

**Mentha piperita and Depressive disorders: A controlled trial**

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**Introduction:** Depressive disorders are among the most important disabling diseases that have affected a large population throughout the world. This study has been carried out with the aim to determine the effect of *Mentha piperita* on improving the symptoms in persons with depression as a co treatment. **Methods:** The effect of *Mentha piperita* on depression was studied in a triple-blind random clinical trial. The applied tool was Beck questionnaire and the number of samples was 55. Collected data were analyzed using SPSS software taking the help of descriptive statistics, one-way Variance analysis and Variance analysis with repeated measurements. **Results:** The results of the research showed that, there was a statistical significant difference at the level of  $p=0.01$  among under studied groups in such a way that's, *Mentha piperita* reduced the symptoms of disease and improved the under research samples. **Conclusion:** Some plants could be used as treatment complementary in psychical disorders therefore; the necessity of more researches is felt in this regard.

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**Introduction:**

Depressive disorder is considered as a common disorder distributed in the population, and usually associated with substantial symptom severity and role impairment(1). Being female, middle-aged, widowed, separated, or divorced, and low income can increased risk of depression. Men were significantly less likely to receive treatment than women(2). The lifetime prevalence of depressive disorder varied from 6.9% to 16.2 % (1-4). Sign and symptoms of depression are depressed mood, anhedonia, decreased energy, difficulty in concentration, insomnia, anorexia, helplessness, hopelessness, guilt feeling, and suicidal thoughts or death. Depression usually results in difficulty in occupation and social function and interpersonal relationship. More than 2/3 had suicidal thought and finally 15% of the depressed patients commit suicide(5). Physical manifestation of depression as a prevalent psychological disease usually causes lack of correct recognition of depression in patients and such problems exist in all cultures(6,7). At present, several pharmacologic and non-pharmacologic treatments are performed for depressive disorder. Epidemiologic researches suggest that patients turn to dietary supplements because of a reluctance to take prescription medications or a lack of satisfaction with the results. They often perceive

dietary supplements to be a safer and more natural alternative. Patients with mental health disorders, including depression, are among those who use dietary supplements(8). Today, more and more individuals use complementary/ alternative therapies for treatment of physical and mental disorders. Eisenberg et al (1993) conducted a national survey in the US, finding that one in three respondents had used at least one alternative therapy in the last year(9). There is a lot of researches on effect of herb on psychological and physical disorder for example: Peppermint was found to enhance memory, increased alertness, but Yalang-Yalang decreased it (10), the beneficial effect of FEWP(Free and Easy Wander Plus) for mood disorder(11), the role of essential oils in the treatment of Attention Deficit Hyperactivity Disorder (ADHD)(12), the use of hypericum perforatum (St Johnson's wort) to treat depression, Ginkgo biloba to delay cognitive decline in patients with Alzheimer's disease(13), the effect of the herb on insomnia (14), the effect of odor compounds of Mint, Ostokhodoos and Rosemary on the stress of nursing students, indicated that depression and stress of the students have been reduced(15), effect of peppermint oil in irritable bowel syndrome(16), the other plants with CNS-effect used (17) and etc. All of the researches were mixed of some plants and *M. Piperita* is one of

them. Mint is a grassy, nutrient vegetable. It uses as a complementary food by people, the same as lettuce or parsley. It is cultivated in most temperate zones of the world. The present study was done in order to determine the effect of the pure extract of Mint on the depressive disorder.

#### Methods:

This research is a double blinded randomized controlled parallel trial to measure the effect of mint extraction on the treatment of severe depression. The samples consisted of the depressed patients referred to Shahid Mofateh Clinic of Yasouj City (south of Iran) during 2007-2008. The inclusion criteria were the age limit of 18-60, having depressive symptoms for at least two weeks, receiving similar treatment regime, having no other psychological disorders, no history of admission in psychiatry ward, no ECT (electroconvulsive therapy) and no history of taking any drug except antidepressant drugs ordered by their psychiatrist. One hundred twenty patients were selected at the starting point of the research. Patients were randomly allocated to five groups; placebo (control group), and four experimental groups, namely, those received daily 10.0 mg, 50.0 mg, 100.0 mg or 200.0 mg of hydro alcoholic extract of *Mentha Piperita* for two months. Each group consisted of 24 patients. Severity of depression was measured by a psychiatrist, using BDI (Beck Depression Inventory) and DSM IV-TR criteria before and 2 months after intervention. To prepare the extract, in September the time of flowering of Mint, the fresh mint plant samples were collected. The samples were cleaned, washed and dried in shadow. Dried Mints were then grounded and soaked in water and alcohol with the proportion of 50: 50 for a period of 48.0 hours and then filtered. Thereafter, water and alcohol were separated using rotary machine(18). Then, the extract was injected in capsules with rates of 10.0 mg, 50.0 mg, 100.0 mg and 200.0 mg and packed Placebo was prepared using the same capsules. These packages were kept in refrigerator before being delivered to the patients. The study was double blinded in such a way that the researcher was aware of the grouping but the co-researcher who had the responsibility of collecting data along with the psychiatrist, the psychiatrist who was responsible for diagnosis and the patients were unaware of the study grouping. Researchers did not find any significant side effect for mint extract. This research was carried out by a financial support from

the Vice Chancellor for Research of Yasouj University of Medical Sciences. The trial registration number is: 201011105147 N1. Informed consent was also obtained from the patients. The usual anti depressant treatment of all groups of the study was continuing throughout the research period. Fifty four percent of the participants were lost to follow up (39% loss of those who were not continue to the research and eliminating 15% of persons whose data was incomplete). The main reason for such a significant loss was a sudden and huge increase in the fuel cost in Iran (7 times higher than the time when the study was started). The high cost in transport as well as the fact that most participants were from remote rural areas with a low socio-economic background could have prevented a significant number of the participants to attend the follow-up procedures including post test. The losses to follow rates were similar in all study groups (13, 15, 12, 11 and 14 for placebo, 10, 50, 100 and 200 groups respectively). Accordingly, the statistical analysis was carried out on the data from 55 persons. The collected data were analyzed using Chi-Square test and one way ANOVA for repeated measures. The power of the statistical analysis was calculated at about 60%.

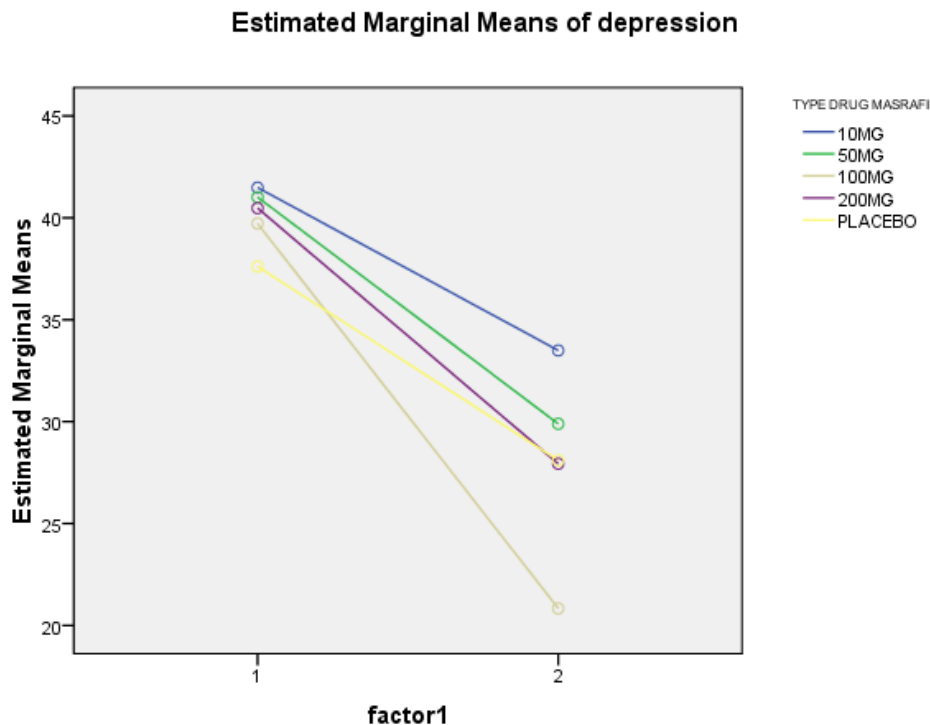
#### Results:

In total 55 participated in this study. Patients were divided into five groups by randomized allocation method. Majority of the experimental groups (68.2%) and control group (54.5%) were women. The mean age of those in the case groups was 27.9±8.5 (with a range of 18-52 years) and in control groups was 29.3±13.9 (with a range of 18-60 years). In the experiment groups, 24 patients (54.5%) were married comparing to (54.5%) in the control group. One way ANOVA & Chi-Square Test show no significant difference between age, sex, marriage situation, and familial history of depression disease, level of education and occupation status of patients in both experiment and control groups. Table 1 shows the distribution and the comparison of the mean and ST-deviation of depression in case and control groups before and after intervention. The highest anti-depressant effect was seen in those patients who received 100 mg and 200 mg of the extract respectively and the lowest score belongs to the groups of 50 mg, placebo group and 10 mg, respectively (P<0.01). According to Shefe procedure the difference was significant between 10 milligrams group and 100 milligrams group.

**Table 1:** The mean and standard deviation of depression in the groups under the study before and after intervention

Group Time	Control (No=11.0)	10 mg (No=9.0)	50 mg (No=12.0)	100 mg (No=13.0)	200 mg (No=10.0)	Significant level
Before intervention	36.7±6	40.1±8.3	40.2±8.8	38.9±10.6	40.6±5.3	NS*
After intervention	26.6±9.7	34±7.8	29.4±9.6	20.1±7.5	28.4±10.2	P<0.01

\* NS= Not Significant



### Discussion & Conclusion:

Depression is a common psychiatric disease, which is among the most disabling health and psychological problems in different societies. Depressive disorder is associated with role impairment, difficulty in social and occupational function and the patient may commit suicide (1-5). At present, several pharmacologic and non-pharmacologic treatments have been applied for this disease mostly expensive with a large number of unwanted complications. Psychological therapy is also time consuming. Accordingly, using herbs as treatment or as a complementary treatment can be valuable. This study was done in order to determine the effect of mint extract on depressive disorder.

It was revealed in this study that the severity of depression in the experimental groups improved significantly. Based on the results of this research, the Mint extract at the rates of 100.0 mg and 200.0 mg was more effective on the patient's disease status. Several studies on the effect of herbal medicine on different diseases and disorders showed positive effects of herbs on memory, alertness and diseases like IBS, ADHD and stress (17-23).

According to the results of this study, mint may be used in treatment of depression, particularly in 100 mg and 200 mg per day. It wasn't possible to find out the effective ingredient of the extract; however, based

on the results of a published study Narigenin may be the effective content of mint extract(19). With no or very limited side effects we suggest M. Piperita may be used as a complementary regimen in control of depressive disorder. Obviously, further research is needed to find out the most effective content and the mechanism of its effects on depressive disorder.

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### Mention:

The Farsi version of the results of this study is published in Armaghan Danesh, a local journal of Yasouj university of medical sciences and it's abstract has been indexed by Index Copernicus, Google scholar, IMEMR & ISC.

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