

Assessment of *Salat Taraweeh* and Fasting Effect on Body Composition

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INTRODUCTION

In recent years, bioelectrical impedance analysis BIA has become an increasingly popular modality in the assessment of human body composition, which includes the measurements of bioelectrical tissue conductivity, mass distribution and water compartments. It provides a safe, simple, inexpensive, non-invasive and practical method to estimate body composition and body hydration of the human body. This technique is now widely used in human nutrition and clinical research [1-6].

Ramadhan is the ninth month in the Islamic calendar year, and it has been obligatory that Muslims must fast, during the day, for the entire month. Muslims are prohibited from eating and drinking from dawn until dusk, and this prohibition also includes smoking and sexual intercourse. During *Ramadhan*, special evening prayers, the *taraweeh* prayers, are conducted following the *Ishaa* prayers. The word *taraweeh* originates from Arabic, which means 'to rest' or 'to relax'. The *taraweeh* prayers are widely regarded as a moderate exercise to help the body to relax after a full day of fasting, and Prophet Muhammad (SAW) highly recommended that Muslims attend the congregational *taraweeh* prayers in the mosques. Because of this, the *taraweeh* is widely practiced during *Ramadhan*, even though it is an optional prayer.

To date, no known attempt has been made in assessing the changes of body composition caused by fasting and

performing the *taraweeh* prayers using BIA. The study is the first to document the trends of body composition changes caused by fasting and performing the *taraweeh* prayers.

METHODOLOGY

A total of 18 male subjects with no past medical history were recruited in this study. The BIA and glucose measurements were taken during the day, when the subjects have fasted for a minimum of four hours. Anthropometric measurements (height and weight) were measured to the nearest 0.1 cm and 0.1 kg, respectively.

The bioimpedance analysers used for the measurements are Biodynamics Model 450 (Biodynamics Corp., USA) for single frequency 50 kHz BIA measurement, and Xitron Hydra ECF/ICF model 4200 (Xitron Technologies Inc., USA) for multiple frequency measurement (5 to 1000 kHz range). The wrist and ankle methodology were employed for electrodes placement on the subject. The blood glucose level is determined from finger prick blood test using Cardiocheck PA monitoring device.

The measurement is performed twice (see Figure 1), the first was on the 30th *Shaaban* (1 day before *Ramadhan*) and the second measurement was made on 20th *Ramadhan*. All subjects are required to perform the *taraweeh* prayers in addition to the five normal daily prayers. Subjects were asked to pray the *Maghrib*, *Ishaa*, and *taraweeh* prayers congregationally at the mosque. Subject was asked to rest 10 minutes before each measurement in order to reduce effect from other movements (brisk walking etc).



Fig. 1 BIA Measurement

A. Study Protocol Definition

The study protocol is as followings:

The subject's health characteristics inclusion criteria:

- a. Body Mass Index (BMI) less than 30 kg/m²
- b. Blood pressure in the normal range (120/80 mmHg) ± 10%
- c. Glucose level less than 6.1 mmol/L.
- d. Total cholesterol value less than 5.20 mmol/L.

The Subject's prayer performance:

- a. Regularly performs the daily prayers.
- b. Has excellent level of understanding of *salat* recitations.
- c. Keeps the spine horizontally erect during the *rukuk* position
- d. Flexes the toes during the *sujud*, the sit between *sujud*, and the first and final *tashhahud*.

B. Statistical Analysis

The statistical analysis was performed using statistical software SPSS version 13 for Windows XP (SPSS Inc. USA). A univariate analysis of variance (ANOVA) was employed for comparisons between normally distributed continuous variables. The results were considered statistically significant if the p -value was less than 0.05.

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