International University of Africa  
Faculty of Medicine  
Department of Physiology  

The Effects of Ramadan Fasting on Anthropometric Measurements Among Medical Students at International University of Africa; Pilot Study May – June 2017.

A thesis submitted in partial fulfillment of the academic requirements for the degree of Master Degree in human physiology

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This thesis is my original work and has not been presented for a degree in any other University.

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DEDICATION

I dedicate this research to my lovely:

Father
Mother
Sisters.

To my friends who have supported me throughout the process.

To everyone who was there for me and helped me to complete this research.

God bless you all.
ACKNOWLEDGMENT

I would like to thank the students of International University of Africa who participated in this study for their cooperation, full support, and resilience throughout the holy month of Ramadan.

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LIST OF ABBREVIATION:

TG       Triglycerides
HDL      High Density Lipoprotein
LDL      Low Density Lipoprotein
VLDL     Very Low Density Lipoprotein
IDF      International Diabetes Federation
MS       Metabolic Syndrome
BMI      Body Mass Index
WC       Waist Circumference
HC       Hip Circumference
WHR      Waist to Hip Ratio
WTR      Waist to Thigh Ratio
BIA      Body Impedance Assessment
CT       Computed Tomography
FBS      Fasting Blood Sugar
<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>HBA1C</td>
<td>Glycosylated Hemoglobin</td>
</tr>
<tr>
<td>SIST</td>
<td>Suprailiac Skin folds Thickness</td>
</tr>
<tr>
<td>HOMA-IR</td>
<td>Homeostatic model Assessment Insulin Resistance</td>
</tr>
<tr>
<td>FM</td>
<td>Fat Mass</td>
</tr>
<tr>
<td>MM</td>
<td>Muscle Mass</td>
</tr>
<tr>
<td>TBW</td>
<td>Total Body Water</td>
</tr>
<tr>
<td>CRP</td>
<td>C - reactive protein</td>
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<tr>
<td>BMR</td>
<td>Basal Metabolic Rate</td>
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ABSTRACT

Introduction: Fasting during the month of Ramadan is considered one of the five pillars of the Islamic religion, and Muslims must abstain from food and fluid between the hours of sunrise to sunset. The aim of this study was to assess the changes in anthropometric measurements during Ramadan fasting.

Methods: This observational, descriptive, cross sectional study was carried out during Ramadan in June 2017. Eighty three healthy volunteer subjects participated in this study from International University of Africa. Body weight, waist circumference, hip circumference, biceps and triceps skin folds were measured. Body mass index (BMI) and waist to hip ratio were calculated. Measurements were taken 1 week before Ramadan, at the middle of Ramadan and in the last week of Ramadan.

Results: At the end of Ramadan, weight, body mass index (BMI), waist circumference, waist to hip ratio (WHR), biceps skin fold and triceps skin fold were significantly reduced. There was no significant change in hip circumference. In females group the changes during Ramadan were more significant than males group.

Conclusions: Fasting during the month of Ramadan led to a beneficial significant reduction in weight, BMI, waist circumference and waist/hip ratio in all participants. These changes were more significant in females group than males group.
ملخص:

مقدمة: صيام شهر رمضان يعتبر ركن من الأركان الخمس للدين الإسلامي، وعلى المسلم الامتناع عن الطعام والشراب في الساعات من وقت شروق الشمس حتي وقت الغروب. الهدف من هذه الدراسة هو تقلييم التغيرات في القياسات الانثروبومترية خلال صيام شهر رمضان.

المنهجية: هذه الدراسة الوصفية قد أجريت خلال شهر رمضان في حزيران 2017. ثلاثي وثمانين متطوعين أصحاء شاركوا في هذه الدراسة من جامعة أفريقيا العالمية. تم قياس وزن الجسم، محيط الخصر، محيط الورك، ثنية الجلد في العضلة ذات الرأسين والعضلة ثلاثية الرؤوس. تم حساب مؤشر كتلة الجسم ونسبة الخصر للورك. أخذت القياسات أسبوع قبل رمضان، في منتصف رمضان، وفي الأسبوع الأخير من رمضان.

النتائج: في نهاية شهر رمضان تم التقصان بشكل كبير في كل من وزن الجسم، مؤشر كتلة الجسم، محيط الخصر، نسبة الخصر للورك، ثنية الجلد في العضلة ذات الرأسين وثنية الجلد في العضلة ثلاثية الرؤوس. لم يكن هناك تغيير في محيط الورك. كانت التغيرات خلال شهر رمضان في مجموعة الإناث ملموسة أكثر من التغيرات في مجموعة الذكور.

خاتمة: أدى الصيام خلال شهر رمضان إلى انخفاض ممهم احصائيا في وزن الجسم، مؤشر كتلة الجسم، محيط الخصر ونسبة الخصر للورك في جميع المشاركين. مجموعة الإناث أكثر عرضه لهذه التغييرات من مجموعة الذكور.