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### THE FREQUENCY AND IMPACT OF PREMENSTRUAL SYNDROME ON THE QUALITY OF LIFE OF MEDICAL STUDENTS IN ALMATY

**Abstract.** Data on the frequency and severity of premenstrual syndrome (PMS) range from 30 to 95%. According to US statistics, 70 to 90% of US women of reproductive age experience some manifestations of PMS; severe forms are registered in 5-8% of women; every third woman has a decrease in her quality of life [1]. According to M. Steiner (2000), PMS is recorded in more than 75% of Canadian women [2], and in Japanese women this percentage reaches 95% with severe symptoms of PMS reported by 1.2% [3].

Some of recent studies have established a significant prevalence of PMS in young girls. N. Nisar (2008) in her study reports that 51% of students were diagnosed with PMS, 5.8% experienced premenstrual dysphoric disorder (PMDD) [4]. According to the study by G. Pinar (2011), the incidence of PMS among students was 72.1% [5].

Many women report that premenstrual symptoms have a significant negative impact on their daily lives, they experience deterioration of various social and individual functions, such as a reduced working capacity, social activity and family relationships, including the sexual sphere.

**Keywords:** premenstrual syndrome, quality of life, frequency and severity of premenstrual syndrome, premenstrual dysphoric disorder.

**Introduction.** "PMS" means premenstrual syndrome or premenstrual tension syndrome; a condition characterized by various cyclical repetitive symptoms (physical, emotional, behavioral and cognitive) that develop in the second phase of the menstrual cycle and disappear soon after the menstruation starts [6]. A number of studies discovered that Premenstrual syndrome develops more often in women engaged in mental case, rather than in patients who have autonomic dystonia syndrome, and 4 times more than in women with body weight deficiency.

The syndrome can appear under the influence of numerous factors summoned by physical or mental overstrain, professional problems, social insecurity, chronic emotional stress [7]. In the process of the influence of Premenstrual syndrome on the quality of life the following results were discovered: absenteeisms increase, labor of productivity decreases, the quality of professional activity descends.

The negative impact on social relations guides to aggravation in interpersonal relationships in workplace. In current research conducted by the students of a medical school at the University of Urmia (Iran) in 2014, Premenstrual syndrome was identified in 39.4% of cases. The estimation of the quality of life was below in more than half of the cases, especially in the psychotic and social components. The results of this study show that Premenstrual syndrome has negatively influence on some quality of domains of life.

**Materials and methods of study.** Within the framework of the research, an anonymous questionnaire survey was conducted among medical students of Almaty with the help of 2 questionnaires at the same time. The questionnaire on the detection of PMS was developed by researchers. The quality of life was assessed using the SF-36 questionnaire (The Short Form-36). SF-36 refers to non-specific questionnaires for assessing the quality of life; it is widely distributed in the US and European countries in conducting scientific researches. It can be used both in healthy and sick people and is the "gold" standard for a study of the quality of life. The questionnaire survey was conducted on a voluntary basis. The data obtained as a result of the questioning of 1,500 students using a specially developed and approved questionnaire was used as the material for the study. The design of the study met the criteria of a one-stage clinical study; the questioning was conducted for 2 months. The generated sampling included 2061 questionnaires, of which 561 questionnaires, which is 27.2%, were filled in incorrectly, many fields were empty, the quality of life items were not filled in correctly.

**The results of the authors' research.** The average age of the respondents was  $24 \pm 4.3$  years. All the students included in the study were residents of the Republic of Kazakhstan. Living conditions were satisfactory for all students. 28.0% were married, and 54.0% of respondents had a sexual life. The structure of contraceptive methods used among sexually active respondents was as follows:  $26.0 \pm 5.2\%$  of combined oral contraceptive pills;  $48.1 \pm 4.3\%$  of condoms;  $10.0 \pm 5.7\%$  of intrauterine devices;  $15.9 \pm 5.6\%$  did not use any contraceptive methods. The lack of contraceptive methods among 15.9% of sexually active girls and low level of the use of effective modern methods of preventing unwanted pregnancies resulted in abortion in 13.0% of the respondents in the study group. Extragenital diseases were registered in the history of 38.8% students in the group with 3.3 different extragenital diseases for each student in the group.

The most frequent symptoms accompanying menstruation in the study group of students were irritability and bad mood in  $58.0 \pm 2.2\%$  and  $59.5 \pm 2.2\%$  of students, respectively. In  $34.5 \pm 2.1\%$  of students irritability turned into aggressiveness. The abdominal bloating ( $41.0 \pm 2.2\%$ ), nausea ( $20.0 \pm 1.8\%$ ) and vomiting ( $11.0 \pm 1.4\%$ ) were reported quite often. One of three students experienced breast engorgement and pain ( $32.5 \pm 2.1\%$  and  $32.0 \pm 2.1\%$ , respectively). The respondents frequently reported headaches ( $30.5 \pm 2.1\%$ ); less frequently they complained of chest pain ( $7.5 \pm 1.2\%$ ) and changes in blood pressure ( $14.5 \pm 1.6\%$ ). Severity of symptoms made 39.5% of students use painkillers to relieve pain. Poor performance, skipping classes during menstruation were reported by 34.5% of students. Despite the severity of symptoms during menstruation, absences from lessons, only 12.4% of students sought medical advice. The results of the study on PMS frequency demonstrated that  $57.4 \pm 1.6\%$  of students did not experience any changes in their health status or had single symptoms, PMS was reported in  $36.0 \pm 2.14\%$  of respondents, and the severest form was registered in  $6.6 \pm 1.11\%$  (Table 1).

Table 1 – The Frequency of Premenstrual Syndrome and Premenstrual Dysphoric Disorder in Respondents of the Study Group

No symptoms or single symptoms of premenstrual syndrome		Premenstrual syndrome		Premenstrual dysphoric disorder	
abs	%	abs	%	abs	%
861	$57.4 \pm 1.6$	540	$36.0 \pm 2.1$	99	$6.6 \pm 1.1$

Our studies showed that the presence of extragenital diseases in students had a significant impact on the frequency of PMS and PMDD. Thus, the frequency of PMS in students with EGD was  $63.9 \pm 3.4\%$ ; this rate was  $18.3 \pm 4.83\%$  ( $P < 0.05$ ) in healthy subjects without EGD (Table 2).

Statistically significant difference was also reported in the frequency of the severest form of PMDD. The EGD group demonstrated the PMDD frequency of  $12.8 \pm 2.3\%$ ; the no-EGD group demonstrated  $2.6 \pm 0.9\%$  ( $P < 0.05$ ). The frequency of PMDD according to the data of different authors may vary between 5.8% and 36.1% due to the fact that they did not take potential presence of extragenital diseases into consideration.

Table 2 – The Frequency of Premenstrual Syndrome and Premenstrual Dysphoric Disorder in Respondents of the Study Group Depending on the EGD

No symptoms or single symptoms of premenstrual syndrome		Premenstrual syndrome		Premenstrual dysphoric disorder	
With EGD	Without EGD	With EGD	Without EGD	With EGD	Without EGD
%	%	%	%	%	%
23.3±1.7	79.1±1.3	63.9±3.4*	18.3±4.8	12.8±2.3*	2.6±0.9

\*-p<0.05 statistically significant difference in the frequency of PMS and PMDD in respondents with EGD vs. the group of respondents without EGD.

Only 210 of 810 sexually active students used modern methods of contraception, which is 25.9%. Comparison of the frequency of various manifestations of PMS in two groups of students showed a significant effect of COCPs on the course of this syndrome. Thus, the group of respondents, who used combined oral contraceptive pills, demonstrated a statistically significant difference in the manifestation of almost all symptoms, except aggressiveness.

Table 3 – The Frequency of Various Symptoms Accompanying the Menstruation Depending on the Contraceptive Method among Respondents of the Study Group

Symptoms	Use contraceptives (COCP) N=210		Do not use contraceptive methods or use other methods (IUD, barrier method) N=600		P
	abs	%	abs	%	
irritability	189	40.3±5.8	279	59.7±3.4	<0.01
tearfulness	72	34.7±5.6	135	65.3±3.3	<0.001
touchiness	87	26.6±5.2	240	73.4±3.1	<0.001
bad mood	129	26.8±5.2	351	73.2±3.1	<0.001
aggressiveness	141	50.5±5.9	138	49.5±3.5	>0.05
numbness in hands	24	28.5±5.3	60	71.5±3.1	<0.001
drowsiness	78	32.5±5.5	162	67.5±3.3	<0.001
obliviousness	27	26.4±5.2	93	73.6±3.1	<0.001
swollen face, eyelids, legs	12	12.9±2.0	81	87.1±2.3	<0.001
breast pain	57	22.0±4.9	201	78±2.9	<0.001
breast engorgement	48	18.1±4.6	216	81.9±2.7	<0.001
abdominal bloating	138	41.8±5.8	192	58.2±3.4	<0.001
headaches	69	28.8±5.4	177	71.2±3.2	<0.001
nausea	51	31.4±5.5	111	68.6±3.2	<0.001
vomit	12	14.2±4.1	72	85.8±2.4	<0.001
BP changes	27	23.0±5.0	90	77.0±2.9	<0.001
chest pain	12	19.0±4.6	51	81.0±2.7	<0.001
heart palpitations	33	29.7±5.4	78	70.3±3.2	<0.001
chills	42	34.1±5.6	81	65.9±3.3	<0.001

The concept of quality of life is an individual capacity for functioning in a society (labor, social activity, family life), and also a complex of physical, emotional, mental and intellectual characteristics of a person. The results of the SF-36 questionnaire are presented in the form of scores by 8 scales formulated in such a way that a higher score indicates a higher level of quality of life. In the case of medical students without PMS, the physical performance (PF-87.4 ± 1.6), role performance subject to the physical state (RP-84.2 ± 2.4), bodily pain (BP-84.0 ± 1.9), role performance subject to the emotional state (RE-84.2 ± 2.6) do not have express deformations and are approximately equally compressed. In the group of women without PMS the average value of the scale of the general state of health is -71.9 ± 1.6; in PMS group it is 64.4 ± 2.0 (p < 0.05). Extragenital diseases were more common in respondents with PMS that affected the general health status. The average value of social performance in the group of subjects is 76.3 ± 1.8 (without PMS) and 73.2 ± 1.9 (with PMS). The scale of mental health of medical students is at the level of 67.0 ± 1.6 without PMS and 60.0 ± 1.5 with PMS. Comparative assessment of the MOS SF-36 questionnaire provided the following results: in the group of women with PMS, all 8 scales tend to decrease. A significant decrease in the scale of role performance caused by the physical state (RP -68.9 ± 4.2) was observed.

#### Conclusions.

1. The frequency of PMS in medical students in Almaty is 36.0±2.14% with the severest form in 6.6±1.11%.
2. The presence of extragenital diseases increases the frequency of premenstrual syndrome in students by 3 times (18.3±4.8% of 63.9±3.4%), and premenstrual dysphoric disorder – by 5 times (2.6±0.9% of 12.8±2.3%).
3. The use of combined oral contraceptive pills reduces the frequency of all premenstrual symptoms.
4. Premenstrual syndrome has a negative impact on the quality of life of students. All 8 scales of the quality of life tend to decrease in the PMS group.

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**АЛМАТЫ ҚАЛАСЫ МЕДИЦИНАЛЫҚ УНИВЕРСИТЕТТЕРІНІҢ  
СТУДЕНТТЕРІНДЕ ЕТЕККІРАЛДЫ СИНДРОМЫНЫҢ ЖІЛІГІ  
ЖӘНЕ ОНЫҢ СТУДЕНТТЕР ӨМІР САПАСЫНА ӘСЕРІ**

**Аннотация.** Етеккіралды синдромының жиілігі туралы деректер кең шегінде ауытқиды – 30%-дан бастап 90%-ға дейін жетеді. АҚШ статистикалық деректеріне сәйкес репродуктивті жастағы әйелдердің 70-90 пайызы етеккіралды синдромының көріністерінен зардап шегеді, ал 5-8 пайыз әйелдер бұл сырқаттың

ауыр түріне шалдыққан, ал әр үшінші әйел өмір сапасының төмендегенін айтады. М. Steiner (2000) деректері бойынша Канадада 75 пайыз әйел етеккіралды синдромына шалдыққан, Жапонияда болса 95 пайыз әйелдер бұл аурумен сырқат, соның ішінде 1,2 пайызы ауыр түрімен ауырады.

Бір қатар зерттеулерде етеккіралды синдромының жас қыздар арасында жиі таралғаны туралы көрсетілген. Мысалы В. N. Nisar (2008) деректері бойынша бұл синдром 51 пайыз студенттерде бар, ал 5,8 пайыз студент қыздар етеккіралды дисфориялық бұзылыстарынан зардап шегеді. G. Pinar (2011) зерттеуі бойынша етеккіралды синдромы жиілігі 72,1 пайызды құрайды.

Көптеген әйелдерде етеккіралды синдромы белгілері олардың күнделікті өміріне, әлеуметтік және жеке қызметтерінің бұзылуына, жұмыс істеу қабілетіне, жанұядағы қарым-қатынасына, жыныстық өміріне елеулі теріс әсер етеді.

**Түйін сөздер:** етеккіралды синдромы, өмір сүру сапасы, етеккіралды синдромы жиілігі мен ауырлығы, етеккіралды дисфориялық бұзылыстары.

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### **ЧАСТОТА ПРЕДМЕНСТРУАЛЬНОГО СИНДРОМА И ЕГО ВЛИЯНИЕ НА КАЧЕСТВО ЖИЗНИ СТУДЕНТОК МЕДИЦИНСКИХ УНИВЕРСИТЕТОВ г. АЛМАТЫ**

**Аннотация.** Данные о частоте и тяжести предменструального синдрома (ПМС) колеблются в широких пределах – от 30 до 95%. Согласно статистики США, в стране от 70 до 90% женщин репродуктивного возраста испытывают те или иные проявления ПМС, тяжелые формы зарегистрированы у 5-8% женщин, у каждой третьей отмечается снижение качества жизни [1]. В Канаде, по данным М. Steiner (2000), ПМС фиксируется более чем у 75% женщин [2], а у жительниц Японии этот показатель достигает 95%, тяжелая степень симптомов ПМС выявлена у 1,2% японских женщин [3].

В ряде последних исследований установлена значительная распространенность ПМС у молодых девушек. В исследовании N. Nisar (2008) у 51% студенток был установлен диагноз ПМС, у 5,8% - клиника расценена как предменструальное дисфорическое расстройство (ПМДР)[4]. В исследовании G. Pinar (2011) распространенность ПМС среди студентов составила 72,1 % [5].

У многих женщин предменструальные признаки оказывают существенное отрицательное воздействие на их повседневную жизнь, отмечается нарушение различных социальных и индивидуальных функций - снижение работоспособности, социальной активности и взаимоотношений в семье, включая сексуальную сферу.

**Ключевые слова:** предменструальный синдром, качество жизни, частота и тяжесть предменструального синдрома, предменструальное дисфорическое расстройство.