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Research Article

**THE EFFECT OF GREEN TEA ON MENTAL HEALTH OF
NURSES WORKING IN SELECTED HOSPITALS OF
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Nastaran Pourkhorshidi^{4*}**¹Instructor, Islamic Azad University, Unit of Tehran, Tehran, Iran.²Professor, Department of Pharmacognosy, Pharmaceutical Sciences Research Center, Faculty of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran.³Department of Community Medicine, Islamic Azad University, Unit of Tehran, Tehran, Iran.⁴ Instructor, Master of Psychiatric Nursing, Besat Hospital, Hamadan University of Medical Sciences, Hamadan, Iran.**Abstract:**

It is necessary for a dynamic life and for the growth and prosperity of people to have a physical and mental health. The purpose of this study was to determine the effect of green tea on mental health of nurses working in selected hospitals of Hamadan University of Medical Sciences in 2014. This study is a clinical trial study that, the sample consisted of 150 graduate and postgraduate nurses working in the selected hospital of Hamedan University of Medical Sciences in 2014 by simple random sampling. Data were collected through a general mental health questionnaire (GHQ-28). First, a questionnaire was distributed among the nurses of the study and after the responses; each sample was given three green tea bags of a certain company, 3 disposable glasses of 250 cc and 6 sugar cubes. They were asked to take 3 glasses of green tea three times a day and continue for 6 weeks and after this time, the mental health questionnaire was distributed among the subjects and collected after the response. Data were analyzed using Chi-square and Fisher's exact tests. Green tea consumption improved the index of physical health of individuals (P=0.000). Green tea consumption improved the index of anxiety and sleep deprivation (P=0.000). Green tea consumption improved the index of social dysfunction (P=0.000). Green tea consumption improved the index of depression in individuals (P=0.000). Green tea consumption had an effect on nurses' mental health (P=0.000). Green tea improves mental health and improves the dimensions of physical health, reduction of anxiety disorder, sleep, social function and depression.

Key words: *Green tea, physical health, social dysfunction, depression, anxiety disorder.***Corresponding Author:****Nastaran Pourkhorshidi,**
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INTRODUCTION:

Quality of life today is one of the most important health outcomes because it addresses all aspects of health, including physical, mental, and social health [1]. In fact, quality of life is a general concept that encompasses physical health, personal growth, psychological states, independence level, social relationships, and relationships with prominent environmental institutions [2]. Therefore, it is necessary for the dynamic life and the growth and prosperity of people to have mental health as well as physical health which in this issue doubles the importance of mental health, because in today's society, people are more likely to face tense situations than before and it seems that mental health relates to all humans and the whole society [3]. Among them, nurses are one of the most commonly encountered in these tensions. Nurses undergo physical and psychological analysis due to long hours of work, work shift, the presence of non-treatable patients, continuous contact with sensitive, irritable, and depressed patients, as well as dying patients and other occupational issues which poses a threat to their mental health. In addition, the nursing education program, which is prepared and regulated on the basis of science, knowledge, ethics, human principles, respect for individuality of patients, in most cases is in contradiction with the conditions governing the workplace [4]. In the case of the highly tense nursing profession, the fact that the 2008 death statistics due to occupational stress in the United Kingdom showed that, the rate of suicide in female nurses is higher than the average death rate from other occupations [5]. Statistics also show that the problem of organizations is not just the attraction and selection of nurses. The major problem is to maintain nurses in organizations. According to the US Nursing Board, the changing job place of nurses with a bachelor's degree is 32% and a professional dropout rate is 40%. This means that of 10 nurses 4 nurses leave their jobs each year [6]. According to a survey about occupational stress on US nurses at least 40000 nurses are addicted to alcohol and the proportion of drug use in nurses is 30 to 100 times higher than the total population [7]. Therefore, it was observed that nurses were exposed to different stresses and therefore, this study investigates the effect of green tea on the physical health of nurses working in selected hospitals of Hamedan University of Medical Sciences in 2014.

MATERIALS AND METHODS:

The present study was a semi-experimental study in which the research population consisted of all bachelor and master degree nurses working in the selected hospital of Hamedan University of Medical

Sciences in 2014. The research environment was a 700-bed hospital in Hamedan, south east of Hamedan city, where the hospital had wards (orthopedic, surgery, pediatric, burn, emergency, neurological and internal medicine). The sample of this study includes 150 people of morning shift nurses working in Hamadan University of Medical Sciences and Health Services Hospital who had the research conditions selected with simple random sampling method determined by Morgan table method. The inclusion criteria of the study include bachelor and master degree in nursing, a hospital worker with at least one year of work experience and a six-month past shift in the morning. Exclusion criteria included the incidence of chronic physical illness or the occurrence of known mental illness, according to the research sample, and pregnant and lactating women. In this research, data was collected through a general mental health questionnaire (GHQ-28). This questionnaire consisted of two parts:

A. Demographic characteristics questionnaire: included the individual characteristics of the units under study. These include: age, gender, marital status, departmental name, degree of education, record of nursing care

B. General mental health questionnaire (GHQ-28): Includes questions related to the measurement of various mental health factors founded in 1979 by Goldberg and Hiller with the aim of identifying mental disorders in the community [8]. This questionnaire is one of the most well-known tools for screening mental disorders, the purpose of this questionnaire is not to achieve a specific diagnosis in the hierarchy of mental illness, the main purpose of this is to distinguish between mental and psychological illness. The main form of this questionnaire includes 60 questions. This questionnaire is in the form of forms with 30 questions, 12 questions and 28 questions. The Public Health Mental Health Questionnaire, which was used in this study, includes 4 scales, and each scale has 7 questions scored between 0 to 3. Scale questions are in sequence as from Questions 1-7 are the physical signs, 8 to 14 are associated with anxiety and sleep disorder index, and 15 to 21 are about social dysfunction, and questions 22 to 28 are associated with the depression scale. Each section was rated 0 to 21 and the total score of the mental health questionnaire varies from 0 to 84 and in the scoring system, higher score points to a greater increase in symptoms. The cutoff point of this test was 23. Also, scores 14-21 are considered as severe disorder, 7-13 as a moderate disorder and 0-6 as a healthy person. And overall, the mental health score between 0-23 and above 23 is considered to be disrupted. In 2010, a study was conducted in Iran entitled the validation of

28-question general health questionnaires as a tool for screening psychiatric disorders by Dr. Ahmad Ali Noorbala, Sayed Abbas Bagheri Yazdi, and Kazem Mohammad in subjects over 15 years old as 98%. The confidence of mental health questionnaire of 95% was calculated in 2010 by Noorbala and Palahang. Many studies have been conducted on the reliability of the General Health Questionnaire (GHQ-28) all of which indicate the optimal performance of this questionnaire in determining the mental health status. The reliability of the 28-item questionnaire has been calculated by Palahang, Barahani, and Shah Mohammadi as 91% [9]. The researcher referred to the selected hospital after receiving a written introduction from the Faculty of Nursing Midwifery of Islamic Azad University, Tehran Medical Sciences Branch and after obtaining permission from hospital authorities, among the entire research community, selected 150 people by simple random sampling. After coordinating with the head nurse and entering the ward, the researcher introduced himself to the research units and explained the purpose of the research. Subsequently, mental health questionnaires were provided to samples, and after completion, were collected. Then each of the samples was given 3 green tea bags of a certain company, 3 250 cc disposable glasses and 6 sugar cubes. They were asked to take 3 glasses of green tea three times a day and continued this for 6 weeks. The researcher relied on green tea on a daily basis with subjects. Meanwhile, the breakfast was given in front of the researcher and at work. After 6 weeks after taking the green tea, the mental health questionnaire was distributed again among the subjects and after responses the questionnaires were collected and, the results before and after the use of green tea were compared. To analyze the data, SPSS software version 20 was used and to describe the

data, descriptive statistics (tables, calculation of indicators, such as mean, standard deviation and graphs) were used and inferential statistics were used for data analysis (Chi square and Fisher's tests).

FINDINGS:

The findings indicate that the service record of 83.3% of the studied units was 1 to 10 years old and 6.7% of them had 20 to 30 years of experiment. And also 44.6% of the units studied were between the ages of 31 and 40 and 2% over 50 years of age. 54% of the units were women and 84% of the units were undergraduate. 68.7% of the subjects were married. Considering that the mean scores of physical health dimensions after the use of green tea are less than before the use of green tea, it can be concluded that green tea consumption significantly improves the index of physical health of individuals (table 1). Considering that the mean score of anxiety and sleep disorder index after the use of green tea is less than before the use of green tea, it can be concluded that the use of green tea significantly improves the index of anxiety and sleep disorder in individuals (table 2). Considering that the mean score of social dysfunction index after consumption of green tea is less than before the use of green tea, it can be concluded that the use of green tea significantly improves the index of social impairment in individuals (table 3). Considering that the mean score of depression index after taking green tea is less than before the use of green tea, it can be concluded that green tea consumption significantly improves the index of depression in individuals (table 4). Considering that the average mental health score after taking green tea is less than the average mental health score before taking green tea, it can be concluded that the use of green tea significantly improved the mental health of nurses (table 5).

Table 1: Significance of Mean Score of Physical Health Dimensions Index before and after the use of green tea in nurses working in selected hospitals of Hamadan University of Medical Sciences from 2013 to 2014

Index	Groups	Mean	SD	T-test	Degree of freedom	P-value
Physical Health Dimensions	Before green tea	7.9	4.07	6.964	149	0.000
	After green tea	5.2	3.2			

Table 2: Significance of Mean Score of anxiety and sleep disorders index before and after the use of green tea in nurses working in selected hospitals of Hamadan University of Medical Sciences from 2013 to 2014

Index	Groups	Mean	SD	T-test	Degree of freedom	P-value
Anxiety and sleep disorders	Before green tea	7.4	3.4	5.576	149	0.000
	After green tea	5.2	3.2			

Table 3: Significance of Mean Score of social dysfunction index before and after the use of green tea in nurses working in selected hospitals of Hamadan University of Medical Sciences from 2013 to 2014

Index	Groups	Mean	SD	T-test	Degree of freedom	P-value
Social dysfunction	Before green tea	8.3	3.3	7.6	149	0.000
	After green tea	5.6	2.8			

Table 4: Significance of Mean Score of depression index before and after the use of green tea in nurses working in selected hospitals of Hamadan University of Medical Sciences from 2013 to 2014

Index	Groups	Mean	SD	T-test	Degree of freedom	P-value
Depression	Before green tea	6.1	4.04	4.127	149	0.000
	After green tea	4.5	3.8			

Table 5: Significance of Mean Score of mental health index before and after the use of green tea in nurses working in selected hospitals of Hamadan University of Medical Sciences from 2013 to 2014

Index	Groups	Mean	SD	T-test	Degree of freedom	P-value
mental health	Before green tea	29.8	11.7	7.605	149	0.000
	After green tea	20.6	100.2			

DISCUSSION:

Mental health is a state of feeling alive as the person can cope with society and her personal situation and social characteristics seems satisfactory to him [10]. Regarding the dimensions of physical health of working nurses before the use of green tea, it was found that, the highest percentage (50%) of moderate disorder was in physical health and the least (9.3%) had severe disorder. In a study conducted by Bigdeli and Karimzadeh [11], on nurses working in different parts of hospitals of Semnan University of Medical Sciences in 2011, showed that the highest percentage of studied units (49%) in the physical health aspect were suspected to have moderate disorder, which is similar to the present research. Concerning anxiety disorder and sleep disturbance before taking green tea, the findings showed that, most of the units (53.3%) had moderate anxiety and sleep disorders. In a study by Melasiditis and Haberman [12], in nursing mental health in 2009, 27% of nurses had a demonstration of Nowruz anxiety and 15% of nurses are in the category of borderline anxiety, which is similar to the present study. In a study conducted by

Shahraki Vahed [13], about mental health of nurses in Zahedan Hospital in 2010, it also showed that, only 41% of the nurses had problems with anxiety and were easy to sleep. Concerning the determination of social function disorder in the units under study before taking green tea, the findings showed that, the highest percentage of nurses in the social function dimension (63.3%) had moderate disorder. Abdi's [14], study conducted in 2010 on mental health of nurses working in hospitals affiliated to Tehran University of Medical Sciences showed that, most of the research units (68%) had moderate disability in social function. The study of determining the status of depression in employed nurses before taking green tea showed that, the highest percentage of subjects (57.3%) were healthy and the least (7.7%) had severe depression. Molasitos and Habermane [12], conducted a research on nurses working in 2009 that showed, 78% of nurses do not have depression and are healthy. This study is similar to the present study. The study of determination of mental health of the studied units before taking green tea showed that, (66%) of nurses had a mental health problem

before taking green tea and 34% of them had healthy mental health. In a study by Abdi et al [14], in 2010 on the mental health status of nurses working in hospitals affiliated to Tehran University of Medical Sciences, the mental health of 43% of nurses was healthy that, the conclusion of the study is consistent with the result of the present study and also, in a study done by Shahrakie Vahed et al [13], in 2010 entitled "Surveying the mental health of nurses working in Zahedan University of Medical Sciences", the results showed that, 42% of nurses were healthy and 68% had mental disorders. Regarding determination of the dimensions of physical health of the units under study after the use of green tea, the findings showed that, most of the samples (75%) were healthy after drinking green tea and they have less physical problems. This result is consistent with study conducted by Janet Brian et al [15], in 2011 in Japan entitled, the relationship between consumption of green tea, coffee and other beverages with the work performance and behavioral patterns between the specific groups of employed people. The analysis in this study showed that, with green tea, fatigue decreased and employees felt good (49%) and there is also less need for reinforcing medications. The study of determination of anxiety and sleep disorders of the studied units after consumption of green tea showed that, most of the studied units (73.3%) experienced less anxiety after taking green tea. A study by Tokyo Kikukawa et al [16], in Japan in 2013 on 100 teachers from Tokyo showed that, teachers who take 3 glasses of green tea daily experience anxiety 80 percent less than teachers who do not consume green tea. Also, in a study by Neivani in nursing students in 2009 which examines the anti-anxiety effect of green tea over a semester, results showed that 70% of the units had reduction in anxiety and restlessness, which is similar to the present study. Investigating the determination of in social dysfunction of the units after the consumption of green tea showed that, most of the studied subjects (72.7%) had good performance after taking green tea that, this conclusion is consistent with the results of a study conducted in 2011 by Janet Brian et al [15], entitled "Measuring the relationship between green tea and other beverages in work performance and behavioral patterns among specific groups of employed people" that, green tea consumption increases performance particularly when it is consumed without sugar and green tea increases the work-related psychological state or functional performance up to 40%. The findings showed that 74% of the units were healthy in terms of depression status after taking green tea and did not have depression. In a study conducted by Kai Jun Peng et al [17], in Japan in 2009, the effect of green tea on

the mental health of individuals was measured. The analysis showed that with constant consumption of green tea for 3 months, depression decreased. This conclusion is consistent with the results of the present study. A survey to determine the mental health of nurses after taking their green tea showed that, most of the studied units (69.3%) were healthy in terms of mental health and the least percentage of the studied units (30.7%) had their mental health disrupted. In a research that was conducted in 2009 by KIMBERLY [18] in Japan on the adolescent mental health it was shown that, adolescents who consume 3 teaspoons of green tea have a better mental health than adolescents who did not consume. Comparing mental health of nurses before and after taking green tea showed a significant relationship between mental health of nurses before and after taking green tea. This means that most of the research units (66%) had a mental health problem before taking green tea. After the consumption of green tea, their mental health was evaluated healthy by 69.3% of. The study, conducted by Tomata et al [19], in Japan in 2009, confirms this study. This research was about the use of green tea and its effect on psychosis. The results showed that the progression of psychosis among respondents who consumed 5 cups of green tea per day compared to those who took a cup, was lower which is consistent with the research.

CONCLUSION:

The decrease in the mental health of nurses leads to consequences such as absenteeism, job change, poor quality of patient care and reduced satisfaction of patients and given that green tea has prevented mental health loss and it promotes social performance, it is recommended to be used at work. Therefore, green tea increased mental health and improved physical health, decreased anxiety, sleep, social function and depression.

Conflict of interest:

In this study, there is no conflict of interest.

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