

The Comparison of Anthropometry and Quality of Life Before and During Ramadan Fasting Among Healthy Adult Population in Kuala Nerus, Terengganu

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Abstract

Ramadan fasting is a tenet of Islam where eating, drinking, taking medication and engaging in sexual activities are prohibited for all Muslims during daylight¹. This religious fasting changed the food frequency and quantity, physical activity and sleep duration at night. Previous evidence has linked Ramadhan fasting with a positive effect on body weight was observed². In fact, increasing spiritual activities during this month might provide positive impact on emotion and mental health³. Therefore, this study aims to determine the comparison between anthropometry measurement and quality of life before and during Ramadhan fasting.

This cross-sectional study was conducted on 84 healthy adult populations in Kuala Nerus. The mean age of participants was 22.57±3.8 years old with 85% of them were female and 15% were Malay male. The assessment of anthropometry consists of weight, body mass index, body fat percentage, total body water, total muscle mass and waist circumference. Waist circumference was obtained by measuring the narrowest part of torso or the midpoint between the last rib and hipbone using SECA measuring tape while height was assessed using stadiometer. Other anthropometric data were measured using Tanita BC-540 Body InnerScan, an electronic weighing scale with a precision of 0.1 kilograms. BMI is calculated by dividing weight (kg) by square of height (meter). The quality of life was assessed using a short form-36 questionnaire (SF-36) where eight domains of quality of life were included (physical functioning, role of limitation due to physical health, role of limitation due to emotional problem, energy/fatigue, emotional well-being, social functioning, pain and general health). All outcomes were measured twice; before Ramadan (one to two weeks prior to Ramadhan month) and during Ramadan (week 2 to 4 of Ramadhan month).

Results revealed that body weight ($p<0.001$) body mass index (BMI) ($p<0.001$) and waist circumference ($p=0.043$) were significantly reduced during Ramadhan month with no significant changes in body fat percentage, total body water, and total muscle were evidenced among participants. For the quality of life, the domain of role limitations due to emotional problems has been observed to be improved during Ramadhan compared to before Ramadhan ($p=0.010$). This study also found that body fat percentage was negatively correlated with physical functioning ($r=-0.25$, $p=0.025$) while waist circumference was positively correlated with energy level and fatigue ($r=0.25$, $p=0.025$).

Table 1: Anthropometry and quality of life before and during Ramadhan

Parameters		Before Ramadhan Fasting Month	During Ramadhan Fasting month
		[Mean (SD)]	[Mean (SD)]
Anthropometry	Weight (kg)	57.0 ± 11.8	56.2 ± 11.4
	BMI (kg/m ²)	22.4 ± 3.8	22.1 ± 3.7
	Body fat percentage (%)	28.4 ± 8.9	28.0 ± 9.2
	Waist circumference (cm)	75.3 ± 10.3	74.5 ± 9.7
	Total body water (%)	53.0 ± 6.6	53.2 ± 6.7
	Total muscle mass (kg)	38.1 ± 7.0	38.1 ± 6.9
Quality of life	Physical functioning	97.5(10-100)	95.0(20-100)
	Role of limitation due to physical health	77.4±34.9	77.4±33.7
	Role of limitation due to emotional problem	73.9±38.5	84.3±24.4
	Energy/fatigue	60.7±14.2	62.6±12.3
	Emotional well-being	64.7±11.5	65.5±10.9
	Social functioning	69.8±12.1	69.2±12.5
	Pain	76.6±18.1	78.4±17.4
General health		68.1±15.8	70.2±16.4

This study provides evidence on the benefit of practicing Ramadan fasting among a healthy adult population where significant reduction of anthropometry (body weight, body mass index and waist circumference) and significant improvement of quality of life were observed. However, a wider population supported with biomarkers data is suggested for future studies to provide a better understanding in the benefit of Ramadhan Fasting on overall health.

Keywords

Ramadan fasting, Anthropometry, Quality of life, Adult

References

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