

EATING HABITS, PHYSICAL HEALTH AND LIFESTYLE CHANGES DURING COVID-19 LOCKDOWNS: COMPARISON BETWEEN HUNGARIAN AND JORDANIAN FEMALE CAREGIVERS AND WORKERS

1. INTRODUCTION

A new coronavirus (SARS-Cov2) was discovered in China in December of 2019. The COVID-19 Pandemic has had a huge impact on human health, causing sudden lifestyle changes as a result of public health recommendations and governmental measures, which are numerous restrictions on daily living. The negative impacts of confinements like these are that they restrict interest in typical regular exercises, physical activity, travel and access to many forms of workout (Hossain et al., 2020). The measures imposed a burden on population health by limiting physical fitness, which is positively associated with the ability to cope with infections and cardiopulmonary problems. (Bloch et al., 2020; Hoffmann et al., 2019). The restrictions caused other negative mental and physical health issues to wives and caregivers who had to look after their family by staying most of the time at home and causing more stress and unusual duties. The Pandemic has caused women to dedicate more time to care for and educate their children, while men have been mostly unaffected, according to research (Murat Yildirim & Eslen-Ziya, 2020). Critical gender theory is the basis of our theoretical framework, where gender is defined as a socially constructed definition of biological sex, with cultural ideals and social institutions shaping the dos and don'ts of femininity and masculinity. The health outcomes that are determined by the impact of social interventions can be different between Jordan and Hungary due to lifestyle and tradition differences.

Jordan with 10 million population have faced the first COVID-19 case on 2 March 2020 that was confirmed by the Jordanian Ministry of Health, by 14 March 2020 prime minister announced measures and regulations including halting all sports events, all theaters, swimming pools, sports clubs, and youth centers have been closed until further notice (Al Jazeera, 2020). The government declared a lockdown on 17 March, which was afterward turned into a strictly-enforced time limit that was described as one of the world's strictest measures, by the end of first wave in May 2020, total cases in Jordan reached 459, following this the government decided to ease restrictions (Ministry of Health, 2020). In Hungary, which is a country similar to Jordan with approximately 10 million population, the first cases in Hungary were

announced On 4 March 2020, On 11 March 2020, the Hungarian government pronounced a state of emergency. The Surgeon General reported numerous limitations, anniversary of the Hungarian Revolution on 15 March 2020 was cancelled, moreover universities were requested to suspend in-person classes and switch to online courses (Mediaworks Hungary, 2020). In addition, The state of emergency impacted nearly all sporting activities; indoor and outdoor activities. by the end of first wave in May, total confirmed cases reached 2863, after that The National Assembly canceled the state of emergency on 16 June 2020 (Coronavir Information Page, 2020).

Both countries went through a period of fluctuations in lock down with various social distancing and suspending regulations based upon COVID-19 waves until current year. The government's self-quarantine guidelines had an influence on mental and physical health. According to previous studies, lockdown has been linked to an increase in the occurrence of mental health issues such as sadness, anxiety, and stress (Salari et al., 2020). Negative outcome on physical health can be contributed to by mentioned factors. Poor mental health and physical activity are the leading risk factors for major disease morbidity. For the general population, but also for older persons and chronically ill patients, who are more vulnerable to COVID-19-related mortality, this is true (Hallal et al., 2012).

Physical activity is directly linked to school-related activities, active transportation, and engagement in sports for children and adolescents (Hoffmann et al., 2019). It is notable that because schools have been closed due to the COVID-19 epidemic, physical activity participation has been hampered, raising the risk of long-term sedentary behavior. Moreover, in March 2020, the Jordanian and Hungarian governments decided to impose more stringent containment measures, including a ban on mass gatherings and events, as well as a ban on meeting for no reason, a ban on leaving for education and some specific jobs, and a reduction in the number of employees across the country. Despite the fact that the number of cases in the two populations indicated were not high in the first two months; March- May 2020 compared to other nations with thousands of cases (WHO Coronavirus (COVID-19) Dashboard, 2022), there was a strict lockdown in both countries, thus there has been a significant drop in any type of socialization, as well as a sudden and radical change in behaviors and lifestyles of the population. Physical separation and isolation have a significant impact on individuals' life, particularly on eating patterns and day-to-day activities, all of the mentioned factors have influenced children, students, employees and housewives' lifestyle. The lockdown led to two major impacts: First, staying at home incorporated digital-education, smart working,

confinement of outside and in-gym physical movement. Second, there was stockpiling of food, due to the limitation in basic supply shopping. Furthermore, the interference of the work schedule caused by the isolate result in boredom, which in turn was associated with greater energy intake (Zentner et al., 2015). Also, Hearing persistently about the COVID-19 from media was unpleasant. People are more likely to eat comfort foods that are high in sugar and calories if they are stressed. The impact of the COVID-19 pandemic on women was shown in studies (Ma et al., 2017; Yılmaz & Gökmen, 2020). According to a study, having kids/ children appears to be one of the most important predictors of how the impact is perceived (Murat Yildirim & Eslen-Ziya, 2020). One theory is that the lock-down forced working women to prioritize care-taking responsibilities in accordance with cultural beliefs of the good mother, thereby reinforcing traditional gender roles at home (Collins et al., 2020; Sutherland, 2010). It is possible that they experienced a reduction in productivity while working from home. As a response to increased environmental demands, stress creates greater physical and psychological activity (Frankenhaeuser, 1986; Selye, 1956). It is thought that women are more likely to have sleep disorders than men because of a number of factors. Many working women would reduce their sleep to cope with work and their roles as mothers and wives, because of the threat of psychosocial stress. Decreased or disrupted sleep can cause a rise in cortisol levels, which can increase appetite and motivation to eat. This could be a factor that affected the health of working women during lock down (Åkerstedt, 2006).

Inactivity prevalence is high among adults and children/adolescents in Middle Eastern nations, according to previous studies, and it is even greater among womenClick or tap here to enter text.. Although the prevalence of physical inactivity which defined as performing less than 600 MET-minute per week, exceeded 40% in all Arab countries, it was only (5%) in Jordan comparing it with Saudi Arabia which reached 68% and 87% in (Sharara et al., 2018; WHO EMRO, 2019) However, by 2017, obesity rate in Jordan reached 43.1% and 28.2% among women and men respectively, while in Hungary obesity percentage among women reached 24.6% and 28.2% for men (GHO, 2021). Previous numbers indicates that women physical activity, eating habits and lifestyle in Hungary might be more proper than in Jordan; this may be refer to conservative traditions, cultural norms, and beliefs regarding illness and recovery that may contribute to low levels of Physical Activity PA among the general population (Barghouti et al., 2015). Additionally, in studies conducted in Saudi Arabia, Egypt, and Jordan, many parents in the region appear to prioritize educational and spiritual activities over physical activities for their children. Friends, peers, and even teachers have shown a lack of enthusiasm for physical activity (Musaiger et al., 2013). Another culturally unique element is gender

constraints: even where exercise facilities are accessible, as they are in the region's more affluent countries, accessibility is a challenge, especially for women (Sharara et al., 2018b).

Increasing consumption of salty and sugar-laden snacks was noted for a significant part of individuals in the studies that were conducted for examining changes in eating patterns. According to the results, fast food habit showed a significant decrease in fast-food consumption during the period (Bakaloudi et al., 2021). Which gave positive signs that they had to go for home-cooked food, but still the problem was for snacks. Hungarian local dishes are mostly based on meat, vegetables, fruits, bread, and dairy products. bread is the most important and fundamental component of the Hungarian diet, a side dish may or may not be required by the main meal (József Venesz, 1977). The state indicates that Hungarian cuisine which is mostly continental Central European cuisine might be healthier than Jordanian traditional food, which gives justification to the obese people in Hungary. If compared to Jordanians, Hungarian food is more proper.

According to European Commission legislation, legal women and men equally share care tasks in the family as well as tasks relating to all aspects of household work, meaning that working women are less likely to accept traditional gender roles. It is thought that Hungarian working women were less likely to have an effect than Jordanians because of the burden caused by the lockdown consequences. Lockdown is less likely to affect their health, behavior and lifestyle (European Commission, 2012).

Women with low perceived life stress did not show a relationship between stress markers and the drive to eat, while women with high perceived life stress showed greater stress-induced cortisol responses and cardiovascular responses which is specifically positive associated with the drive to eat (Klatzkin et al., 2019). When women have children and care for them at home, inequality in tasks within the households might become even more pronounced. The double burden causes stress and is one of the barriers to achieving work life balance. A study showed that those women who had work experience, indicated childbirth or marriage as the reasons for leaving work, and that respondents spent on average 4-6 hours a day on household chores. Hence, this report calls on policymakers to enhance women's work-related legislation and conditions (Mehtap, 2016).

2. Goals and Methods

Our study aimed to investigate the immediate impact of the COVID-19 pandemic on eating habits, physical health and lifestyle changes among Hungarian and Jordanians female employees, and to compare with the two population as there are some differences in sociodemographic characteristics, type of living, cultural backgrounds, traditions and daily life routine among the two population.

3. Study design and participants

The study comprised a structured questionnaire packet via Google Form. It was sent to (180) Jordanian and Hungarian female from different cities between (23 January and 15 March 2022) The questionnaire was made available via online social media. The inclusion criteria for the study were Jordanian and Hungarian nationality female workers, wives and caregivers. from different cities, aged ≥ 18 years old. These criteria were verified by answers given to the corresponding survey questions.

4. Data Collection

The questionnaire consisted of questions that inquired demographic information (age, gender, place of residence, current employment); anthropometric data (reported weight and height); dietary habits information (adherence to traditional food, appetite change, snacks intake, food frequency), family structure data (having kids, living with the spouse), And questions that include lifestyle habits information (house chores, sleep quality and physical activity) were taken from the International Physical Activity Questionnaire. Data on the frequency and the duration of low-intensity, moderate-intensity, and vigorous-intensity physical activity were collected as well through IPAQ questions. Total weekly physical activity was estimated by adding up the weekly time of each level of physical activity. Changes in eating habits and lifestyles were described as “decreased”, “unchanged”, or “increased” during the COVID-19 lockdown when compared to the pre-COVID-19 period.

5. Statistical Analysis

After completing the digital version of the questionnaire created using Google Forms, a total of 101 Jordanian and 80 Hungarian women completed the questionnaire and participated in the research. The data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 25.0.(IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0, IBM Corp., Armonk, NY, USA). The mean and standard deviation were estimated for numerical variables, as well as absolute numbers and percentage of the occurrence of answers for categorical variables. Pearson's chi-square test was used to investigate an association between two categorical variables. Student's t test was used to compare age and Body Mass Index between the two samples. The significance level was assumed to be $p < 0.050$.

6. Results

a. Anthropometric Data

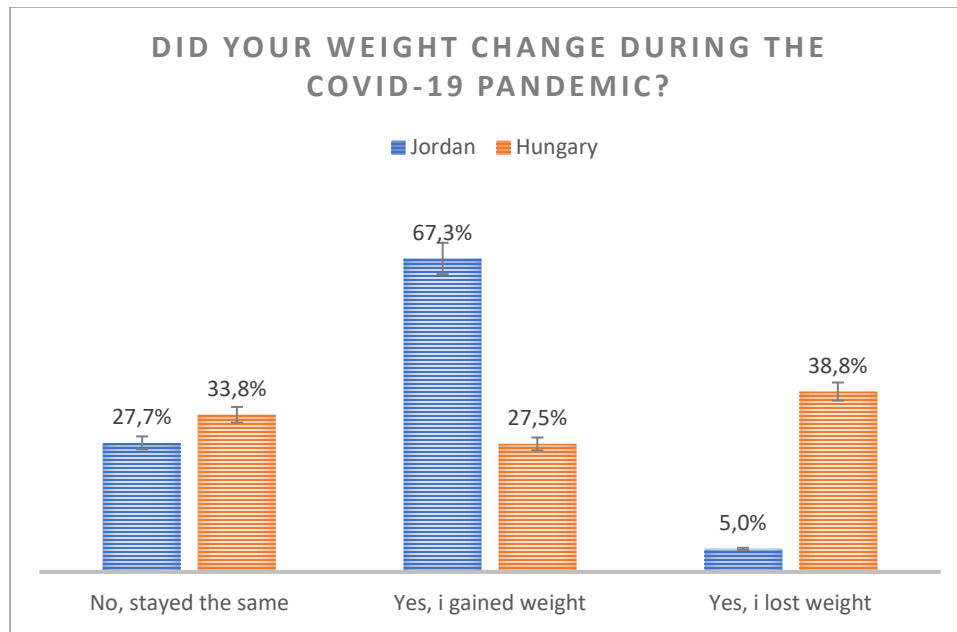
Jordanian participants of the present study presented significantly higher values of age and Body Mass Index and therefore more overweight has been noticed among Jordanians. (Table 1.) mean BMI was $(25,1 \pm 4,76)$ and $(21,6 \pm 2,99)$ for Jordanian and Hungarian participants respectively.

Table 1. Mean Body Mass Index in the Samples

	Country	N	Mean	Std. Deviation	Std. Error Mean
BMI	Jordanian	101	25,12	4,764	,474
	Hungarian	80	21,62	2,991	,334

$$t=5.73, p < 0.001$$

Also, mentioning weight changes in the give period, it shows that 67.3% of Jordanians have gained weight during lockdown while only 27.5% of Hungarians have gained weight in the same period. While 33.8% of Hungarians and 27.7% of Jordanians have maintained their weight. (Figure. 1)



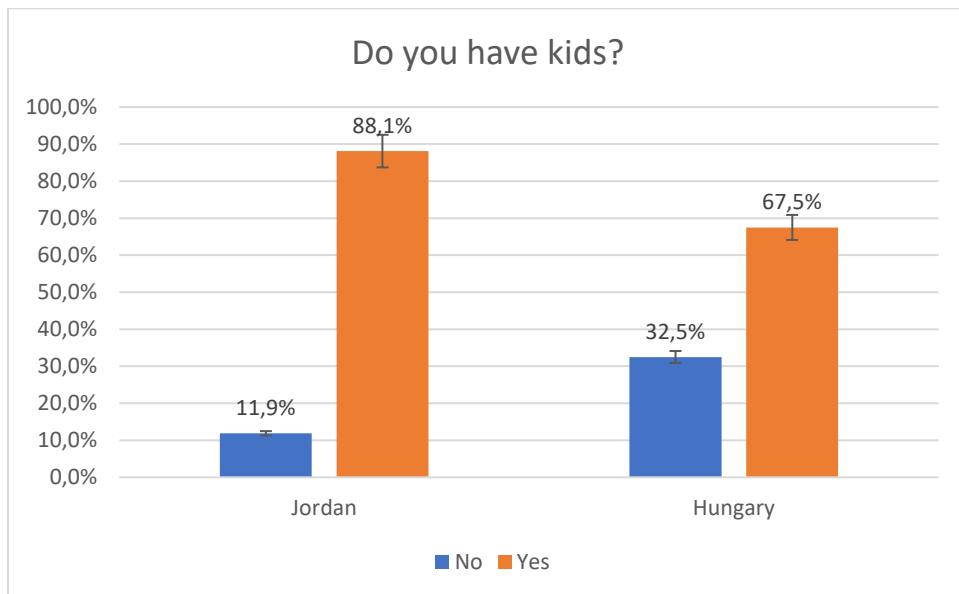
Chi2 =40.4, $p < 0.001$

Figure 1.

We could also review the family members body change if their children have gained or lost weight. If we are only looking at children, we can see that 11.9% of Jordanian mothers children have gained weight while zero of their children have. 28.8% of Jordanians said that their spouses and children have gained weight, and 38.7% said that their children gained weight as a result. If set aside with Hungarians, only 6.3% of their children have gained weight with their fathers.

b. Sociodemographic analysis

Similarly, 90% of both population participants have job and most of them are living with their spouses/partners. 85.1% Jordanian, 88.8% Hungarian couples are both working. In addition, according to previous studies workers without children reported being significantly less affected by the lockdown (Murat Yildirim & Eslen-Ziya, 2020). Therefore, having kids can be an important factor, results show significant difference; (88.1% of Jordanian are having kids while 67.5% of Hungarian participants have kids. (Figure 2.)



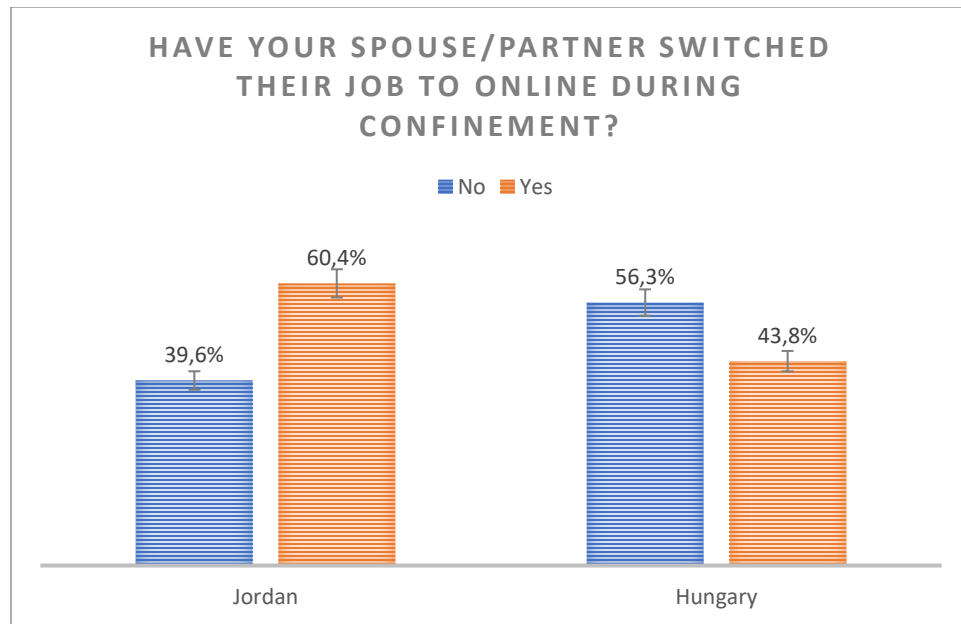
Chi2 =11.4, $p < 0.001$

Figure 2.

c. Lifestyle change

A high percentage of participants from both populations have altered their job online during confinement, with most of them doing so in Hungary.

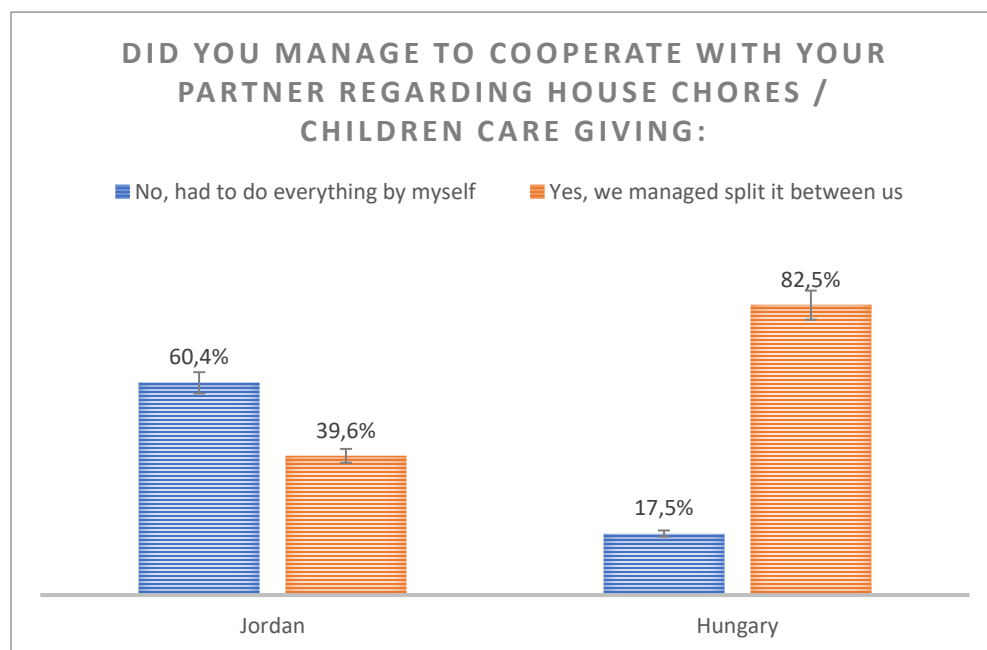
Also, It is believed that both populations had extra housework responsibilities and there was a need to manage it with their partners who have altered their job to online/ home control jobs as well. (Figure 3.)



Chi2 =9.7, p = 0.008

Figure 3.

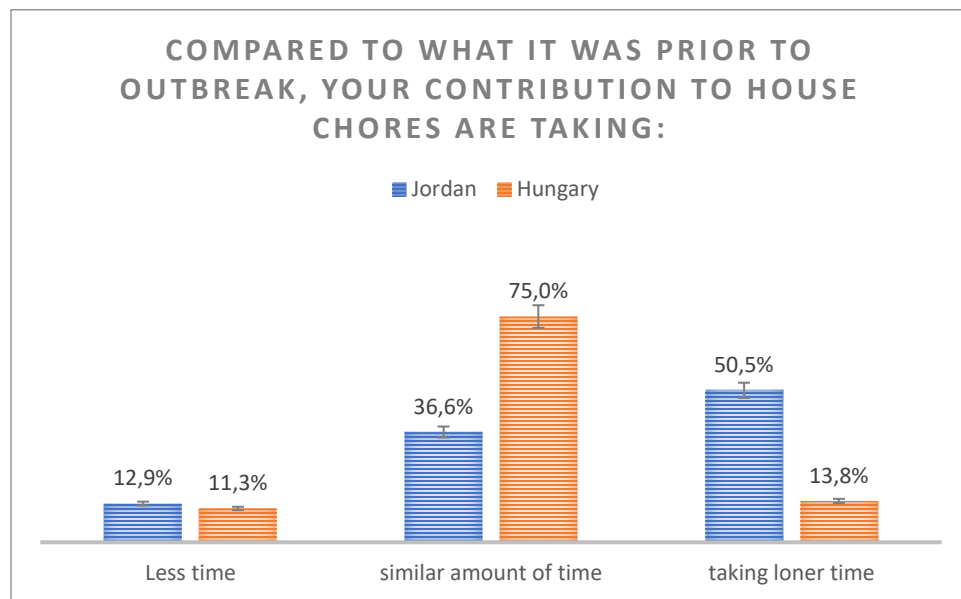
Regarding to house chores, 60.4% of Jordanian women had to do their own house chores, while 82.5% of Hungarian women claimed that they split their responsibilities with their partners, these percentages results are enough to support. (Figure 4.)



Chi2 =33.9, p < 0.001

Figure 4.

In comparison to what it was before the lockdown, 50.5% of Jordanian participants agreed that their contribution for house duties took up more from their time, while only 13.8% of Hungarian participants reported that housework required more effort and time. 56.4% of Jordanians and 60% of Hungarians had the same sleeping patterns before they were in confinement. (Figure 5.)

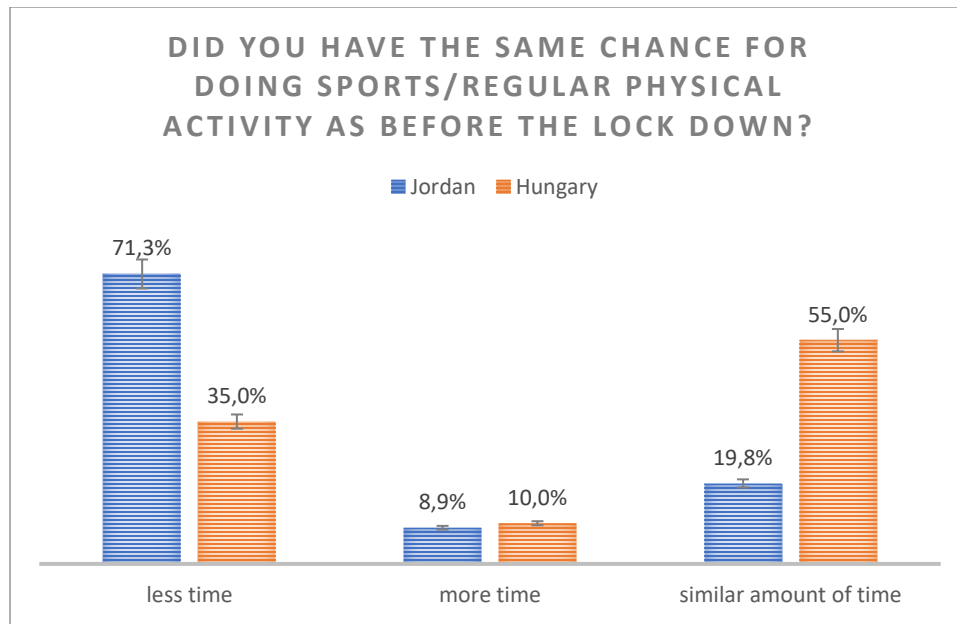


Chi2 =29.9, p < 0.001

Figure 5.

d. Physical activity and eating habits change

Hungarian respondents have more vigorous and moderate trainings in their routine compared to Jordanians. The same opportunity to participate in sports and regular physical activity as before the lockdown for Jordanians was remarkably less, 71.3% had less chance to engage their self with regular exercising, while only 34% of Hungarians had less chance for doing regular sports.



Chi2 =26.3, $p < 0.001$

Figure 6.

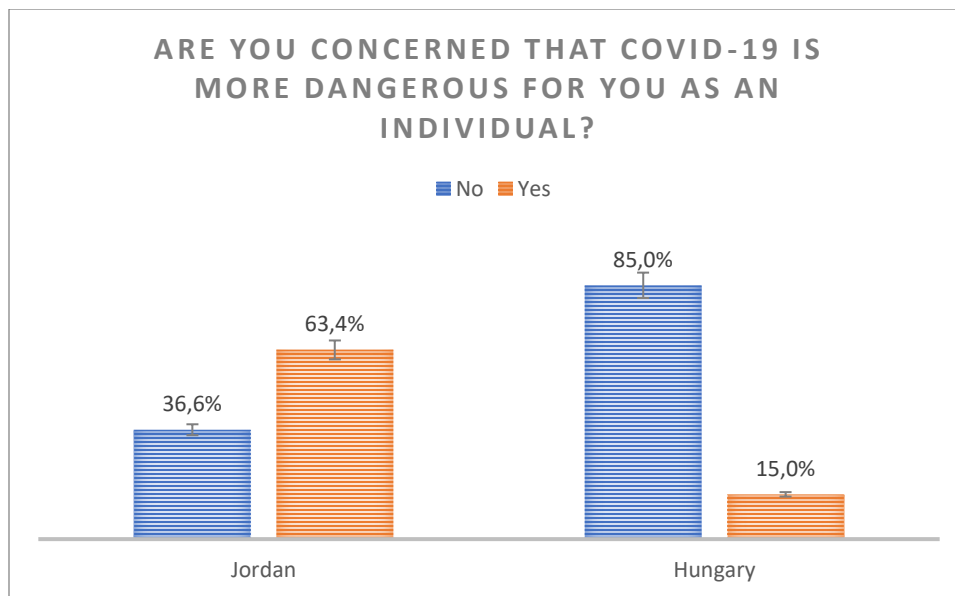
Regarding eating habits, half of the Jordanian participants felt a change in their hunger/satiety perception: 47.5% had more appetite. Whereas 70% of Hungarians didn't feel any change with their appetite.

Similarly, a significant difference appears regarding to snacks consumptions change, 50.5% of Jordanians have increased their snacks consumptions when compared to Hungarians: 26.3% increased their snacks, 71.3% had the same consumption and only 2.5% decreased their snacks.

Mentioned results support previous studies which agree that changed work habits (suspension or online working), as opposed to unchanging work habits, and female gender, are linked to altered hunger, both adversely and positively.

e. Accomplishment from home

Questionnaire queries revealed that Jordanian women are less satisfied with online/control job than Hungarian women. It indicates that satisfaction with the work and performance environment at home was less compared to Hungarians. Moreover, 63.4% of Jordanians consider that COVID-19 confinement is more risky for their life and health which makes remarkable difference compared with Hungarians with only 15%. (Figure 7.)



Chi2 =26.3, p < 0.001

Figure 7.

7. Conclusion

Our study showed that Jordanian women are less satisfied with the lockdowns that have been caused by COVID-19 Pandemic because most of them had changed their lifestyle and daily routine. The change reflected negatively on their physical and mental health, so they thought that the lock down caused by COVID-19 is more dangerous for their mental and physical health.

It was found that sociodemographic factors were related to an unpleasant change in weight gain and stress load, as well as the fact that most of them have complained that they don't find enough cooperation from their partners in home and childcare responsibilities. Women should be included in physical activities, leisure and recreational activities in order to improve their health status. The support of their family, partners and society can be used for inclusion. The study can be used to design physical health support for women and families. We give attention on food consumption, overeating and physical inactivity rise during lockdown, we encourage health authorities to take the necessary awareness measures for a healthier lifestyle during future pandemics as such they obliged social distancing and sticking at home restrictions which was associated with developing Non-Communicable Diseases, immunologic, cardiopulmonary complications of more severe illnesses among high percentage of populations, these illnesses and

conditions have an influence on an individual's quality of life and are linked to rising health-care expenses, which create a financial burden on the government and businesses.

Furthermore, prevention of children and family members Obesity is a necessity for a healthier and more productive population, and we recommend that it starts from parental habits, considering the results that showed mothers weight gain and health change have affected their children as well. We highlight the importance of parental rules that encourage physical exercise and good eating as it correlated with their children's health.

It is believed that going through tough times can lead to strained relationships between partners and family members. Stress can lead to physical inactivity and difficulty in exercising. It can be achieved by including family members in recreational sports activities counting indoor and outdoor sports, which can improve their overall well-being and build strong family bonds. The results draw attention to the importance of family cooperation and support in difficult circumstances such as during the Pandemic, the more the partners understand each other, the less adverse effects can occur.

The main limitation of our present study is that it is done upon self-reported questionnaire online by respondents without interference/interviews which can affect the reliability of the collected data, and the sample might be not representative for Jordanian and Hungarian women population. Also it was not conducted within the most critical period of lockdown. However, the strength here might be represented by the fact that it was done after many lockdown periods as it was fluctuating, thus it is believed that responses described the absolute effect of entire lockdowns from March 2020 until March 2022. In addition, our online questionnaire was alike to other studies' survey that have been used in the past. In addition, to the best of my knowledge, this study is novel and no such study have been conducted so far. Also it would also be interesting to observe if other nations' lockdowns had varied effects on mental and physical well-being.

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