Impact of the COVID-19 Pandemic on Physical Activity in the General Population

Dr. Chris Hong, DO (1)., Dr Alexander Kowalski, DO (1), Michelle Minkanic, OMS-II (2)

(1) Rowan University School of Osteopathic Medicine – Department of Family Medicine
RowanSOM/Jefferson NJ Health/Virtua Our Lady of Lourdes Health System Family Medicine Residency Program
(2) Rowan University of School of Osteopathic Medicine

Background and Hypothesis:

- Obesity has been a national epidemic in the United States
- COVID-19 declared a pandemic by the WHO in March 2020
  - Obesity & related health outcomes became a higher risk
  - Physical activity & well-known health benefits became more limited
- Important for physicians to understand effects of the pandemic on physical activity
- We hypothesized the COVID-19 pandemic negatively impacted patients from maintaining physical activity as compared to pre-pandemic times

Methods:

- Participants were recruited in person in the examination rooms at the Rowan Family Medicine clinic located in Washington Township, NJ.
- Data was collected via one hardcopy survey from January 2022 to November 2022 that was distributed to participants at the clinic who consented to it.
- Patients were given hard copies of the questionnaire to fill out.
- The questionnaire contained 21 questions, that included questions about the participant's top 3 activities before and after the pandemic, as well as the frequency and duration for each activity.
- We also obtained personal Information demographics (sex, age, if applicable, weight, height, race) from the participants, however, no identifying information will be collected.

Results:

- One hundred nine patients volunteered for the survey.
- With respect to gender, 67% were female and 33% were male.
- The mean pre-pandemic and current BMI's were 30.4 (SD= 7.12) and 30.6 (SD=7.41), respectively. The paired t test (t= 0.731, dfs = 107, p = 0.47) indicates that there was no significant mean difference.
- The percentages of the number one activity for both groups prior to the pandemic were: cardiovascular exercises (52.3%), no activity (20.2%), weightlifting (11.9%), other activity (8.3%), sports (6.4%), and swimming (0.9%).
- The percentages of the number one activity currently were: cardiovascular activities (51.4%), no activity (16.5%), weightlifting (12.8%), other activity (11.9%), sports (4.6%), and swimming (2.8%).
- Based on the McNemar test for correlated proportions, there was no difference in the percentages for any of the five activities before and after the pandemic.

Conclusion:

This study demonstrates that there were no significant changes in the mean BMIs and the number one preferred activity for physical activity when compared to pre-pandemic levels.

Acknowledgement:
We acknowledge Rowan Department of Family Medicine for their assistance in obtaining IRB approval. The study was approved by the institution's Institutional Review Board.

Table 1: Distribution of Sex

	Frequency	Percent
0 Male	36	33.0
1 Female	73	67.0
Total	109	100.0

Table 2: Distribution of Race

	Frequency	Percent
African American	21	19.3
Asian	3	2.8
Hispanic	6	5.5
Other	4	3.7
White	75	68.8
Total	109	100.0

Table 3: Distribution of Activity Prior to COVID

	Frequency	Percent
0 None	22	20.2
1 Weight Lifting	13	11.9
2 Cardio	57	52.3
3 Swimming	1	0.9
4 Sports	7	6.4
5 Other	9	8.3
Total	109	100.0

Table 4: Current Distribution of Activity

	Frequency	Percent
0 None	18	16.5
1 Weight Lifting	14	12.8
2 Cardio	56	51.4
3 Swimming	3	2.8
4 Sports	5	4.6
5 Other	13	11.9
Total	109	100.0

REFERENCES:

1. Centers for Disease Control and Prevention. (n.d.). *CDC Covid Data tracker*. Centers for Disease Control and Prevention. Retrieved October 30, 2021, from https://covid.cdc.gov/covid-data-tracker/#datatracker-home.
2. Hauck, Grace, et al. "Five Months in: A Timeline of How COVID-19 Has Unfolded in the US." *USA TODAY*, USA TODAY, 23 June 2020, https://www.usatoday.com/in-depth/news/nation/2020/04/21/coronavirus-updates-how-covid-19-unfolded-u-s-timeline/2990956001/.
3. Centers for Disease Control and Prevention. (2021, June 7). *Adult obesity facts*. Centers for Disease Control and Prevention. Retrieved October 30, 2021, from https://www.cdc.gov/obesity/data/adult.html.
4. Centers for Disease Control and Prevention. (2021, September 15). *Obesity, race/ethnicity, and covid-19*. Centers for Disease Control and Prevention. Retrieved October 30, 2021, from https://www.cdc.gov/obesity/data/obesity-and-covid-19.html.
5. O'Hearn M, Liu J, Cudhea F, Micha R, Mozaffarian D. (2021). Coronavirus Disease 2019 Hospitalizations Attributable to Cardiometabolic Conditions in the United States: A Comparative Risk Assessment Analysis. *Journal of the American Heart Association*. 2021 Feb;10(5):e019259. doi:10.1161/JAHA.120.019259.