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**Title**

*Bodyweight Changes During COVID-19 for Patients Diagnosed with Depression: A Retrospective Cohort Study*

**Priority 1 (Research Category)**

Obesity, exercise and nutrition

**Presenters**

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**Abstract**

Context: The COVID-19 pandemic led to an unprecedented lockdown of millions of Americans from the spring of 2020 to the fall of 2020. Studies done on the impact of COVID-19 on mental health and body weight have been important to our understanding of the effects of the pandemic. However, these studies on depression and BMI change have not identified a possible direction of the causality of the relationship between depression and body weight as affected by lockdown measures during a pandemic.

Objective: The purpose of this study was to examine whether a diagnosis of depression is associated with changes in BMI during the COVID-19 pandemic for adults (aged  $\geq 18$  years).

Study Design and Analysis: Retrospective cohort study

Setting or Dataset: EHR data from a family medicine university clinic.

Population Studied: Adults  $\geq 18$  years who visited the clinic within a 6-month period prior to lockdown (October 2019-March 2020) and at least once in the 6-month post-lockdown period (September 2020–March 2021). The lockdown period started in March 2020. 1,211 patients were included.

Outcome Measures: Dependent variable: change in BMI; Primary independent variable: diagnosis of depression; Confounding variables: age, race/ethnicity, sex, medications, and chronic conditions

Results: Mean age was 59.9 (sd=16.5). Patients were mostly female (n=770, 63.6%), white (n=678, 56.0%), and non-Hispanic (n=622, 51.4%). 18.7% (n=227) had a diagnosis of depression. There was a significant difference in BMI change ( $p < 0.001$ ) between the group diagnosed with depression (mean change=2.11, sd=1.9) and the group with no depression diagnosis (mean change=1.67, sd=1.9). Similarly, a diagnosis of depression significantly predicted BMI changes ( $p > 0.001$ ). This association remained while including confounding variables in the model ( $p = 0.009$ ). Further statistical analysis showed that

age between 31 and 50 significantly predicted BMI changes in those patients with no depression diagnosis while controlling for confounding variables ( $p=0.027$ ).

Conclusion: Individuals with depression had significant changes in BMI during the COVID-19 pandemic, and age predicted these changes in middle-aged adults (30-50 years old). These findings highlight the importance of identifying and following up with individuals with a diagnosis of depression to alleviate effects on their BMI during extended isolation. Identifying patients who might be susceptible to these changes could lead to patient health outcomes.