Premenstrual syndrome and quality of life among Sohag University female students

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Abstract

Background

Premenstrual syndrome is a debilitating condition, causing social and occupational impairment in the lives of affected women. **Aim:** evaluate the premenstrual syndrome and quality of life among Sohag University female students. **Subjects & method*:* The study was carried out in six faculties which had been selected randomly from Sohag University. **Design:** A descriptive correlational design was utilized in this study. **Sample:** The study sample included all available single female students in the selected faculties at Sohag University experienced premenstrual syndrome. **Tools of data collection:** Three tools were used; demographic data sheet, premenstrual syndrome questionnaire and women's quality of life questionnaire. **Results:** Results revealed that, the mean age of studied students was19.9+1.4. The majority of them (81.9%) were from rural areas. It was found that, 61.2% of female students experienced low PMS & 38.8% of them experienced severe PMS. **Conclusion:** The study concluded that, more than one-third of the sample experienced severe premenstrual syndrome. Also, premenstrual syndrome was positively significantly correlated with all domains of quality of life as well as the total score of quality of life. **Recommendation:** The study recommended that, psycho-educational program is essential to decrease the severity of premenstrual syndrome among students and enhance their quality of life.

Key words: Premenstrual Syndrome & Women Quality of life.

Introduction

Premenstrual syndrome is characterized by the cyclical recurrence of a variable constellation of physical, psychological, and/or behavioral symptoms which appears in the luteal phase and subsides with the onset of menstrual flow (**Lee, et al., 2005**) In this respect, **Kaur & Thakur (2009)** reported that, premenstrual syndrome (PMS) is manifested by any change in mood, behavior; appearance of some abnormal vague symptoms is often noticed in second half of the cycle. But if the symptoms are severe enough to disturb life cycle of a women or require medical help, called premenstrual syndrome (PMS). At least one of the following somatic & affective symptoms appears 5 days before menses or prior menstrual cycle affective symptoms are depression, anger outburst, irritability, anxiety, confusion & social withdrawals. While in somatic symptoms there are breast tenderness, abdominal bloating, and headache. These symptoms are relieved within 4 days of the onset of menses.

Management of moderate-severe premenstrual distress has traditionally focused on medical treatments, developing from irradiation of the ovaries to selective serotonin reuptake inhibitors (SSRIs), as the primary pharmacological option. This type of treatment assumes a purely biomedical view of premenstrual experience, positioning PMS and premenstrual dysphoric disorder as fixed pathologies within the woman, caused by hormonal or neurotransmitter imbalance (**Read et al., 2014).**

Quality of life is defined by **Hyman et al., (2005)** a number of ways and many measures exist for assessing the construct. Most definitions explicitly state that the assessment of quality of life should take into account patients' subjective views of their life circumstances. This includes perceptions of social relationships; physical health; functioning in daily activities and work; economic status; and an overall sense of well-being. While measures of functioning focus on objective, quantifiable impairments that exist, measures of quality of life assess enjoyment and life satisfaction associated with various activities. **Dean et al., (2006)** reported that, the existence of premenstrual symptoms, regardless of the severity and number of symptoms was associated with a significant decrease in quality of life. Also, **Nour et al., (2009)** reported that, PMS is associated with reduction in health related quality of life and women with PMS have greater work productivity impairment than women without PMS. Similarly, (**Zaka & Mahmood, 2012)** reported that, PMS is a commonly encountered complaint among women and may affect women's quality of life and reduce their occupational productivity.

It was reported **by Issa et al., (2010)** that, there was moderate/severe intensity correlated significantly between premenstrual syndrome and quality of life.

Efforts should therefore be made to alleviate the pain associated with menses. In addition, the College's health-care providers should take into account the issues of premenstrual syndrome and its management more seriously by intensifying health education on premenstrual syndrome in order to improve the quality of life of the students.

Significance of the study

Study of women's quality of life is highly important and has therefore attracted the attention of several researchers of this field. The pre-menstrual syndrome is a periodic complex physical, mental and behavioral change, and its severity interferes with daily activity or social relationship (**Zarei1 and Bazzazian, 2015).** So, the research could be helpful in decreasing the severity of PMS and enhancing quality of life among Sohag University female students.

Aim of the Study
The study aimed to
Evaluate the relation between premenstrual syndrome and quality of life among Sohag University female students.
Research hypothesis
Premenstrual syndrome might negatively cause changes in quality of life of students.

Subjects and Method
Setting: This study had been carried out at six faculties of Sohag University which had been selected randomly including (Nursing, Arts, Science, Industrial education, Physical education, and Education) faculties.
Subjects: Female students from different selected faculties at Sohag University who had premenstrual syndrome, accepted to participate in the study.
Sample size: A convenient sample of 400 female students in the above stated faculties at Sohag University who had premenstrual syndrome.
 Also, these numbers were taken according to the total number of female students in each college.
The formulas used in our Sample Size Calculator

$$ss = \frac{Z^2 * (p) * (1-p)}{C^2}$$

Where
Z = Z value (e.g. 1.96 for 95% confidence level)
p = percentage picking a choice, expressed as decimal
(.5 used for sample size needed)
c = confidence interval, expressed as decimal
(e.g., .04 = ±4)
SS = Sample Size
Correction for Finite Population

$$new\ ss = \left(\frac{ss}{ss-1}\right) \div 1 + pop$$

Where: pop = population
New SS = New Sample Size.
Criteria of selection
Inclusion criteria
1. All available female students in the above stated faculties at Sohag University who had premenstrual syndrome.
2. Single.
3. Age is ranging between 18- 25 years old.
4. Not receive any hormonal therapy.
5. Not suffer from any organic or psychotic disorders.

Research design: A descriptive correlational design had been utilized in this study.
Tools for data collection:
Tool one: Demographic data sheet
This tool has been developed by the researcher in Arabic language and revised by the supervisors. It included personal data as (age, residence, faculty name, grade/level, telephone number) based on review of literature.
Tool two: Premenstrual syndrome questionnaire (Arabic version by Gar Allah, 2006).
This questionnaire has been developed in the original French language version by **Eltorky** in **(2006)** and translated into Arabic version by **Gar Allah in (2006)** The purpose of the premenstrual syndrome questionnaire is to evaluate psychological and physical symptoms that occur before the onset of menstruation. This questionnaire consisted of 28 items which classified into 17 items evaluate the psychological symptoms and 11 items evaluate physical symptoms.
This questionnaire with response options on a 4 point Likert scale as the following: 1= There are no symptoms, 2= Presence of minor symptoms, 3= Presence of symptoms impede the daily activities, and 4= Presence of symptoms changed life style pattern.
 Each student is considering has severe psychopathological probability if total points exceeded 20 points.
Tool three: The woman's quality of life questionnaire (Lustyk & Gerrish, 2010).
This questionnaire allows for the assessment of QOL in women, it consists of 40 items. This questionnaire with response options on a 3 point Likert scale as the following: Yes = zero, No = 1, and Not apply =2.
27 items from all items have reserved scored except items number (4,14,15,24,26,27,28,30,31,32, 38,39,40).

After reverse scoring, larger values are indicative of higher QOL.

The questionnaire is divided into four subscales covering different aspects of woman's quality of life: Physical domain, including questions number 1, 2, 3, 4, 5, 6, 7, 8, 9, and 36. Psychological domain, including questions number10, 11, 12, 13, 25, 29, 33, 34, 35, and 37. Social domain, including questions number 16, 17, 18, 19, 20, 21, 22, 23, 27, and 28. Spiritual domain, including questions number 14, 15, 24, 26, 30, 31, 32, 38, 39, and 40.

Note: This questionnaire was translated into Arabic version by the researcher to suit the studied subjects' culture.

Reliability of this questionnaire was done by the researcher by using Cronbach alpha. It was 0.93.

Validity of this questionnaire was carried out by jury of five experts in the fields of psychiatry and psychiatric nursing who reviewed and suggested the required modifications to ascertain relevance and completeness.

The study has been implemented through the following

Preparatory phase

The researcher prepared the review of literature and the tools of the study to collect data. Also, an official permission was obtained to carry out the study from the authoritarian persons of Sohag University. A full explanation about rationale of the study was done. The aim of the study was explained to the students in order to gain their co-operation, as well as voluntary participation. Confidentiality was assured.

Pilot study

During this phase, a pilot study was carried out on 40 students to ensure that the questions of the study tools were simple, clear, understood and applicable to students. Students included in the pilot study were excluded from the study The pilot study had been

Procedure and data collection phase

The assessment for all participants (400 students) had been done by using premenstrual syndrome questionnaire to determine the severity level of premenstrual syndrome and women quality of life questionnaire to explore their quality of life. The study was carried out in 2 months from the beginning of October 2015 to the last of November 2015. The number of students had been taken from each faculty was as the following: Faculty of Nursing =35 students, faculty of Arts = 200 students, faculty of Science = 40 students, faculty of Industrial Education = 25 students, faculty of Physical Education = 20 students, and faculty of Education = 80 students.

The number of students has been taken from each faculty calculated according the actual number of female students in those faculties and according this formula

$$n = N*X / (X + N - 1)$$
Where:
$$X = Z_{\alpha/2}^2 *p*(1-p) / MOE^2$$
$Z_{\alpha/2}$ is the critical value of the Normal distribution at α/2 (e.g. for a confidence level of 95%, α is 0.05 and the critical value is 1.96)
MOE is the margin of error
P is the sample proportion
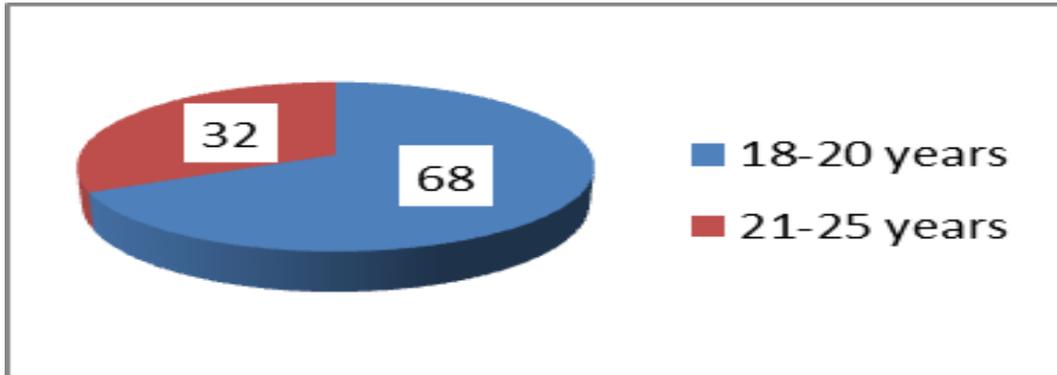N is the population size **(Bartlett et al., 2001).**

Ethical considerations

Research proposal was approved from ethical committee in the faculty of nursing at Assuit University, there is no risk for study subjects during application of the research, the study followed common ethical principles in clinical research, oral consent obtained from the students who were willing to participate in the study. After explaining the nature and purpose of the study, confidentiality and anonymity have been assured, study subjects have the right to refuse participating or withdrawing from the study without any rationale any time, and study subject's privacy was considered during collection of data.

Statistical design

Collected data were coded and verified prior to computerized data entry .The SPSS program version 20 used for data entry and analysis. Descriptive statistics were calculated, e .g, frequency, percentage, means & standard deviation. Correlation was performed using Pearson correlation coefficient. Statistical significance was considered at P- value <0.05.

Results

Figure(1): Distribution of the studied female students according to age (n=400).
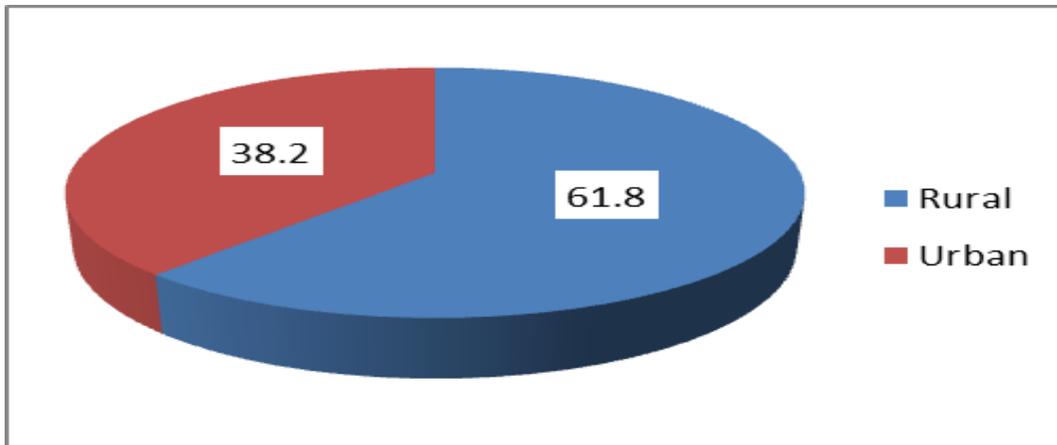

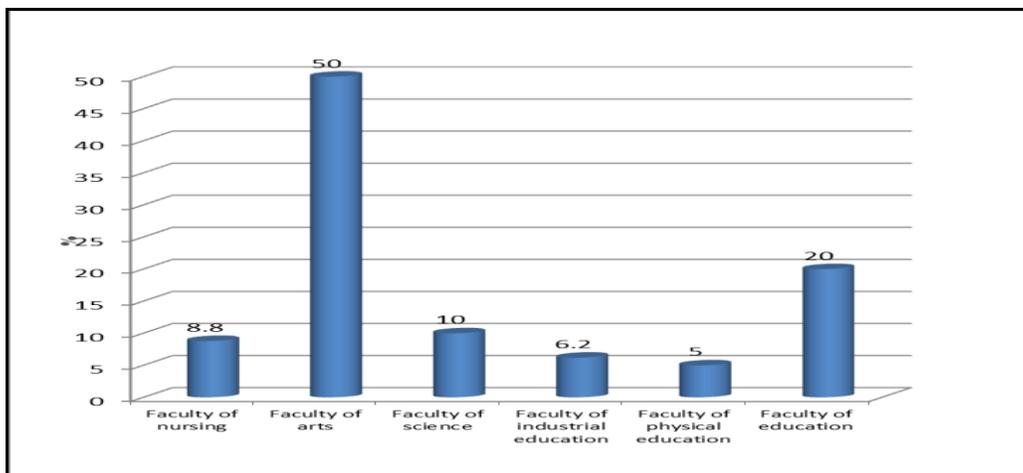**Figure (2): Distribution of the studied female students according to residence (n=400).**

Figure (3): Distribution of studied female students according to faculty name (n=400).
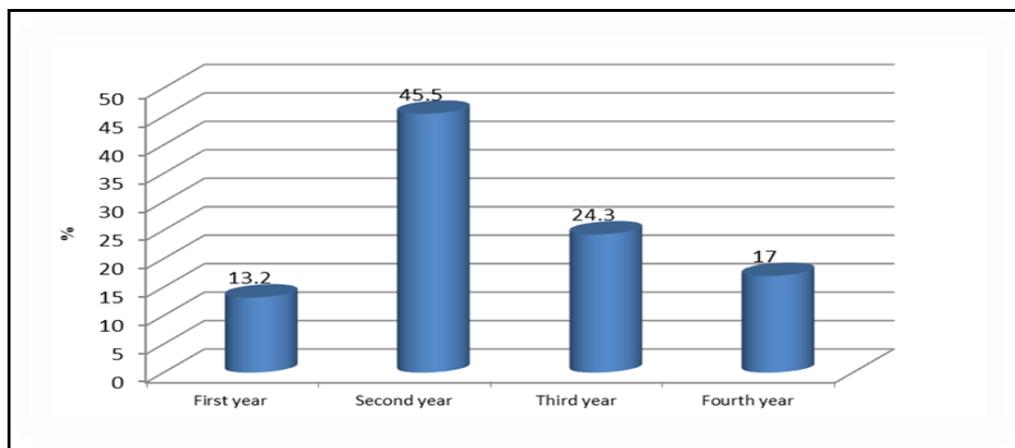
Figure (4): Distribution of studied female students according to years of study (n=400).

Table |(1): Frequency of premenstrual syndrome (PMS) among studied female students.

Premenstrual syndrome	Total (n=400)	
	No.	%
Low PMS	245	61.2
Severe PMS	155	38.8

Table (2): Mean scores of the women quality of life among studied female students.

Women quality of life domains	Mean ± SD
	Total (n=400)
Physical domain	13.7±2.3
Psychological domain	15.4±2.9
Social domain	9.1±1.2
Spiritual domain	4.3±3.3
Total scale	42.5±7.6

Note: Each domain scores are ranging between 10- 20 marks.
Large values indicate higher quality of life.
Lower values indicate poor quality of life.

Table (3): Correlation between premenstrual syndrome and women quality of life (QOL) domains among studied female students.

Women quality of life domains	Premenstrual syndrome	
	Total (n=400)	
	r	p. value
Physical domain	0.40	<0.001**
Psychological domain	0.58	<0.001**
Social domain	0.30	<0.001**
Spiritual domain	0.43	<0.001**
Total score of QOL	0.58	<0.001**

* Statistically significant correlation (p<0.05)
** Statistically significant correlation (p<0.01)
carried out in 2 days of September 2015 from 25th September 2015 to 27th September 2015. There was no change in the tools.

According to **Figure (1):** shows distribution of the studied female students according to their age. It was found that, 68% of the studied female student's age ranged between 18-20 year old& 32% of them ranged between 21 and 25 years old.

According to residence, it was noticed that, about two- third of female students were from rural areas & slightly more than one third of them were from urban areas as revealed in **Figure (2).**

 Figure (3): Shows distribution of the studied students according to their faculty name. It was noticed that, about half of students were from faculty of arts and this explained by that, the total number of students at theoretical faculties were higher than students in practical facilities. According to years of study, it was found that, about 45% of the studied students were from second year and 24.3% of them were from third year as revealed in **Figure (4).**

Table (1): Illustrates frequency of premenstrual syndrome (PMS) among studied female students. It was found that, 61.2% of them experienced low premenstrual syndrome and 38.8% of them experienced severe PMS.

Table (2): Shows mean scores of the quality of life (QOL) among studied female students. It was found that, lower mean scores were related to social, spiritual domains as well as total mean score of QOL (9.1±1.2, 4.3±3.3, 42.5±7.6) respectively. While, both psychological and physical domains were somewhat higher (15.4±2.9, 13.7±2.3) and this indicates high quality of life at both domains.

 Table (3): Illustrates correlation between premenstrual syndrome and women quality of life among studied female students. It was found that, premenstrual syndrome was positively significantly correlated with physical, psychological, social and spiritual domains as well as the total score of QOL, (r = 0.40 at p. value = <0.001**, r = 0.58 at p. value = <0.001**, r = 0.30 at p. value = <0.001**, r = 0.43 at p. value = <0.001**, and r = 0.58 at p. value = <0.001** respectively).

Discussion
The following discussion will focus upon the findings related to the aim of the study; the mean age of the studied sample was 19.9±1.4 with age group ranging from 18- 25 years old and this according to inclusion criteria of the study sample.

This result is slightly different than **Elnagar & Mohamed, (2015)** who mentioned in their study about self –care measures regarding premenstrual syndrome among female nursing students that, the mean age of the studied sample was 20.8 ±1.05 but their age group from 21- 30 years. This variation may be due to different in age group between two studies.

The present study revealed that, the majority of students were from rural area while minority of them was from urban area. In contrast, **El Sayed (2007)** found that, less than half of students were from rural area, and more than half of students were from urban area. These differences may be due that; rural population was 57.3% of total population in Egypt according to **Egypt statistical year book in September (2016**) The present study is not consistent with **Ramya et al., (2014)** who reported in their study about effect of educational program on premenstrual syndrome in adolescent school girls that, slightly less than half of girls were from urban school girls and about half of them were from rural school girls.

The present study revealed that, half of the study students were from Faculty of Arts, slightly less than one quarter of them were from faculty of Education and the remainders of the sample were from colleges of Science, Nursing, Industrial Education and Physical Education. This result is not consistent with **Thu et al., (2006)** who reported that, one third were from Business Administration students, less than quarter were from Nursing students, and one quarter of them were from Faculty of Arts, Faculty of Law, Faculties of Architecture, Biotechnology, Communication Arts, Education, Engineering, Graduate School, and Science and Technology faculty.

These differences may be the nature of study & cultural differences, the present study data were collected from only six faculties of Sohag University. While **Thu et al., (2006)** study the data had been collected from each faculty of Assumption University.

Regarding years of study, the present study reported that, less than one quarter of the students were from first year, half of them were from second year, less than one quarter of them were from third year, and the minority of them were from fourth year.

This result is not consistent with previous study had done about premenstrual syndrome among female University Students in Thailand at Assumption University by (**Thu et al., 2006)** who found that, about one third of them were first year students, one quarter were second year, 11.7% were third year, one quarter were fourth year, and 4.5% were graduate students.

The present study revealed that, nearly two thirds of female students experienced low premenstrual syndrome (PMS) and about one third of them experienced severe PMS. This result is not consistent with **Badkur et al., (2016)** who revealed that, students suffered from mild PMS were estimated as one third of them while students who experienced severe PMS were estimated as two thirds.

The current study showed that, some students experienced premenstrual syndrome reported poor health related quality of life in social domain, spiritual domain as well as total mean score of QOL. While both psychological and physical domain were somewhat higher and this indicates high quality of life at both domains.

This can be explained by that about two thirds of female students experienced mild premenstrual syndrome and about one third of them experienced severe PMS, and the majority of students use analgesics in a random and continuous way, even before start of menstrual cycle which makes them overcome physical pain and thus lead to improve the psychological of these students.

This result is not consistent with **Yang et al., (2010), Dennerstein et al., (2010), & Delara et al., (2012)** who reported in their study on 602 female students about health related quality of life among Iranian adolescents with premenstrual disorders, with age group between 14 and 19 years that, poorer conditions on role emotional, role physical, social functioning and bodily pain. These variations may be due to different study population, sampling size, cultural influences.

The present study showed a positive significant correlation between premenstrual syndrome and quality of life' domains as well as the total score of QOL among studied female students (p <0.001). These may be due to the students considering the premenstrual syndrome as a natural event, and they have a higher tendency to deny the effects of menstruation or premenstrual symptoms on their life activities.

These findings are in disagreement with **Daley, (2009)** who showed that premenstrual syndrome had a moderate but significant negative correlation (p <0.001) on the quality of life of affected girls, particularly school performance, social interactions, lifestyle, and emotional wellbeing. Also, **Sakai et al., (2011)** in their study about premenstrual in young adult Japanese females who smoking tobacco revealed that the severity of premenstrual symptoms have a significant negative impact on activities of daily life. This variation between the present study and their study may be due to different life styles, socio-demographic status, and cultural differences or different study tools.

Conclusion

The present study concluded that, all the studied sample had poor QOL related to social, spiritual domains as well as the total score of QOL. However, physical & psychological domains of QOL were higher among them; more than one-third of the sample experienced severe premenstrual syndrome.

Also, premenstrual syndrome was positively and significantly correlated with all domains of QOL as well as the total score of QOL.

Recommendations

The study recommended that, psycho-educational program is essential to decrease the severity of PMS among students and enhance their quality of life.

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