (5):** Frequency Distribution of Studied Students According to Quality Of Life (Social Health) (N= 400)

Social Health	Never		Almost Never		Often		Almost Always		Always	
	No	%	No	%	No	%	No	%	No	%
11. Having problems with family.	200	50.0	75	18.8	79	19.8	36	9.0	10	2.5
12. Not fulfilling family responsibilities	121	30.3	120	30.0	88	22.0	44	11.0	27	6.8
13. Not Participation in social events	94	23.5	93	23.3	99	24.8	69	17.3	45	11.3
14. Unwilling to talk with friends	110	27.5	95	23.8	99	24.8	51	12.8	45	11.3
15. Being irritable with others	81	20.3	101	25.3	86	21.5	59	14.8	73	18.3
16. Not being comfortable with others	108	27.0	89	22.3	84	21.0	52	13.0	67	16.8
<b>Total score</b>			<b>No</b>				<b>%</b>			
<b>High level QOL</b>			48				12			
<b>Moderate level QOL</b>			159				39.7			
<b>Low level QOL</b>			193				48.2			

**Table (6):** Frequency Distribution of Studied Students According to The Quality Of Life (Academic Performance) (N= 400)

Academic Performance	Never		Almost Never		Often		Almost Always		Always	
	No	%	No	%	No	%	No	%	No	%
17. Lecture attendance	129	32.3	100	25.0	100	25.0	37	9.3	34	8.5
18. Concentration and understanding	59	14.8	110	27.5	122	30.5	49	12.3	60	15.0
19. Participation in discussion	73	18.3	87	21.8	115	28.8	61	15.3	64	16.0
20. Sleep desire during lecture	92	23.0	100	25.0	84	21.0	51	12.8	73	18.3
21. Practical performance	85	21.3	85	21.3	101	25.3	61	15.3	68	17.0
22. Participation in activities	111	27.8	73	18.3	98	24.5	62	15.5	56	14.0
23. Missing exam	315	78.8	57	14.3	19	4.8	6	1.5	3	0.8
<b>Total score</b>			<b>No</b>				<b>%</b>			
<b>High level QOL</b>			38				9.6			
<b>Moderate level QOL</b>			156				39			
<b>Low level QOL</b>			206				51.5			

**Figure (1):** Frequency distribution of studied students according to total level of quality of life (n=400)



**Table (7):** Correlation between the dysmenorrheal with total quality of life (n =400)

Grade of pain (dysmenorrheal level)	Total quality of life						X <sup>2</sup>	P
	Low		Moderate		High			
Grade 0	1	14.2	1	14.2	5	71.4	17.8	.000
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		

## Conclusion

**Based on the findings of the present study, it can be concluded that:** The majority of the studied students suffered from dysmenorrheal. 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 dysmenorrheal.

## Recommendations

**On the light of the findings of the study, the following are recommended:**

1. conduct health education program to increase awareness about factors that might influence the intensity of dysmenorrhic pain and pharmacological and non pharamcological methods of pain relief during menstruation

2. Conduct better quality population-based longitudinal studies on the natural history of dysmenorrhea and on the effect of its risk factors across the reproductive life course.

3. Further research should focus on the adaptive techniques used by the students to mitigate the negative impacts of dysmenorrhea.

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### Conflict of interest

No

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