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# Changes in Health Behaviors By Gender During a Global Pandemic

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## ABSTRACT

As we emerge from Covid-19 pandemic, many people struggle to return to normal, leading us to ask what changes have occurred as a result of the virus and social distancing. We have observed 471 million people suffer with Covid-19, lost 6.08 million lives to the virus, and learned how the virus works as well as how to fight it, yet very little is known about the impact of the virus and its countermeasures on our health habits. **PURPOSE:** To examine the effect of gender on changes in health behaviors during the COVID-19 pandemic. **METHODS:** Eight hundred and sixty-six subjects (70.8% female; age= 45±3.4) were surveyed with 129 questions regarding their health behaviors either 1) prior to the pandemic, 2) after the pandemic (current), 3) or the changes in these behaviors they have perceived. The questionnaire utilized a dual set of questions regarding behaviors prior to the pandemic and currently which examined dietary structure, physical activity (using questions from the global physical activity questionnaire (GPAQ), and mental health. For the remaining questions regarding perceived changes, scales were used to indicate the degree of change and whether the behaviors improved or not. The data was analyzed using SPSS 20.0. When analyzing data, first calculated a change score for the pre-pandemic and post-pandemic reported behaviors. These change scores were then used to run independent sample t-tests to identify the differences in changes between males and females, described by means with the accompanying standard deviations. **RESULTS:** Analysis of the data found that overall, individuals struggled with increased stress, consuming the proper amounts of healthy foods observed (i.e. fruits and vegetables), and with maintaining physical activity levels. When male and female responses were compared, several significant trends emerged. Firstly, females reported a higher increase in anxiety and depression. Secondly, there was little difference found between the changes in nutritional habits and physical activity of men and women. Finally, while observing the data, another trend demonstrated that individuals with children and college students also reported significant increases in stress and a difficulty to maintain nutritional and exercise habits. **CONCLUSION:** From these findings, it can be concluded that the Covid-19 Pandemic has caused a deficit in health behaviors across the board. It can also be concluded that as a society, we must do more to meet the needs of females, parents, and college students, especially during such a crisis, to help facilitate the maintenance of these behaviors and ensure overall quality of life is an equal opportunity. Further research should explore the identified trends found in parents, college students, and females, as well as underrepresented populations to determine how their needs are not being met, or why they were more likely to suffer as a result of the pandemic.

## INTRODUCTION

- COVID-19 is a highly infectious disease caused by SARS-CoV-2 virus that was declared a pandemic on March 11th, 2020 by the World Health Organization
- To combat the spread and impact of the virus, social distancing and stay-at-home orders were put in place, closing all nonessential businesses
- Social distancing presented a potential threat to both men and women's ability to enact health behaviors
- Consistent practice of health behaviors is crucial to preventing disease and maintaining quality of life, and equal access to these behaviors between genders has not always been granted.
- Prior access to the resources and services that facilitate healthy behaviors may not be, or have been, equally available to men and women, indicating the pandemic's effects could be disproportionately harming one gender.

## PURPOSE

To examine the effect of gender on changes in health behaviors during the COVID-19 pandemic.

## METHODS

### Study Population

- Eight hundred and sixty-seven subjects (age= 42.3 ± 17.7 years; male= 29.2%; female = 70.8%; 90.9% white) participated in the study.
- 96.5% of subject participants reported that they were living in an area currently under a stay-at-home or lockdown order, with 23.1% reporting that they live in a "hot spot"
- 51.8% of subjects reported having children in the home
- 25.6% of subject participants were currently enrolled as a college student at the time of the survey.

### Methodology

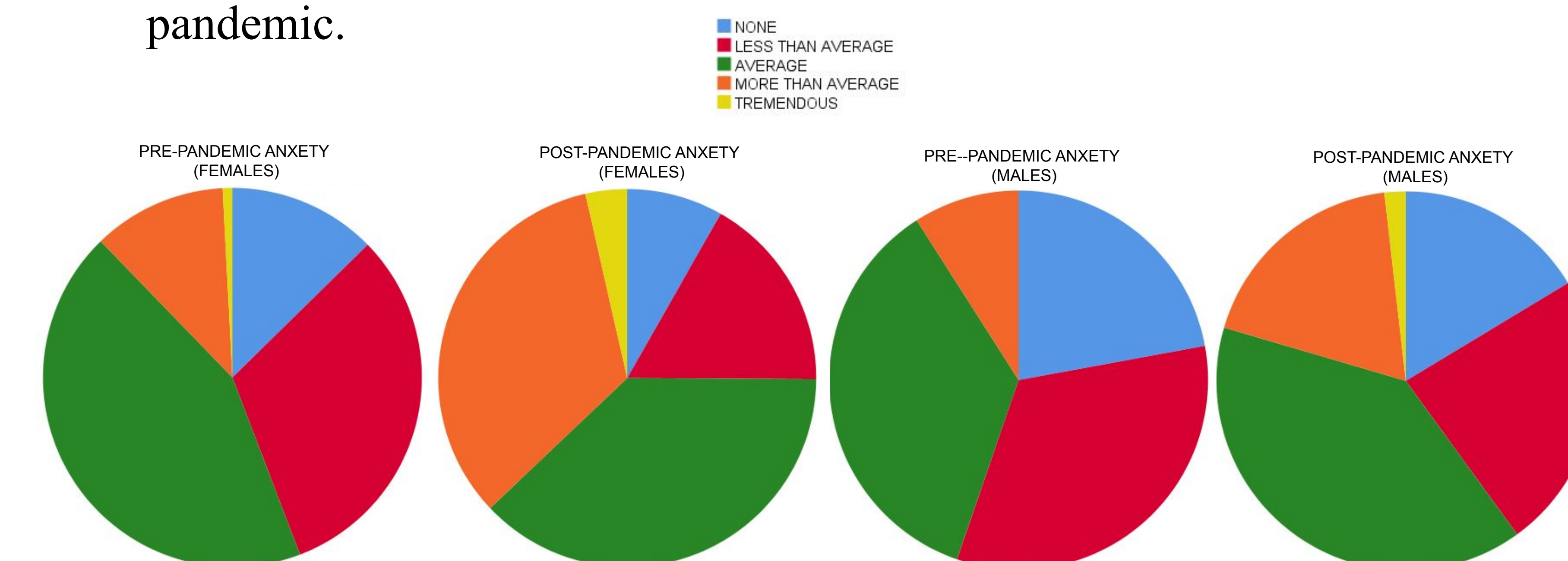
- Subjects completed a 129-item online questionnaire between April 20, 2020 and May 25, 2020.
- Subjects completed question sets regarding their self-reported health behaviors (diet, PA, stress).
- Subjects were asked to report on their health behaviors prior to the beginning of the pandemic and subsequent stay-at-home orders (PRE), and their current (over the last 30 days) health behaviors (POST).
- PA was assessed using the Global Physical Activity Questionnaire (GPAQ), with questions regarding frequency and duration of aerobic and strengthening exercise, as well as sedentary behavior.
- Diet was assessed with a series of intake and food frequency questions including fruit and vegetable intake, frequency of takeout/delivery meals, snacking and water consumption.
- Subjects were also asked to self-report the perceived impact (PC) of the COVID-19 pandemic on their health behaviors (diet, PA, stress) on a 3-point Likert scale i.e. (*increased/improved, no change, decreased/worsened*)

### Statistical Analysis

- The data was analyzed using SPSS 20.0
- Calculated a change score (POST-PRE) for physical activity and nutrition behaviors, as well as mental health outcomes.
- Independent samples t-tests were used to examine the differences in change in health behaviors between male and female respondents.
- Means ± SD and frequencies were used to describe the population's health behaviors.

## RESULTS

- Results of the independent samples t-test indicate a significant difference in the change in mental health (anxiety and depression) between male and female respondents across the pandemic ( $t_{416.202} = -2.422, p = 0.016$ ;  $t_{453.472} = -4.067, p < 0.001$  respectively).
- Mean change scores indicate that female respondents increased anxiety and depression significantly more than their male counterparts during the pandemic.
- There were no significant differences in change in physical activity and nutrition behaviors between males and females across the pandemic.



## CONCLUSIONS

- The results of the current investigation found that women experienced a significantly greater decline in mental health compares to their male counterparts.
- Limitations of the current investigation include the unequal distribution of male and female subjects, and a predominantly white subject pool.
- Future research should seek to identify potential mechanisms for these differences, as well as potential interventions and support systems to better assist these negatively impacted populations.
- Additionally future research should seek to investigate the interaction between gender, race, socioeconomic status, and parental status and the effects of changes in health behaviors across the pandemic.

## REFERENCES

1. Adhanom, "WHO Director-General's Opening Remarks at the Media Briefing on COVID-19 - 11 March 2020."
2. Ciotti, M., Ciccozzi, M., Terrinoni, A., Jiang, W.-C., Wang, C.-B., & Bernardini, S. (2020). The COVID-19 pandemic. *Critical Reviews in Clinical Laboratory Sciences*, 57(6), 365–388. <https://doi.org/10.1080/10408363.2020.1783198>
3. Douglas et al. - 2020—Mitigating the wider health effects of covid-19 pa.pdf. (n.d.). Retrieved December 16, 2021, from <https://www.bmj.com/content/bmj/369/bmj.m1557.full.pdf>
4. Douglas, M., Katikireddi, S. V., Taulbut, M., McKee, M., & McCartney, G. (2020). Mitigating the wider health effects of covid-19 pandemic response. *BMJ*, m1557. <https://doi.org/10.1136/bmj.m1557>
5. Lemma, S., Gelaye, B., Berhane, Y., Worku, A., & Williams, M. A. (2012). Sleep quality and its psychological correlates among university students in Ethiopia: A cross-sectional study. *BMC Psychiatry*, 12(1), 237. <https://doi.org/10.1186/1471-244X-12-237>