

Changes in Dietary Intake and Body Weight among Adults during Covid-19 Pandemic in Afghanistan

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ABSTRACT

Background: There is no study investigating the changes of dietary intake and body weight during COVID-19 in Afghanistan. Therefore, we aimed to examine the changes of dietary intake and body weight during COVID-19 pandemic among Afghan adults in Afghanistan.

Methods: The current study is an online survey among the Afghan population in Afghanistan, which was conducted on 3200 Afghan adults (2800 men and 400 women) ages 18-60 years between 15 August 2020 and 10 May 2021. The inclusion criteria were age over 18 years old, both genders, interested of participants in the study, and internet access. The age under 18 years old, pregnant and breastfeeding women were not included in this study.

Results: The (12.5%) of study participants were females. Almost (56.34% from 3200 participants) of the study population decreased the bodyweight. Additionally, over half percent of study participants increased the consumption of fruits (93.12%), vegetables (57.28%), legumes (59.03%), tea (61.34%), coffee (53.96%), pepper (57.38%), boiled food (69.05%) and supplements (87.46%).

Conclusion: We found that intake of fruits vegetables, legumes, tea, coffee, pepper, boiled food and supplements increased among Afghan participants. Furthermore, the body weight of most participants decreased due to COVID-19 pandemic.

Keywords: Dietary intake, Body weight, COVID-19 pandemic

INTRODUCTION

The coronavirus disease 2019 (COVID-19) was informed on 31 December 2019 in Wuhan the capital city of Hubei province in China, which rapidly spreading outside China and the Asian continent, and it was declared a pandemic in March 2020, according to recent reports [1-3]. In Afghanistan, the first case of COVID-19 was confirmed on 24 February 2020, which was a 35 years old man from Herat province [4, 5]. Additionally, the three new cases of COVID-19 confirmed on 7 March in Heart province [6, 7]. On 10 March, the new case was reported oversight of the Heart province [4]. Besides, the first death due to COVID-19 was a 40-year-old man from Balkh province on 22 March [5]. As the number of cases was increasing rapidly, the ministries of public health and education decided that some provinces become lockdown and the school and university lessons would taught online [8]. There are several

concerns to control the COVID-19 in Afghanistan. For instance, entrance of Afghan refugees from neighbor countries like Iran and Pakistan every day, non-compliance with frequent hand washing with sanitizer and soap, attending in parties, low economics, lack use of the mask, low health education, shaking hands and hugging in communities as a whole [9-12].

According to the resent research, during COVID 19 has been associated with the dietary changes, physical activity, sleep disorders, psychological and emotional disturbances among women and men. For instance, several studies demonstrated that physical activity decreased during COVID-19 among both gender [13, 14]. Cross sectional studies revealed that weight gain was associated with the high intake of unhealthy foods, high intake of alcohol consumption, and decreases the physical activity due to the COVID 19 [15-17]. Additionally, several studies demonstrated

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that the risk of stress and depression diseases increase during COVID 19 and associated with high intakes fats, fried foods, pizza and beverages [18-20]. On the other hand, several studies revealed that high intake of fresh fruits, vegetables, eggs, legumes increased during the COVID-19 [21-23]. According to resent studies, that high intake healthy foods, vitamins and minerals could play role to against the COVID19 patients and increase the immune system of human body [24-26].

To the best our knowledge, there is no study investigating the changes of dietary intake and body weight during COVID-19 in Afghanistan. Therefore, we aimed to examine the changes of dietary intake and body weight during COVID-19 pandemic among Afghan adults in Afghanistan.

MATERIALS AND METHODS

The current study is an online survey among the Afghan population in Afghanistan, which was conducted on 3200 Afghan adults (2800 men and 400 women) ages 18-60 years between 15 August 2020 and 10 May 2021. All participants provided an online written consent, which was voluntary. To collect all data, we created using the Google forms, which were in the national language of Afghanistan (Dari and Pashto) and shared in social media such as Facebook, Instagram, and WhatsApp. The inclusion criteria were age over 18 years old, both genders, interested of participants in the study, and internet access. The age under 18 years old, pregnant and breastfeeding women were not included in this study. The demographic data included age, gender, marital status, BMI, place of residence, job, smoking status, ethnicity, SES (socio-economic status), medicine use, history of diseases, number of children, type of living, and physical activity was measured by (0 for None, 1 for Low(<0.5h/d), 2 for moderate(0.5-2h/d) and 3 for high (>2h/d). The weight and height were used for the body mass index, which was calculated as weight (kg) divided by height squared (m²). Additionally, body weight changes were divided into three parts (0 for no changes, 1 for increased, and 2 for decreased). Furthermore, the dietary intake include rice, fruits, vegetables, legumes, dried fruits, kebab food, fried food, boiled food, fast food, fast foods, fatty foods, red and proceed meat, sweets, coffee, tea, fish, dairy, beverages, supplements use(vitamin C, D, E and B complex). We presented the categorical variables in frequency (n) and percent (%). The chi-square was used to analysis the body weight changes. All the statistical analyses carried out using SPSS (SPSS Inc., version 24). The questionnaires took around 15 minutes to complete.

RESULTS

Out of 17300 sent the links, 6240 participants responses were received, and only 3200 (men=2800 and women=400) participants

completed the answers. The General characteristics of study participants are presented in Table 1. The (87.5%) of study participates were males, (49.2%) males were between age 18 and 29 years old, (19.33%) males were between 30 and 39 years old, (27.46%) of males were between 40 and 49 years old, and (4.01%) males were older than 49 years old. The (12.5%) of study participants were females, 79.5% females were between 18 and 29 years old, and (20.5%) females were older than 29 years old. Over half of the study participants (65.62%) were married. Rendering to BMI, (59.15%) were overweight, (26.81%) were normal weight, (9.34%) were obese and (4.68%) were underweight. The most commonplace of residence was Kabul (40.59%), followed by Herat (26.12%), Mazar Sharif (17.25%), Logar (7.34%), Panjsher (3.28), Baghlan (2.53%), Parwan (0.93%), Laghman (0.59%), Nangarhar(0.56%), Kapisa (0.46%), Paktia (0.25%), and Kunar (0.06). The (47.92%) of the population were Tajik, followed by, Pashtun (41.84%), Hazara (9.05%), Turkmen (1.03%), and Uzbek (0.15%). Over half of the populations (59.25%) were workers, and (29.16%) were jobless. In terms of smoking, (27.65%) of the study population were non-smokers. (36.21%) of participants used the paracetamol, and (72.65%) had no history of diseases. Among the study participants, (6.21%) had no children, (26.65%) had 1 or 2 children, (28.84%) had 3 or 5 children, and (38.28%) had over 5 children. According to physical activity, (90.4%) of study participants had not physical activity, (6.03%) had low (<0.5h/d) physical activity, (2.65%) had moderate (0.5-2h/d) physician activity and (0.9%) had High (>2h/d). In terms of social-economic status, (36.12%) had low economic, (55.28%) had middle economic and (8.59%) had high economic. According to the type of living, (96.53%) of participants living in a house with a garden or a yard, and (3.46%) living in an apartment/ a house with no garden or yard.

Bodyweight changes of the study participants, by gender, are presented in Table 2. Almost (56.34% from 3200 participants) of the study population decreased bodyweight. In terms of increased body weight in men were (17.46%) and in women were (18.5%). According to no changes, body weights in men were (20.32%) and in women were (66.25%).

The percentage of consumption of foods of the study participants are presented in Table 3. Over half of the study participants did not change in the intake of rice (65.18%), dairy (91.91%), and dried fruits (75.09%). In terms of decreasing the consumption of foods, over half percent of the population decreased the intake of fish (62.12%), fatty foods (65.05%), sweets (80.09%), fast food (99.05%), beverages (63.09%), kebab food (78.16%) and fried food (59.03). According to increase the consumption of foods, over half percent of study participants increased the consumption of fruits (93.12%), vegetables (57.28%), legumes (59.03%), tea (61.34%),

Table 1: General characteristics of study participants.

Variables	Frequency (n=3200)	Percent (100%)
Age in year		
18-29	1580	49.2
30-39	895	28
40-49	699	22
≥50	26	0.8
Gender		
Male	2800	87.5

Female	400	12.5
BMI		
Under weight	150	4.68
Normal weight	858	26.81
Over weight	1893	59.15
Obese	299	9.34
Marital status		
Single	1025	32.03
Married	2100	65.62
Divorced/Widow	75	2.34
Residence		
Kabul	1299	40.59
Nangarhar	18	0.56
Kunar	2	0.06
Herat	836	26.12
Kapisa	15	0.46
Mazar Sharif	552	17.25
Baghlan	81	2.53
Logar	235	7.34
Laghman	19	0.59
Paktia	8	0.25
Panjsher	105	3.28
Parwan	30	0.93
Ethnicity		
Pashtun	1339	41.84
Tajik	1534	47.93
Hazara	289	9.05
Turkmen	33	1.03
Uzbek	5	0.15
Occupation		
Worker	1896	59.25
Driver	89	2.7
Doctor	3	0.093
Engineer	7	0.21
Nurse	15	0.46
Teacher	256	8
No job	934	29.16
Smoking		
Non smoker	885	27.65
Less than 3 cigarettes a day	256	8
3-5 cigarettes a day	479	14.96
6-9 cigarettes a day	1256	39.25
≥10 cigarettes a day	324	10.12
Medicine usage		
None	989	30.9
Ibuprofen	325	10.15
methadone	559	17.46
Paracetamol	1159	36.21
Tramadol	168	5.25
History of diseases		
No history of diseases	2325	72.65
Diabetics	413	12.9
Hypertension	273	8.53

Depression	189	5.9
Number of children		
No	199	6.21
1-2	853	26.65
3-5	923	28.84
>5	1225	38.28
Physical activity		
None	2893	90.4
Low(<0.5h/d)	193	6.03
Moderate(0.5-2h/d)	85	2.65
High (>2h/d)	29	0.9
SES		
Low	1156	36.12
Middle	1769	55.28
High	275	8.59
Type of living		
In a house with garden or yard	3089	96.53
In an apartment/a house with no garden or yard	111	3.46

Abbreviations: SES (Social-Economic Status) and BMI (Body Mass Index)

Table 2: Body weight changes of study participants, by gender.

	Total		Men		Women	
	n=3200	100%	n=2800	87.5%	n=400	12.5%
Increased	563	17.59	489	17.46	74	18.5
Decreased	1803	56.34	1742	62.21	61	15.25
No changes	834	26.06	569	20.32	265	66.25

n= Frequency.

Table 3: The percentage of consumption of foods of the study participants.

	Increased	Decreased	No changes
	Percentages (%)		
Rice	27.78	7.04	65.18
Fish	0.5	62.12	37.73
Fruits	93.12	0.46	6.4
Vegetables	57.28	30.7	11.93
Dairy	6.24	1.84	91.91
Legumes	59.03	0.59	40.37
Dried fruits	2.34	22.57	75.09
Tea	61.34	20.96	17.68
Coffee	53.96	32.78	13.25
Red and processed meat	20.9	37.59	41.5
Pepper	57.38	22.56	20.15
Fatty foods	12.65	65.05	22.3
Sweets	4.15	80.09	15.75
Fast-food	2.09	99.05	6.84
Beverages	22.8	63.09	14.11
Kebab food	1.75	78.16	20.09
Fried food	13.85	59.03	27.12
Boiled food	69.05	15.87	15.08
Supplements	87.46	1.96	10.58

coffee (53.96%), pepper (57.38%), boiled food (69.05%) and supplements (87.46%).

DISCUSSION

This online survey among the Afghan population demonstrated that dietary intakes and body weight changed during the COVID-19 pandemic. Our findings confirmed that the fruits vegetables, legumes, tea, coffee, pepper, boiled food and supplements increased among Afghan participants during COVID-19. Furthermore, the body weight of most participants during the COVID-19 was decreasing. To the best of our knowledge, this is the first online study of COVID-19 to demonstrate the changes of dietary intake and body weight during COVID-19 pandemic among the Afghan adults in Afghanistan.

To begin with, there are several factors associated with COVID-19. For instance, physical activity, sleep disorders, social economic status, psychotic health, body weight and dietary changes. Several studies demonstrated that physical activity decreased during COVID-19 among both gender [13, 14]. In line with our findings, (90.4%) of study participants had not physical activity during this pandemic. However, a cross sectional study revealed that physical active at home during lockdown increased in Spain [27]. Furthermore, most of studies study presented that the hour of sleeping was increase among adult population, and changed the time of sleeping during lockdown [27-29]. As well, during the lockdown due to COVID-19, the risk of stress and depression were increase among both sex, according to resent research [30, 31]. On the other hands, in our study, we did not consider the sleep disorders and psychotic health among our population. Most of studies demonstrated that dietary intake changed due to COVID-19 [32, 33]. In line with our findings, several studies demonstrated that high intakes of healthy foods increase during COVID-19 pandemic [34, 35]. Furthermore, a case control study revealed that high intake of fruits, vegetables and meat increased among adults due to COVID-19 [36]. A recent study in Italy presented that diet patterns changed among children and adolescent, and the intake of potato, chips, red meat and sugar drinks increased during COVID-19 [37]. Moreover, a cross sectional study revealed that intake of fatty foods and sweets were decrease due to COVID-19 [38]. Another cross sectional studies demonstrated that the intake of fast food and beverages decreased during the lockdown [39, 40]. In addition, a cross sectional study presented that healthy food increase during the COVID-19 after recommended [41]. According to resent research, high intake of vegetables, supplements and fruits were increase among all generations [42]. On the other hand, most of studies demonstrated that intake of unhealthy foods increased during the COVID-19 among both sex [43].

The strength of our study, this is first study to demonstrate the changes of dietary intake and body weight among adults in Afghanistan. On the other hand, the limitations of our study include, first weight and height collected using self-report, which is subject to reporting biases and errors. In addition, most of people did not access to internet.

CONCLUSION

We found that intake of fruits vegetables, legumes, tea, coffee, pepper, boiled food and supplements increased among Afghan participants. Furthermore, the body weight of most participants decreased due to COVID-19 pandemic.

Statement of Authorship

AMB contributed in conception, design, search statistical analyses, data interpretation, manuscript drafting and supervised the study. BB and MB contributed in data interpretation and manuscript drafting and data clearing. All authors approved the final manuscript for submission.

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Declaration of Interest Statement

The authors declare no personal or financial conflicts of interest

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The authors declare no personal or financial conflicts of interest.

REFERENCES

- Han Y, Liu Y, Zhou L, Chen E, Liu P, Pan X, et al. Epidemiological assessment of imported coronavirus disease 2019 (COVID-19) cases in the most affected city outside of Hubei Province, Wenzhou, China. *JAMA Network Open*. 2020;3(4):e206785.
- Surveillances V. The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19)—China, 2020. *China CDC weekly*. 2020;2(8):113-122.
- Baloch S, Baloch MA, Zheng T, Pei X. The coronavirus disease 2019 (COVID-19) pandemic. *The Tohoku J Exp Med*. 2020;250(4):271-8.
- Saeed KM, Mir K. Epidemiological Characteristics of Coronavirus disease 2019 (COVID-19) in Afghanistan. *Glob Acad J Med Sci*. 2020;2(4):31-40.
- Saed KM, Amiri W. Descriptive Epidemiology of Coronavirus Disease 2019 in Afghanistan. *غرض نافر طبي ژورنال*. 2020:1.
- Osanui K, shayann A, Joya SA. Clinical Features of Patients with COVID-19 in Herat Province of Afghanistan.
- Manandhar S, Nakarmi P, Baniya N. A novel coronavirus emerging in world—key questions for developing countries and under developed countries. *North Am Acad Res*. 2020;3(02):473-497.
- <https://pajhwok.com/2021/06/01/covid-19-closing-only-educational-centres-wont-work>.
- https://reliefweb.int/sites/reliefweb.int/files/resources/afg_sh_covid19_research_brief_july_2020.pdf.
- <https://www.crisisgroup.org/asia/south-asia/afghanistan/covid-19-afghanistan-compounding-crises>.
- https://en.wikipedia.org/wiki/COVID-19_pandemic_in_Afghanistan.
- <http://www.emro.who.int/emhj-volume-27-2021/volume-27-issue-3/the-covid-19-pandemic-an-opportunity-to-strengthen-health-systems-in-afghanistan.html>.
- Castañeda-Babarro A, Arbilla-Etxarri A, Gutiérrez-Santamaría B, Coca A. Physical activity change during COVID-19 confinement. *Int J Env Res Pub Health*. 2020;17(18):6878.
- Sekulic D, Blazevic M, Gilic B, Kvesic I, Zenic N. Prospective analysis of levels and correlates of physical activity during COVID-19 pandemic and imposed rules of social distancing; gender specific study among adolescents from Southern Croatia. *Sustainability*. 2020;12(10):4072.

15. Kriaucioniene V, Bagdonaviciene L, Rodríguez-Pérez C, Petkeviciene J. Associations between changes in health behaviours and body weight during the covid-19 quarantine in Lithuania: The Lithuanian covidiet study. *Nutrients*. 2020;12(10):3119.
16. Chopra S, Ranjan P, Singh V, Kumar S, Arora M, Hasan MS, et al. Impact of COVID-19 on lifestyle-related behaviours-a cross-sectional audit of responses from nine hundred and ninety-five participants from India. *Diabetes & Metabolic Syndrome: Clin Res & Rev*. 2020;14(6):2021-2030.
17. Reyes-Olavarría D, Latorre-Román PÁ, Guzmán-Guzmán IP, Jerez-Mayorga D, Caamaño-Navarrete F, Delgado-Floody P. Positive and negative changes in food habits, physical activity patterns, and weight status during COVID-19 confinement: associated factors in the Chilean population. *Int J Env Res and Pub Health*. 2020;17(15):5431.
18. Landaeta-Díaz L, González-Medina G, Agüero SD. Anxiety, anhedonia and food consumption during the COVID-19 quarantine in Chile. *Appetite*. 2021;164:105259.
19. Alamri ES. Effects of COVID-19 home confinement on eating behavior: A review. *J Pub Health Res*. 2021.
20. Khademian F, Delavari S, Koohjani Z, Khademian Z. An investigation of depression, anxiety, and stress and its relating factors during COVID-19 pandemic in Iran. *BMC Pub Health*. 2021;21(1):1-7.
21. Di Renzo L, Gualtieri P, Pivari F, Soldati L, Attinà A, Cinelli G, et al. Eating habits and lifestyle changes during COVID-19 lockdown: an Italian survey. *J Translational Med*. 2020;18:1-5.
22. Zhao A, Li Z, Ke Y, Huo S, Ma Y, Zhang Y, et al. Dietary diversity among Chinese residents during the COVID-19 outbreak and its associated factors. *Nutrients*. 2020;12(6):1699.
23. Hirvonen K, de Brauw A, Abate GT. Food consumption and food security during the COVID-19 pandemic in Addis Ababa. *Am J Agric Economics*. 2021;103(3):772-89.
24. Arshad MS, Khan U, Sadiq A, Khalid W, Hussain M, Yasmeen A, et al. Coronavirus disease (COVID-19) and immunity booster green foods: A mini review. *Food Sci & Nutri*. 2020;8(8):3971-6.
25. Boumediene KM, Nada B. The role of nutrition in strengthening immune system against newly emerging viral diseases: case of SARS-CoV-2. *The North African J Food and Nutri Res*. 2020;4(1):240-4.
26. Bae M, Kim H. The role of vitamin C, vitamin D, and selenium in immune system against COVID-19. *Molecules*. 2020;25(22):5346.
27. Sánchez E, Lecube A, Bellido D, Monereo S, Malagón MM, Tinahones FJ. Leading factors for weight gain during COVID-19 lockdown in a Spanish population: a cross-sectional study. *Nutrients*. 2021;13(3):894.
28. Sañudo B, Fennell C, Sánchez-Oliver AJ. Objectively-assessed physical activity, sedentary behavior, smartphone use, and sleep patterns pre-and during-COVID-19 quarantine in young adults from Spain. *Sustainability*. 2020;12(15):5890.
29. Cellini N, Conte F, De Rosa O, Giganti F, Malloggi S, Rey M, et al. Changes in sleep timing and subjective sleep quality during the COVID-19 lockdown in Italy and Belgium: age, gender and working status as modulating factors. *Sleep Med*. 2021;77:112-9.
30. Novotný JS, Gonzalez-Rivas JP, Kunzová Š, Skladaná M, Pospíšilová A, Polcrová A, et al. Risk factors underlying COVID-19 lockdown-induced mental distress. *Frontiers in Psychiatry*. 2020;11.
31. Giannopoulou I, Efstathiou V, Triantafyllou G, Korkoliakou P, Douzenis A. Adding stress to the stressed: Senior high school students' mental health amidst the COVID-19 nationwide lockdown in Greece. *Psychiatry Res*. 2021;295:113560.
32. Rolland B, Haesebaert F, Zante E, Benyamina A, Haesebaert J, Franck N. Global changes and factors of increase in caloric/salty food intake, screen use, and substance use during the early COVID-19 containment phase in the general population in France: survey study. *JMIR Pub Health and Surveillance*. 2020;6(3):e19630.
33. Huber BC, Steffen J, Schlichtiger J, Brunner S. Altered nutrition behavior during COVID-19 pandemic lockdown in young adults. *Eur J Nutri*. 2020:1-0.
34. Muscogiuri G, Barrea L, Savastano S, Colao A. Nutritional recommendations for CoVID-19 quarantine. *European J Clin Nutri*. 2020;74(6):850-1.
35. Marty L, de Lauzon-Guillain B, Labesse M, Nicklaus S. Food choice motives and the nutritional quality of diet during the COVID-19 lockdown in France. *Appetite*. 2021;157:105005.
36. Trujillo-Mayol I, Guerra-Valle M, Casas-Forero N, Sobral MM, Viegas O, Alarcón-Enos J, et al. Western dietary pattern antioxidant intakes and oxidative stress: importance during the SARS-CoV-2/COVID-19 pandemic. *Adv in Nutri*. 2021;12(3):670-81.
37. https://www.researchgate.net/publication/341058580_Effects_of_COVID_19_Lockdown_on_Lifestyle_Behaviors_in_Children_with_Obesity_Living_in_Verona_Italy_A_Longitudinal_Study.
38. https://www.researchgate.net/publication/350951762_The_impact_of_COVID-19_lockdown_on_snacking_habits_fast-food_and_alcohol_consumption_A_systematic_review_of_the_evidence.
39. Bennett G, Young E, Butler I, Coe S. The impact of lockdown during the COVID-19 outbreak on dietary habits in various population groups: a scoping review. *Frontiers in Nutri*. 2021;8:53.
40. <https://environmenthealthprevmed.biomedcentral.com/articles/10.1186/s12199-020-00901-5>.
41. <https://www.intechopen.com/books/diabetes-mellitus-insights-and-perspectives/the-role-of-fruit-and-vegetable-consumption-in-human-health-and-disease-prevention>.
42. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7278251/>.