

Exploring Changes In Participation In Dry January Between 2020 And 2021

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Abstract

Background: To explore the level of participation in Dry January during the COVID-19 pandemic between 2020 and 2021, and potential shifts in the sociodemographic and drinking characteristics of those taking part.

Methods: We analysed data from: i) 1863 increasing and higher risk drinkers responding to a nationally representative survey of adults in England in January and February 2020 and 2021, and ii) 104,598 users of the 'Try Dry' app, the official aid to those participating in Dry January 2020 and 2021 in the UK. We used logistic regression, t-tests and chi-squared tests to compare the prevalence and sociodemographic composition of i) increasing and higher risk drinkers reporting a Dry January-motivated reduction attempt and ii) users of the 'Try Dry' app in 2020 and 2021.

Results: The proportion of increasing and higher risk drinkers reporting Dry January-motivated reduction attempts increased from 4% in 2020 to 8% in 2021 (OR=2.07, 95% CI=1.38-3.11, $p<.001$) with no changes detected in sociodemographic composition. The number of *Try Dry* app users in 2021 increased by 34.8% relative to 2020. App users in 2021 were two years older on average [$p<.001$, $d=.02$], with a 2% increase in the proportion of female app users [$p<.001$, vs. $<.01$].

Conclusions: Higher participation in Dry January 2021 relative to 2020 indicates increased engagement with a period of temporary abstinence following the COVID-19 related lockdowns in England and the UK, which is positive in the context of increasing alcohol consumption throughout the pandemic.

Background

Alcohol consumption is a dose-dependent¹, leading risk factor for preventable cases of cancer², linked with many other chronic and acute conditions³. Restrictions introduced as a result of COVID-19 in the UK have impacted on drinking behaviour with rises in increasing and higher risk drinking (defined by standard cut-offs of ≥ 8 on the full Alcohol Use Disorders Identification Test⁴)⁵⁻⁷ and heavy episodic drinking⁸. As such, reducing alcohol consumption and associated harms is a public health priority⁹. This study reports the possible impact of COVID-19 restrictions on engagement with a national campaign, Dry January, which aims to help people in the UK reduce their alcohol consumption. Here, we explore the level of participation in Dry January between 2020 and 2021, and potential shifts in the sociodemographic and drinking characteristics of those taking part.

Dry January is a behaviour change programme created and run by the UK charity Alcohol Change UK (ACUK) that encourages people to abstain from alcohol for the month of January and change habitual drinking patterns over the longer term¹⁰. Participants in Dry January can use an app, Try Dry to track alcohol units, calories and money saved, to track progress and to set future goals. Participants can also access daily coaching emails and peer support. Studies evaluating the impact of Dry January participation have found evidence of reported benefits to physical health^{11,12}, mental health and well-

being¹¹, as well as significant reductions in drinking days per week, drinks per typical drinking day and frequency of drunkenness six months after January¹³. Amongst participants of FebFast, a similar month-long abstinence challenge in Australia, 51% reported drinking less frequently four months after participation¹⁴.

Lockdowns were first introduced in many countries in response to the COVID-19 pandemic, including England, Scotland and Wales in March 2020. All non-essential stores and licenced premises were closed making social gathering and the opportunity to drink alcohol outside the home limited. While pubs, clubs and bars were closed, people could still purchase alcohol for home consumption and home alcohol expenditure increased in the first lockdown¹⁵. Evidence suggests that the first lockdown had a polarising impact on drinking patterns^{7,8} with 26% of drinkers drinking less and 26% drinking more⁷. The prevalence of increasing and higher risk drinking increased significantly with 1.8 times greater odds of increasing and higher risk drinking during lockdown relative to pre-lockdown⁶. As well as leading to increased alcohol consumption, the first lockdown also led to an increase in self-reported alcohol reduction attempts by increasing and higher risk drinkers (28.5% during lockdown vs. 15.3% pre-lockdown)⁶.

A third lockdown, announced on the 4th January and commencing on the 6th January, coincided with the first week of Dry January in 2021. The impact of a third lockdown on alcohol consumption and reduction attempts may not have been the same as the first lockdown. A number of health behaviours, including alcohol consumption, changed over the course of the pandemic and in response to changing restrictions¹⁶. Deteriorating socio-economic, personal circumstances and mental health¹⁷⁻¹⁹, could have led to substantial disengagement from the Dry January campaign. On the other hand, the pandemic could have refocused attention on longer-term health and encouraged engagement with the campaign.

Beyond changes in the prevalence of participation in Dry January, the sociodemographic and drinking characteristics of participants may have changed. In previous years, being female and of more advantaged socio-economic position was associated with greater likelihood of participating in Dry January²⁰. However, sociodemographic groups have been differentially affected by lockdown^{7,8,16} and this has been reflected in drinking behaviour. Being younger⁷, female^{5,7} and of a lower socio-economic position⁵ were all associated with increased drinking in lockdown. Deterioration in psychological wellbeing and being a parent was associated with increases in the frequency of heavy episodic drinking⁸. Those groups drinking more in lockdown may be more likely to participate in Dry January if they are consciously aware of their increased drinking and are motivated to cut down. Conversely, the reasons leading to increased consumption may make these drinkers less likely to engage with a month of abstinence. Understanding more about how the composition of Dry January participants changed during lockdown, may inform health communications and policy decisions around provision and targeting of support for alcohol reduction.

In this paper, we use data from two sources, i) the Alcohol Toolkit Study (ATS), a representative population survey in England, and ii) the database behind the Try Dry app, a freely available app built and

run by ACUK. We compare the proportion of and sociodemographic and drinking characteristics of individuals who report a Dry January-motivated reduction attempt in the ATS in England and users of the Try Dry app based in the United Kingdom, in 2021 relative to 2020. We aim to address the following research questions:

1. Among increasing and higher risk drinkers in England, has there been a change in the prevalence of Dry January-motivated alcohol reduction attempts in 2021 compared with 2020?
2. Are drinking and sociodemographic characteristics associated with Dry January-motivated alcohol reduction attempts amongst increasing and higher risk drinkers in England, and are any associations moderated by year?
3. Has there been a change in the number of users of the Try Dry app in the UK in January 2021 compared with January 2020?
4. Were there changes in the drinking and sociodemographic characteristics of users of the Try Dry app in the UK in January 2021 relative to January 2020?

Methods

This protocol and analysis plan were pre-registered on the Open Science Framework (<https://osf.io/dxf2s/>).

Study Design

Alcohol Toolkit Study (ATS)

The ATS is a monthly cross-sectional survey of a nationally representative sample of adults in England²¹. The study started in March 2014 and uses a form of random location sampling to select a new sample of approximately 1,700 adults each month (further details on the design and sampling methods of the ATS are described elsewhere²¹). Before COVID-19, surveys were conducted via face-to-face interviews but, due to social distancing restrictions, from April 2020 onward surveys were conducted by telephone. The telephone-based data collection relied on the same sampling and weighting approach as the face-to-face interviews, and diagnostic analyses indicate that comparisons between face-to-face and telephone data are reasonable⁶.

For the present study, we used data from respondents to the survey aged 18 + in January and February 2020 and January and February 2021 who reported increasing and higher risk drinking. The outcome variable was based on a question about 'recent cut down attempts' and as such participants reporting a Dry January-motivated recent reduction attempt in February were included in the analysis. Increasing and higher risk drinking was defined by standard cut-offs of those scoring ≥ 8 on the full 10-item Alcohol Use Disorders Identification Test (AUDIT) or ≥ 5 on the AUDIT-C (questions 1–3 of the AUDIT)²².

Try Dry App

The Try Dry app is the official digital aid to Dry January and is freely available to download. Users are given the option to enter their age and gender when they undertake the AUDIT-C within the app and are encouraged to log a status each day throughout January to specify whether they drank or not. In our protocol we specified that data for the 'Try Dry' analysis would be from those 'who downloaded or reactivated the app in January 2020 or January 2021.' However, this was loosely defined as many who downloaded the app for January 2021 may have done so in advance of January. For example, many download the app in late December in anticipation of participation. Rather than set an arbitrarily defined cut-off date for downloads, we define Try Dry app users as those who entered at least one status (e.g. logging a day as being dry or not) in January 2020 or 2021. This included users who downloaded the app for the first time, reactivators who had previously used the app, and continuous users who have been using the app throughout the year and not stopped using it in January.

Measures

Comparison of Dry January-motivated alcohol reduction attempts in 2021 compared with 2020 (RQ1 and 2)

The dependent variable was a Dry January-motivated alcohol reduction attempt. Participants who reported that they were making a current attempt to reduce their alcohol consumption or had made a serious attempt to reduce their alcohol consumption in the last year were asked a follow-up question about the motives underlying the most recent alcohol reduction attempt. Those who reported 'yes' in response to 'to give up alcohol for a month (e.g. Dry January)' were coded as 1, those who record 'no' were coded as 0. Increasing and higher risk drinkers not making any attempts to cut down on drinking in the last year were also coded as 0.

The following variables were included as potential predictors; Year (2020 vs. 2021), AUDIT score, Number of Last year reduction attempts, Smoking Status (never smoker [ref] vs. current vs. ex-smoker), Living Alone (vs. not), Living with Children (vs. not) and Reducing Alcohol Consumption due to Future Health Motives (vs. not). The following sociodemographic factors were also included; age (as a continuous variable), sex (male [0]/female [1]) and occupational social grade in England (ABC1 high social grade vs. C2DE low social grade). See Supplementary Materials for more detail on the operationalisation and coding of measures.

Comparison of users of the Try Dry app in 2021 compared with 2020 (RQ3 and 4)

The dependent variable was the number of users of the Try Dry app in January 2020 and in January 2021.

The predictor variables were the sociodemographic characteristics age and gender. Age was treated as a continuous variable. Gender was coded as men = 0, women = 1. App users reporting 'other' or 'rather not say' in response to their gender were not included in this analysis. These categories likely encompass within group variation in gender identity although this cannot be differentiated, and it was not meaningful to treat them as one analytic sample.

Analysis

Comparison of Dry January-motivated alcohol reduction attempts in 2021 compared with 2020 (RQ1 and 2)

Data were weighted to match the English population profile on age, social grade, region, tenure, ethnicity, and working status within sex. Analyses focused on complete cases. The results section includes information on missing data.

Descriptive statistics were used to report the sociodemographic and baseline drinking characteristics of the sample by year. Descriptive statistics and logistic regression models were used to estimate the prevalence and odds of a Dry January-motivated alcohol reduction attempt by increasing and higher risk drinkers in relation to the year 2020 (reference) vs. 2021 (RQ1). Due to the relatively small sample size, a series of logistic regression models, were conducted to examine changes in the drinking characteristics and sociodemographic composition of those reporting a Dry January-motivated alcohol reduction attempt (RQ2). Each separate model contained year, characteristic and year by characteristic interaction terms.

Comparison of users of the Try Dry app in 2021 compared with 2020 (RQ3 and 4)

Descriptive statistics, t-tests and chi-squared tests were used to compare the number of users of the Try Dry app (RQ3) and the characteristics of users (RQ4; percentage of female users and mean age) in 2020 with 2021.

Changes To Pre-registered Protocol

Comparison of Dry January-motivated alcohol reduction attempts in 2021 compared with 2020 (RQ1 and 2)

In a deviation from our protocol, we report Ns (supplementary Tables 1 and 2) rather than regression models and note that our sample size is insufficient to draw meaningful statistical inferences about region or ethnicity²³. This is because there were very small sample sizes for Dry January-motivated reduction attempts in some regions (as small as $n = 1$, see Supplementary Table 1) and amongst participants of minority ethnic groups ($n = 0$, see Supplementary Table 2).

Comparison of users of the Try Dry app in 2021 compared with 2020 (RQ3 and 4)

Incomplete location data for some participants in January 2020 meant that we were unable to isolate England only data and instead have used data from those in the UK. Finally, we did not examine differences in baseline AUDIT-C scores. The AUDIT-C was measured at multiple timepoints and as some participants had had the app for many years (e.g. reactivators) the data we used did not have the baseline AUDIT-C scores for the year of interest.

Results

ATS Sample Characteristics

6,759 people in England responded to the ATS during the study period (3,402 in January and February 2020, 3,357 responded in 2021). Of these respondents, 10.3% (n = 695) increasing and higher risk drinkers in England in January and February 2020 and 2021 reported a current or recent reduction attempt and indicated whether the reported reduction attempt was motivated by the Dry January programme. A further 17.3% (n = 1,168) reported no attempts at cutting down in the last 12 months and were therefore coded as having no Dry January-motivated reduction attempts and included in the final analytic sample of 1,863 (weighted n = 1,845). As the analytic sample is weighted throughout, the weighted sample characteristics are shown in Table 1.

Table 1

Weighted sample characteristics of increasing and higher risk drinkers in England, stratified by year.

	Total	2020	2021	Missing¹
Weighted n	1845	809	1036	-
Age, mean (SD)	45.74 (17.16)	44.27 (17.92)	46.89 (16.45)	14
Sex, % Female (n)	37% (689)	36% (288)	39% (401)	2 ²
Ethnicity, % White (n)	93% (1716)	95% (764)	92% (952)	6
Social Grade, % ABC1 (n)	63% (1153)	69% (557)	59% (595)	23
AUDIT score, mean (SD)	8.43 (3.84)	8.22 (3.77)	8.59 (3.89)	30
Last year reduction attempts, mean (SD)	.92 (4.20)	.56 (2.60)	1.21 (5.11)	86
Currently trying to cut down	26% (475)	22% (180)	28% (295)	0
One or more attempt to cut down in past 12 months	33% (612)	27% (220)	37% (391)	0
¹ Missing data is from participants not responding to all questions.				
² 2 participants responding 'other' to sex are excluded as the small samples prohibit meaningful comparison				

Proportion of increasing and higher risk drinkers reporting a Dry January-motivated alcohol reduction attempt in 2020 versus 2021

The proportion of increasing and higher risk drinkers reporting a Dry January-motivated alcohol reduction attempt increased significantly from 4% in 2020 to 8% in 2021 (OR = 2.07, 95%CI = 1.38, 3.11, $p < .001$).

Sociodemographic and drinking correlates of Dry January-motivated alcohol reduction attempts amongst increasing and higher risk drinkers 2020 versus 2021

People who attempted to reduce their consumption in the last year had greater odds of reporting a Dry January-motivated alcohol reduction attempt (Table 2). No other significant associations or interactions were detected between the independent variables measured and a Dry January-motivated alcohol reduction attempt. This suggests that there were no significant differences in the measured sociodemographic composition and drinking characteristics of increasing and higher risk drinkers attempting a Dry January in 2020 and 2021.

Table 2

Logistic regression models predicting Dry January-motivated alcohol reduction attempts by increasing and higher risk drinkers by individual characteristics and characteristic by year interaction terms.

	Weighted n ¹	Individual characteristic			Characteristic*Year Interaction		
		OR	95% CI	P value	OR	95% CI	P value
AUDIT score	1826	1.06	.92 1.23	.435	1.00	.92 1.08	.937
Last year reduction attempts	1764	1.18	1.02 1.36	.026	.93	.87 1.01	.079
Smoking status (never smokers [ref])							
Current Smoker	1846	.57	.11 3.01	.509	1.35	.53 3.44	.531
Ex-Smoker	1846	.74	.09 6.03	.781	.98	.30 3.23	.972
Living alone	1849	.60	.07 5.26	.644	1.12	.34 3.74	.856
Living with children	1856	.53	.11 2.67	.442	1.60	.63 4.03	.322
Future Health Motive	1856	4.68	.70 31.35	.112	.82	.29 2.32	.710
Age	1841	1.02	.98 1.07	.259	.98	.96 1.01	.115
Sex²	1854	1.76	.41 7.53	.448	.80	.35 1.82	.594
Social Grade³	1825	.78	.15 3.94	.764	1.60	.64 3.99	.317

1 Due to sample size, individual regression models were run for each variable, N's differ due to missing data. 2 Female as reference. 3 Higher social grade as reference

'Try Dry' Sample Characteristics

Number of users of the Try Dry app 2020 versus 2021

There was a 38.4% increase in the number of Try Dry app users between 2020 and 2021 (see Table 3 for sample characteristics).

Table 3
Difference in sample characteristics of Try Dry app users in 2020 and 2021.

	2020	2021	Difference
Try Dry App, n	43,868	60,730	
Gender, % Female (n)	68% (29,546 ¹)	70% (33,390 ²)	χ^2 (df = 1) = 48.27, $p < .001$, $V < .01$
Age, mean (SD)	40.5 (11.31) ³	42.8 (11.06) ⁴	t (df = 91889.99) = -31.03, $p < .001$, $d = .20$
¹ Missing gender data from 29 app users in 2020. 74 participants reporting 'other' and 499 reporting 'rather not say' are also treated as missing here ² Missing gender data from 10,237 app users in 2021. 58 reporting 'other' and 3017 reporting 'rather not say' are also treated as missing here. ³ Missing age data from 4 app users in 2020 ⁴ Missing age data from 10131 in 2021.			

Sociodemographic differences in Try Dry app users in 2020 versus 2021

Try Dry app users were significantly older in 2021 with an average age of 42.8 (SD = 11.06) relative to an average age of 40.5 (SD = 11.31) in 2020, although this age difference was small ($d = .21$). There were significantly more female app users in 2021 (70%) relative to 2020 (68%), but again the effect size was small ($V < .01$).

Discussion

Increasing and higher risk drinkers were twice as likely to report a Dry January-motivated alcohol reduction attempt in 2021 relative to 2020 in England, and there was a 34.8% increase in the number of users of the Try Dry app in January 2021 relative to 2020. When looking at the sociodemographic and drinking characteristics of those reporting a Dry January motivated alcohol reduction attempt in 2021 relative to 2020, there is little evidence that the composition of participants has changed markedly. Data from a nationally representative sample of adults in England demonstrated no significant interactions between sociodemographic and drinking characteristics and year, suggesting that the composition of participants was comparable between years despite the substantial increased participation. There were some significant differences in terms of the demographic composition of Try Dry users, with a higher proportion of female users and a slightly older group in 2021 relative to 2020. However, the effect sizes were small, with a two-percentage point increase in the proportion of female users and a 2.27 increase in mean age in years. Therefore, these identified differences might not represent meaningful changes in the demographic composition of Try Dry users. Indeed, the increase in age could be partially driven by natural aging of previous users of the app who reactivated or continued their use in January 2021.

Increases in alcohol consumption following COVID-19 lockdowns in the UK⁶⁻⁸ are likely to have a negative impact on public health. However, the current study suggests there may be some evidence of increased engagement with a population-level intervention of temporary abstinence, with engagement doubling amongst increasing and higher risk drinkers. This is in line with previous literature outlining

increased motivation to cut down on drinking after the initial COVID-19 lockdown in the UK⁶. These findings suggest that there could be increased motivation amongst some increasing and higher risk drinkers to reduce drinking, and amongst both increasing and higher risk drinkers and the general population to engage in temporary abstinence. More support should be directed at encouraging those motivated to cut down to engage with evidence-based approaches to do so. Furthermore, messaging around cutting down on alcohol consumption in public health campaigns such as ACUK's future Dry January campaigns could be explicitly linked to the increases in drinking seen over the pandemic 19 and addressing habitual drinking and its impact on health, something that has been done with smoking cessation²⁴.

Previous research has demonstrated that women and those of higher socio-economic grade are more likely to participate in Dry January²⁰. This was a pattern we did not detect in the ATS analysis of high and increasing risk drinkers. These differences may suggest that there are socioeconomic differences between those who engage in Dry January-motivated reduction attempts and those who use the Try Dry app. There is very little evidence in this study of any shifts in terms of the sociodemographic or drinking characteristics of those attempting a Dry January between 2020 and 2021. This could have negative implications for public health, as research has shown that alcohol harms are concentrated amongst more disadvantaged drinkers²⁵. Research identifying the impact of COVID-19 on motivation to reduce alcohol consumption amongst more disadvantaged drinkers would be of value.

A strength of this study is the use of two data sources, a nationally representative survey and the official Dry January app to examine changes in the prevalence and characteristics of people engaging in both the official and unofficial forms of Dry January in 2020 and 2021. This triangulation from two data sources adds robustness to the findings over using individual data sets in isolation²⁶. However, this approach is not without limitations. We cannot draw any conclusions about why a greater proportion of drinkers reported Dry January-motivated reduction attempts and used the Try Dry app in 2021 relative to 2020. Participation in Dry January has increased each year since its inception in 2013, so the increases we see here may not directly relate to COVID-19 lockdowns or social distancing policies. The latest data from ACUK's Dry January programme show that there were fewer new sign-ups in 2022 compared to 2021³¹, though there was an increase in the number of returners. This does perhaps indicate that the huge growth from 2020 to 2021 was not all 'organic' growth but may well have been partly driven by the pandemic. Future trends will help to further understand this increase. Finally, many people engage in DIY attempts to stay dry in January whereby they attempt to complete the challenge but do not engage with the Dry January programme of support or engage with the Try Dry app. The ATS analysis cannot differentiate between unsupported attempts versus those engaging with the Try Dry app. As such, we cannot draw any conclusions about any changes in the group attempting not to drink in January but who did not engage with the Try Dry app between 2020 and 2021 both in terms of size and composition.

There were further limitations of the study. Our sample size was insufficient to draw meaningful statistical inferences about region or ethnicity. This was particularly limiting with regards to race and

ethnicity, as there is evidence that COVID-19 has disproportionately affected Black, Hispanic and Asian groups²⁷⁻²⁹. Furthermore, online surveys and digital interventions often fail to capture the changing behavioural trends of those experiencing severe health and social comorbidities (e.g., homelessness, severe mental illness) and including those with an Alcohol Use Disorder. Previous research has shown that lockdown represented a risk factor for relapse for those with Alcohol Use Disorders who were previously abstinent and increased consumption amongst those still drinking³⁰. This highlights the need for a specific focus on these groups as tailored and comprehensive approaches will be required.

Conclusion

The proportion of increasing and higher risk drinkers in England reporting Dry January-motivated alcohol reduction attempts doubled between 2020 and 2021, alongside a 38.4% increase in the number of users of the Dry January app, Try Dry. There was limited evidence of changes in the sociodemographic composition of those participating in Dry January 2021 relative to 2020, with small increases in the average age of Try Dry app users and the proportion of female users. These findings may be indicative of increases in motivation to reduce drinking and to engage with a period of temporary abstinence following the COVID-19 related lockdowns in England and the UK. Increasing participation in Dry January and increases in the proportion of increasing and higher risk drinkers reporting Dry January-motivated reduction attempts within the context of increasing alcohol consumption throughout the pandemic is encouraging.

Declarations

Ethics approval and consent to participate

Ethical approval for the ATS was granted by the UCL Ethics Committee (ID 2808/005). All methods were performed in accordance with relevant guidelines and regulations and informed consent was obtained from subjects.

Consent for publication

Not applicable

Availability of Data and Materials

The datasets analysed during the current study are available from the corresponding author on reasonable request.

Declarations of competing interest

IK, SC and JB declare no conflicts of interest. RP is the CEO of the charity, Alcohol Change UK, which runs Dry January and the Try Dry app. MO and CG act as scientific consultants for 'One Year No Beer'. MO, CG

and JB currently lead an RCT evaluating the effectiveness of an alternative alcohol reduction app, Drink Less.

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Authors Contributions

MO, IK, SC, RP, CG and JB contributed to the conception of the research questions and design of the study. MO conducted the analysis and prepared the first draft of the manuscript. All authors reviewed the manuscript.

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