



Physical Activity Levels, Related Energy Expenditure and Body Mass Index During COVID-19 Quarantine Among the Kuwaiti Male Swimmers and Water Polo Players

Dr. Mohammed F. Alkatan^{*}

Dr. Mohammed B. Hasan^{**}

Abstract

With no vaccine has been developed to counter-attack the corona virus (COVID-19) pandemic, Kuwait has been forced to adopt strategies that aimed to limit the spread of the virus. Thus, it was imminent for Kuwait to declare a state of quarantine. The COVID-19 pandemic has brought a lot of uncertainty on Kuwaiti swimming community. Swimmers and water polo players in Kuwait are unable to train due to pool and beach closures.

Goal of the Study: The primary aim of the present study was to determine the prevalence of physical activity levels among the physically active Kuwaiti male swimmers and water polo players before and during the last seven days of the COVID-19 quarantine period. Anthropometric measurements including body weight and height were measured in addition to calculating body mass index too.

Study Methodology: A total of 81 male participants (mean age: 22 ± 6 years; height: 169 ± 4 cm; weight:

* University of Texas, Austin 2015, PhD in Philosophy of Kinesiology, Major: Sport Physiology, Associate Professor, Department of Physical Education & Sports, College of Basic Education, Public Authority for Applied Education & Training, Kuwait.

** Texas Woman's University, 2018, PhD in Philosophy of Kinesiology, Major: Biomechanics, Assistant Professor, Department of Physical Education & Sports, College of Basic Education, Public Authority for Applied Education & Training, Kuwait.

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70 ± 3 kg; BMI: 23.5 ± 1.2 kg/m²) were included in the study. Researchers have used the online version of validated questionnaire known as The Arab Teen Lifestyle Study (ATLS). A paired two-way sample t-test was used for statistical analyses.

Study Results: As expected, there was a significant decrease in Energy consumption before and during the COVID-19 quarantine. Moreover, during the COVID-19 quarantine, weight and body mass indicator got significantly increased.

Study Conclusions: We can conclude that Kuwaiti swimming community in particular has been adversely affected by the sudden quarantine measure in Kuwait. Though the measures encourage home-based PA, there is no doubt that not everyone has access to swimming pools. Thus, the closure of sport clubs leaves many swimmers with many uncertainties as to when normal life will be resumed so that they can swim and train their entire body.

Keywords: Swimmers, Water Polo, Kuwait, Physical Activity, Covid-19.

1. Introduction

Corona virus disease 2019 (COVID-19) is a direct representation of pneumonia as it contains a complete unknown etiology. The first time the virus made its way to light was in Wuhan city, in the Hubei province of China on 31st December 2019 (World Health Organization, 2020, situation report-1; Nishiura et al., 2020. p.330). A month later on 7th January 2020, Chinese research made a milestone by providing results that discovered a novel corona virus (CoV) which had a distinct genetic sequence and thus stood out the name "2019-nCoV". Afterward, the World Health Organization (WHO) named the disease caused by the virus "COVID-19"(World Health Organization, 2020, situation report-22). With the prevalence of the outbreak in China and its main mode of transmission being human-to-human transmission, COVID-19 virus started to spread worldwide very quickly. It is in this regard that the WHO on 30th January 2020 declared a state of global health emergency and later on, led to the

definition of COVID-19 as a pandemic on 11th March 2020 (World Health Organization, 2020, situation report-51).

With no vaccine that has been developed to overcome the pandemic, governments have been forced to adopt strategies that aimed to limit the spread of the virus (Sohrabi et al., 2020, p. 71). In Gulf Cooperation Council (GCC) for example, Kuwait became the first country to be hit hard by the pandemic and thus implemented direct measures to curb the catastrophe from increasing. It had initially reported its first case on 24th February and because COVID-19 pandemic was spreading like wildfire, it was imminent for Kuwait to declare a state of quarantine. With the implementation of the necessary measures, the lives of the populace has drastically changed. Among the measures promoted by the government are, social distancing, suspension of social events, which included professional and non-professional sport activities, closure of schools and universities. These same strategies were adopted by nearly all countries around the world and so far, prevented the virus from spreading as fast as it did initially. We have seen access to swimming pools, public parks and gardens, gyms, and sports centers are prohibited. This has led to home-based recreational activities being highly encouraged but not in a group-based while respecting the two meters social distancing rule. Since the adoption of these measures, it is, therefore, imperative that people cope up with the limiting conditions to contain the spread of COVID-19 virus. The measures have since proved to help curtailing the spread of the pandemic.

The swimming community in particular has been adversely affected by the new quarantine measures. To start with, the Olympics and major championships have been closed to the year 2021 possibly (Toresdahl & Asif, 2020, p.221). However, there is no certainty since the pandemic may still exist. The pandemic differs everywhere around the world, but measures are nearly the same since the adoption of closures to public access to water bodies. The few who enjoy this luxury are the rich who own islands as compared to the billions of other people worldwide. Although many are optimistic and want life to return to its normal state, the reality is this may not happen sooner than the forecast. This study surveyed the Kuwaiti swimming and water polo community activity as

the main PA. To measure the level of PA that the population undertakes, let's say "per week", we used the standardized instrument known as The Arab Teen Lifestyle Study (ATLS) (Al-Hazzaa, Al-Sobayel, & Musaiger, 2011, p.3810). The questionnaire was previously shown to be a reliable and valid instrument for assessing PA (Al-Hazzaa et al., 2011, p.417). The instrument allows us to measure all types and three intensity levels of PA as follows: light-, moderate-, and vigorous-intensity physical activities. Through time spent and frequency on each PA intensity, the ATLS data provides an opportunity to compute levels of PA practice and the linked weekly spending using the respective metabolic equivalent task (MET) and each PA type (Al-Hazzaa, Al-Sobayel, & Musaiger, 2011, p.3810).

Research Problem:

Since the majority of Kuwaiti swimmers and water polo players don't have access to a pool or open water, with many pools and beaches closed in Kuwait, it is with this regard that we aimed our study to measure the change through an online adapted version of the ATLS, of PA levels which expressed energy consumption (MET-minutes/week) among the physically active Kuwaiti male swimmers and water polo players before and during the last seven days of the COVID-19 quarantine period. This study will consider the difference between total weekly energy consumption before and during the COVID-19 quarantine period besides these demographic and anthropometric variables. We hypothesized that the Kuwaiti male swimmers and water polo players would practice lower levels of swimming and overall PA during the quarantine.

Research Objectives:

Our main objective of the current study was to evaluate the impact of this quarantine period on physical activity (total weekly energy consumption) before and during COVID-19 quarantine among Kuwaiti male swimmers and water polo players.

Research Importance:

Currently, there is insufficient evidence to fully examine the effect of the quarantine period on the prevalence of physical activity levels

among the Kuwaiti male swimmers and water polo players. Thus, there is a need to conduct a study to determine whether these restrictions have truly led the population to lessen their PA during this period.

Research Questions:

- 1 - Are there significant differences in weight, BMI, and levels of PA activities expressed as energy consumption (METs-minutes/week) among the Kuwaiti male swimmers and water polo players before and during the last seven days of COVID-19 quarantine.
- 2 - Are there significant differences in place, time, and physical activity choices and reasons for being active among the Kuwaiti male swimmers and water polo players before and during the last seven days of COVID-19 quarantine.

2. Materials and Methods:

2.1. Study Design

The study made use of Google Forms web survey platform to carry a descriptive method with online survey style.

2.2. Procedure

The online survey paid close attention to avoid disclosing the identity of the participants. We used the website of the Kuwait Swimming Association to publish the link for the online survey. Dissemination of the online survey was done via social media tools such as WhatsApp, Instagram, and Facebook, and shared with the personal contacts of the research group members and among the swimmers, water polo players and coaches, thanks to snowball sampling technique.

The online survey at its beginning included a brief description of the study, its purpose, and the pronouncements of anonymity and confidentiality of the respondents willing to take part of the study. Ethical approval was attained from the Public Authority for Applied Education and Training (PAAET).

2.3. Participants

Participants who were willing to undertake the study first had to

complete the online questionnaire between the 23th of April and the 30th of April 2020. Recruiting participants took place during COVID-19 quarantine, where the government had put up measures to curb the spread of the virus which meant many people were indoor and had literally no chance with outdoor activities such as access to publicparks or pools. There are a total of 150 swimmers and water polo who are registered at the Kuwait Swimming Association. A total of 97 Kuwaiti male swimmers and water polo players completed the online questionnaire. Among them, 81(54%) participants were recruited for this study.

Cleaning process that we adopted included: multiple submissions and immediate removal ineligible cases presented by the same respondent; we identified and handled data that were deemed meaningless. This helped to reduce errors that would affect our data. We used invalid responses in place where respondents were reluctant or showed inconsistency in providing data.

2.4. Questionnaire

Participants completed a validate and reliable self-reported questionnaire developed by Al-Hazzaa, et al. (2011) for the measurement of PA levels (Al-Hazzaa, Musaiger, & Group, 2011). Among the physically active population before and during the last seven days of COVID-19 quarantine, we expressed as energy consumption (MET-minutes/week). Because the questionnaire was administered only once to participants, the levels of PA were measured simultaneously for both conditions (before and during COVID-19). 49 questions formed the online self-reporting questionnaire and sought to find out the PA levels. The questionnaire had seven sections as follows: (1) demographic data (questions 1 and 2); (2) Information relating to the type of swimming (from question 3 to 4); (3) anthropometric data (from question 5 to 7); (4) all PA patterns before COVID-19 quarantine as follow; (a) waking, stair steps, jogging or running, cycling (from question 8 to 14); (b) swimming or water polo activities before the COVID-19 quarantine (questions 15 and 16); (c) moderate-intensity PA before COVID-19 quarantine (questions 17 and 18); (d) vigorous-intensity before COVID-19 quarantine (questions 19 and 20); (e)

weight training before COVID-19 quarantine (questions 21 and 22); (f) household activity before COVID-19 quarantine (questions 23 and 24); (5) information relating to physical activity choices and reasons for being active before COVID-19 quarantine (from question 25 to 28). (6) all PA patterns during COVID-19 quarantine as the same order as the previous questions (from questions 29 and 46); (7) Information relating to PA choices and reasons for being active during COVID-19 quarantine (from question 47 to 49).

To compute the total weekly PA level before and during COVID-19 quarantine, we used the total activity energy consumption in METs-minutes per week (METs-min/wk) and the METs-min/wk spent in each of the moderate- and vigorous-intensity PA for statistical analysis (Al-Hazzaa, Al-Sobayel, & Musaiger, 2011, p.3810).

2.5. Scoring Protocol

Using Metabolic equivalent (MET) concept corresponding to 3.5 mL O₂ kg⁻¹ min⁻¹ or 1 kcal kg⁻¹ h⁻¹, weekly PA computations were expressed as energy consumption in MET-minutes/week (Al-Hazzaa, Al-Sobayel, & Musaiger, 2011, p.3810). We Precisely, assigned to each type of PA (the corresponding metabolic equivalent task is: slow walking: 2.5 METs; moderate walking: 3.3 METs; brisk walking: 4.8 METs; jogging & running: 8 METs; cycling: 7 METs; swimming: 6 METs; moderate-intensity sports: 4 METs; vigorous-intensity sports: 8 METs; stair steps, METs-min/week is computed as = (numbers of stair flight/3) X 8 METs; weight training (resistance training or calisthenics): 6 METs; household activity: 3 METs), we estimated the total weekly energy consumption (i.e., the sum of walking, jogging & running, cycling, swimming weight training, stair steps, household activity, moderate-intensity physical activities and vigorous-intensity physical activities) in MET-min/wk using the basal level of energy consumption (expressed in MET) (Al-Hazzaa, Al-Sobayel, & Musaiger, 2011, p.3810). The formula is the product of PA type level and the MET level per minute limited to seven days. The calculation of the total weekly energy consumption using the matching metabolic equivalent task for each PA type was calculated using the Compendium of Physical Activities (Al-Hazzaa et al., 2011, p.3810)

Participants were classified into the 3 categories of PA based on

the MET-min/wk of the total weekly energy outlay: (a) low active (< 600 MET-minutes/week); (b) moderate active (600-2999 MET-minutes/week), (c) high active (MET-minutes/week) (Al-Hazzaa et al., 2011, p.417).

3. Statistical Analysis

For statistical analysis, Chi-squared test was used to analyze categorical variables. A paired two-way sample t-test was used to detect any significant differences between the mean values of PA level by Kuwaiti male swimmers and water polo players as well as demographic and anthropometric variables before and during the last seven days of COVID-19 quarantine period using SPSS Version 22.0 (SPSS Inc.). Statistical significance was set at $p < 0.05$ for all analyses. Data are presented as mean $\pm$ standard deviation (SD) unless otherwise stated. Body Mass Indicator (BMI) levels were classified into 2 sections: (a) normal weight (< 25 kg/m²); and (b) overweight and obese (> 25 kg/m²) (Willett, Dietz, & Colditz, 1999, p.427). To describe the categorical variables, percentages were calculated. Summary statistics to represent the PA level (expressed in METs-min/wk).

4. Results

Participants

A total of 81 Kuwaiti male swimmers and water polo players took part in the study. Participants with the following demographic and anthropometric characteristics: mean age: 22 ± 6 years; height: 169 ± 4 cm; weight: 70 ± 3 kg; BMI: 23.5 ± 1.2 kg/m². All the characteristics of the participants are reported in Table 1. More than half (75%) of the participants were swimmers; 30% freestyle, 16% breaststroke, 17% backstroke, 12% butterfly and 25% were water polo players. To answer the first question regarding the weight and the BMI. A significant increase in weight and BMI during quarantine compared to pre-quarantine condition was found among Kuwaiti swimmers and water polo players.

Regarding the BMI levels, Analysis of BMI levels allowed us to categorize participants as: normal weight (< 25 kg/m²) and overweight or obese (> 25 kg/m²). Analysis showed that before COVID-19

quarantine, 72% of the participants were categorized as normal weight ($< 25 \text{ kg/m}^2$) and 28% of them classified as overweight or obese ($> 25 \text{ kg/m}^2$). However, the comparison between before and during COVID-19 quarantine showed there was a significant decrease in normal weight group (72% vs. 39%, respectively) while, the overweight or obese group showed significant increase in body weight (28% vs. 61%, respectively) during COVID-19 quarantine (Table 1).

Table (1)
Descriptive Characteristics of the Participants (means $\pm$ standard deviations or percentage)

Variable	Pre COVID 19	During COVID 19
N	81	-
Age (year)	22 ± 6	-
Height (cm)	169 ± 4	-
Weight (kg)	70 ± 3 *	75 ± 2
BMI (kg/m^2)	23.5 ± 1.2 *	25.2 ± 0.9
Swimming type, n (%)		
Freestyle	24 (30%)	-
Breaststroke	13 (16%)	-
Backstroke	14 (17%)	-
Butterfly	10 (12%)	-
Water polo	20 (25%)	
Body mass Indicator (BMI) n (%)		
Normal weight ($< 25 \text{ kg/m}^2$)	59 (72%) [^]	32 (39%)
Overweight or obese ($> 25 \text{ kg/m}^2$)	21 (28%) [^]	49 (61%)

* $p < 0.005$ for the difference between the Pre COVID-19 and During COVID 19 periods (paired t-test for dependent samples or Chi-Square tests).

To answer the first question concerning the PA activities, before COVID-19 quarantine, analysis showed physical activity energy consumption in different types of physical activity by Kuwaiti male

swimmers and water polo players as follow: walking ($M = 537$, $SD = 43$) METs-minutes/week, jogging ($M = 648$, $SD = 67$) METs-minutes/week, cycling ($M = 352$, $SD = 56$) METs-minutes/week, swimming ($M = 3201$, $SD = 546$) METs-minutes/week, resistance training ($M = 528$, $SD = 58$) METs-minutes/week, household ($M = 277$, $SD = 27$) METs-minutes/week, moderate-intensity sports ($M = 388$, $SD = 59$) METs-minutes/week, vigorous-intensity sports ($M = 856$, $SD = 137$) METs-minutes/week (Table 2).

On the other hand, responses analysis for the 'during COVID-19 quarantine', physical activity energy consumption in different types of physical activity by the participants are as follow: walking ($M = 403$, $SD = 55$) METs-minutes/week, jogging ($M = 278$, $SD = 46$) METs-minutes/week, cycling ($M = 279$, $SD = 26$) METs-minutes/week, swimming ($M = 0$, $SD = 0$) METs-minutes/week, resistance training ($M = 177$, $SD = 72$) METs-minutes/week, household ($M = 250$, $SD = 69$) METs-minutes/week, moderate-intensity sports ($M = 150$, $SD = 95$) METs-minutes/week, vigorous-intensity sports ($M = 271$, $SD = 94$) METs-minutes/week (Table 2).

The related descriptive analysis carried out reported in Table 2, physical activity energy consumption in different types of PA by Kuwaiti male swimmers and water polo players before COVID-19 quarantine condition compared to during COVID-19 quarantine. Kuwaiti male swimmers and water polo players showed a significant reduction in most types of physical activities such as jogging (648 ± 67 vs. 278 ± 46 METs-minutes/week, respectively), swimming (3201 ± 546 vs. 0 ± 0 METs-minutes/week, respectively), resistance training (528 ± 58 vs. 177 ± 72 METs-minutes/week, respectively), moderate-intensity sports (388 ± 59 vs. 150 ± 95 METs-minutes/week, respectively), and vigorous-intensity sports (856 ± 137 vs. 271 ± 94 METs-minutes/week, respectively) except walking (537 ± 43 vs. 403 ± 55 METs-minutes/week, respectively), cycling (352 ± 56 vs. 279 ± 26 METs-minutes/week, respectively), stair stepping (12 ± 2 vs. 1 ± 4 METs-minutes/week, respectively), and household activity (277 ± 27 vs. 250 ± 69 METs-minutes/week, respectively). We also observed that before COVID-19 quarantine, Kuwaiti male swimmers and water polo players reported a greater sum of all moderate-intensity physical

activity (1202 ± 87 vs. 803 ± 95 METs-minutes/week, respectively) and sum of all vigorous-intensity physical activity compared with the during COVID-19 quarantine (5597 ± 276 vs. 1013 ± 163 METs-minutes/week, respectively). Moreover, table 2 shows a significant decrease of total PA in METs-min/wk before COVID-19 quarantine to during COVID-19 quarantine (6799 ± 342 vs. 1816 ± 121 METs-minutes/week, respectively).

Concerning the PA categories suggested for scoring protocol (i.e., < 600 ; 600 ; 3000 METs-min/wk), responses analysis for before COVID-19 quarantine conditions showed that Kuwaiti male swimmers and water polo players were highly active participants; meanwhile, during COVID-19 quarantine condition results showed that Kuwaiti male swimmers and water polo players became a moderately active (Table 2).

Table (2)

Means and standard errors of the energy consumption expressed as (MET-minutes/week) in different types of physical activity by Kuwaiti male swimmers and water polo players before COVID-19 quarantine condition compared to during COVID-19 quarantine.

Variable	Pre COVID-19	During COVID-19	p value *
Walking (METs-min/wk)	537 ± 43	403 ± 55	0.227
Stair Stepping (METs-min/wk)	12 ± 2	8 ± 4	0.822
Jogging (METs-min/wk)	648 ± 67	278 ± 46	< 0.001
Cycling (METs-min/wk)	352 ± 56	279 ± 26	0.227
Swimming (METs-min/wk)	3201 ± 546	0 ± 0	< 0.001
Resistance training (METs-min/wk)	528 ± 58	177 ± 72	< 0.001
Household (METs-min/wk)	277 ± 27	250 ± 69	0.327
Moderate-intensity sports (METs-min/wk)	388 ± 59	150 ± 95	< 0.001
Vigorous-intensity sports (METs-min/wk)	856 ± 137	271 ± 94	< 0.001

Cont/ Table (2)

Means and standard errors of the energy consumption expressed as (MET-minutes/week) in different types of physical activity by Kuwaiti male swimmers and water polo players before COVID-19 quarantine condition compared to during COVID-19 quarantine.

Variable	Pre COVID-19	During COVID-19	p value *
Sum of all moderate-intensity physical activity (METs-min/wk)	1202 ± 87	803 ± 95	< 0.001
Sum of all vigorous-intensity physical activity (METs-min/wk)	5597 ± 276	1013 ± 163	< 0.001
Total physical activity (METs-min/wk)	6799 ± 342	1816 ± 121	< 0.001

* Paired T-test for dependent samples for the differences between Pre COVID 19 and During COVID 19.

In order to answer the second question, the researcher used percentage, Table 3 that displays Kuwaiti male swimmers and water polo players' responses to questions related to place and timing of exercise as well as why they exercise. There were significant differences before and during the quarantine period in those responses. During COVID-19 quarantine, all the participants engaged in physical activity at sports or recreational centers (100%) whereas the majority of the participants exercise mostly at home (77%) followed by neighborhood(23%) during COVID-19 quarantine condition. In responses regarding the timing of physical activity, more than 69% of the participants exercised at noon/afternoon, and only 37% exercised at evening. However, the majority exercised at noon/afternoon 91% and only 9% exercised at evening during COVID-19 quarantine condition. The most important reasons for being physically active by the Kuwaiti male swimmers and water polo players are also presented in Table 3. Before COVID-19 quarantine condition, all the participants exercised for competition (100%) whereas participants engage in exercise mostly for health benefits purpose (47%) or recreation (31%) and only (22%) for weight loss reasons during COVID-19 quarantine condition.

Table (3)

Physical activity choices and reasons for being active(%) among Kuwaiti male swimmers and water polo players before COVID-19 quarantine condition compared to during COVID-19 quarantine.

Variable	Pre COVID 19	During COVID 19	p value *
Where do you exercise?			
Sport/recreational center	81 (100%)	0	< 0.001
At home	0	62 (77%)	< 0.001
At neighborhood	0	19 (23%)	< 0.001
Total n (%)	81 (100%)	81 (100%)	
When do you mostly exercise?			
Evening	30 (37%)	7 (9%)	< 0.001
Morning	0	0	
Noon/afternoon	51 (63%)	74 (91%)	< 0.001
Total n (%)	81 (100%)	81 (100%)	
Reason for being active			
For health benefits	0	38(47%)	< 0.001
For recreation	0	25 (31%)	< 0.001
For weight loss	0	18 (22%)	< 0.001
For competition	81 (100%)	0	< 0.001
Total n (%)	81 (100%)	81 (100%)	

* Chi square test for the differences between observed and expected frequencies.

5. Discussion

This study aimed to look at the physically active among the Kuwaiti male swimmers and water polo players before and during COVID-19 quarantine period using the ATL Squestionnaire. Because of the containment measures adopted by the world governments to control the spread of COVID-19, the practice of PA was subject to significant limitation.

The formulated hypothesis was in agreement with our findings

which showed significantly lower levels of PA between before and during the pandemic surge among the Kuwaiti male swimmers and water polo players. We presume that these lower levels of PA were attributable to some factors such as; absence of a coach, restriction placed by governments on accessing public and large water bodies, going to gyms and undertaking large sporting activities which required contact with other people such as football, and self-awareness where the participants been trying to protect themselves from getting infected with the virus (Stanton & Reaburn, 2014, p.177; Gjestvang, Stensrud, & Haakstad, 2019; Calogiuri & Chroni, 2014, p.873). There have been many studies carried out to explain the importance of exercise features but never have they dwelled on home-based exercises during a pandemic (Hallal et al., 2012, p.247). Hence, there is difficulty in adopting the new norm all over the world (Battaglia et al., 2020, p.2684).

The human body has been affected both in the short-term and long-term due to disruption in the PA (Hou, Zhang, & Gao, 2020, p.455). Undertaking low or non-PA activities in just few days, results in muscle mass reduction and atrophy (Kortebein, Ferrando, Lombelida, Wolfe, & Evans, 2007, p.1772). The direct result to this, is health risks and maintaining body weight becomes hard (Westerterp, 2019, p.791). Finally, a lengthy sedentary lifestyle attracts negative metabolic profile and cardiorespiratory fitness (Hou, Zhang, & Gao, 2020, p.455). Because of the many benefits of PA on psycho-physiological human functions, there has been a stepped-up adoption of major institutions such as the World Health Organization (WHO) to develop guidelines that people need to adhere to during this period (Jakicic & Davis, 2011, p.829.; Gaesser, Angadi, & Sawyer, 2011, p.87).

The swimming community is quite worried. Given the current phenomena, championships and Olympics have been forced to close their activities possibly until 2021 with no certainty since no one knows when the outbreak will come to an end (Toresdahl & Asif, 2020, p.221). This is because of the fear of contracting the deadly virus (Chen et al., 2020, p.103). We discovered interesting findings in relation to the METs-min/wk before and during the COVID-19 quarantine. In the

current study, the Kuwaiti male swimmers and water polo players showed a significant reduction in total weekly energy consumption during COVID-19 quarantine comparing with before quarantine condition. This should be attributed to the majority of Kuwaiti swimmers and water polo players not having access to a pool or open water with all pools and beaches closed in Kuwait during COVID-19 quarantine.

We found a significant difference for weight and BMI variable before and during COVID-19 quarantine. Kuwaiti male swimmers and water polo players significantly increased their weight and BMI during the quarantine condition and this is due to reduction in amount spent in PA which lead to adverse health effect. Scientific studies have proved that overweight induces negative effects to a human body in practically every stage (Mascherini et al., 2019, p.5128). For illustration, the following are among the harm of overweight: increasing the rate of mortality, high blood pressure (hypertension), high LDL cholesterol, type 2 diabetes, and stroke (Bhaskaran et al. 2014, p.755). It is thus imperative that Kuwaiti male swimmers and water polo players engage in PA activities to curb opportunistic diseases and help keep their health in check even in COVID-19 period with home-based exercises (National Heart, Lung, and Blood Institute, 2013; Jiménez-Pavón Carbonell-Baeza, & Lavie, 2020).

6. Strengths and Limitations of the Study

The typology of this research study draws its strength from the participants we selected during this period. The quarantine period did help us a lot as we were able to use the online survey instrument to our advantage. Thus, we were able to select a good sample size for our study. This became our greatest strength due to feedback being almost immediate. We can say that our main limitations were biasness in reporting of the physical activity which is a common phenomenon in many surveys. We conclude that respondents may have reported bias during this quarantine period. It is due to this that the MET- min/wk change between before and during COVID-19 quarantine was not affected. Self-selection bias that could cause a non probability

sampling may be another limitation to us which affected the generalizability of the findings. Moreover, we only recruited water-based sports such as swimming and water polo. Thus, we recommended other researches to examine total energy consumption (MET- minutes/week) in different types of land-based sport such as football, handball, track and field. Eventually our findings were concluded with the literature (Aung et al., 2020, p.328,; Hall, Laddu, Phillips, Lavie, & Arena, 2020).

7. Conclusions

Based on the outcome, we can conclude that the world swimming community in general and the Kuwaiti swimming community in particular have been adversely affected by the sudden quarantine norm in Kuwait. As much as the measures encourage home-based PA, there is no doubt that not everyone around the world has access to swimming pools at their account and thus, the closure of public recreational places leaves many swimmers with many uncertainties as to when normal life will lead again so they can engage their bodies in swimming just to get their total body workout in check. However, with those having access to PA activities have been encouraged to wear masks and keep social distancing and, in the even of, one feels sick or shows any symptoms of COVID-19, is encouraged to vacate the premises immediately and see a medical practitioner. In our study, we recommend that we switch our physical activity to different ones not limited to swimming only. Doing another indoor exercise is better than nothing at all.

Competing Interests:

The authors declare that they have no competing interests.

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Availability of Data and Materials:

All data generated or analyzed during this study are available in the corresponding author on reasonable request.

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مستويات النشاط البدني استهلاك الطاقة للنشاط ومؤشر كتلة الجسم أثناء الحجر الصحي لجائحة كورونا لدى السباحين وللاعب كرة الماء الذكور في دولة الكويت

د. محمد فيصل القطان

د. محمد بدر حسن

ملخص

مع عدم وجود لقاح لمواجهة جائحة كورونا (كوفيد-19)، اضطرت الكويت إلى اعتماد استراتيجيات تهدف إلى الحد من انتشار هذا الفيروس. وبالتالي، كان على الكويت أن تعلن حالة الحجر الصحي. جلبت جائحة كورونا الكثير من الريبة في محيط مجتمع السباحة الكويتي. فالسباحون في الكويت لا يمكنهم ممارسة التدريب بسبب إغلاق المسابح والشواطئ.

أهداف الدراسة: كان الهدف الأساسي من هذه الدراسة هو تحديد معدل مستويات النشاط البدني بين السباحين وللاعب كرة الماء الكويتيين قبل وخلال السبعة أيام الأخيرة من فترة الحجر الصحي لفيروس كورونا. تم أخذ قياسات الجسم والتي تشتمل على وزن الجسم والطول، ومن ثم حساب مؤشر كتلة الجسم.

المنهج: إجمالي عدد المشاركين في هذا البحث 81 مشاركاً من الذكور (متوسط العمر: 22 6 سنوات؛ الطول: 169 4 سم؛ الوزن: 70 3 كجم؛ مؤشر كتلة الجسم: 23,5 1,2 كجم/م²) تم ضمهم في هذه الدراسة. استخدم الباحثون النسخة الإلكترونية من الاستبيان المصادق عليه والمعروف باسم دراسة أسلوب حياة المراهقين العرب (ATLS). تم استخدام اختبار "ت" ثنائي للعينة في التحليلات الإحصائية.

النتائج: كما كان متوقع، هناك انخفاض كبير في استهلاك الطاقة ما بين الفترة قبل الحجر الصحي وأثناء الحجر الصحي لجائحة كورونا. وبجانب ذلك، كان ملحوظاً زيادة وزن الجسم ومؤشر كتلة الجسم خلال الحجر الصحي.

الخاتمة: يمكننا أن نستنتج أن مجتمع السباحة الكويتي على وجه الخصوص قد تأثر سلباً بقوانين الحجر الصحي المفاجئ في الكويت. بقدر ما أن التدابير تشجع على ممارسة النشاط البدني في المنزل، ليس هناك شك بأنه ليس بإمكان جميع السباحين الوصول إلى حمامات السباحة، وبالتالي فإن إغلاق النوادي الرياضية يترك العديد من السباحين بحيرة حول عودة الحياة الطبيعية مرة أخرى ليمكنوا من السباحة وتدريب الجسم بشكل كامل.

المصطلحات العلمية: السباحين، كرة الماء، الكويت، النشاط البدني، كوفيد-19.

Dr. Mohammed Alkatan is an associate professor at Public Authority for Applied Education and Training-Department of Physical Education and Sports in Kuwait. Dr. Mohammed received a M.S. in exercise science and wellness at Old Dominion University (2008) and a Ph.D. in exercise physiology at the University of Texas at Austin (2015). Dr. Alkatan's research interests in investigating pharmacological and lifestyle interventions (particularly physical activity) that prevent and treat age-related chronic diseases including cardiovascular disease, cancer, hypertension, type-2 diabetes, cognitive impairment, and obesity. Furthermore, Dr. Alkatan is interested in the beneficial effects of habitual exercise on public health.
(M.alkatan@paaet.edu.kw)

Dr. Mohammad Bader Abdullatif Hasan, obtained his Doctoral Degree in Kinesiology majored in Biomechanics from Texas Woman's University, United States of America, 2018. He is working as a faculty member (Assistant Professor) at The Public Authority for Applied Education and Training, Collage of Basic Education, Physical Education Department. Research interest: Effect of upper or lower body on human movement, Effects of gait pattern on lower body joints of human, Sports motion analysis.
(Mb.hasan@paaet.edu.kw)

