Changes in Alcohol-Related Behaviors and Quality of Life During the COVID-19 Pandemic:
Impact of Alcohol Use Disorder Diagnosis and Treatment History

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The COVID-19 pandemic has led to increases in anxiety and depression worldwide.[1] While mental health challenges and pandemic-related stress may trigger alcohol drinking to cope,[2] there is substantial heterogeneity in changes in drinking patterns from before to during the pandemic.[3] Individuals with a history of alcohol use disorder (AUD) may be vulnerable to COVID-related complications and alcohol relapse.[4,5] We examined longitudinal changes in alcohol-related and quality of life (QoL) outcomes among individuals with AUD (separated by treatment history) and contrasted these time changes to those observed among healthy controls.

Methods

From June 3, 2020, to March 5, 2021, we reached out to 1,203 prior participants of the National Institute on Alcohol Abuse and Alcoholism (NIAAA) Natural History Protocol. After excluding participants that (1) did not respond (n = 548); (2) declined/withdrew (n = 233); (3) completed the survey after March 11, 2021 (n = 23); and (4) had missing data on primary study variables (n = 21), 378 participants were enrolled in the NIAAA COVID-19 Pandemic Impact of Alcohol (C19-PIA) Study. Data were collected by phone and/or through an online survey. The study sample was 46.6% female, 52.7% White, 32.0% Black, and 15.3% Other Race. Most participants (91.0%) resided in Maryland (57.4%), Washington, DC (19.8%), or Virginia (13.8%). AUD diagnosis was determined to be positive in 163 participants (43.1%), using Structured Clinical Interview for *DSM-IV* or *DSM-5*, in the Natural History Protocol.[6] Of these individuals, 109 underwent inpatient treatment at NIAAA. Based on history of AUD treatment status, we created 3 groups: "healthy control" (56.9%; n = 215, of which 36 were nondrinkers); "non-treatment AUD" (14.3%; n = 54); and "treatment AUD" (28.8%; n = 109). Of the 378 participants, 320 (84.7%) were asked to report alcohol craving and 293 (77.5%) also provided data on QoL. The study was approved by the National Institutes of Health Intramural Institutional Review Board.

Data mapping onto 3 timepoints were extracted from the Natural History Protocol (T1) and the C19-PIA Study (T2: retrospectively reported pre-pandemic timepoint; T3: timepoint during the pandemic). Time lapsed from T1 to C19-PIA Study ("cohort") ranged from 28.8% < 1 year, 37.6% 1–2 years, and 33.6% 3–5 years. Participant enrollment was stratified into 3 phases: from June 3, 2020, to July 31, 2020 (27.8%); from August 1, 2020, to November 22, 2020 (37.0%); and from November 23, 2020, to March 5, 2021 (35.2%). Study outcomes included Alcohol Use Disorders Identification Test (AUDIT)[7] for problematic drinking, Penn Alcohol Craving Scale[8] for alcohol craving, and World Health Organization QoL-BREF[9] for 4 QoL domains. Multilevel modeling was used to account for the nesting structure of observations across time within participants. The multilevel models tested interactions of time and AUD treatment status on study outcomes while adjusting for age, sex, race, cohort, and enrollment phase.

Results

Longitudinal changes in outcomes varied by AUD treatment status (Figure 1). Pairwise effects of time on outcomes are presented in Supplementary Table 1.

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Figure 1. Changes in Problematic Drinking, Alcohol Craving, and Quality of Life Domains by AUD Treatment Groups[a]
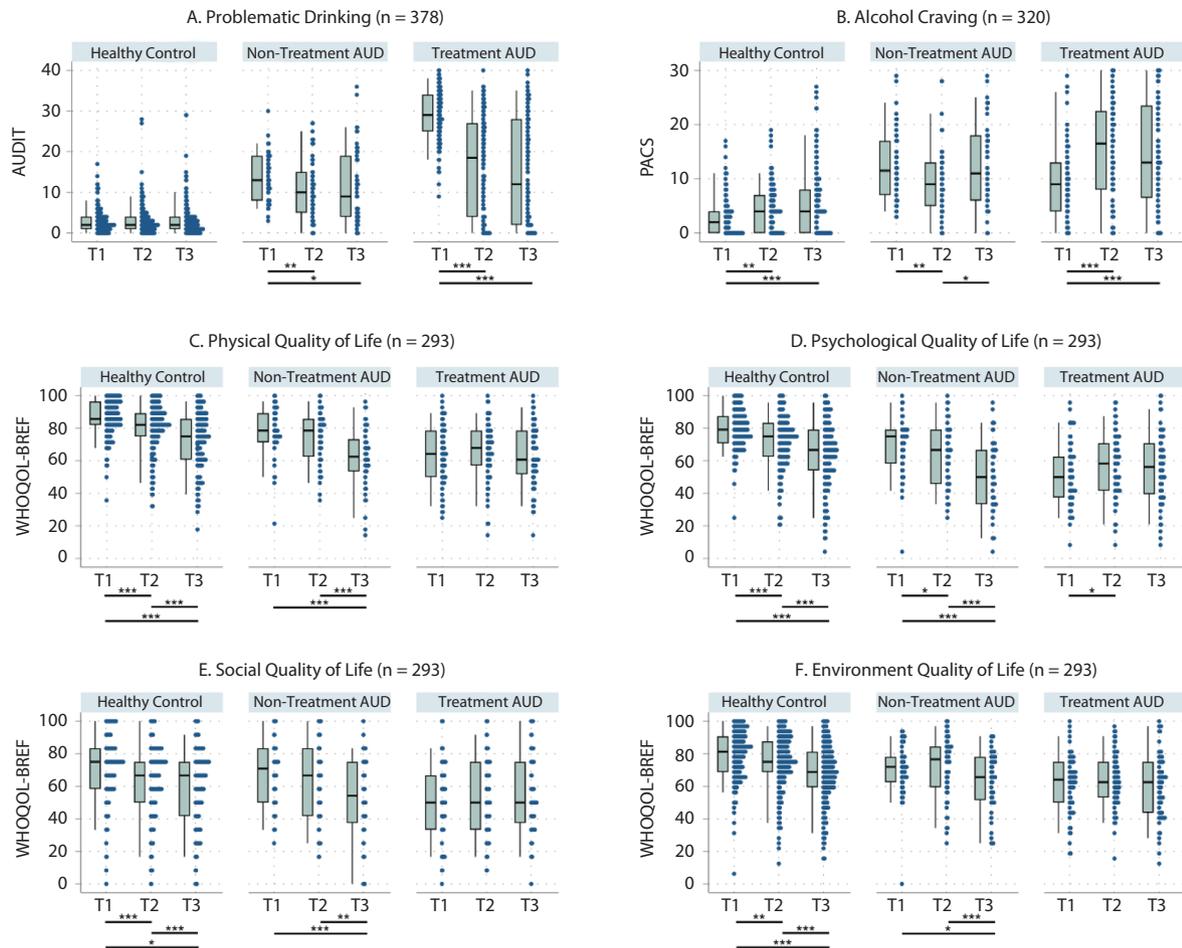
[a]Timepoints were as follows: T1 = Natural History Protocol, T2 = C19-PIA study pre-pandemic, T3 = C19-PIA study during the pandemic. The box plots show the 5th, 25th, 50th, 75th, and 95th percentiles of study outcomes, and the distributions of data points are plotted to the right of the box plots. More heterogeneous responses were observed at T2 and T3 than at T1. Missing data in PACS (n = 58) reflected a skip logic for individuals who abstained from alcohol at T3. Missing data in quality of life (QoL) were found in 85 participants. Missingness in QoL did not differ by age, sex, race, cohort, or enrollment phase and was handled using complete case analyses.
*P < .05. **P < .01. ***P < .001.
Abbreviations: AUD = alcohol use disorder, AUDIT = Alcohol Use Disorders Identification Test, PACS = Penn Alcohol Craving Scale, WHOQOL-BREF = World Health Organization QoL-BREF.

Problematic drinking in the healthy control group remained low across time. Individuals with AUD regardless of treatment history scored lower on problematic drinking at T2 and T3 relative to T1. Despite these declines, AUDIT scores remained the highest in the treatment AUD group at T3 (mean = 15.0, SD = 13.2). Increases in alcohol craving from T1 to T3 were observed in the healthy control and treatment AUD groups. Alcohol craving in the non-treatment AUD group decreased from T1 to T2 and increased from T2 to T3. All 4 QoL domains in the healthy control group decreased across time. Similar declines were observed for most QoL domains in the non-treatment AUD group. QoL scores in the treatment AUD group were lowest at T1 and remained generally low across time.

Discussion

Relative to pre-pandemic levels, problematic drinking remained low among healthy controls and declined among individuals with a history of AUD during the pandemic. Reductions in AUDIT scores in the treatment AUD group may reflect potential beneficial effects of the NIAAA inpatient treatment program and/or more limited social opportunities for drinking during the pandemic.[10,11] However, despite within-group reductions, the average pandemic AUDIT score in this group was still above the clinical threshold (≥ 8), indicating the need for continued intervention.

Increases in alcohol craving in the healthy control and treatment-seeking AUD groups revealed an understudied dimension of drinking warranting surveillance. Fewer recreational and social activities along with higher COVID-related stress (eg, unemployment, losing a loved one, financial stress) may have contributed to QoL reductions among healthy controls.[12,13] Lack of change in QoL among individuals with AUD may reflect a floor effect given the initially low QoL levels.

Study limitations include a convenience regional sample limiting generalizability, attrition from Natural History Protocol, varied time lapsed from T1 to the C19-PIA Study, T2 retrospective report, partial data on QoL, and lack of AUD diagnostic and treatment data at T3. More research is needed to understand challenges individuals with AUD encountered during the pandemic (eg, social isolation, disruption to treatment) to inform approaches (eg, telemedicine) to support recovery from AUD.

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See supplementary material for this brief report at PSYCHIATRIST.COM.

Supplementary Material

Title: Changes in Alcohol-Related Behaviors and Quality of Life During the COVID-19 Pandemic: Impact of Alcohol Use Disorder Diagnosis and Treatment History

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List of Supplementary Material for the Brief Report

Disclaimer

This Supplementary Material has been provided by the authors as an enhancement to the published brief report. It has been approved by peer review; however, it has undergone neither editing nor formatting by in-house editorial staff. The material is presented in the manner supplied by the author.

Supplementary Table 1. Effects of Time on Alcohol-Related and Quality of Life Outcomes by AUD-Treatment Status

	A. Problematic Drinking		B. Alcohol Craving		C. Physical Quality of Life	
	b (95% CIs)	p	b (95% CIs)	p	b (95% CIs)	p
Healthy Control						
T2 vs T1	0.13 (-0.89, 1.15)	0.805	**1.72 (0.69, 2.76)**	**0.001**	**-5.13 (-7.47, -2.79)**	**<0.001**
T3 vs T1	0.07 (-0.95, 1.09)	0.895	**2.69 (1.65, 3.73)**	**<0.001**	**-12.51 (-14.85, -10.17)**	**<0.001**
T3 vs T2	-0.06 (-1.08, 0.96)	0.907	0.96 (-0.06, 1.98)	0.065	**-7.38 (-9.67, -5.09)**	**<0.001**
Non-Treatment AUD						
T2 vs T1	**-2.84 (-4.88, -0.81)**	**0.006**	**-2.68 (-4.62, -0.75)**	**0.007**	-2.54 (-7.00, 1.91)	0.263
T3 vs T1	**-2.56 (-4.58, -0.53)**	**0.013**	-0.17 (-2.11, 1.76)	0.860	**-14.89 (-19.35, -10.44)**	**<0.001**
T3 vs T2	0.29 (-1.74, 2.32)	0.781	**2.51 (0.59, 4.43)**	**0.011**	**-12.35 (-16.74, -7.96)**	**<0.001**
Treatment AUD						
T2 vs T1	**-11.99 (-13.43, -10.55)**	**<0.001**	**5.51 (3.99, 7.04)**	**<0.001**	1.97 (-1.76, 5.70)	0.300
T3 vs T1	**-13.76 (-15.20, -12.32)**	**<0.001**	**4.82 (3.29, 6.34)**	**<0.001**	-1.08 (-4.80, 2.65)	0.571
T3 vs T2	**-1.77 (-3.19, -0.34)**	**0.015**	-0.69 (-2.16, 0.77)	0.353	-3.05 (-6.74, 0.64)	0.106

	D. Psychological Quality of Life		E. Social Quality of Life		F. Environment Quality of Life	
	b (95% CIs)	p	b (95% CIs)	p	b (95% CIs)	p
Healthy Control						
T2 vs T1	**-7.87 (-10.55, -5.18)**	**<0.001**	**-8.90 (-12.28, -5.52)**	**<0.001**	**-4.05 (-6.52, -1.57)**	**0.001**
T3 vs T1	**-15.96 (-18.65, -13.28)**	**<0.001**	**-12.53 (-15.90, -9.15)**	**<0.001**	**-11.27 (-13.74, -8.80)**	**<0.001**
T3 vs T2	**-8.10 (-10.73, -5.47)**	**<0.001**	**-3.63 (-6.93, -0.32)**	**0.032**	**-7.22 (-9.64, -4.80)**	**<0.001**
Non-Treatment AUD						
T2 vs T1	**-5.72 (-10.84, -0.60)**	**0.029**	-4.61 (-11.05, 1.83)	0.161	2.19 (-2.53, 6.90)	0.363
T3 vs T1	**-17.52 (-22.64, -12.41)**	**<0.001**	**-13.81 (-20.26, -7.37)**	**<0.001**	**-5.76 (-10.47, -1.04)**	**0.017**
T3 vs T2	**-11.81 (-16.85, -6.76)**	**<0.001**	**-9.20 (-15.55, -2.85)**	**0.005**	**-7.94 (-12.59, -3.30)**	**<0.001**
Treatment AUD						
T2 vs T1	**5.51 (1.23, 9.79)**	**0.012**	1.62 (-3.77, 7.01)	0.556	1.64 (-2.31, 5.58)	0.416
T3 vs T1	4.10 (-0.18, 8.38)	0.061	3.33 (-2.06, 8.72)	0.225	-1.40 (-5.34, 2.55)	0.487
T3 vs T2	-1.41 (-5.65, 2.83)	0.515	1.72 (-3.62, 7.05)	0.529	-3.03 (-6.94, 0.87)	0.128

Multilevel models adjusted for age, sex, race, cohort, and enrollment phase. Regression coefficients were unstandardized. The ranges of possible scores were from 0 to 40 for the Alcohol Use Disorders Identification Test, 0 to 30 for Penn Alcohol Craving Scale, and 0 to 100 for each of the four World Health Organization QoL - BREF domains.