

Effect of Ramadan fasting on emotional reactions in nurses

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ABSTRACT

Background: Today anxiety, depression, and stress are among the fundamental problems, and nursing due to ongoing relationships with patients is one of the stressful jobs. The present study has been carried out to investigate the effect of fasting on emotional reactions among nurses in selected hospitals of Tehran.

Materials and Methods: In a descriptive analytical study, 313 nurses working in selected hospitals in Iran with the mean age of 37.82 ± 7.17 years were sampled with randomized cluster sampling method from two selected hospitals, and level of their emotional reactions was assessed by DASS₂₁ questionnaire in two stages over 1-2 weeks before and after Ramadan. Then, using the statistical software SPSS₁₅ and with Wilcoxon and paired *t*-test, data were analyzed.

Results: The findings showed that depression and stress levels were significantly reduced after in comparison with before the holy month ($P < 0.05$). Despite the reduction of anxiety level in fasting caregivers after Ramadan, the difference was not significant.

Conclusions: Fasting has been effective in diminishing stress and depression levels among nurses.

Key words: Anxiety, depression, fasting, nurses, stress

INTRODUCTION

Among the psychological disorders, anxiety, stress, and depression have unfortunately been highly prevalent and widespread.^[1] According to World Health Organization, almost 500 million people worldwide are suffering from mental disorders, among whom half are developing mood disorders such as depression and anxiety.^[2] Anxiety disorders are the most common psychiatric disorders in the general population, and presently about 30 million people in America are suffering from this disorder.^[3] It is estimated that at least 7 million of Iranian population suffer from one or more of psychiatric disorders.^[4]

Health sector is one of the key areas of sustainable development in communities, that is directly associated with human health and solemnly responsible for health maintenance and restoration for human society which requires safe and vibrant therapy to be accomplished.^[5] Increased number of chronic and elderly diseases and relevant difficulties such as patients' mortality are among the stress-exacerbating factors in nursing,^[6] so that 27th ranking

has been allocated to this occupation amongst 130 psychologically high-pressure professions.^[7] Inappropriate emotional reactions such as stress, anxiety, and depression are well-known inseparable part of modern nursing, leading to numerous problems for both nurses and patients,^[8] as anxiety and stress reactions have been statistically observed in at least 20% of nurses.^[9] The amount of occupational stress has been reported to be 59.9% in Canadian nurses by Reineck (2005),^[10] and a direct relationship has been detected by Boya *et al.* (2008) between anxiety and depression and job insecurity level.^[11] In studies conducted in Iran, depression, anxiety, and stress levels have been reported to be 24.9-25.8%, 27.9-21.6%, and 23.8-47.6%, respectively, among working nurses of Tehran,^[12,13] and 26.9% (in moderate to severe range),^[14] 34.3%,^[15] and 46.6%,^[16] in other investigations.

The role of spirituality and religion in health and disease has been considered in recent years and some believe that spirituality is part of the biological-psychological-social model, and there are evidences that show strong religious beliefs, spiritual longing, prayer, and worship have positive effects on a person's physical and mental health.^[3]

In this regard, Ellison *et al.* (2001) believe that efforts have recently been increased to elucidate the connection between religion and mental health,^[17] and many studies have demonstrated positive and some have reported negative effect of religion on mental health.^[18,19] For instance, in studies by Patel *et al.* (2010) and Ng Tze Pin *et al.* (2004),

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no relationship has been found between religiosity and mental health.^[20,21] In contrast, Agardh *et al.* (2010), Myer *et al.* (2008), and Beaudoin *et al.* (2009) have ascribed better mental health and lower level of stress as a result of piety.^[18,19,22] Researches carried out in Iran have also emphasized affirmative and significant correlation between religious orientation, increased mental health, and decreased psychiatric disorders.^[23,24] Moreover, religious components such as trust in God, reading or listening to Quran, and participation in repetitive rituals like prayers have been revealed to have positive relationship with decreased rates of depression, anxiety, and stress, as well as enhanced quality of individuals' life.^[25-28]

Although fasting in the holy month of Ramadan is influential on physical and mental health based on religion of Islam,^[17] and several studies have described the effect of fasting on physical health,^[29-33] few investigations have addressed to the relationship between fasting and mental health, in which fasting has been concluded to be effective on diminishing anxiety and paranoid ideation and augmenting mental health and self-esteem.^[28,34-37] In review studies by Azizi (2002 and 2009) on the articles published in terms of fasting, it has been pointed out that stress is less pronounced in fasting days of Ramadan than usual days.^[25,38] On the contrary, Kadri *et al.* (2000) have achieved inconsistent finding and stated increased rate of anxiety due to high level of irritability during this month.^[39]

According to the potential for effect of religion and spirituality on health and benefit in the recovery of the physical and mental diseases, Alves *et al.* (2010) suggested to investigations of religion and health that should be emphasized by the Spiritual experts and health professionals^[40] Also, high frequency of emotional reactions and their impact on nurses performance and the effect of long-term ongoing stress in the workplace on high incidence of occupational burnout, resignation, repeated absences, and reduced work efficiency,^[41] and considering no comprehensive study on the effect of fasting on depression, anxiety, and stress levels, beside the role of culture and religious beliefs on spiritual mental health, in the present study we aimed to investigate the effect of fasting in the holy month of Ramadan on emotional reactions among working nurses in selected hospitals of Tehran.

MATERIALS AND METHODS

This descriptive analytical study was conducted with a systematic random sampling method on 313 nurses from selected hospitals of Medical Sciences University in Tehran, who had decided to have fasting in 2010. Then explaining the aims of the study and informed consent was obtained in two stages between 1 to 2 weeks before and after Ramadan fasting they were given.

Data collecting instruments included a demographic questionnaire eliciting age, gender, marital status, educational level, and the time and the number of working shifts, and DASS21 as a standardized depression, anxiety, and stress questionnaire. This questionnaire contains 21 questions, of which there are 7 questions related to stress, 7 questions about anxiety, and 7 assessing depression is related to another question. Each question has a four-part range that in which options are graded from 0 to 3, and "21" is the highest score in each subgroup.^[42] The questionnaire validity and reliability have been approved by various studies, including Crawford and Henry (2003), Bayram and Bilgel (2008), Al-Gelban *et al.* (2009), Ramli *et al.* (2009), and Edimansyah (2008).^[43-47] In Iran, Hajiamini *et al.* (2008 and 2011) and Zandi *et al.* (2011) have applied DASS₂₁ in their investigations. Sahebi (2003) has also confirmed the validity of this questionnaire through a research on a large population of people in Iran.^[13,48-50]

In addition to consent for the study participation, other inclusion criteria consisted of having a university degree and at least 1 year of formal or contractual work experience and fasting for at least half of the holy month of Ramadan, while unwillingness to continue participation, any disease or excuse leading to lack of fasting for at least half of the month, and diagnosis of any emotional reaction in a very severe range were considered as the exclusion criteria. In the post-test study and following recognition of 29 cases as sample attrition base on exclusion criteria, 248 nurses were finally evaluated and collected data were analyzed by SPSS₁₅ statistical software using Wilcoxon test for non-normally distributed data and paired *t*-test for normally distributed data.

In the present research, satisfaction for the study participation and freely leaving the project in cases of unwillingness were morally observed. Questionnaires were coded, and data were confidentially collected without being recorded in personnel files; those with severe emotional reactions were also advised for psychiatric consultation.

RESULTS

The first stage results showed that from a total of 313 nurses studied, 56.5% were males and 83.1% were married, and in terms of educational level, 89.1% had bachelor's degree [Table 1].

In regard to depression status, findings revealed that 30.8% of samples were suffering from some degrees of mild to severe depression before the month of Ramadan, and the percent reached to 24.3 after this month. Findings associated with anxiety level also displayed mild to very severe anxiety in 33.9% and 30.7% of participants,

respectively, before and after Ramadan, indicating 3.2% reduction in anxiety level. Results also demonstrated mild to extremely severe stress in 33% of the study nurses before and 22.3% after the holy month of Ramadan [Table 2].

Comparison between the average subjects' score in the two mentioned stages represented a decline in the mean scores in all the scales, so the mean depression, anxiety, and stress scores were diminished after Ramadan. Comparison of the mean subjects' scores by *t*-test showed a significant difference in terms of depression and stress ($P < 0.05$), and although test scales comparison at the beginning and end of the holy month indicated a reduction in the mean anxiety score, the difference was not statistically significant [Table 3].

DISCUSSION

Considering that nursing profession has been introduced as one of the most stressful occupations, and different effects of religious practices, including stress reduction, have been reported by several studies,^[19-22,34,37,38] impact of fasting was evaluated on emotional reactions among working nurses in the present study. Stress-related data showed

some degrees of moderate to extremely severe stress in 33% of nurses before the month of Ramadan, which is in accordance with the other investigations that reported related rate in 23.8-47.6% of nurses.^[13,16,34] Anxiety (mild to severe) has also been observed in 33.9% of nurses in the same stage, which is consistent with 27.9% and 34.3% stated by others^[11,13] and inconsistent with 20% reported by Petit *et al.* (2000) (9); such a controversy might be owing to inclusion of mild anxiety range in the frequency component, leading to more percentage obtained; in addition, DASS₂₁ questionnaire was used in our study and Asad-Zandi *et al.*'s (2011) survey, but Hamilton (HAS) was used in that investigation. Depression rate (30.8%) achieved in the present study is also in agreement with others' findings in this regard (25.8%, 24.9%, and 29.9%).^[13,14,34]

The main purpose of the study was to evaluate the effect of fasting on rates of depression, anxiety, and stress among the study nurses over 1-2 weeks before and after Ramadan, and the results exhibited a decrement from 33% to 22.3% in the stress level after the holy month, which was statistically significant ($P = 0.01$). In line with such a finding, Azizi's review studies (2002 and 2009) could be referred, in which stress has been reported to be less developed in the fasting days of Ramadan than the usual days.^[25,38]

Moreover, although anxiety level revealed a decline after (30.7%) compared to before (33.9%) the holy month, the difference was not significant; nonetheless, the reduction was reported to be meaningful in Moghadamnia and Javanbakht's studies.^[36,51] However, these findings are not compatible with Kadri *et al.*'s (2000) result, indicating increased rate of anxiety due to high irritability in this month. For explaining this contradiction, it can be noted that anxiety and depression levels have been compared between male smokers and non-smokers with a limited sample population (two groups of 50 participants each) using Hamilton questionnaire in Kadri *et al.*'s survey.^[39] Despite the reduction in anxiety level after the holy month in the present study, lack of meaningful difference between statistical tests and no similar studies reported in this line, as well as existing conflicting results depict a necessity for larger sample size for the study implementation.

Table 1: Frequency of nurses' demographic profile

Variables	<i>n</i>	%
Sex		
Male	177	56.5
Female	136	43.5
Marital		
Single	53	16.9
Married	83.1	260
Number of children		
Without children	18	47
One or two children	62	161
Three and more	20	52
Education		
Associate degree	5.4	17
BS	89.1	278
MSc	5.4	17

Table 2: Frequency of nurses' stress, anxiety, and depression before and after Ramadan fasting

Stage level	Before Ramadan fasting			After Ramadan fasting		
	Stress (%)	Anxiety (%)	Depression (%)	Stress (%)	Anxiety (%)	Depression (%)
Normal	67	66.1	69.2	77.7	69.3	75.5
Mild	14.9	15.1	12.3	8.5	13.9	9.5
Moderate	12.5	9.1	13	7.7	6.8	10.7
Severe	4.9	5	3.8	5.3	5.6	2.6
Extremely severe	0.7	4.7	1.7	0.8	4.4	1.2

Table 3: Comparison of emotional reactions mean and standard deviation before and after Ramadan fasting

Stage emotional reaction	After Ramadan fasting		Before Ramadan fasting		P
	Mean	SD	Mean	SD	
Depression	2.9	3.3	3.7	3.7	0.02*
Anxiety	2.7	3.1	3.1	3.3	0.1
Stress	4.7	3.9	5.7	4.9	0.01*

*: (P < 0.05)

Depression level had also been decreased from 30.8% before to 24.3% after the holy month, which was a statistically significant difference ($P = 0.02$). The study results are confirm with those reported by Kazemi *et al.*'s (2006),^[34] and although quite relevant studies have not been available in terms of fasting effect on stress, anxiety, and depression, findings of other researches showing fasting impact on increased mental health can be referred.^[28,35,37]

Inadequate pieces of evidence on the effect of fasting on mental health, stress, anxiety, and depression was among the limitations of the study, restricting the possibility of further analysis and inscribing a comprehensive discussion; therefore, it is suggested that regarding the high frequency of stress and anxiety in the society, especially in some stressful professions such as nursing and generally the health care team, more comprehensive researches be conducted in this regard based on personal religious beliefs. So, further scientific research on the medical aspects of the Ramadan fasting on health and disease is recommended.^[40]

CONCLUSION

Gaining comfort and confidence and staying away from depression and anxiety are the most fundamental innate human needs, and researchers are striving to underlie the provision of relief in different ways. The study results demonstrated that religious practices such as fasting in the holy month of Ramadan have been effective in diminishing stress, anxiety, and depression levels, as the decrement has been statistically significant for the stress and depression rates.

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