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## The effect of *Valerian* root extract on the severity of pre menstrual syndrome symptoms



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### ABSTRACT

Premenstrual syndrome (PMS) is a common disorder. Due to the knowledge lack of the precise etiology of this syndrome, different treatment methods are recommended, one of them is the use of medicinal herbs. This study aimed to investigate the effect of *Valerian* (續草 *xié cǎo*) root extract on the intensity of PMS symptoms.

In this double-blind clinical trial, 100 female students of Islamic Azad University, Tonekabon Branch, Mazandaran Province, Iran, with PMS were randomly divided into groups receiving *Valerian* (scientific name: *Valeriana officinalis*) and placebo in 2013. The participants received 2 pills daily in the last seven days of their menstrual cycle for 3 cycles and recorded their symptoms.

The data collection tools included demographic information questionnaire, daily symptom severity questionnaire, and a provisional diagnosis of premenstrual syndrome questionnaire.

Data were compared previous, one, two, and three cycles after student's intervention using and analyzed by independent t-test, paired t-test, chi-squared test, and repeated measures ANOVA in SPSS 16.

A significant difference was seen in mean emotional, behavioral and physical premenstrual symptom severity in the intervention group before and after the intervention ( $P < 0.001$ ). However, this difference was not statistically significant in the control group. The results of this study showed that *Valerian* root extract may reduce emotional, physical, and behavioral symptoms of premenstrual syndrome.

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### 1. Introduction

Premenstrual syndrome (PMS) is one of the most common difficulties in women at their reproductive age.<sup>1</sup> PMS is known as the recurrent mood and physical symptoms which is generally in the luteal phase, and it remits in the follicular phase of the menstrual cycle.<sup>2,3</sup> There is a high incidence of PMS; about 80% of women reported mild premenstrual symptoms, 20%–50% reported moderate symptoms, and about 5% of women had severe symptoms.<sup>4,5</sup>

Despite the high prevalence of premenstrual syndrome, causes of it have not been clear and several etiologies have been proposed (e.g., hormonal change, neurotransmitters, prostaglandins, diet, drugs, and lifestyle).<sup>6</sup>

Symptoms vary among individuals. The most common symptoms include fatigue, irritability, flatulence, breast tenderness, sensitive mood to alternation of sadness and anger, mood changes, and depression<sup>7</sup> as well as have been reported anxiety disorders in a large proportion of patients with this syndrome.<sup>8</sup> Premenstrual syndrome, causing disturbance in communication, disruption of the normal activities, lack of exercise and interest, and reduce the accuracy of the individual tasks. If the severity of symptoms is high, will affect lifestyle, convenience, and health of the person. This syndrome is a disease can change in the women's individual characteristics and behaviors. The result of this change in behavior has significant impact on the family. These effects include conflicts

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with spouse, child abuse and criminal behavior. Recurrent negative effects of the increased tension will be in the family, reduce the durability of family, disconnect between family members, and decrease participation in the family and social issues.<sup>9</sup>

A wide variety of strategies have been proposed for this syndrome. Women affected by mild symptoms recommended education, supportive consultation and generally self-care measures, such as increasing exercise and adopting a healthy diet. Women suffering from severe symptoms can be a range of helpful medications.<sup>7</sup> However, for many women, no change in lifestyle and use of medications are not entirely one satisfactory approach in premenstrual syndrome. Some women with moderate symptoms may be lifestyle changes to be insufficient and tend to use prescription medications for a long time, that all of them would have significant adverse effects.<sup>10</sup>

Due to the side effects of chemical drugs, except severe cases, chemical drugs consumption is not recommended. Today, complementary and herbal medicine are commonly used in the treatment of many chronic conditions such as PMS.<sup>11–15</sup> New therapeutic approaches are valuable and special place. *Valerian* (續草 *xié cǎo*) plant, scientific name: *Valeriana officinalis* and belonging to the *Valerianaceae* family, it is known as the cat grass. Many compounds have been detected in extracts of this plant that most important of which are noted to include: Valproate, Isovalproate and Didovalproate. The sedative effects of *Valerian* attributed to Volatile oils consist of Valerenal and Valernik acids. The sedative effects of *Valerian* stated in the books of the ancient Greek physicians like Hippocrates and trials of this work confirms, using of it goes back in traditional medicine for thousands of years. This plant has known due to anticonvulsant effects, sedation, anti-hysteria, and remove heart palpitations.<sup>16</sup> *Valerian* ability is known to create and promote relaxation in the central nervous system, reduce stress and anxiety, and enhance sleep in the worldwide. The *Valerian* capsule contains 530 mg pharmaceutical markets of *Valerian* plant root.<sup>17</sup> In a study conducted in Germany, the *Valerian* herb was indicated to be effective in reducing depression and anxiety.<sup>14</sup> The results of another study conducted in Brazil on *Valerian* showed 3 plants was effective for anxiety disorders and the need for further research.<sup>18</sup> Meanwhile, in the other studies showed that *Valerian* was effective in reducing the primary dysmenorrhea.<sup>19</sup> Also in all these studies not been mentioned any side effects.

Due to limited research on this herbal drug and as regards the definition of World Health Organization, Midwife as a member of the health team is responsible and has the numerous tasks including education, care for girls and women, and freedom from damage to them such as during menstruation the researcher came upon to research one of the most common side effect of the plant on menstrual period. So that in case of positive outcomes taken steps to promote physical and mental health of women.

## 2. Methods

### 2.1. Study type

The study was double-blinded clinical trial.

### 2.2. Ethical approval

In this study, the researcher after taking an introduced letter of Tehran University of Medical Sciences, registration in the clinical trial site (IRCT Code: 201211179463N5, Ethics Committee No. 91/D/130/3183), providing to the Tonekabon Islamic Azad University, explaining the purpose of the study and how doing it, received the agreement of Azad authorities. It is mentioned the Ethics

Committee of Tehran University of Medical Sciences approved this study and all participants gave their informed consent.

### 2.3. Subjects and inclusion criteria

After obtaining a license sampling, researcher presented on consecutive days in the environment of study from March to end of August 2013, and provided the necessary explanation of research purposes in the students of university dormitory. Then the researcher expressed summarizes of the premenstrual syndrome (series of the mood and emotions, physical symptoms occur during the secretary menstrual cycle), how to recognize it, and assured the confidentiality of information. The provisional diagnosis of premenstrual syndrome questionnaire was provided in the 400 to 700 students living in university dormitories after explaining to do and expressed their willingness to participate in the study. Premenstrual syndrome identified based on the presence of symptoms for 3 months. These symptoms include depressed mood, sense of hopelessness, self-deprecation, anxiety, restlessness, irritability, depression, nervous tension, freak, lack of control over the actions and behavior, difficulty concentrating, confusion, dizziness, marked changes in appetite or desire for food, changes in sleep (hypersomnia and insomnia), crying for no reason, fatigue, physical symptoms such as breast tenderness or swelling, muscle or joint pain, swelling of the extremities, headaches, and bloated feeling or weight increasing. Of this number, 260 students qualified to participate in the study. Students were selected who have at least 5 symptoms of premenstrual syndrome. Demographic questionnaire was completed through the interviews and excluded students having conflict response to the inclusion criteria (18–35 year-old, single, regular menstrual cycles 21–35 days, the duration of 3–7 days during the last 6 months, no physical and mental well-known disease, insensitivity to herbal medicines, non-use of specific medications, stressful events during the 3 months before the study such as the death of close someone, parental divorce, economic problems in the family, an accident or adverse events, lack of enterprise in other similar researches), then record sheets for the final diagnosis of premenstrual syndrome were placed the eligible students before treatment completed them the first day of menstrual cycle for two cycles (the first day of bleeding calculated as the first day of the menstrual cycle and the students were asked o complete symptoms, according to the intensity of the feeling in the midday during each cycle daily). Record sheets included a 35-day table containing all of mood symptoms (anxiety, depression, crying for no reason, mood changes, irritability), physical symptoms (tenderness or swelling breast, muscle or joint pain, swelling of extremities, headache, and flatulence or weight gain), emotional, and behavioral symptoms (insomnia, fatigue, lack of energy and concentration, and bulimia). Also, it was explained to students how to complete the form in the first day of the menstrual cycle for two cycles. Zero was given in the absence of symptoms, mild symptoms that may not be barrier to daily activities given number one, moderate symptoms that interfere with daily activity number two, and severe symptoms that interfere with daily activities such as work and education number three.

Of these, 140 students completely filled forms. with respect to the exclusion criteria included: A number of students had, such as severe premenstrual syndrome, no wanting of students to continue taking the drug, the emergence of drug allergy symptoms, physical or emotional illness and need to take medicine, cessation of drug use for a week in the first cycle and irregular use of drugs in the second and third cycles for two days, understanding the physical and mental illness during the study, marriage during the study, death of relatives, and surgeries over the past 2 months excluded this study.

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