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THE CONSEQUENCES OF COVID-19 PANDEMIC ON DIET AND PHYSICAL ACTIVITY

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Cezara Cruceanu¹ , Puiu Lucian Georgescu² 

¹ "Elisabeta Doamna" Psychiatric Hospital; Galati;

² "Dunarea de Jos" University of Galati, Galati, Romania

✉ cez_300@yahoo.com

ABSTRACT — AIM: The COVID-19 pandemic has had major consequences on our habits and style of living. For this study, an online questionnaire was conducted online, with a total of 103 participants. This survey aimed to determine the pandemic's implications on nutrition and behavior patterns. **RESULTS:** During quarantine, the feelings of hunger and satiety did suffer changes: 17% of the cases reported a decrease, compared to the vast majority (55%), who experienced high levels of hunger. Three-quarters of participants reported either an enhanced or at least a similar intake of main meals and snacks between meals. Boredom and stress proved to be the central factors determining these results. When the participants were asked about the level of physical activity, a small number answered that the frequency of training grew. Meanwhile, the subjects who moved occasionally had more time to do it at home. Most of the participants (75%) stated that the length of leisure time was "more than sufficient". **CONCLUSION:** As the pandemic is still ongoing, more research should be made on a larger population, to obtain more accurate results.

KEYWORDS — psychiatry, pandemic, Covid-19, eating behaviour, eating disorders, physical activity.

INTRODUCTION

The outbreak of the COVID-19 pandemic was a catastrophic event. The public health measures implemented, especially the mandatory quarantine, has had a huge global impact (Grigoras & Ciubara, 2021). They have interfered with our daily lives, changed our habits and way of thinking, and had negative effects on our physical, psychological and mental health (Luca et al., 2020a; Luca et al., 2020b). Previous studies have revealed a wide range of psychosocial repercussions on the population during the outbreak of SARS-CoV-2 infection (Ammar et al., 2020; Di Renzo et al., 2020a; Di Renzo et al., 2020b). On a personal level, people experienced the fear of getting sick or dying, feelings of helplessness, and stigma. In particular, the fear of one's health or of their loved ones, social distancing,

and the forced quarantine disturbed the emotional and mental well-being of each individual (Loue, 2020; Miu, 2019; Onea, 2019; Sandu, 2020). Multiple factors led to inappropriate food choices (e.g. home orders, easy access to the kitchen, lack of exercise, anxiety, stress). Although some good habits rose, such as eating home-cooked food, the amount of consumed food was the one being compromised. Adequate nutrition is important especially during this time, taking into consideration that obesity, cardiovascular diseases, and diabetes amplify the risk of complications from SARS-CoV-2 infection.

This study aimed to objectify the factors contributing to the changes in eating behaviour and to collect data on the pandemic's impact on diet, physical activity, and mental health.

METHODS

This study was based on a questionnaire conducted on an online platform (Google Forms), available to any device with internet access, distributed on various social networks. Adults were encouraged to participate without any exclusion criteria other than age (it was mandatory to be over 18 years old).

The survey included 20 questions, structured in three different sections: (1) personal and general data (age, sex, background, level of education, profession); (2) anthropometric information (weight and height); (3) lifestyle changes in eating habits and psycho-emotional aspects caused by social isolation during the pandemic (e.g. anxiety, depression, sleep disorders, emotional eating, perception of diet and appetite control, the level of grocery shopping frequency). Non-completed surveys were not included. No names were requested, the answers were anonymous and confidential according to Google's privacy policy.

RESULTS

After the validation of the data, 103 participants successfully completed the online survey and were included in the study. The results show that the median age of the population was 35.92 years, age ranging between 18 and 82 years (18–30 years — 50%, 31–40 years — 30%, 40–50 — years 10%, 50–60 — years 25%, more than 60 years — 5%).

The female participants (67 cases) represented the majority of the population (65%). Nearly 80% came from urban areas and a high percentage attained a graduate (40.77%) and postgraduate education (34.98%).

Concerning the weight of the subjects, 48 participants were overweight (46.60%), 30 had a normal weight (29.12%) and 25 were obese (24.27%). In addition, 53% were married (55 cases), 69 individuals lived in a nuclear family (66.99%), 25 came from an extended family (24.27%) and the remaining 9 lived in joined families (8.73%). Based on income, 17 subjects belonged to the upper class (16.50%), 41 (40.4%) to the middle class, and 45 (43.69%) participants had low salaries. The average BMI of the participants was 25 kg/m². The majority of the participants (57) reported a stable weight (55.33%), while 41 (37.86%) gained weight and 5 (4.85%) lost weight during the pandemic.

Through quarantine, the feeling of hunger and satiety changed for more than half of the population: for 16.50% (17 cases) they decreased, in 28.15% (29 cases) they remained the same and for 55.33% (57 cases) they progressed. An important part of the cases stated that they raised the consumption of vegetables (70 cases — 67.96%) and fruits (58 cases — 56.31%). However, most of the participants reported unhealthy food choices, leading to higher intakes of sweets (80 — 77.67%), fried foods (57 cases — 55.34%), fast food (50 cases — 48.54%), and carbonated beverages (35 cases — 33.98%).

Regarding the psychological and emotional aspects, a high percentage of the respondents declared to have felt anxious (85.43%) or depressed (51.45%) during the lockdown.

Overall, participants decreased their level of physical activity (65.04%) during the confinement. On the other hand, a part of the people who were practicing some kind of sport before the pandemic (14.56%) increased their training and fitness level. Furthermore, a few cases, who were exercising only occasionally, declared they spent more time doing physical exercises (10.67%). The most common forms of activity were jogging, aerobic exercise, and doing household chores. Additionally, 77 individuals reported they had more time to relax at home (74.75%).

DISCUSSION

The objective of the present research was to determine changes in eating behavior, physical activity, and psycho-emotional states, before and during the lockdown of the COVID-19 pandemic in an adult Romanian population. Our findings illustrate that even if healthier lifestyle practices, like eating more fruits and vegetables, were adopted, the frequency and the quantity of consumption were higher.

From a psychological and emotional point of view, data from this study support the conclusions of other studies conducted around the world during the lockdown (Baroiu et al., 2021; Di Renzo et al., 2020a; Isaacs et al., 2021; Konttinen et al., 2010; Malta et al., 2020; Moynihan et al., 2015; Stanton et al., 2020). These studies proved that the COVID-19 lockdown led to emotional imbalances and psychological disorders, affecting the population's overall wellness. The measures of staying indoors and working from home, the social isolation, and the incapability of close contact with other people caused elevated levels of stress, depression, and anxiety throughout the studied population (Di Renzo et al., 2020a; Konttinen et al., 2010; Stanton et al., 2020).

In particular, this study showed that the global intake of fast food, sweets, fried food, soft drinks sweetened with sugar significantly increased. Similar results were found in other countries (Di Renzo et al., 2020a; Di Renzo et al., 2020b; Malta et al., 2020; Moynihan et al., 2015).

Participants who were not used to doing sports before the lockdown did not consider this event as an opportunity to start. However, a small part of the cases, who already did some kind of physical activity, reported an improvement in the frequency and duration of training. Notably, the involvement in aerobic exercise and household chores was important.

The questionnaire used in this study had many strengths. It was easy, short, and did not require more than 10 min to be completed and submitted. Also, it provided critical insights on mental and emotional health and on lifestyle-related habits.

This study had some limitations like the small number of participants, the fact that the majority came from urban areas, the level of income, and the impossibility of long-term follow-up.

The coronavirus pandemic has caused many significant changes: improper diets, lack of exercise, and negative emotional background. Although some good habits have increased, such as eating home-cooked food or doing exercises in the house, the unfavorable aspects (stress, anxiety, depression, food addiction) surpassed the positive ones.

In conclusion, the online questionnaire had good reliability, making it a suitable tool in determining the changes that affected the population's health during this period. These findings are extremely valuable in preventing later health disorders and in raising the effectiveness of future therapeutic interventions.

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REFERENCES

1. AMMAR, A., BRACH, M., TRABELSI, K., CHTOUROU, H., BOUKHRIS, O., MASMOUDI, L., BOUAZIZ, B., BENTLAGE, E., HOW, D., AHMED, M., MÜLLER, P., MÜLLER, N., ALOUI, A., HAMMOUDA, O., PAINEIRAS-DOMINGOS, L. L., BRAAKMAN-JANSEN, A., WREDE, C., BASTONI, S., PERNAMBUCO, C. S., MATARUNA, L., ... HOEKELMANN, A. (2020). Effects of COVID-19 Home Confinement on Eating Behaviour and Physical Activity: Results of the ECLB-COVID19 International Online Survey. *Nutrients*, 12(6), 1583. <https://doi.org/10.3390/nu12061583>
2. BAROIU, L., DUMEA, E., NĂSTASE, F., NICULEȚ, E., FOTEA, S., CIUBARA, A. B., ... & CIUBARA, A. (2021). Assessment of Depression in Patients with COVID-19. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 12(2), 254–264. <https://doi.org/10.18662/brain/12.2/204>
3. DI RENZO, L., GUALTIERI, P., CINELLI, G., BIGIONI, G., SOLDATI, L., ATTINÀ, A., BIANCO, F. F., CAPARELLO, G., CAMODECA, V., CARRANO, E., FERRARO, S., GIANNATTASIO, S., LEGGERI, C., RAMPOLLO, T., LO PRESTI, L., TARSIANO, M. G., & DE LORENZO, A. (2020a). Psychological Aspects and Eating Habits during COVID-19 Home Confinement: Results of EHLC-COVID-19 Italian Online Survey. *Nutrients*, 12(7), 2152. <https://doi.org/10.3390/nu12072152>
4. DI RENZO, L., GUALTIERI, P., PIVARI, F., SOLDATI, L., ATTINÀ, A., CINELLI, G., LEGGERI, C., CAPARELLO, G., BARREA, L., SCERBO, F., ESPOSITO, E., & DE LORENZO, A. (2020b). Eating habits and lifestyle changes during COVID-19 lockdown: an Italian survey. *Journal of translational medicine*, 18(1), 229. <https://doi.org/10.1186/s12967-020-02399-5>
5. GRIGORAS, M., & CIUBARA, A. (2021). Looking into Pandora's Box between "Everything" and "But" -Depression, Pain of Losses the Next Pandemic of Humanity? *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 12(2), 326–334. <https://doi.org/10.18662/brain/12.2/210>
6. ISAACS, A., SQUIRES, C. G., & HAWKES, C. (2021). How Is COVID-19 Shaping Families' Relationships With Food and the Food Environment in England? A Qualitative Research Protocol. *International Journal of Qualitative Methods*, 20, 1–9. <https://doi.org/10.1177/1609406921991371>
7. KONTINEN, H., MÄNNISTÖ, S., SARLIO-LÄHTEENKORVA, S., SILVENTOINEN, K., & HAUKKALA, A. (2010). Emotional eating, depressive symptoms and self-reported food consumption. A population-based study. *Appetite*, 54(3), 473–479. <https://doi.org/10.1016/j.appet.2010.01.014>
8. LOUE, S. (2020). Health Disparities, Social Distancing, and Belonging in Pre- and Post-Covid-19 United States. *Postmodern Openings*, 11(1Sup2), 59–64. <https://doi.org/10.18662/po/11.1sup2/140>
9. LUCA, L., BAROIU, L., CIUBARA, A. B., ANGHEL, R., BULGARU-ILIESCU, A. I., ANGHEL, L., & CIUBARA, A. (2020a). Covid-19 and the Spanish Flu. From Suffering to Resilience. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 11(3Sup1), 01–07. <https://doi.org/10.18662/brain/11.3Sup1/116>
10. LUCA, L., CIUBARA, A. B., FULGA, I., BURLEA, S. L., TERPAN, M., & CIUBARA, A. M. (2020c). Social Implications for Psychiatric Pathology of Depressive and Anxiety Disorders, Alcohol Addiction and Psychotic Disorders during the COVID-19 Pandemic in Romania. Analysis of two Relevant Psychiatry Hospitals. *Revista de cercetare si interventie sociala*, 69, 261–272. http://www.rcis.ro/images/documente/rcis69_16.pdf
11. MALTA, D. C., SZWARCOWALD, C. L., BARROS, M., GOMES, C. S., MACHADO, Í. E., SOUZA JÚNIOR, P., ROMERO, D. E., LIMA, M. G., DAMACENA, G. N., PINA, M. F., FREITAS, M., WERNECK, A. O., SILVA, D., AZEVEDO, L. O., & GRACIE, R. (2020). A pandemia da COVID-19 e as mudanças no estilo de vida dos brasileiros adultos: um estudo transversal, 2020 [The COVID-19 Pandemic and changes in adult Brazilian lifestyles: a cross-sectional study, 2020]. *Epidemiologia e serviços de saúde: revista do Sistema Único de Saúde do Brasil*, 29(4). <https://doi.org/10.1590/S1679-49742020000400026>
12. MIU, T. A. (2019). Fasting, a Means to Spiritual, Bodily and Social Health. *Logos Universality Mentality Education Novelty: Philosophy & Humanistic Sciences*, 7(2), 62–72. <https://doi.org/10.18662/lumenphs/27>
13. MOYNIHAN, A. B., VAN TILBURG, W. A., IGOU, E. R., WISMAN, A., DONNELLY, A. E., & MULCAIRE, J. B. (2015). Eaten up by boredom: consuming food to escape awareness of the bored self. *Frontiers in psychology*, 6. <https://doi.org/10.3389/fpsyg.2015.00369>
14. ONEA, I. (2019). Gyms and Social Interaction. *Logos Universality Mentality Education Novelty: Social Sciences*, 8(2), 21–34. <https://doi.org/10.18662/lumenss/22>
15. SANDU, A. (2020). Bioethics in crisis or a crisis of bioethics? An anthropology of the pandemic in the medicalized society. *Lumen*.
16. STANTON, R., TO, Q. G., KHALESİ, S., WILLIAMS, S. L., ALLEY, S. J., THWAITE, T. L., FENNING, A. S., & VANDELANOTTE, C. (2020). Depression, Anxiety and Stress during COVID-19: Associations with Changes in Physical Activity, Sleep, Tobacco and Alcohol Use in Australian Adults. *International journal of environmental research and public health*, 17(11), 4065. <https://doi.org/10.3390/ijerph17114065>