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Lifestyle Habits Among Sultan Qaboos University Students During COVID-19 "Stay-At-Home" Period

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Abstract

The aim of the present study was to enhance our understanding of COVID-19 quarantine's effect on lifestyle of Sultan Qaboos University students. 192 male and 186 female students completed an online multi-section questionnaire between 15th April and 1st May 2020 five weeks after the beginning the "stay at home" period. Almost 34% of the students gained between 2kg – 4kg weight during this period. We found that more than half of the students slept less than the recommend 7 hours of sleep. Also, 75% of the students spent most of their daily time in front of screen (e.g., mobile phone & computers). Approximately 70% of students exercised at home 3-4 times at light or moderate intensity per week with an increase of physical activity levels for most of them. In contrast 29.2% of student engage in sedentary behaviours at home. The major effect of COVID-19 stay-at-home period on SQU students' daily lifestyle had behaviours warrant the attention of SQU administrations and health practitioners to prevent or mitigate the potential adverse physical and psychological consequences.

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1) Introduction:

Covid-19 pandemic, which started as a viral infection outbreak in Wuhan, China in December 2019, has forced unprecedented global measures to fight the spread of the virus. Among the extreme measures undertaken was the suspension of face-to-face teaching in schools and universities. 60.5% of the world's students' population in 109 countries were affected by the school closures (UNESCO, 2020). In Oman, the Supreme Committee tasked with tackling developments resulting from COVID-19 has issued an order of major lockdown and suspension of studies in March 15, 2020. There was a period of "stay-at-home" orders that lasted for several months. During this period, Sultan Qaboos University (SQU) has initially suspended studies and later shifted to emergency remote teaching. Staying at home for longer periods and shifting to online teaching can change students' lifestyle behaviours. Among these changes is longer screen time for both studying and leisure and decreased physical activity. This assertion is supported by a study conducted on 2427 children and adolescent students in Shanghai, China. The results indicated a substantial increase in physical inactivity and screen time during the COVID-19 pandemic (Xiang et al., 2020).

"Stay-at-home" particularly for longer time periods could have adverse physical and psychological consequences such as diabetes, cardiovascular disease, frustration, stress, anger, and poor quality of sleep (Pecanha et al., 2020; Jiménez-Pavón et al., 2020; Marelli et al., 2020). The World Health Organisation (WHO) has identified physical inactivity as the fourth leading risk factor for mortality globally. Also, sedentary lifestyle is a major risk factor for the development of non-communicable disease including heart diseases and cancer. On the other hand, regular physical activity across all ages and genders has been associated with numerous physiological and psychological benefits. It was found to decrease the risk of many chronic diseases including type II diabetes, hypertension, ischemic heart disease and breast and colon cancer. Hence, the WHO has made recommendations for physical activity for people to stay active by exercising at home in order to promote health and mitigate the adverse health effects of COVID-19 (Chen et al., 2020; Hammami et al., 2020; WHO, 2020). The recommendations are a minimum of 150 minutes of moderate or 75 minutes of vigorous physical activity per week in bouts of at least 10 minutes, for those aged 18-64 years.

In general, these recommendations are hardly met by adults, including those at university level. The transition from school to college life makes major changes in the lifestyle of students. One of these is the difficulty in maintaining a routine physical exercise in their busy university schedule as well as changes in their dietary habits towards unhealthy meals and snacks. Several studies looking at the lifestyle of SQU students found a decline in the physical activity among students especially females. Zayed & Frieze (2015), found that 45% of male and 21% of female students did not engage in any sport or physical activity. These findings were replicated in another study by Li et al. (2015). Moreover, students reported lack of physical activity with 78% of males and 28% of females being overweight (Kilani et al., 2012), while another study found that 32.5% of female students engaged in low physical activity levels (Waly et al., 2014). With the emergency remote teaching, SQU students spend a longer time in front of screen in contrast to traditional face to face learning which could exacerbate the adverse effect done the "stay-at-home" period.

COVID-19 lockdown and quarantine had changed the lifestyle behaviours and negatively impacted the physical and psychological health. Many people during this unusual circumstance eat, sit down, sleep, and watch media screens more than usual, especially for normally inactive people, which may all

exacerbate or contribute to weight gain and obesity. Understanding and determining the lifestyle status among SQU students during this pandemic could help the university administrations to implement effective policies and interventions for students. Therefore, our study aims to investigate the effect of the COVID-19 lockdown on the lifestyle of SQU students during the "stay at home" period. In particular, we focused on weight status, perceived sleep quality, duration and time of sleep, type-specific screen time, and physical activity state, level, frequency, and time.

2) Method:

2-1. Participants and procedure:

The sample was 192 male and 186 female students from different college at SQU: Education (n = 101), Engineering (n = 50), Economics and Political Sciences (n = 75), Agricultural and Marine Sciences (n = 5), Medicine and Health Sciences (n = 24), Art and Social Sciences (n = 29), Law (n = 41), Nursing (n = 14), Sciences, (n = 39). The participants were reading for undergraduate (n = 347) and postgraduate (n = 31) degrees. Their average age was 21.66 years (SD = 4.56 years; range = 23-47). The data was acquired by e-mailing randomly an online questionnaire in Google form among SQU students. No consent form was used as the responses were anonymous. The data collection was carried out five weeks after the beginning the COVID-19 stay-at-home period between 15th April and 1st May in the spring semester of 2020. On March 15, 2020, face-to-face teaching was suspended at the SQU in corresponding with Supreme Committee for dealing with COVID 19.

2-2. Questionnaire:

Self-reported questionnaire was designed based on the literature review on students' lifestyle and validated by 6 experts specialized in sport sciences and medicine with experience of more than 10 years. It consists (30) questions divided into two part: Part (1) – Demographic characteristics including: age, gender, location of residence, college, education level, and year in college; Part (2) – Students' daily lifestyle practices during staying at home precaution against (COVID-19) pandemic such as, type, frequency, and level of physical activity, sleep time and quality, duration of watching television, duration of using internet, duration of using mobile phone, duration of playing electronic game, and reasons (motives) for exercise at home. The questionnaire was validated on a sample of 39 undergraduate students to ensure its reliability and to determine the degree of difficulty, appropriateness of the wording, and time needed for questionnaire completion. The average time taken to complete the questionnaire was 7 – 10 min.

2-3. Data analysis

Statistical analyses were performed using the Statistical Package Social Sciences (SPSS) version 12. Results were presented as means ± standard deviation (SD). Chi-square test was conducted for categorical variables. P-value less than .05 was considered statistically significant.

3) Results

As presented in Table 1, the majority of students (65.9%) reported that their weights were stable, while (34.1%) of them have gained weight after four weeks of stay-at-home period, with most of them (12.7%) gained at least (2kg). Also, (11.2%) of the total gained weight group gained (3kg) or ≤ (4kg),

especially males as (14.1%) of them gained ≤ (3kg). There was no significant association between gender and their gained weight.

For sleep duration, table 2 indicates that (58.5%) of the students reported had less than 7 hours of sleep per night, while (41.5%) of students reported had more than 7 hours of sleep per night. The majority of students (82.3%) went to bed after midnight (12:00 am) and only (4.5%) went to sleep before 11 pm. A total of (36.8%) of students rated their sleep quality as acceptable, bad or very bad. No gender difference was found for duration and quality of sleep and bedtime.

Daily Screen time per day of students is shown in Table 3, in total (58.9%) and (16.1%) of students reported spending most of their daily time on mobile phone use and computer use, respectively. There were significant differences between gender, for example females reported spending most of their daily time on computer use (22%) and study (7.5%), while males spent most of their time on mobile phone use (66.7%) and play electronic games (5.2%).

Significant differences were also observed between males and females in hours spent on screen time per day. Males reported spending more time watching TV (57.4%) and playing electronic games (30.7%) for ≥2 hours per day in comparison with females (43.5%) and (10.9%) respectively. On the other hand, (60.7%) of females reported spending more time using computer for >3 hours per day, in compared with males (43.7%). However, no significant difference relative to gender and hours of mobile phone use, with almost all of students (83.5%) reported spending more than two hours using mobile phone per day.

Daily physical activities of students is shown in Table 4, (29.2%) of students had sedentary lifestyle and (70.4) of them were active and engaged in home-based physical. (28.1%) of them reported engaged more in home-based physical activity during stay-at-home period than before. Physical activity variables were significantly different across gender. In general, males were more active than females. Specifically, (62%) of active males engaged in moderate or vigorous in home-based physical activity (3) times or more per week, while all active females engaged only in light or moderate in home-based physical activity with most of them for more than (30) minutes and (3) times or more per week. Noticeably, (30.7%) of active male and female students engaged at least in moderate-intensity in home-based physical activity (3) times or more per week for more than (30) minutes per week.

Finally results showed significant differences between gender in style of home-based physical activity as well as in post photos and videos in social media as shown in Table 4. In compared to (28.6%) of active male students, (46.8%) of active female students liked more engaging in home-based physical activity in pair or group. Of active male students, (19.5%) reported posting photos or videos in social media as compared to (6.2%) of active female students.

4) Discussion

In this study, around (34%) of the students gained weight with an average increase of (2kg) during only the first four weeks of stay-at-home period, suggesting that this period is critical for weigh gain. This was expected as lifestyle behaviours changed during stay-at-home period such as sleep quality and quantity, eating habits, increased sedentary activities, and increased screen time. This finding supports previous research reported weight gain during the COVID-19 quarantine (AlMughamis, AlAsfour, & Mehmod, 2020; Zeiglar, 2021). Male students reported gaining more weight as compared to females, this could be due to the dramatic change in daily lifestyle for males during stay-at-home period. Omani

males go outside more often and have more outdoor activities than females during the normal time due to social and culture constrictions which put males at a higher likelihood of gaining weight during stay-at-home period. This result is consistent with the work of Kilani et al. (2012), indicating that SQU male students were at risk of overweight and obesity than female students. Also, it was found that SQU female students' main motives for home-based exercise during the COVID-19 stay-at-home period were positive health and agility (Al-Yaaribi, 2021).

It has been shown that the duration of sleep < 7 hours a night is associated with increased weight gain (Chaput, 2014). The finding of this study showed more than half of the students (58.5%) slept less than the recommended 7 hours per night for adults (Hirshkowitz et al., 2015). This could be caused by a delayed bedtime as (82.3%) of the students reported sleeping after midnight. Also, it could be due to the changes in students' lifestyle and much free time that they have had at home by suspension of SQU studies for 4 weeks and all outdoor activities by the government. Taken together, these factors have been shown to affect sleep quality (Gupta et al., 2020), the finding showed that nearly (36 %) of the students reported acceptable, bad or very bad sleep quality.

Screen time during COVID-19 has increased as a result of lockdown and stay-at-home period orders. As shown in Table 3, almost (75%) of students spent most of their daily time on mobile phone and computer use. A possible explanation for this excessive screen time is might be that students use mobile phone and computer for socializing with family members and friends, entertaining, shopping, or online lecturing. Gender differences were found showing that males tend to spend more than 2 hours per day watching TV and playing electronic games than females who like to spent more than 3 hours per day in computer use. These findings support previous study showing that during the pandemic students' screen time increased by 30 hours per week in general and for leisure (Xiang, Zhang, & Kuwahra, 2020)

In Table 4, students reported engaging more in physical activity during stay-at-home period whether at moderate and vigorous intensity. However, more than half of the exercisers performed less than the recommended level of physical activities per every session. Students may exercise more frequent due to their longer free time during the stay-at-home period in a relatively short time (lasting less than 30 min) because they may have not used to engage in physical activities during the academic year. Previous research showed that two of the main barriers to physical activities of university students were lack of time and lack of motivation (Silva et al., 2022). Finally, findings showed that female and male students are motivated to exercise by different factors; females liked to exercise in pairs or small groups than individually and males liked to post photos and video of them while exercising in social media. Exercising in group was found to be superior and more favourable to exercising individually at home (Burke, Carron, Ntoumanis & Estabrooks, 2006). Hence, it is important to taking into account these motivating factors for each group of students.

The present research revealed some interesting findings but also has some limitations. First, it is a cross-sectional; thus, assertions about the causality cannot be inferred. Secondly, it is based on self-reported information which may be susceptible to recall bias and social desirability. Third, SQU students only were recruited, future research should replicate the current findings with students from other higher education institutions and general population in Oman. Fourth, socioeconomical levels of the students was not taken into account which may have impact on their lifestyle. (Tate, Yarandi, Jones, & Wilson, 2015).

The findings of this study provide evidence for the adverse physical and psychological effects of lockdown and quarantine for students. Policies and practitioners at SQU should aim to designed well-being interventions to mitigate the adverse effects and promote healthy lifestyle. Educating students about the reasons and adverse physical and psychological consequences of quarantine and benefits of physical activity should be involved in these interventions.

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Table 1

Descriptive statistics for gender and age and frequency and percentage of weight status (N = 378)

Variables		Male *n* = 192 n (%)	Female *n* = 186 n (%)	Total *n* = 378	p-value
Age (years)/ Mean ± SD		21.1 ± 3.49	22.2 ± 5.40	21.6 ± 4.56	
Weight status					
	Stable	126 (65.6%)	123 (66.1%)	249 (65.9)	.91
	Gained	66 (34.3%)	33 (33.9%)	129 (34.1)	
Gained wight (kg)		1kg/ 15 (7.7) 2kg/ 24 (12.5) 3kg/ 16 (8.3) 4kg & above/ 11 (5.8)	1kg/ 24 (12.9) 2kg/ 24 (12.9) 3kg/ 9 (4.8) 4kg & above/ 6 (3.2)	39 (10.3) 48 (12.7) 25 (6 .6) 17 (4.6)	.44

* $p < .05$; ** $p < .01$.

Table 2

Frequency and percentage of sleep quality, duration and time (N = 378)

Duration of sleep/ per night		n (%)	n (%)		
	More than 7 hours	82 (42.7)	75 (40.3)	156 (41.5)	.638
	Less than 7 hours	110 (57.3)	111 (59.7)	221 (58.5)	
Night bedtime					
	Before 10:00 pm	3 (1.6)	-	3 (.8)	.638
	Between 10:00 – 11:00 pm	5 (2.6)	9 (4.8)	14 (3.7)	
	Between 11:00 pm – 12:00 am	19 (9.9)	31 (16.7)	50 (13.2)	
	After 12:00 am	165 (85.9)	146 (78.5)	311 (82.3)	
Quality of sleep					
	Very good	41 (21.4)	60 (32.3)	101 (26.7)	.165
	Good	77 (40.1)	61 (32.8)	138 (36.5)	
	Acceptable	45 (23.4)	36 (19.4)	81 (21.4)	
	Bad	26 (13.5)	25 (13.4)	51 (13.5)	
	Very bad	3 (1.6)	4 (2.2)	7 (1.9)	

* $p < .05$; ** $p < .01$.

Table 3

Frequency and percentage of daily screen time (N = 378)

Screen type		n (%)		n (%)		
	Use mobile phone	128 (66.6)		95 (51.1)	223 (58.9)	.000
	Use computer	20 (10.4)		41 (22)	61 (16.1)	
	Study	8 (4.1)		14 (7.5)	22 (5.8)	
	Play electronic games	10 (5.2)		1 (0.5)	11 (2.9)	
	Watch TV	1 (0.5)		3 (1.6)	4 (1.1)	
	Others (house work, cock, play traditional games with family, chat with family…etc.)	25 (13)		32 (17.2)	57 (15.3)	
Hours of watching TV /day						
	Never	70 (36.5)		91 (48.9)	161 (42.6)	.020
	≤ 2 hours	110 (57.4)		81 (43.5)	191 (50.6)	
	> 2 hours	12 (6.3)		14 (7.6)	26 (6.9)	
Hours of using computer/day						
	Never	14 (7.3)		6 (3.2)	20 (5.3)	.000
	≤ 3 hours	95 (49.6)		66 (36.6)	161 (43.2)	
	> 3 hours	84 (43.7)		113 (60.7)	197 (52.1)	
Hours of using mobile phone/day						
	≤ 2 hours	30 (15.6)		32 (17.2)	62 (16.5)	.854
	> 2 hours	162 (84.4)		154 (82.8)	316 (83.5)	
Playing electronic games						
	Never	101 (52.6)		162 (87.1)	263 (69.5)	.000
	≤ 2 hours	59 (30.7)		20 (10.9)	79 (20.8)	
	> 2 hours	32 (14.1)		4 (2.2)	36 (9.5)	

* $p < .05$; ** $p < .01$.

Table 4					
Frequency and percentage of states, levels, number, and minutes of exercises activity at home (N = 378)					
Variables		n (%)	n (%)		
Daily sedentary behaviour		55 (28.1%)	57 (30.6%)	112 (29.2%)	.65
Exercisers at home (EH)		138 (71.9%)	128 (68.8%)	266 (70.4%)	
States of EH					
	Increase	59 (42.7)	47 (36.7)	106 (28.1)	.709
	Decrease	39 (28.2)	44 (34.3)	83 (21.9)	
	Steady	40 (29.2)	38 (29.6)	78 (20.6)	
Levels of EH					
	Light	53 (38.4)	74 (57.8)	127 (33.6)	.000
	Moderate	71 (51.4)	54 (42.1)	125 (33.1)	
	Vigorous	14 (10.1)	-	14 (3.7)	
Number of EH per week					
	1-2 times	30 (21.7)	43 (33.5)	73 (19.3)	0.23
	3-4 times	57 (41.3)	47 (36.7)	104 (27.5)	
	5-6 times	17 (12.3)	20 (15.6)	37 (9.8)	
	7 times and more	26 (18.8)	18 (14)	44 (11.6)	
	More than 7 time	8 (5.8)	-	8 (2.1)	
Minutes of EH					
	< 30 minutes	90 (65.2)	60 (46.8)	150 (39.7)	.009
	> 30 minutes	48 (34.7)	68 (53.1)	116 (30.7)	
Style of EH					
	Individual	98 (71.5)	68 (53.1)	166 (43.9)	.039
	Pair	23 (16.6)	30 (23.4)	53 (14)	
	Group	17 (12)	30 (23.4)	47 (10.2)	
Post photos & videos in social media					
	Yes	27 (19.5)	8 (6.2)	35 (9.2)	.003
	No	111 (80.4)	120 (93.7)	231 (61.1)	
Note. EH = Exercise at home * $p < .05$; ** $p < .01$.					