

# Effect of Fasting on Mental Health in the General Population of Kermanshah, Iran

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## ABSTRACT

**Introduction:** Multiple studies have noted the positive effect of fasting on mental health improvement. The present study was conducted to determine the effect of fasting on mental health in the general population of Kermanshah, Iran.

**Methods:** In this analytical research, one-group pretest-posttest design was used for the evaluation of 110 residents of Kermanshah city. General Health Questionnaire (GHQ) with four subscales was utilized in order to assess the subjects' mental health. Data were analyzed using SPSS version 16 and paired t-test.

**Results:** There was a significant difference between pre- and post-test results in terms of general health score ( $t=3.138$ ,  $P=0.002$ ), i.e., fasting could increase the population's general health. There was a significant positive relationship between fasting and four subscales of general health including somatic symptoms ( $t=2.138$ ,  $P=0.035$ ), insomnia/anxiety ( $t=2.587$ ,  $P=0.011$ ), and social dysfunction ( $t=2.627$ ,  $P=0.010$ ). However, fasting had no significant effect on severe depression and suicidal tendencies ( $t=1.700$ ,  $P=0.092$ ).

**Conclusion:** The obtained results showed that fasting has a positive effect on mental health in the general population of Kermanshah. Thus, more attention should be paid to fasting and its impact on people's mental health.

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## Introduction

Today, despite the significant advances in economic, social, and scientific domains, people are not able to overcome psychological problems such as anxiety, depression, stress, and nihilistic attitudes. It seems that individuals have lost their identity and become alienated (1).

World Health Organization (WHO) in 2011 introduced spirituality, religiousness, and personal beliefs as components of quality of life. In the past few years, a great number of studies have aimed to examine the relationship between spirituality, religiousness, and mental health (2). Religion has various aspects including religious participation, salience, and affiliation. Religious participation means attending religious services and institutions, e.g., church membership. Religious salience refers to religious commitment and its importance in one's life. Finally, religious

affiliation is related to the core of one's belief system about his/her relationship with God.

So far, religious affiliation has been neglected in various studies. Religious beliefs affect one's values and lifestyle. Many British general practitioners and American family physicians believe that religious beliefs have a positive impact on patients' health. In a meeting of the American Academy of Family Physicians in 1996, religious beliefs were considered to have healing effects (3). In addition, 75% of the physicians believed that prayer speeds up the healing process (3).

Traditionally, there has been a strong association between religion and health. In numerous psychological studies and theories, the link between religion and mental health has been a topic of interest for researchers;

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however, conflicting and inconsistent results have been reported. On the other hand, some theorists consider religion as a mental construct and religious practice as "obsessive neurosis". Many theories have made conflicting statements about religion and its role in developing mental health (4).

Mental health refers to one's cognitive well-being. It protects the mind against mental traumas and leads to the prevention of mental disorders. In different studies, a significant positive correlation has been reported between religious beliefs, mental health, optimism, and other positive aspects (5). Faith and religious beliefs, obligations, and ceremonies contribute to the treatment and prevention of mental disorders, provided that appropriate ways and methods are applied (6).

Today, many studies are focusing on spirituality and its role in health, morbidity, happiness, well-being, growth, and self-actualization. As the American Psychological Association indicated, research about spiritual health is considered a thriving topic. What doubles the importance of research in this field is emphasis on the influence of Islamic beliefs, especially acts of worship, and their role in human health (7).

For many years, fasting has been known as a way for the soul and body to be purified. In divine religions including Islam, special attention has been paid to fasting. In recent decades, many studies have evaluated the effect of fasting on physical and mental health (8).

In fact, fasting is a common practice in many religions, although the timing and circumstances are different from Ramadan fasting (9). Ramadan fasting, as an Islamic ritual, is of particular importance for Muslims. During this month, Muslims avoid eating, drinking, and smoking from dawn to sunset. Since lunar months coincide with different times of the year, fasting may extend to more than 18 hours. Prolonged fasting causes inhibition of hypothalamic-pituitary-thyroid axis in perfectly healthy individuals (10).

As previous research has indicated, fasting has many advantages for an individual (Afifi, 1997). Islamic views about fasting involve promotion of mental health, spirituality, and physical health (11). There are more than one and a half billion Muslims all over the world and millions of them fast during Ramadan, every

year. Fasting can be beneficial for healthy and growing individuals and has emotional, physical, mental, and social benefits (12). Over the past 4 years, several epidemiological studies have shown the health benefits of fasting (13).

Thus, considering the role of religion and religious practices in mental health and the importance of Ramadan for Muslims and Iranians, the present study aimed to determine whether fasting during Ramadan can improve the mental health of people who perform this religious practice. The importance of this study is the comparison of a natural intervention in people's religious behavior (fasting) in a certain period of time.

## Materials and Methods

In this analytical study, pretest- posttest design without control group was applied to evaluate 110 residents of Kermanshah, who had decided to fast in the month of Ramadan in 2012. The inclusion criteria were as follows: 1) decision to fast in the month of Ramadan, and 2) consent to participate in the study.

The exclusion criteria were as follows: 1) physical illness; 2) mental illness; 3) use of psychiatric medications; and 4) drug addiction. At the end of the month, those who could not fast for a minimum of 21 days (for any reason) were excluded from the study.

Ethical considerations were observed throughout the study. In order to keep the confidentiality of the data in questionnaires, the participants wrote a number or a specific code number instead of their real names. The subjects were evaluated using a personal demographic questionnaire and General Health Questionnaire-28 (GHQ-28). The participants fasted for at least 21 days and were analyzed again at the end of Ramadan, using the questionnaires.

The study sample included the general population of Kermanshah city and consisted of a group of people, selected via convenience sampling from public places such as parks, mosques, neighborhoods, and shops. Finally, the sample included 13 men and 97 women, who were tested twice before and after the month of Ramadan using GHQ-28.

GHQ-28 was introduced by Goldberg and Hillier to measure an individual's mental health (14). This questionnaire indicates low to severe levels of distress and consists of 28 items. The

**Table 1.** Number of subjects, mean and SD of subscale, and total GHQ score during pre- and post-test periods, based on sex

Variables	Measures	SD	Mean	Number	
<b>Total general health</b>	Pre-test	Female	13.281	27.85	97
		Male	9.895	22.08	13
	Post-test	Female	13.414	24.27	97
		Male	10.352	19.00	13
<b>Scale A: Somatic symptoms</b>	Pre-test	Female	3.747	6.89	97
		Male	2.862	5.23	13
	Post-test	Female	3.676	6.20	97
		Male	2.204	4.23	13
<b>Scale B: Anxiety/insomnia</b>	Pre-test	Female	4.441	7.76	97
		Male	3.357	6.54	13
	Post-test	Female	4.352	6.64	97
		Male	3.082	6.00	13
<b>Scale C: Social dysfunction</b>	Pre-test	Female	4.181	8.22	97
		Male	2.375	6.85	13
	Post-test	Female	3.516	7.03	97
		Male	3.440	7.00	13
<b>Scale D: Depression and suicidal tendencies</b>	Pre-test	Female	4.462	5.13	97
		Male	4.741	3.15	13
	Post-test	Female	4.628	4.55	97
		Male	3.805	2.15	13

**Table 2.** Comparison of the mean of subscales and total GHQ score in pre- and post-test periods

Variables	SD	Mean	Degree of Freedom	t	P-value
Total general health	11.758	3.52	109	3.138	0.002
scale A: Somatic symptoms	3.568	0.73	109	2.138	0.035
Scale B: Anxiety/insomnia	4.275	1.05	109	2.587	0.011
Scale C: Social dysfunction	4.101	1.03	109	2.627	0.010
Scale D: Depression and suicidal tendencies	3.925	0.64	109	1.700	0.092

four major scales in this questionnaire include scale A: somatic symptoms; scale B: anxiety/insomnia; scale C: social dysfunction, i.e., an individual's inability to meet the demands of professional life and cope with different situations; and scale D: severe depression and suicidal tendencies. Each item is scored from 0 to 3. In a study conducted in Iran, a total score of 23 was considered as the threshold for the presence of distress (15).

In this study, GHQ-28 was completed in two stages over 50 days (1-2 weeks before and 2 weeks after Ramadan); the general health of the population was evaluated in two stages (before and after the month of Ramadan). For further access to people's data and to gather correct answers, we used codes chosen by participants in both stages.

For statistical analysis of the data, SPSS version 16 was used. After describing the data, statistical analysis was performed using paired

and independent t-tests.

## Results

To evaluate the effect of fasting on mental health in the general population of Kermanshah, scores of all subscales and the total score of GHQ-28 were calculated for pre- and post-test periods (before and after the month of Ramadan). These numbers indicated the magnitude and direction of score changes in GHQ-28, before and after Ramadan.

The number of subjects, mean and standard deviation (SD) of raw scores in four subscales, and the overall score of GHQ-28 in pre-test and post-test evaluations, were separately calculated for male and female groups (Table 1). We used paired t-test to compare the overall score and pre/post-test scores in all four subscales (Table 2).

The results of the data analysis showed significant differences between pre- and post-

test results in terms of general health ( $t=3.138$ ,  $P=0.002$ ), i.e., fasting increased the population's general health. Also, there were significant positive correlations between fasting and subscales A, B, and C ( $t=2.138$ ,  $P=0.035$ ;  $t=2.587$ ,  $P=0.011$ ; and  $t=2.627$ ,  $P=0.010$ , respectively); however, subscale D (severe depression and suicidal tendencies) was unaffected by fasting ( $t=1.700$ ,  $P=0.092$ ).

## Discussion

In this study, effect of fasting on mental health was investigated. The mental health of the sample group was evaluated and compared before and after Ramadan. It should be noted that in terms of general health and its subscales, higher scores indicated lower general health. In this study, effect of fasting on mental health in the general population of Kermanshah was studied. The participants were investigated before and after the month of Ramadan, using GHQ-28, and the obtained results were compared.

The obtained results showed that fasting has a positive impact on the promotion of mental health. This finding is in consistence with the results of studies by Shafii et al. (2003) and Khosh Niiat Nikoo et al. (2012) (16, 17). Hadianfar (2005) reported that people with religious beliefs have a higher level of mental health. In fact, faith in God reduces the amount of experienced stress. In this regard, Hamidi quoted from Gazvarpour and Barkhordar (2003); that examined mental health implications of Quran and Nahj-al-Balaghah. They found that Quran encourages mental balance, hope, human values, and self-esteem (18).

A study by Javanbakht et al. (2009) showed that fasting during Ramadan has a significant impact on improving students' self-esteem and mental health (19). Moreover, Sadeghi and Mazaheri (2005) found significant differences in physical symptoms, insomnia, anxiety, social impairment, and depression. In their study, total GHQ score suggested improved general health after Ramadan in groups which fasted the whole month (or for a limited number of days). In addition, lower levels of mental health were observed after Ramadan in groups which did not fast (20).

Mental health improvement is related to

different aspects of fasting. Fasting is defined as abstinence from eating, drinking, and all taboos, which lead to its annulment including slander, backbiting, lying, and ogling. Therefore, during this month, people are encouraged to experience difficult physical and emotional states such as thirst and hunger, which lead to a sense of mastery over self and increased self-control. Furthermore, observing this religious practice, which involves forgiveness, interpersonal communication, and sustentation, may lead to an individual's increased efficiency, which directly contributes to the promotion of mental health.

Hosseinkhanzadeh quoted from Brgyn's meta-analysis (1988); a positive relationship was found between religion and mental health. People with intrinsic religious orientations had higher levels of mental health, compared to those with extrinsic religious orientations. Tamkv and Fysy's findings (2001) showed that among couples with nine years of marital life, those who observed rituals had higher marital satisfaction. In addition, the study by Viar et al. (2002) showed that religious beliefs and practices are associated with higher levels of marital satisfaction and greater marital orientation (21).

As the results indicated, fasting improves somatic symptoms, reduces insomnia/anxiety symptoms, and improves social function; the results were consistent with those of the study by Moghaddamnia and Maghsoudi in 2004 (22). Similarly, Ghahremani et al. (2000) showed that fasting leads to better mental health, reduces symptoms of anxiety and depression, and improves social functioning (23). Also, Kazemi et al. (2006) showed that fasting can be an important factor for decreasing depression and improving the mental health of university students (5). However, in the current study, fasting did not affect depression and suicidal tendencies, but finding of other studies indicated that following the teachings of Islam reduced the probability of developing these diseases. Surrender to God's will plays an important role in the improvement of one's health status. Adherence to Quran has a relaxing effect and helps people overcome diseases and problems. These acts of worship guarantee people's physical and psychological health. In fact,

following the teachings of Islam is a means of dealing with and reducing anxiety, frustration, and depression (24).

## Conclusion

According to the obtained results, fasting is associated with mental health improvement. Fasting is a combination of spiritual practice, abstinence from eating, and changes in lifestyle and eating habits. Each one of these elements can have various effects on mental health and sleep-wake cycle. It is hoped that future studies take further steps towards clarifying the effects of fasting for Muslims.

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