

# The Lifestyles of Palestinians during Corona Virus Pandemic: A cross sectional Study from Palestinian West Bank

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## Research

**Keywords:** Corona virus pandemic, Palestinian People, demographic variables, lifestyle and mental wellbeing

**DOI:** <https://doi.org/10.21203/rs.3.rs-620266/v1>

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# Abstract

**Introduction:** Corona virus pandemic was associated with restriction on movement and perceived danger among the public but changes in the lifestyle and mental-wellbeing aspects were not studied in Palestinian People

**Aims:** We aimed to study the changes in lifestyle and mental wellbeing aspects of Palestinian society.

**Methods:** A translated questionnaire was produced through google forms and was administered through social media and university platforms including demographic variables, mental wellbeing issues, and lifestyle aspects. Data was analyzed by SPSS 21.

**Results:** 152 adults participated in the study, they were  $25 \pm 9$  y, 67% were females, 47% were from villages and 47% were from cities. 82% were with bachelors degree. 13% had COVID, 13% lost dear relative due to COVID, and commitment to restrictions was present in 14%. There was high prevalence of negative feelings including sadness, hopelessness and anxiety. Study participants consumed low amount of fruits and vegetables, had a lot of soft drinks, but they in general were physical active.

## Conclusion

The corona virus pandemic is associated with negative impact on lifestyle and mental wellbeing

## Introduction

The novel Corona virus pandemic (2019-Ncov) was declared pandemic in March 2020 by WHO and lead to high rate of mortality in 110 countries with more than 118,000 deaths worldwide. The pandemic was associated with fear, anxiety, anger and post-traumatic stress (1). The pandemic was associated with increased economic toll; restaurants were empty and close, travelling became hard with only 10% of flights operate. It was hard for many leading politicians to decide on whether lockdown should be imposed or not, given the high rate of infection that is associated with loosing restrictions (2). Natural disasters are often associated with negative impact on mental wellbeing and post-traumatic stress syndrome, depression, anxiety and other behavioral problems(3). WHO recommended social distancing or physical distancing which is associated with higher risk of loneliness that increases all cause mortality(4).

Staying at home, virtual education and working, limitation of outdoor and in gym physical activities, limited shopping and stockpiling food along with boredom was associated with more energy intake. Also, stress is associated with consumption of junk food with much of sugar, salt, calories and less healthy food(5). Unhealthy behaviors (poor diet quality, lack of physical exercise, tobacco and alcohol use) are major contributor to global burden of diseases and may be associated with increase in the risk of mental illness(6).

Regular physical activity prevents hypertension, obesity, increase mental health and improves life quality. Increase in energy intake and low physical activity is associated with increase in body weight and increase in risk of chronic diseases(7). In addition, sleep quality declined in corona virus during pandemic(8).

The Palestinian authority (PA) imposed strict lockdown in the beginning of coronavirus pandemic, but this lockdown was loosed and this lead to a spike in corona virus in Opt, with increase in 9000 cases by July, 18, 2020 compared to less than 400 cases at the end of lockdown (9). Israeli military occupation of West Bank and Gaza strip has lasted over 50 years with lack access to water, land, borders and free movement. Palestinian Authority and ministry of health has practiced extreme efforts to handle the pandemic, but with limited access to resources and borders this was very challenging, especially imposing lockdown that is associated with lost income for small businesses and workers (9). In this study, we aimed to study the lifestyle of Palestinian people during pandemic and whether commitment to lockdown was associated with decline in indicators of healthy lifestyle patterns.

## Methods

A cross-sectional design was used to evaluate lifestyle and mental wellbeing aspects among Palestinians through an electronic data collection tool (google forms) which was distributed through different social methods that included facebook and professional, social and student facebook groups. The population consisted of all Palestinians living in the West Bank, Gaza, and in Israel. A convenient sampling method was adopted to reach the determined sample size of n=152. The data collection tool was translated questionnaire(10). Questions about smoking, alcohol, negative feeling, physical activity, sleeping, medications, skin and sexual performance, soft drinks. Also, questions regarding demographic variables and changes in habits at the pandemic were asked.

## Results

The study participants mainly were  $25.5 \pm 9$  y, females, they mainly lived in cities and villages, with few living in refugee camps and inside Israeli areas. Most of our study participants had bachelor degree and very few have graduate degrees and almost half of them were working. In general most of our study participants were in good health and wellbeing, very few of our study group had chronic diseases. Slightly less than 10% had anemia and mental health issues, asthma and anemia.

With regards to Corona virus, 13% had COVID, 13% lost loved ones due to the pandemic, 14% committed to restrictive measures imposed by MOH. 18% of our study participants were smokers, very low number used alcohol or drugs.

Table 2 describes the mental health and lifestyle of study participants during corona pandemic. Almost 65% of study participants reported some level of sad feeling, 67% of study participants reported level of loss in interest, 79% of the study participants reported having some form of anxiety feeling. With regards

to lifestyle, most of our study participants reported being physical active during the pandemic, but 58% had some worries about having change in their BMI, in general they had good quality sleeping. With regards to intake of fruits and vegetables, 43% of the study participants reported they took at least 3 fruits and vegetables. Less than half of the study participants reported fear for their skin, hair, feeling problems in their teeth and gums, very few suffer from side effects for medications.

Table 3 describes lifestyle changes due to pandemic. Majority of our study participants reported changes in eating habits, physical activity, sleeping habits, social support, addiction habits, but the time spent out was changed in less than half of participants.

Table 4 describes mental health and lifestyle during pandemic between those who committed to lockdown or not. In summary those who committed to lockdown were more worried about their weight, hair and skin. Other lifestyle and mental aspects were not different between those who committed to lockdown or not.

## Discussion

In this study among young participants who are either working or students youth, we report high rate of sadness, loss of interest in loved activities and anxiety. Study participants in general reported lower diet quality with low intake of fruits and vegetables and higher intake of soft drinks. Also, they reported lower social support. Our study group did not have addiction problems, but this could possibly be underreported given that this issue is particularly sensitive in Palestinian conservative cultural context. Commitment to restriction was not associated with lower mental and lifestyle qualities.

We report high rate of deteriorated mental wellbeing in our study including sense of sadness, loss of interest in doing loved things and experience of anxiety. In previous work in a study done in UAE, lower mental quality was associated was more prevalent among females and better mental wellbeing was associated with better diet, better physical activity and better sleep scores (11). Corona virus pandemic was definitely linked to less ability to go out and perform outdoor activities which could be associated with reduced hormones which could influence the mood such as endorphins and serotonin. In addition this could be linked to exposure to UV radiation and so lower formation of vitamin D which is protective from depression(11). A longitudinal study among a sample of participants from UK indicated across waves of pandemic showed that symptoms of anxiety, entrapment decreased with time, but depressive symptoms did not change and positive feelings increased which could be a positive indication on the direction of mental wellbeing(12). Among causes of hopelessness, socioeconomic barriers and job losses (13).

Most of the study participants feared gaining weight. Stress is related to higher energy intake, unhealthy dietary patterns with high intake of sugar and fat (14, 15). Physical inactivity is also increased during pandemic and is linked to increase in the weight gain. Depression was associated with increase intake of saturated fat, energy dense food and high intake of salty food (16). People with anxiety snack 2.45 times more (17). COVID pandemic is associated with increased consumption of biscuits, cakes,

decreased intake of fruits and vegetables (18). Indeed in our study, participants reported increase intake of soft drinks and reduced intake of fruits and vegetables.

High level of worry about hair and skin could be related to the fact that most of our study participants were females. Psychological stress is related to release of stress hormones such as glucocorticoids and epinephrine. The release of these hormones could be related to physiological stress and skin is now recognized as immediate skin target. Skin is considered an organ that shields our body from environmental stress and it is mainly composed of dermis and epidermis. The relationship between brain and skin was summarized somewhere else(19). Stress could be measured by cortisol level in hair and in a previous study, depression was associated with increase in cortisol level in the hair, but hair cortisol level was not associated with sleep hours in participants who are 25-33 y(20).

Our results on sexual satisfaction could be not give a clear picture on the situation in Opt, given that it is a conservative mainly Muslim culture, reporting this aspect could have been sensitive for participants. However, in general our study group reported having healthy sexual wellbeing. Also, our study group age was very young in a way that could bias our interpretation of this aspect.

Our study participants reported change in social support during the pandemic. Unfortunately, the research question was not developed to seek more information on the nature of social support the Palestinian community expected. However, loss of income and financial resources could have caused some disruption in familial relationships. Many studies have suggested that the pandemic increased the risk of violence against women due to confinement that lead to increase in social interaction between partners(21, 22). The authors were not able to find studies on the social aspect of the pandemic on the Palestinian society. Palestinian society is in general built on extended families and intensive social relationships, the pandemic imposed restrictions on social gatherings, weddings and even funerals.

Before the pandemic started more than quarter of the Palestinians lived below poverty line, 30% in West Bank and 64% in Gaza, the youth employment rate is 38%. Gender should be involved in any attempt to COVID in Opt(23). Our study showed higher rate of distress than what was reported by other research group in Palestine. COVID-19 worry score was associated with higher risk of distress and insecurity (OR 1.77 (1.46- 2.14)) and (OR 4.3 (3.53-5.23)) respectively(24).

The Palestinian society is in health transition. The pandemic as is shown in our study increased the risk of unhealthy eating, drink soft drinks and although participants did not report low physical activity, they were concerned about their weights and reported low intake of fruits and vegetables which could increase the risk of chronic diseases in the future. It is even suggested that the duration of lockdown will negatively impact the glycemia and increase the rate of diabetes related complications(25).

In conclusion, we report a negative impact of corona virus on the mental wellbeing of Palestinian communities, dietary habits, physical activity and weight satisfaction. Palestinians reported low intake of fruits and vegetables during the pandemic and striking change in the social support they receive. Commitment to lockdown was not associated with lower mental health and unhealthy lifestyle.

However, participants who reported by committed to restrictions reported fear from weight gain and fear for their skin and health. The pandemic has been going on for two years now with majority of Palestinian universities and work places using virtual system of providing service and working which could increase sedentary lifestyle and lower quality diet, which could be translated in higher prevalence of obesity, diabetes and chronic diseases, so efforts are needed in this aspect prevent decline in communities wellbeing.

## **Declarations**

### **Consent form**

The goals of the study were discussed in social media platforms and participants were asked to fill online survey if they want to participate in the study and filling the form was considered consent to participate in the study.

### **Data Availability**

The datasets generated and/or analyzed during the current study are not publicly available due [being kept confidential for future work] but are available from the corresponding author on reasonable request.

### **Competing interest**

None

### **Author Contributions:**

NN designed the study, collected data, analyzed data and wrote part of the manuscript. M.T obtained IRB approval, revised the manuscript

### **Funding**

None

### **Ethical Approval**

This study was approved by Najah University IRB board

### **Consent for publication**

All the study authors read and approved the manuscript for publication

### **Acknowledgement**

We would like to thank members of the Palestinian society who participated in this study

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## Tables



Table 1: Summary Description of the Study group

<b>Variables</b>	
<b>Demographic Variables</b>	
Sex (n= 153)	
Males	36 (24%)
Females	117 (76%)
Place of residence (n= 153)	
City	72 (47%)
Village	72 (47%)
Camp	9 (6%)
Geographic Area (n= 152)	
West Bank	132 (87%)
Green Line	17 (11%)
Out of Palestine	3 (2%)
Educational Level (n=153)	
Tawjehee or less	5 (3%)
Bachelor or diploma	126 (82%)
Graduate education	22 (14%)
Working condition (n= 152)	
Yes	99 (65%)
No	53 (35%)
<b>Health Conditions</b>	
Health feeling (152)	
Good or Excellent	142 (93%)
Always tired or very tired	11 (7%)
Diabetes (153)	
Yes	3 (2%)
No	150 (98%)
Cardiovascular diseases (154)	
Yes	

No	4 (2%)
	151 (98%)
<b>Anemia (154)</b>	
Yes	13 (8%)
No	141 (92%)
<b>Asthma (153)</b>	
Yes	13 (8%)
No	140 (92%)
<b>Mental illness (154)</b>	
Yes	15 (9%)
No	139 (90.0%)
<b>Have you been diagnosed with COVID (154)</b>	
Yes	
No	20 (13%)
	134 (87%)
<b>Have you lost loved one due to COVID (153)</b>	
Yes	
No	19 (13%)
	134 (87%)
<b>Commitment to protective measures announced by MOH (152)</b>	
Yes	
No	22 (14%)
	130(86%)
<b>Behaviors</b>	
<b>Smoking (154)</b>	
Yes	27 (18%)
No	126 (82%)

<b>Alcohol (154)</b>	
Yes	3 (2%)
No	151 (98%)
<b>Drugs (154)</b>	
Yes	1 (1%)
No	153 (99%)

**Table 2 : Percentages of Study Participants according to their Mental and Lifestyle aspects**

Variable	No	Never	Hardly feel that	Sometimes feel that	Often feel that	Always feel that
<b>Mental Condition</b>						
Experience of sadness or hopelessness	3 (2%)	28 (19%)	21 (14%)	58 (38%)	26 (17%)	15 (10%)
Experienced a sense of loss of interest in doing loved things	6 (4%)	18 (12%)	26 (17%)	76 (50%)	0	25 (17%)
Experience anxiety and stress due to worries of everyday life	4 (3%)	9 (6%)	19 (13%)	80 (53%)	0	39 (26%)
<b>LifeStyle</b>						
Spent most of the time physically inactive	6 (4%)	101 (66%)	22 (14%)	0	0	23(15%)
Worrying about weight change	12(8%)	41(27%)	10(7%)	38(25%)	0	50(33%)
Unhappy with the quality of sleeping	14(15%)	32(33%)	16(17%)	0	0	34 (35%)
Take less than 3 serving of vegetables & fruits daily	3 (2%)	33 (22%)	29 (19%)	52 (34%)	0	35(23%)
Drinking soft drinks with a lot of sugar (Juice & cola)	11(7%)	19(13%)	33(22%)	55(36%)	0	33(22%)
Fear about hair and skin health	7 (5%)	17(11%)	12 (8%)	37(25%)	0	78 (52%)
Feeling problem with gums and teeth	14(9%)	45(30%)	22 (15%)	43(29%)	0	25(17%)
Unsatisfied by sexual performance	41(34%)	56 (47%)	10(8%)	8 (7%)	0	3 (3%)
Suffering from side effect of medication	24(16%)	99(66%)	10(7%)	11(7%)	0	6(4%)

Due to technical limitations, table 3 is only available as a download in the Supplemental Files section.

Table 4: Comparison of Mental Wellbeing and Lifestyle according to Lockdown

	Lockdown		t-test	p-value
	No	Yes		
Experience of sadness or hopelessness	2.62±1.43 21	2.84±1.43 128	-0.75	0.45
Experienced a sense of loss of interest in doing loved things	2.76±1.44 21	2.82±1.26 128	-0.19	0.85
Experience anxiety and stress due to worries of everyday life	3.24±1.37 21	3.19±1.27 128	0.17	0.87
Spent most of the time physically inactive	1.76±1.37 21	1.76±1.37 129	0.14	0.89
Worrying about weight change	1.71±1.62 21	2.99±1.75 128	-3.14	0.002
Unhappy with the quality of sleeping	2.67±1.49 21	2.65±1.63 129	0.04	0.97
Take less than 3 serving of vegetables & fruits daily	2.52±1.21 21	2.83±1.49 129	-0.89	0.38
Drinking soft drinks with a lot of sugar (Juice & cola)	1.00±1.04 21	1.24±1.10 127	-0.97	0.33
Fear about hair and skin health	2.71±2.0 21	3.71±1.54 128	-2.63	0.006
Feeling problem with gums and teeth	2.65±1.7 20	2.24±1.5 127	1.11	0.27
Satisfied by sexual performance	0.94±1.30 18	0.99±1.02 99	-0.17	0.87
Suffering from side effect of medication	2.70±1.52 20	2.76±1.49 129	-0.17	0.87

## Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [1.jpg](#)