

U.S. Generalized Anxiety Disorder Related to COVID-19 Pandemic by Age and Gender

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Background

- Generalized anxiety disorder (GAD), demonstrating excessive anxiety and worry occurring more days than not for a period of ≥6 months, is one of the most prevalent anxiety disorders in the general population.^{1,2}
- GAD is a debilitating mental health condition, placing a substantial burden on individuals, society, and the economy.¹
- Previous studies show higher prevalence of anxiety disorders in younger adults and females, suggesting a potential disparity in GAD prevalence by age and gender.^{3,4}
- Prior research suggests that the COVID-19 pandemic (COVID) may have multiple impacts on mental health in the United States (US).⁵ However, there’s limited evidence about the impact of COVID on GAD prevalence, as well as how this may vary by age and gender in the US.

Objectives

- To assess GAD prevalence and severity of symptoms before and during COVID in the US, using the GAD 7-item (GAD-7) scale.
- To assess variations in GAD prevalence and severity of symptoms by gender and age groups before and during COVID in the US.

Methods

Study Design

- The National Health and Wellness Survey (NHWS) is an annual internet-based self-report survey; recruitment is designed to represent the general adult population in terms of age, gender, and race/ethnicity distributions in the US.
- Respondents who participated in the US NHWS, which was fielded from March to July 2019, were quota sampled by age and gender and recontacted to complete a short survey in April 2020 to assess the impact of COVID on their mental health (COVID Pulse Survey).
 - Quota sampling by age and gender was implemented for recontacting the respondents from NHWS.
- In the NHWS, respondents were asked about their demographics and health-related characteristics. In both surveys, respondents were asked about their age and gender and completed the GAD-7.

Inclusion Criteria

- Aged ≥18 years
- Resident of the US
- Completed both 2019 US NHWS and COVID Pulse Survey

Exclusion Criteria

- Respondents whose age mismatched within a few years between the two surveys

Variables

- GAD positive screen was defined by GAD-7 score as: yes (≥10), no (≤9).⁶
- GAD symptom severity was defined by GAD-7 score as: none (≤4), mild (5-9), moderate (10-14), and severe GAD (≥15).⁶
- Sample characteristics measured at baseline (2019 US NHWS) included age, gender, race and ethnicity, marital status, education, employment status, health insurance type, and the Charlson Comorbidity Index (CCI).
- The CCI represents a weighted sum of multiple comorbid conditions predictive of mortality, with higher CCI scores indicating greater comorbidity burden.⁷ From a previous study, the cumulative mortality rate attributable to comorbid disease during a 10-year follow-up by CCI scores were: 0, 8%; 1, 25%; 2, 48%; ≥3, 59%.⁷

Data Analysis

- The distributions of sample characteristics at baseline were summarized as means and standard deviations (SDs) for continuous variables and numbers and percentages for categorical variables.
- Numbers and percentages of respondents with a GAD positive screen and by GAD symptom severity were summarized for the overall sample and by gender and age groups, both before and during COVID.
 - McNemar’s tests were used to evaluate the changes in GAD positive screen distribution from before to during COVID. *P*-values <0.05, 2-tailed were considered to be statistically significant.

Limitations

- Our estimation of GAD prevalence may be influenced by selection bias as most respondents were recruited online and may not be representative of populations without access to internet.
- Our results only provide evidence on the prevalence of GAD positive screens and symptom severity and their changes during early COVID. Longitudinal assessments after early COVID are needed to understand whether there is a lasting COVID impact on GAD prevalence and severity.

Strengths

- This is the first study to compare the prevalence of GAD symptom severity and positive screen before and during COVID in the US.
- We used the GAD-7, which has demonstrated good validity and reliability in the general population,^{7,8} to screen for GAD and to assess symptom severity.
- We implemented the two surveys with closing dates to minimize the impact of factors other than COVID on GAD-7 screening.

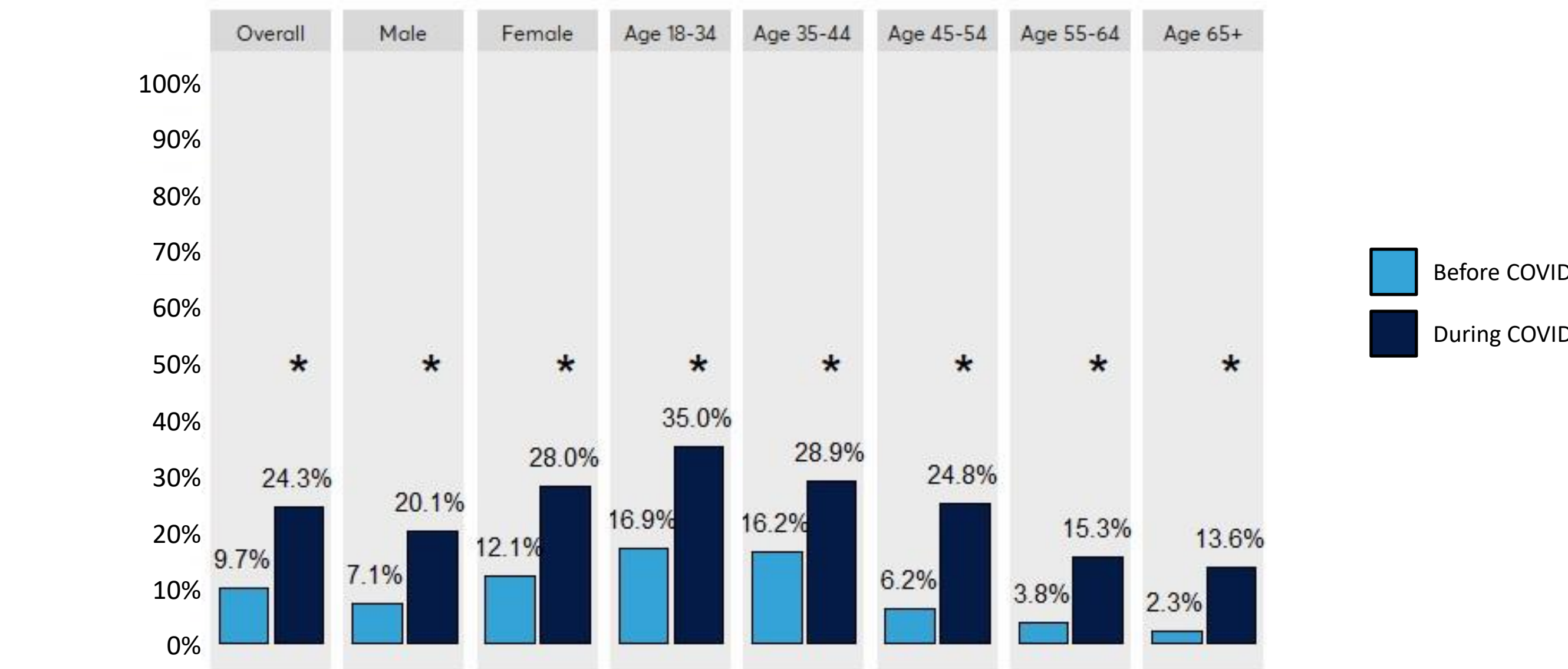
Results

Table 1. Sample Characteristics at Baseline

	Study Sample (N=832)		Study Sample (N=832)
Age (mean, SD)	47.9, 17.3	Education (n, %)*	
Age Category		Less than university	342, 41.1%
18-34	243, 29.2%	University or higher	489, 58.8%
35-44	142, 17.1%	Employed (FT/PT/SE) (n, %)	522, 62.7%
45-54	113, 13.6%	Health Insurance Type	
55-64	157, 18.9%	Commercial	496, 59.6%
≥65	177, 21.3%	VA/TRICARE	20, 2.4%
Male Sex (n, %)	393, 47.2%	Medicare	161, 19.4%
Race/Ethnicity		Medicaid	56, 6.7%
African American	97, 11.7%	Not sure	20, 2.4%
White	511, 61.4%	No insurance	79, 9.5%
Hispanic	106, 12.7%	CCI (mean, SD)	0.5, 1.2
Other	118, 14.2%		
Marital Status (n, %)			
Married/living with partner	474, 57.0%		
Single/not living with partner	263, 31.6%		
Divorced/separated/widowed	95, 11.4%		

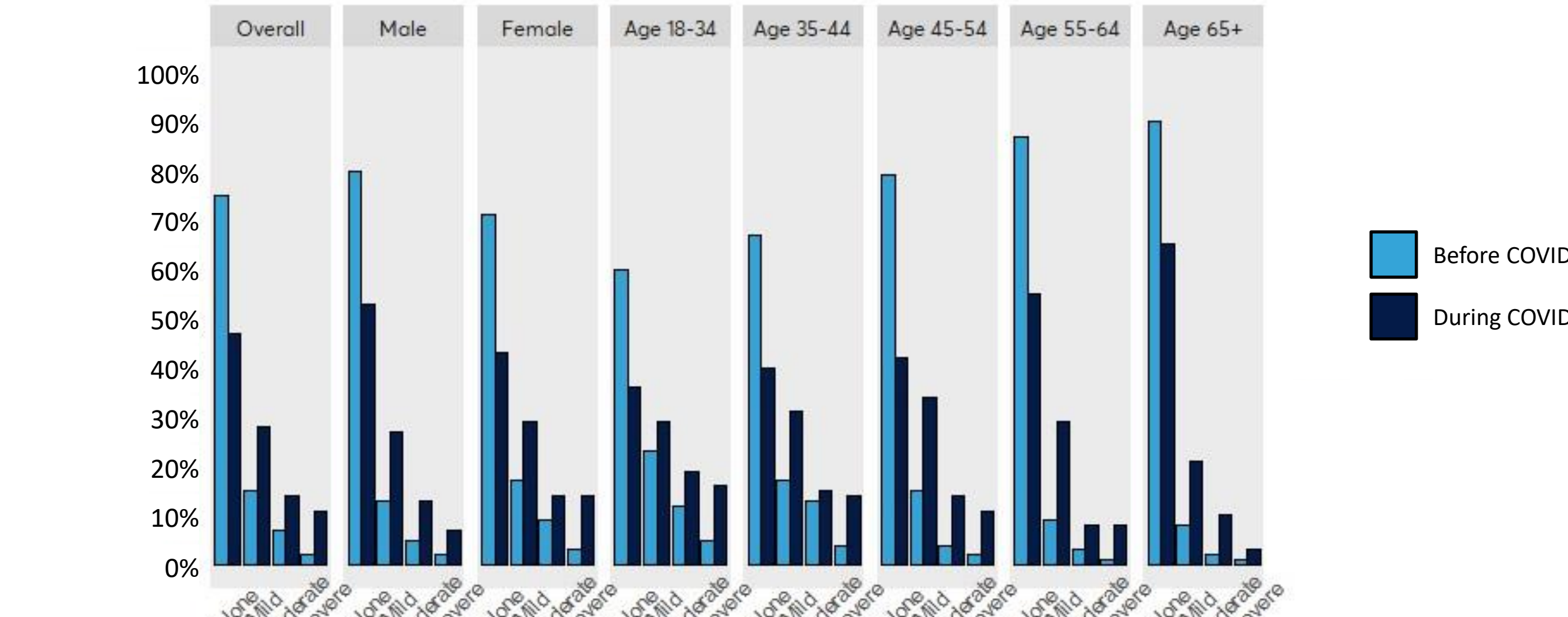
Note: SD: standard deviation; FT: full time; PT: part time; SE: self-employed;
CCI: Charlson Comorbidity Index
*One participant declined to answer on education.

Figure 1. Prevalence of Positive Screen for Generalized Anxiety Disorder, Before and During COVID-19, from Overall Sample and by Gender and Age Group



Note: Groups that were statistically significant at *p*<0.05, 2-tailed during COVID compared with before COVID are marked with asterisks.

Figure 2. Proportion of Respondents with None, Mild, Moderate, and Severe Generalized Anxiety Disorder Symptoms, Before and During COVID-19, from Overall Sample and by Gender and Age Group



Conclusions

- In the US, the percentage of adults (≥18 years) who had a positive screen for GAD increased to 24.3% during COVID and more than doubled from pre-COVID.
- The distribution of GAD symptoms shifted towards greater severity with 13.7% moderate (from 7.3%) and 10.6% severe (from 2.4%) GAD symptoms during COVID.
- The increase in GAD positive screen and shift in GAD symptom severity distribution occurred across all age and gender groups. Female and younger (aged 18-44 years) adults had a higher GAD positive screen prevalence before and during COVID, and they experienced greater increases in severe GAD symptoms during COVID.
- The substantial increase in anxiety symptom severity during COVID, and the disparity of GAD by age and gender, both before and during COVID, underscores the greater need for routine anxiety screening, especially among the younger adults.

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