

## Original Articles

### Effect of Ramadan Fasting on Psychological Status Among Healthy Sudanese Adults Living in Khartoum State

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#### Abstract:

**Background:** Ramadan month Fasting is one of the pillars of Islam and it has been found to have different physiological effects. The psychological status is related to spiritual satisfaction and the associated social interaction. Psychological well-being includes the ability to maintain a sense of autonomy, self-acceptance, personal growth, purpose in life and self-esteem.

**Objectives:** The aim of the study is to assess the relationship between Ramadan fasting and psychological condition of Muslims.

**Methods:** A cross sectional study was carried out during May to October 2019 on 82 healthy Sudanese adults living in Khartoum state. All participant were assessed by Warwick Edinbreg Mental Well Being Scale (WEMWBS). A questionnaire was filled before Ramadan and during mid of Shawal, the month after Ramadan. Data was analyzed using SPSS version 25. P-value considered significant if it is < 0.05.

**Results:** There was a significant change in the WEMWBS before and after Ramadan with mean of (58.2) ±.139 S.D and (59.5) ±.153 S.D respectively and (P value = .000).

**Conclusion:** The study showed that Ramadan Fasting improves psychological condition in normal adults. Tarawih has spiritual impact on Muslims' lives.

**Key words:** Ramadan fasting, psychological condition, WEMWBS, Khartoum.

#### Introduction:

Ramadan is the 9th month of the Higri year and its fasting is obligatory for healthy adult Muslims.<sup>1</sup> The duration of fasting is about 14 hours a day from sunrise to sunset and it varies according to the geographical area and season in which Ramadan falls.<sup>2</sup> Night prayer (Tarawih) is a special prayer of Ramadan which is performed in mosques. This has a spiritual impact on Muslims which can affect their relation with each other and their psychological well-being.<sup>3</sup> The effects of Ramadan fasting on body functions have been studied extensively. Olgan has studied

the effect of Ramadan fasting on diabetic patients; their metabolic control, attitude towards the disease and HbA<sub>1c</sub> level with positive impact on these measures. Diabetes Attitude Scale (DAS) was developed by national diabetes commission in USA and is used as a reliable measure of concordance in patients with diabetes. Attitude scores of all diabetics towards diabetes were identified to be negative and state of well-being was in the middle level. The measure includes 34 questions put in 1 to 5 score. If the score is >3 it shows a positive response and if it is <3, it shows a negative response.<sup>4</sup>

Psychological well-being include the ability to maintain a sense of autonomy, self-acceptance, personal growth, purpose in life and self esteem. Staying mentally healthy is more than treating or preventing mental illness.<sup>7</sup> Researchshers in Warwick and Edinburgh developed a scale to enable measuring the mental well-being and they named it as Warwick-Edinburgh Mental Well-being Scale (WEMWBS).<sup>7</sup> ( **table 1**) show it.

WEMWBS is a 14 item scale of mental well-being covering subjective well-being and psychological functioning in which all items are worded positively and address aspects of positive mental health. The scale is scored by summing responses to each item answered on a one to five Likert scale. The minimum score is 14 and maximum is 70 ( **table 1**).<sup>7</sup>

A study was done to know the effect of Ramadan fasting on the facial expression and an emotional expression and it showed that self-measurement of mood incresed during the fasting period also they studied the behavior and event related potential and the data analysis indicated that the neural dynamic are different in fasting and facial expressions are more happy which increase the right hemisphere activation than the left.<sup>8</sup>

In one study, it has been found that Ramadan fasting decreases both frequency and duration of migraine attacks inspite of decreased caffeine and medications.<sup>9</sup>

It showed in another study that Ramadan had positive influence on performance in the domains of psychomotor function /processing speed and attention. The results exhibited a marked decrease in values of diastolic blood pressure during Ramadan

also slower response times and performance decrements were observed.<sup>10</sup>

In 2018 Amani and Musa conducted a study to assess the relationship between fasting, body mass index and blood pressure in which they found that there was significant decrease in weight and body mass index after Ramadan fasting.<sup>11</sup>

### **Methods:**

A cross Sectional study was conducted in 82 adult subjects (28 males and 54 females) durring the period (May-October 2019) in Khartoum and their ages range between 16 to 80 years old and not known to have any psychological problems and fasting ramadan (people who are psychlogically normal but not fasting ramadan due to any cause not included in the study).

Aim of the study was explained to all participants and a consent was obtained from each. An ethical approval was issued from the National Ribat University, Faculty of Medicine. All participants were interviewed 3 times by a questionnaire which included age, marittal status, assessment of psychological condition by WEMWBS (**Table.1**), reading Holy Quran, Tarawih prayer and thinking about marriage during fasting. The first time before Ramadan, the second in The last ten days of Ramadan and the third at mid of Shawal.

### **Data Analysis:**

Statistical analysis was performed using SPSS version 25.0. Proportions of the studied groups were expressed in percentages and means were used to describe the studied variables, P value  $\leq$  ,05 was considered significant.

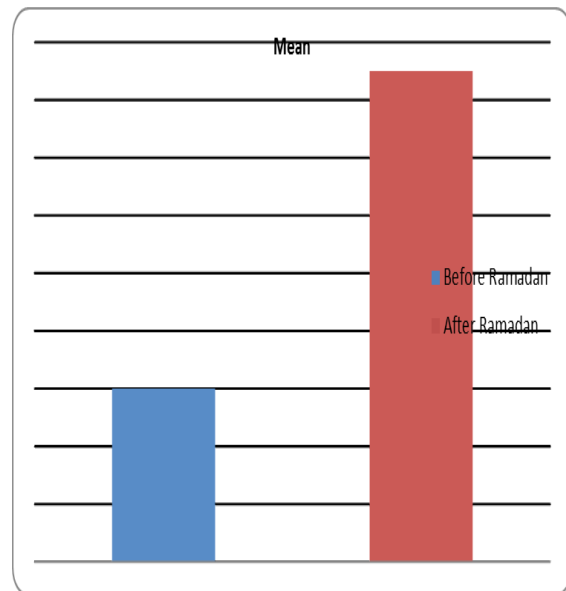
**Table (1):** Shows the Scoring of WEMWS<sup>7</sup>

Statement	None of the time	Rarely	Some of the time	Often	All of the time
	1	2	3	4	5
I've been feeling optimistic about future					
I've been feeling useful					
I've been feeling relax					
I've been feeling interested in others					
I've had energy to spare					
I've been dealing with problems well					
I've been thinking clearly					
I've been feeling good about my self					
I've been feeling close to other people					
I've been feeling confident					
I've Make up my own mind about things					
I've been feeling loved					
I've been interested in new things					
I've been feeling chearful					
Scores					

**Results:**

The demographic data is shown in **table (2)**. The age of participants was divided into two groups young adults and elderly 70.7% of participants within the age group of 16-35 years and 29.3% in the age group of 36-80 years old. Concerning the gender of the participants, 65.7% of participants were females and 34.1% were males. 61% of the studied sample at university level, 19.5% at secondary school, 15.9% post graduate degree and 3.7% at primary level. 48.8% were married while 50% were single.

The mean of WEMWBS before and after Ramadan was  $58.2 \pm .139$  S.D and  $59.5 \pm .153$  S.D, respectively (p value = 0.00) (**figure1**).



**Figure (1):** Shows changes in mean of WEMWBS before and after Ramadan Fasting (N=82).

**Table (2):** Shows mean Standard Deviation and Standard Error of WEMWBS before and after Ramadan Fasting (N=82)

Test	Mean	S.D	S.E
Pre ramadan	58.2	.139	.017
Post ramadan	59.5	.153	.016

**Table (3):** Shows demographic data: Gender, age, marital status and educational level (N=82)

Variable	Category	Frequency	Percentage
<b>Gender</b>	Males	28	34.1%
	Females	54	65.7%
<b>Marital status</b>	Single	41	50%
	Married	40	48.8%
<b>Age group</b>	16-35	58	70.7%
	36-80	24	29.3%
<b>Educational level</b>	Primary	3	3.7%
	Secondary	16	19.5%
	University	50	61%
	Post Graduate	13	15.9%

**Table (4):** Shows WEMWBS before and after Ramadan (N=82)

No	Question	Pre Ramadan Mean	Post Ramadan Mean	P value
1	I've been Feeling optimistic about future	2.26	2.43	0.000
2	I've been feeling useful	4.29	4.41	0.021
3	I've been feeling relaxed	3.62	4.10	0.058
4	I've been feeling interested in other people	4.15	4.38	0.001
5	I've had energy to spare	4.28	3.80*	0.004
6	I've been dealing with problems well	4.23	4.24	0.003
7	I've been thinking clearly	4.37	3.74	0.000
8	I've been feeling good about my self	4.13	4.37	0.001
9	I've been feeling close to other people	4.12	4.44	0.021
10	I've been feeling confident	4.41	4.56	0.000
11	I've make up my own mind about things	4.68	4.63*	0.002
12	I've been feeling loved	4.21	4.35	0.000
13	I've been nterested in new things	3.82	4.21	0.003
14	I've been feeling chearful	3.83	3.92	0.001

The mean in all questions in WEMWBS increases after Ramadan than before except for questions 5,7 and 11 in the table above.

### **Discussion:**

Ramadan fasting is of great spiritual value in a Muslims' lives and imposes a huge change in their life style and spiritual activities which are special for Ramadan. Its effects on the body systems have been studied<sup>5,6</sup> but its psychological impact was taken as guaranteed and it needs more studies.

The WEMWBS was structured to study the mental well-being of the population and it has elements related to the psychological status. From the scale, the questions 1-4,8-10 and 12-14 have shown positive improvement after Ramadan fasting, which indicates the positive impact of Ramadan fasting on the psychological status. The questions which have shown negative responses after Ramadan are only three (5,7&11) and they are related to the physical and mental activities which can be explained by the unusual hectic traditional activities during Ramadan in Sudan.

In this study Ramadan Fasting improves the psychological condition of participants. This finding is in agreement with wael.<sup>9</sup> and Abdulrahman studies.<sup>10</sup> Tarawih has its effect to improve psychological status.

### **Conclusion and recommendations:**

The psychological score even before Ramadan in Sudanese is good and further improved after Ramadan fasting. We recommend to use psychological score in psychologically ill people to see the effect of Ramadan fasting among them, and another study is needed to see the psychological effects in those who do not fast for accepted reasons.

**Conflict of interest:** No conflict of interest.

### **Acknowledgment**

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