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Abstinence-Contingent Wage Supplements for Adults Experiencing Homelessness and Alcohol Use Disorder: A Randomized Clinical Trial

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Abstract

This study evaluated the effectiveness of abstinence-contingent wage supplements in promoting alcohol abstinence and employment in adults experiencing homelessness and alcohol use disorder. A randomized clinical trial was conducted from 2019–2022. After a 1-month Induction period, 119 participants were randomly assigned to a Usual Care Control group ($n = 57$) or an Abstinence-Contingent Wage Supplement group ($n = 62$). Usual Care participants were offered counseling

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Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

CRedit Author Statement

Novak: data curation, investigation, supervision, validation, visualization, writing—original draft, writing—review & editing; **Toegel:** data curation, investigation, supervision, writing—original draft, writing—review & editing; **Holtyn:** conceptualization, data curation, funding acquisition, investigation, methodology, project administration, supervision, writing—review & editing; **Rodewald:** data curation, investigation, project administration, supervision, writing—review & editing; **Arellano:** data curation, investigation, supervision, writing—review & editing; **Baranski:** writing—review & editing; **Barnett:** conceptualization, funding acquisition, methodology; **Leoutsakos:** formal analysis, funding acquisition, writing—review & editing; **Fingerhood:** conceptualization, funding acquisition, methodology, writing—review & editing; **Silverman:** conceptualization, data curation, funding acquisition, investigation, methodology, project administration, supervision, validation, writing—original draft, writing—review & editing

and referrals to employment and treatment programs. Abstinence-Contingent Wage Supplement participants could earn stipends for working with an employment specialist and wage supplements for working in a community job but had to maintain abstinence from alcohol as determined by transdermal alcohol concentration monitoring devices to maximize pay. Abstinence-Contingent Wage Supplement participants reported significantly higher rates of alcohol abstinence than Usual Care participants during the 6-month intervention (82.8% vs. 60.2% of months, OR = 3.4, 95% CI 1.8 to 6.3, $p < .001$). Abstinence-Contingent Wage Supplement participants were also significantly more likely to obtain employment (51.3% vs. 31.6% of months, OR = 2.6, 95% CI 1.5 to 4.4, $p < .001$) and live out of poverty (38.2% vs. 16.7% of months, OR = 3.7, 95% CI 2.0 to 7.1, $p < .001$) than Usual Care participants. These findings suggest that Abstinence-Contingent Wage Supplements can promote alcohol abstinence and employment in adults experiencing homelessness and alcohol use disorder.

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Keywords

Incentives; contingency management; alcohol use disorder; homelessness; employment; biosensor

Introduction

Between 30% and 50% of adults experiencing homelessness have alcohol use disorder (Fazel et al., 2008; Fischer and Breakey, 1991). Though housing-first interventions can be costeffective, their effects on alcohol use have not been demonstrated (Larimer et al., 2009). To address the related problems of addiction, unemployment, and poverty, our research team has developed the Therapeutic Workplace, a contingency management intervention that uses employment-based abstinence reinforcement (Silverman et al., 2019). Participants are hired and paid to work in the Therapeutic Workplace but must maintain drug abstinence to receive maximum pay.

One arrangement of the Therapeutic Workplace that may be particularly useful to adults experiencing homelessness and alcohol use disorder is the Abstinence-Contingent Wage Supplement model, which addresses substance use, unemployment and poverty. Holtyn et al. (2020b) demonstrated its effectiveness in promoting opiate- and cocaine-abstinence and employment. In that study, unemployed adults enrolled in treatment for opioid use disorder received employment services plus abstinence-contingent wage supplements for 1 year. Participants receiving the intervention could earn stipends for working with the employment specialist and wage supplements for working in a community job but had to maintain abstinence from opioids and cocaine to maintain maximum pay. Relative to control group participants, participants who received abstinence-contingent wage supplements provided more opiate- and cocaine-negative urine samples and were more likely to become employed. Although the Therapeutic Workplace has been used to promote alcohol abstinence in adults experiencing homelessness (Koffarnus et al., 2011), the abstinence-contingent wage supplement model has not yet been examined for alcohol use disorder. The purpose of the present study was to evaluate the effectiveness of abstinence-contingent wage supplements in promoting alcohol abstinence and employment in adults experiencing alcohol use disorder, unemployment, and homelessness.

Method

Study Participants and Setting

Participants were recruited from treatment clinics and recovery houses serving adults with alcohol use disorder, online job boards, and through compensated referrals by participants. Participants were recruited from January 2019 through March 2020 and from October 2020 through May 2022. The pause in recruitment was due to restrictions related to the COVID-19 pandemic. Most of the study was conducted remotely because of the COVID-19 pandemic (see Protocol Amendments) by research staff located in Baltimore, Maryland, USA.

Participants were eligible for the study if they were 18–55 years old, met DSM-5 criteria for alcohol use disorder, were experiencing homelessness, earned less than \$200 in the past 30 days, and expressed interest in employment. Homelessness was defined as being in danger of losing their current place of residence, living in a recovery house, or sleeping in any of the following places in the previous 30 days: on the street, in a park, in an abandoned house, in an automobile or van, in a vacant lot, in an alley, in a dumpster, or under a bridge. Participants were excluded if they presented an imminent threat to harming themselves or others; were pregnant or breastfeeding; were incarcerated, in a correctional halfway house, or under constant monitoring; earned more than \$200 in under-the-table income in the past 30 days; or had missing or impaired fingers and were unable to type. The protocol was approved by the Johns Hopkins Medicine Institutional Review Board, and all participants provided written informed consent at enrollment.

Study Design

This was a two-group randomized clinical trial. All participants completed a 1-month Induction period and were then randomly assigned to an intervention or control group. After random assignment, participants completed a 6-month Intervention period and completed study assessments every month.

Transdermal Alcohol Concentration Monitoring—Alcohol use was monitored via wearable biosensors designed to detect transdermal alcohol concentration (TAC). Due to the onset of the COVID-19 pandemic, two different TAC monitoring devices were used: Secure Continuous Remote Alcohol Monitor (SCRAM, Alcohol Monitoring Systems) and BACtrack Skyn. The SCRAM device is a tamper-resistant ankle bracelet that provides constant monitoring with readings every 30 min. Participants were required to wear it continuously, and staff were alerted if the device was removed. Potential alcohol use events were indicated using Alcohol Monitoring Systems standard criteria (Barnett et al., 2011) requiring three or more consecutive TAC readings >0.02 g/dl (along with specific absorption and elimination rate criteria). Research staff reviewed these potential events using visual inspection of TAC readings to determine whether alcohol use occurred.

The BACtrack Skyn device is a small, wrist-worn sensor that connects via Bluetooth to a smartphone application and remotely uploads data to a secure server. Early studies found that BACtrack Skyn readings correlate with other measures of alcohol use, and participants

reported high acceptability ratings, relative to other TAC monitors (Courtney et al., 2023; Fairbairn and Kang, 2019; Wang et al., 2021). Because BACtrack Skyn could be removed by participants, we asked participants to wear the device for at least 18 hours a day. Participants were instructed not to take the device off for more than 1 hour at a time and to send a picture of themselves wearing the device after putting it back on. Instances where TAC levels exceeded 15 µg/L for 60 min (Wang et al., 2021) were visually inspected by research staff to determine whether alcohol use occurred.

To promote consistent monitoring, participants from both groups could earn incentives for wearing the TAC monitoring devices. For the SCRAM device, participants could earn \$100 per month for wearing the device continuously without interfering with its operation. For the BACtrack Skyn device, participants could earn \$0.25 for each hour of wearing the device plus a \$5 bonus if worn for >18 hours.

Induction Period—During the first week, participants were introduced to the workplace contingencies: they could earn \$5 per hour for up to 4 hours per day for contacting research staff each day (Toegel et al., 2020). Participants who contacted research staff 4 out of 5 days during the first week were invited to continue. During the next 3 weeks, participants were given a TAC monitoring device and could earn \$8 per hour for up to 4 hours per day each weekday. These devices had different requirements for use, which made it necessary for the procedures to be tailored to the device used.

The SCRAM device requires that participants provide an alcohol-negative breath sample prior to use. Because participants had to be abstinent from alcohol to begin using SCRAM, participants fitted with SCRAM devices could maintain maximum pay if they continued abstaining from alcohol use. If alcohol use was detected, pay was reset to \$1 per hour. After being reset, pay rates could be raised by \$1 per hour (up to \$8 per hour) for each day without alcohol use.

The BACtrack Skyn device does not require that participants provide an alcohol-negative breath sample to begin using the device. So, incentives for alcohol abstinence were not provided during the Induction period for participants fitted with BACtrack Skyn. Instead, incentives were provided for wearing the device each day.

Randomization—Participants who contacted research staff at least 50% of the workdays during the final 3 weeks of the Induction period were randomly assigned to either the Abstinence-Contingent Wage Supplement group or the Usual Care Control group. Randomization was completed using a computerized urn randomization procedure to balance groups on characteristics that could influence outcome: (1) percentage of Induction period days with alcohol use as assessed by TAC monitoring device ($\geq$ rolling median, Y/N); (2) self-reported abstinence from opiates and cocaine on the Addiction Severity Index-Lite (Y/N); (3) completed high school or obtained a GED (Y/N); and (4) sex (male/female). Various staff members involved in the protocol operated the randomization program. Neither staff, participants, nor researchers conducting analyses were blind to the conditions. Participants were given written instructions that provided details of their group

assignment, and comprehension was assessed through quizzes embedded throughout the instructions.

Intervention Period—The Intervention period lasted for 6 months, and all participants were asked to continue wearing their TAC monitoring device. Usual Care Control participants did not receive employment services nor could they earn stipends or wage supplements.

Abstinence-Contingent Wage Supplement participants were invited to work with an employment specialist (Holtyn et al., 2020a). While unemployed, participants could earn stipends for working with the employment specialist and engaging in job-seeking behavior for up to 20 hours per week for a wage of about \$10 per hour. Stipends were divided into base pay for hours worked (up to \$8 per hour) and performance pay for engaging in job-seeking behaviors. While employed, participants could earn wage supplements for all verified hours that they worked in their community job (up to \$8 per hour for up to 40 hours per week, verified by pay stubs).

To earn the maximum amount in stipends and wage supplements, Abstinence-Contingent Wage Supplement participants had to wear their TAC monitoring device and maintain abstinence from alcohol, as determined by TAC readings. If a participant's TAC readings indicated alcohol use, then their base pay was reset to \$1 per hour. Base pay was also reset for any days in which readings were not available due to not wearing the device. After pay was reset, the stipend or wage supplement could be increased by \$1 per hour (up to the \$8 maximum) each day that the participant maintained alcohol abstinence and worked for at least 5 min.

Study Assessments

Study assessments were conducted for all participants at intake to the study, at the end of the Induction period, and every month during the Intervention period. For all study assessments, we administered the Addiction Severity Index-Lite (ASI-Lite), Phoenix Alcohol 30-day Quantity and Frequency questionnaire, and a questionnaire assessing housing status. At intake, we also administered the Mini International Neuropsychiatric Interview (MINI) and a questionnaire to assess participants' interest in gaining competitive employment. Participants earned \$30 for all study assessments, delivered through reloadable credit cards.

Outcomes

The primary outcome measure was alcohol abstinence. We originally planned to use TAC measurements as the primary outcome measure. However, because we had to change TAC monitoring devices, we used self-reported alcohol use as the primary outcome measure because it was assessed in the same manner for all participants. This decision to change the primary outcome was made prior to any analyses of TAC data. Participants were considered abstinent if they reported having 0 drinks of alcohol in the past 30 days (ASI-Lite). Secondary outcome measures assessed participant employment, poverty levels, and housing status. Participants were considered unemployed if they reported 0 days paid for work in the past 30 days (ASI-Lite).

Whether a participant's income was above the threshold for poverty was calculated using income and age data from the ASI-Lite and 2022 Poverty Thresholds from the US Census Bureau for one person with no related children living in the home. Total income from the ASILite included income from employment, unemployment compensation, welfare benefits and pension, and social security. Earnings from stipends for working with the employment specialist or wage supplements were not included. For each monthly assessment, total income was calculated for the past 30 days and prorated to estimate an annual income, which was then compared with 2022 Poverty Thresholds from the US Census Bureau.

Adverse events and deaths were monitored and reported to the Johns Hopkins Medicine Institutional Review Board and a Data and Safety Monitoring Board (DSMB).

Statistical Analyses

Single-time-point measures were analyzed using logistic regression. Measures assessed monthly were analyzed with a longitudinal logistic regression model. Within-person correlated outcomes were handled using generalized estimating equations (Zeger et al., 1988). Drinking days and days employed were converted to percentages (e.g., 6/30 drinking days per month = 20%) and analyzed using a fractional logit model due to nonnormal distributions (Meaney and Moineddin, 2014; Zhao et al., 2001). Intention-to-treat analyses were adjusted for covariates used for stratification (Pocock et al., 2002). Missing values were imputed as the adverse outcome (e.g., unemployed, living in poverty). Model parameter estimates from this approach were compared with a method without imputation. The magnitudes of effects were expressed using odds ratios with 95% confidence intervals. Tests were two-sided, and p -values $< .05$ were considered significant. Analyses were conducted using *Stata Statistical Software: Release 15* (College Station, TX; StataCorp LLC).

We estimated that a total sample of 130 participants was sufficient to detect a between-group difference of 15% in the primary outcome measure with 80% power using a within-person correlation of 0.69 and an AR1 correlation structure (Liu and Liang, 1997). We stopped recruitment after randomizing 119 participants because of budgetary constraints.

Protocol Amendments due to COVID-19

Restrictions to address the COVID-19 pandemic were enacted and disrupted the trial. Specifically, the protocol was changed so that all parts of the protocol could be completed remotely without in-person visits. Before the amendments, 56 participants had been randomized into the study groups (28 in each group). We made the following changes. 1) Johns Hopkins University paused all research. 2) We changed the method of completing screening, intake, and study assessments to being completed remotely over the phone. 3) We initially used SCRAM devices, which required that participants visit the research unit for staff to collect data. We changed to BACtrack Skyn devices, which allowed data to be collected remotely. 4) Therapeutic workplace activities were shifted from on-site to remote. Originally, during the Induction period participants could earn up to \$8 per hour in base pay for time spent working in the research center plus up to \$2 per hour in incentives for completing modules in a learning program (i.e., their job). Due to the shift to remote work,

participants no longer had access to the research center or the learning program. Therefore, attendance in the research center and the \$2 per hour incentives for completing modules were no longer available. Instead, participants were instructed to maintain contact with research staff by calling or texting every weekday. Participants were paid for each hour of the workday after they contacted research staff to check in, for up to 4 hours per day.

Results

Study Population

The final Intervention period assessment was completed 10 January 2023. We screened 209 people for inclusion, 57 (27%) of whom were excluded (Figure 1). All participants who completed the Induction period were randomized. At intake most participants identified as male, White, and not Hispanic or Latino (Table 1). All randomized participants were included in all analyses.

Study Outcomes

We completed significantly more assessments (Table 2) from Abstinence-Contingent Wage Supplement participants than the Usual Care participants.

Alcohol Use—During the Intervention period, Abstinence-Contingent Wage Supplement participants reported abstaining from alcohol at a significantly higher rate than Usual Care participants (Figure 2 and Table 2).

Employment—During the Intervention period, Abstinence-Contingent Wage Supplement participants reported a significantly higher rate of employment and significantly more days employed than Usual Care participants (Figure 2 and Table 2). The cumulative percentage of participants ever employed (from intake through end of Intervention period) was similar between groups.

Figure 3 shows paystub-verified patterns of employment for Abstinence-Contingent Wage Supplement participants. During the Intervention period, 41 participants (66.1%) submitted paystubs during the intervention. Of those employed, the median latency to first employment was 4.0 weeks. Note that 8 participants (12.9%) were unable to work due to COVID-19 restrictions, which may have mitigated the effect of the intervention on employment outcomes.

Poverty and Homelessness

During the Intervention period, Abstinence-Contingent Wage Supplement participants reported incomes above the federal poverty level significantly more often than Usual Care participants (Figure 4 and Table 2). The cumulative percentage of participants with incomes ever above the federal poverty level (from intake through end of Intervention period) was not significantly different. The two groups did not differ in the rates that they reported having stable housing (Figure 4 and Table 2).

Adverse Events

Participants reported 26 adverse events. Eleven adverse events occurred during Induction period before randomization and 15 adverse events occurred during the Intervention period (3 Usual Care, 12 Abstinence-Contingent Wage Supplement). Nine adverse events were related to study participation, primarily due to TAC monitoring devices that were used in the study protocol. Eight of these events included occurrence of rash or cuts and abrasions related to the SCRAM devices. One event included the occurrence of rash related to the BACtrack Skyn device. The remaining 17 adverse events did not appear related to study participation.

Following randomization, 12 participants quit the study (9 Usual Care, 3 Abstinence-Contingent Wage Supplement). Seven participants (all Usual Care) quit because they no longer wanted to wear the SCRAM device, and one intervention-group participant quit because they could not wear SCRAM in their new job. One intervention-group participant quit after a pay reset. The remaining reasons for quitting did not seem related to study participation.

Discussion

This randomized clinical trial showed that abstinence-contingent wage supplements can promote and maintain alcohol abstinence and employment for those experiencing homelessness and alcohol use disorder. Participants randomized to an Abstinence-Contingent Wage Supplement group could earn stipends for working with an employment specialist and wage supplements for working in a community job. To maintain the highest pay from stipends and wage supplements, participants had to abstain from alcohol use, which was continuously monitored via wearable alcohol biosensors. Relative to participants randomized to a Usual Care group, Abstinence-Contingent Wage Supplement participants reported significantly higher rates of alcohol abstinence, employment, and incomes above the poverty level.

Use of a remote alcohol monitoring procedure may also be an improvement over some prior studies. Previous studies that used in-person monitoring methods were limited by requirements on staff or participants to travel to collect breath samples (e.g., Koffarnus et al., 2011). Remote alcohol monitoring decreases the burden required to provide effective treatment. Refinement of remote alcohol monitoring procedures may represent an important opportunity to reduce disparities associated with contingency management availability.

The present study examined the effects of a model for promoting community employment. Results replicate findings from prior research showing that abstinence-contingent wage supplements can promote employment and help patients with substance use disorder escape poverty (Holtyn et al., 2020b). The present results represent an important extension by demonstrating that abstinence-contingent wage supplements are effective in promoting abstinence from a different target substance, alcohol, and for an important subset of the population, individuals experiencing homelessness. These findings also build on previous studies demonstrating that abstinence-contingent housing and work therapy could promote

cocaine abstinence among people experiencing homelessness (e.g., Milby et al., 2000, 2010).

Some limitations should be noted. First, the primary outcomes were obtained through participant self-report. Although participant reports of alcohol use during monthly assessments did not affect stipend and wage supplement pay, participants in the intervention group may have been less likely to report alcohol use to study team staff during assessments (e.g., Langenbucher and Merrill, 2001).

Another limitation involves the acceptability of our alcohol measurement procedures. Although SCRAM has been validated in previous studies and judged to be a good measurement system for alcohol use (e.g., Barnett et al., 2017; Dougherty et al., 2014; Dougherty et al., 2015), some participants in our study found aspects of the device to be objectional, which is also consistent with previous studies (e.g., Barnett et al., 2011). The present study involved one of the longest continued uses of the SCRAM device in a research study to date (6 months). In the present study, seven participants requested that their SCRAM device be removed at least once during the study, four of whom discontinued use of SCRAM. Clearly, despite the convenience and validity of the SCRAM device, its acceptability may be a barrier for long-term use in alcohol monitoring.

Although the BACtrack Skyn device was generally found to be acceptable by participants, its usage presented two main challenges with validity. First, because the device could be easily removed by participants, we faced challenges in determining if devices were being worn at all and if the study participant was the person actually wearing the device. Although we included procedures to increase our confidence that study participants were wearing the device, BACtrack Skyn devices do not allow for the same level of confidence as SCRAM. Finally, the extent to which changes in TAC readings correlated with meaningful alcohol use was unknown and varied widely across devices. Together, these features of the BACtrack Skyn device may limit its utility in the long-term monitoring of alcohol use. We recommend that researchers interested in monitoring alcohol use consider an alternative, such as the smartphone integrated breath-sample technology that has become more prevalent in recent years (e.g., Koffarnus et al., 2018; Koffarnus et al., 2021; Oluwoye et al., 2020).

A final consideration is regarding the of participants who were enrolled in the Induction period but were not randomized into the study groups. Of the 33 participants not randomized, 23 were because they did not meet check-in requirements. These requirements help ensure that resources are being allocated to participants most likely to complete the intervention, thereby reducing costs. However, the failure to maintain participant engagement at early stages might limit intervention impact.

Conclusion

In summary, this study demonstrated that abstinence-contingent wage supplements can be effective in promoting alcohol abstinence and employment in people experiencing homelessness and alcohol use disorder. Despite the shortcomings of the alcohol monitoring system, we promoted self-reported alcohol abstinence and employment, and helped people

escape poverty. We hope that abstinence-contingent wage supplements can address other socially relevant problems and populations.

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Highlights

- Abstinence-contingent wage supplements sustained self-reported alcohol abstinence
- Abstinence-contingent wage supplements promoted employment
- This intervention could address poverty, homelessness, and alcohol use disorder

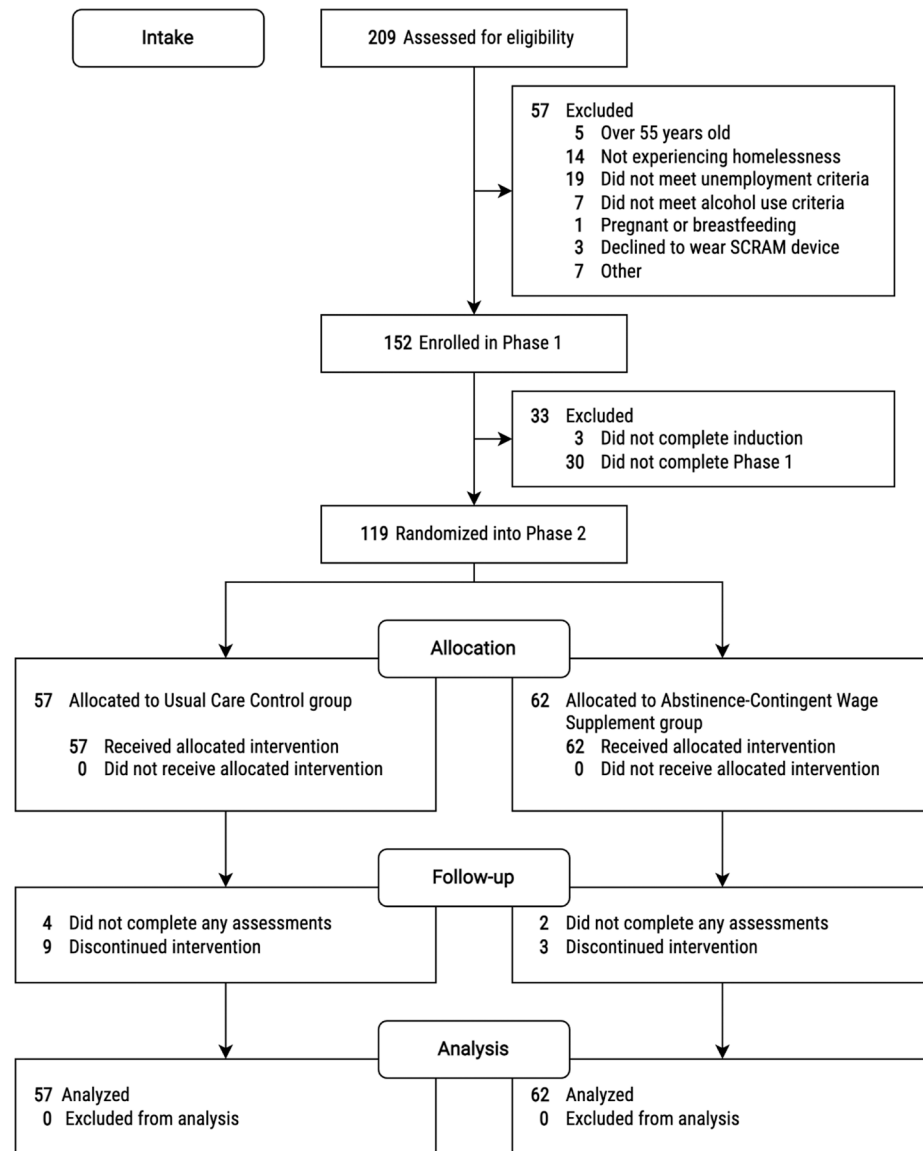


Figure 1.
CONSORT Diagram (United States, 2019–2022)

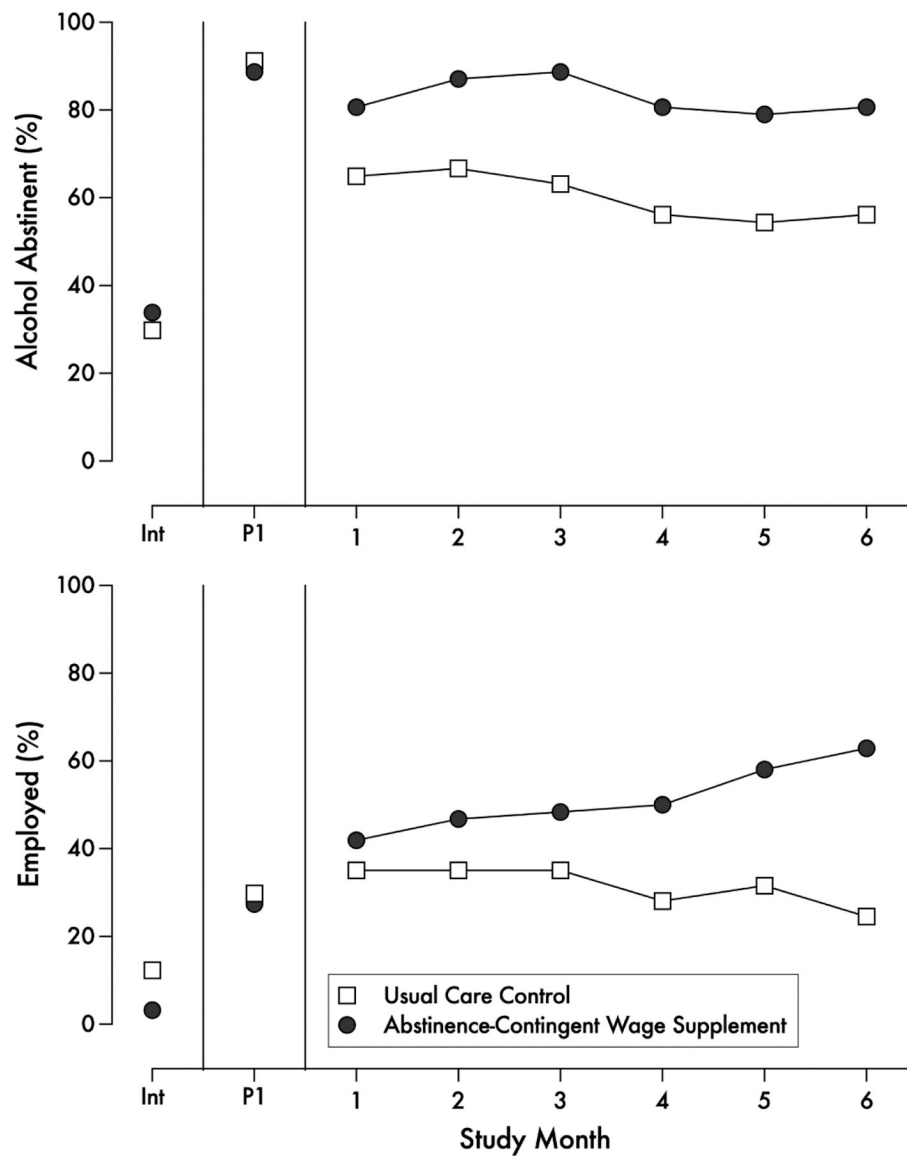


Figure 2. Self-reported alcohol abstinence (top panel) and employment (bottom panel) at intake (Int), at the end of Induction, and across consecutive months during the Intervention period (United States, 2019–2022)

Note. Missing assessments were coded as not abstinent and unemployed.

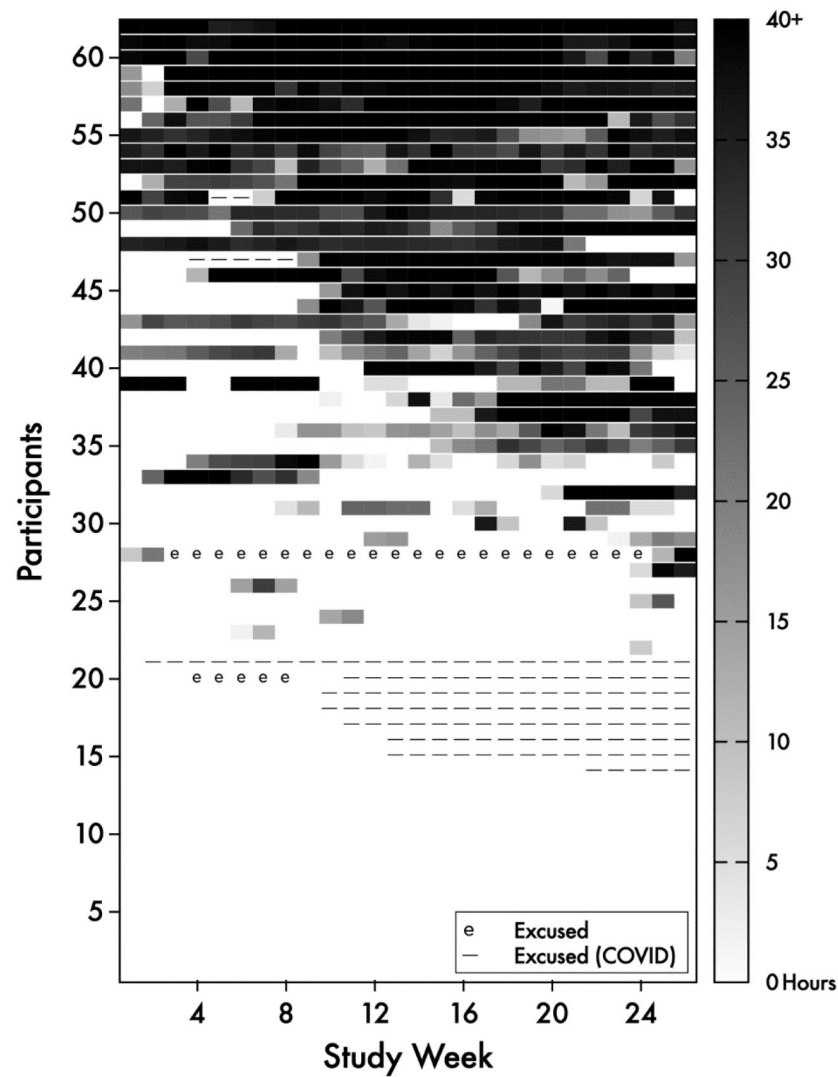


Figure 3.
 Verified employment patterns for participants in the Abstinence-Contingent Wage Supplement group over the 26-week intervention period (United States, 2019–2022)
Note. Each row represents a single participant's hours worked from each consecutive week during the 26-week intervention.

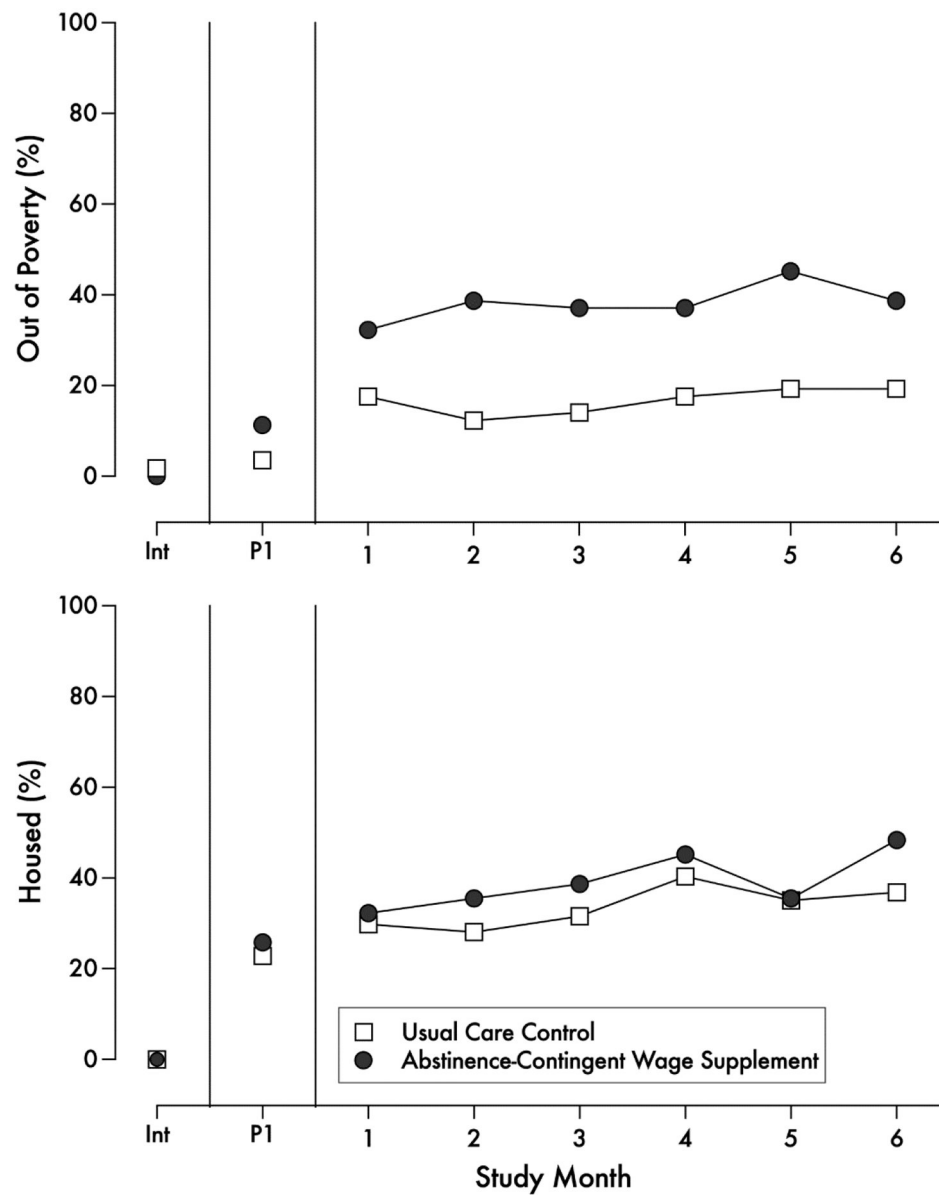


Figure 4. Poverty (top panel) and housing status (bottom panel) at intake (Int), at the end of Induction, and across consecutive months during the Intervention period (United States, 2019–2022)
Note. Missing assessments were coded as experiencing poverty and homelessness.

Table 1

Participant Demographic Characteristics Assessed at Intake (United States, 2019–2022)

	Usual Care (<i>n</i> =57)		Abstinence-Contingent Wage Supplement (<i>n</i> =62)		All (<i>N</i> =119)	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
Mean Age (SD)	39.6	(8.5)	39.2	(7.7)	39.4	(8.1)
Sex						
Male	49	(86)	52	(83.9)	101	(86.3)
Female	8	(14)	10	(16.1)	18	(31.7)
Race						
Black	24	(42.1)	19	(30.6)	43	(36.1)
White	31	(54.4)	42	(67.7)	73	(61.3)
Native American/ American Indian	1	(1.8)	0	(0)	1	(0.8)
Native Hawaiian/Pacific Islander	0	(0)	1	(1.6)	1	(0.8)
Other	1	(1.8)	0	(0)	1	(0.8)
Hispanic or Latino						
Yes	1	(1.8)	3	(4.8)	4	(3.4)
No	54	(94.8)	58	(93.5)	112	(94.1)
Prefer not to answer	2	(3.5)	1	(1.6)	3	(2.5)
High school diploma or GED	47	(82.5)	50	(80.6)	97	(82.9)
Alcohol Abstinent, past 30 days	17	(29.8)	20	(32.3)	37	(31.1)
Employed ≥1 day in past 30 days	7	(12.3)	2	(3.2)	9	(7.6)
Out of Poverty^a	1	(1.8)	0	(0)	1	(0.8)
Housed	0	(0)	0	(0)	0	(0)

Table 2

Outcome Measures Collected from Monthly Assessments During the Intervention Period (United States, 2019–2022)

	Percentage		OR	95% CI	<i>p</i>
	Usual Care (<i>n</i> =57)	Abstinence-Contingent Wage Supplement (<i>n</i> =62)			
Collection Rate					
Self-Report Assessments	74.9	86.6	2.2	1.1–4.3	.020
Alcohol Use Outcomes					
Alcohol Abstinence (%)					
Missing = Not Abstinent	60.2	82.8	3.4	1.8–6.3	<.001
Missing = Missing	80.5	96.0	6.1	2.0–18.7	.002
Drinking Days (past 30)					
Missing = Missing	2.0	0.2	0.1	0.0–1.2	.068
Employment Outcomes					
Employed (%)					
Missing = Unemployed	31.6	51.3	2.6	1.5–4.4	<.001
Missing = Missing	42.2	59.3	2.3	1.3–4.1	.004
Ever Employed (%)					
Missing = Unemployed	70.2	85.5	1.0	0.4–2.3	.988
Days Employed (past 30)					
Missing = Missing	7.3	11.8	2.2	1.2–4.2	.014
Economic Outcomes					
Out of Poverty (%)					
Missing = In Poverty	16.7	38.2	3.7	2.0–7.1	<.001
Missing = Missing	22.3	44.1	3.2	1.7–6.2	<.001
Housed(%)					
Missing = Not Housed	33.6	39.2	1.3	0.7–2.2	.380
Missing = Missing	44.9	45.3	1.0	0.5–1.7	.926
Ever Out of Poverty (%)					
Missing = In Poverty	45.6	66.1	2.4	1.0–6.0	.056

Note. Poverty status was calculated using income and age data from the Addiction Severity Index-Lite and 2022 Poverty Thresholds from the US Census Bureau for one person with no related children. OR = odds ratio, CI = confidence interval.