Comparing the Physical Activity Patterns of Male and Female Students in the Preparatory Year in Saudi Arabia

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Abstract

Objective: This study examined the differences in physical activity patterns between male and female university students in their Preparatory Year at the University of Dammam in Saudi Arabia.

Methodology: The study was a cross-sectional design that recruited 23 males and 23 females from the Art Route of the Preparatory Year at the university (mean BMI was 24.7 ± 6.4 kg/m^2 for males and 29.3 ± 8.1 kg/m^2 for females). All participants wore accelerometers for 7 consecutive days and completed a diet questionnaire.

Results: Male and female students respectively spent 66.4% and 65.8% of their daily waking time sedentary and H€ÈF Ã Å æ } å Å HGÈF Ã Å â } Å ǀ ǂ * @ cÅ] @ ˆ • å & æǀ Å æ & cäçäcˆÈÅ T æǀ ^ • Å •] ^ } cÅ • ä * } å , & æ } cǀ ^ Å { [ǀ ^Å cä { ^Å ÇHÈ Í Ã DÅ â } Å { [ä ^ǀ æcˆÅ c [Å çâ * [ǀ [˘ • Å] @ ˆ • å & æǀ Å æ & cäçäcˆÅ ÇT XÚ ÇEDÅc@ æ } Å • ^ { æ ǀ ^ • Å â ä å Å Å ÇGÈF Ã DÅÇÚÅ mÅ €È€ FDÈÅ V @ ^Å æ ç ^ ǀ æ * ^ Å ǀ ^ç ^ ǀ • Å [˜Å T XÚ ÇŒÅ ~ [ǀ ä æcÅ ǀ ^æ • cÅ F €Å { ä } ˘ c ^ • Å ¸ ^ǀ ^Å F I ÈF ǀ æ } å ÅFGÈHÅ minutes for males and females, respectively. Male and female students spent 65% of their daily sedentary time in prolonged sedentary sessions of more than 20 minutes, with no differences between males and females or between weekdays and ¸ ^^ ˅ ^ } å • ÈÅ Ø ^ { æ ǀ ^ • Å • @ [¸ ^å Å @ ^æ ǀ c @ ä ^ǀ Å ~ [[å Å @ æ à ä c • Å c @ æ } Å { æ ǀ ^ • Å Å ä å Å ÅÉÅ c @ [˘ * @ Å * ǀ ^æ c ^ǀ Å Å ǀ ç ^ * ^ cæ à ǀ Å Å â } cæ \ ^Å Ç] Å mÅ €È€ Í DÅ æ } å Å ǀ [¸ ^ǀ Å & [} • ˘ {] cä [} Å [˜Å ~ æ • • c ^ c • Å Å [[ã ÈÅ • [~ cÅ å ǀ ä } \ • Å Å æ } Å å Å ^ } ˜ * ^ cæ } Å } c ^ ^ * Å • Å æ å Å ^Å { ^ˆ ˆ Å â ä } å } ÈÅ • \ ^Å Ç] Å mÅ €È€ Í DÈÅ

Conclusion: Female university students showed lower levels of MVPA compared with males, but they chose healthier food options. Increasing MVPA among female university students should be the priority for university health educators.

Keywords: Physical activity; Males and females; Accelerometer; MVPA; Obesity; Saudi Arabia; Gender differences

Introduction

Obesity has grown worldwide, leading to the increased prevalence of metabolic syndrome and cardiovascular diseases (CVD). Data from the Eastern Province of Saudi Arabia showed that the prevalence of obesity among adults was 43.8% and that 35.1% were overweight; the data found that body mass index (BMI) was associated with diabetes, hypertension, triglycerides, cholesterol, and physical inactivity [1]. e increase in obesity is associated with decreased levels of physical activity [2]. Physical inactivity is the fourth most common risk factor of CVD and is the ultimate cause of obesity. Physical inactivity prevalence reached 96% of the Saudi population, with the highest -3(yhr(o)12((e)-6(ac Ti)()0.5(oa 6(s)-)r(p7.9b)-9(es9( )%BMI8% a)9(n)4(d t)-6o)12l)4(o)16(w)4(es)5(t6(e)-20( )]TJ40.1 Tw Ti(t)-6o)1

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activity patterns, using accelerometers, among university male and female students in the Faculty of Education at the University of Dammam in Saudi Arabia. e secondary aim is to assess food habits using a modi ed questionnaire that was previously used among Saudi adults.

Methods

Participants characteristics: e participants were 46 students from the Faculty of Education at the University of Dammam, 23 males and 23 females. Female students were recruited through announcements on students' noticeboards. irty-six female students o cially signed the consent form and started the study. e research assistant found that 3 students had a gland abnormality and 2 had food sensitivity, speci cally celiac disease. Two students completed the measurement of physical activity using the accelerometer but did not complete the food habits questionnaire. Six students did not reach the required accelerometer wearing time. All of these female students were excluded from the analysis, so that the study eventually comprised 23 female students. None of the students was diabetic. e 23 male participants were extracted from data collected from the same year of the Preparatory Year at University of Dammam, with two conditions: being a registered student in the College of Education and matching the ages of the female students (19-20 years).

e mean characteristics of the male and female students were respectively as follows: (height: 169.7 ± 6.5 cm vs 157.1 ± 5.3 cm; weight: 71.8 ± 21.2 kg vs 72.0 ± 18.2 kg; and BMI: 24.7 ± 6.4 kg/m^2 vs 29.3 ± 8.1 kg/m^2). Ethical approval for the current study was obtained from the Institutional Review Board at the University of Dammam (IRB-2015-14-058). Data were collected during the period between 15 March 2015 and 15 May 2015.

Study procedure and data management: e study was conducted at the University of Dammam and employed a cross-sectional design. Male and female participants separately attended arranged clinics at the College of the Preparatory Year. A er each participant signed the consent form, height was measured to the nearest 0.5 cm and weight was measured to the nearest 0.1 kg, using a digital stand scale tted with a height column (GIMA S.p.A., code 27288, CE 0476, Italy). e participants completed a diet and health questionnaire that consisted of 24 questions distributed across 4 categories: demographics, free daily activity, medical history, and food habits. Physical activity was measured using accelerometers (ActiGraph-wGT3X-BT) for 7 consecutive days. Each accelerometer was initialized for each participant, and all participants were asked to wear the devices on their right hip all day except for sleep time and when they made water contact.

e data from the accelerometers were computed using ActiLife so ware (ActiLife, v 6.11.6., 2009, ActiGraph, LLC, USA). Wear time validation was computed using the Troiano algorithm [12]. A given period of wear time was considered to be a non-wear period when the vector magnitude was zero for 60 minutes or more (continuous inactivity), allowing for 2 minutes of consecutive intervals h6t for 7 consecnnaeriout

compared with participants with BMI between 20- 24.9 kg/m² (3.9 hrs/day *vs* 5.3 hrs/day) (p = 0.04). However, there were no significant differences between groups in MVPA, and there was no interaction between BMI or gender with MVPA (p = 0.9) Figure 2 shows the individual variations in MVPA and BMI for male (a) and female (b) students.
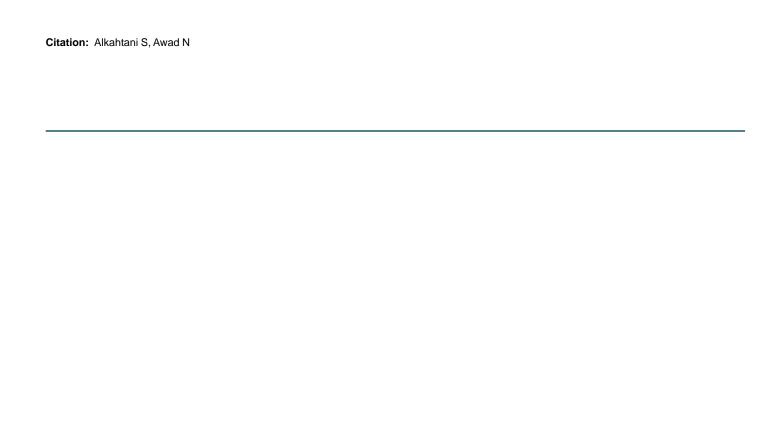
Table 2 shows the frequency of free daily activity and the food habits of the male and female students, and Table 3 shows the significant differences between the male and female students in food habits.

Discussion

The main finding of the current study is that although female students were more obese and less active than males, there was no association between obesity and physical inactivity; other obstacles prevented females from reaching the recommended daily minimum amounts of MVPA. Increasing MVPA in females should be the priority of health promotion programs at Saudi universities, especially at the University of Dammam, where the current study was conducted.

The current data revealed that females were more overweight than males by 8.7%, and they were more obese by 17.4%. Some studies have reported similar rates of overweight among male and female university students and also found that obesity was substantially greater in females than males [13]. The average height of the current female participants was similar to that of other female Saudi university students of the same age, but the weights and BMI of the current cohort were higher [14]. The current small sample size is not representative of university female students, and obese female students may be more inclined to participate in a study that is related to measuring their physical activity and food habits. It is important

choices through avoiding high-fat food and salt and eating fruits and bers [31]. University male students are more likely to adopt westernized dietary patterns, whereas females are more likely to adopt vegetarian low-calorie dietary patterns [32]. Previous national studies from Australia [33], Canada [34], and the USA [35] reported that women consumed more servings of fruits and vegetables per day than men reported consuming. Increased vegetable consumption among females is expected to be associated with a number of positive health aspects [36]. is eating behavior should be promoted among current male university student, who showed a number of unhealthy eating behaviors such as increased so drink consumption, energy drink consumption, and fast food intake.

e increased consumption of sugar-sweetened carbonated beverages has been fogcia m -1.2 T6(g b)-9(e)rns [3lia [0 0 9 42.515-3(a)-5(lo)1 Md bd -1.2 T6(g( )]TJ(n)4(d se-3(a)-19np)11(t)-5(io)31, w)-7(h).049 0g

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