Intention to reduce drinking alcohol and preferred sources of support: an international cross-sectional study

TITLE PAGE

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ABSTRACT

Introduction: Drinking alcohol is legal in most countries of the world. Given the social acceptance of this behavior despite potential negative impact on health, help-seeking behavior could differ when compared to other drugs. This paper aimed to assess intentions to reduce drinking and the preferred sources of support among a large international sample of people who drink alcohol.

Materials and methods: The Global Drug Survey (GDS) is the world's largest annual survey of drug use. This paper included data from 82,190 respondents from 12 countries on four continents who reported the use of alcohol in the last 12 months, collected during November 2016 - January 2017 (GDS2017).

Results: Overall, 34.8% said they would like to drink less in the following 12 months and 7.6% said they would like help to drink less. Online tools were the preferred source of support to reduce drinking by respondents from Australia, New Zealand, and the UK, those with low AUDIT scores and without a mental health condition. Specialist counselling was most preferred by those from Germany, Switzerland, and Denmark and those with high AUDIT scores, not educated to degree level and with a mental health condition.

Conclusion: Interest in online interventions for harmful drinking is significant and highest among people who drink at low risk. Online tools should offer brief screening and feedback, ensuring that people with high risk drinking patterns are referred to more specialist services.

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1. INTRODUCTION

Drinking alcohol affords both pleasures and risks to the consumer. It can enhance social interactions (de Visser, Wheeler, Abraham, & Smith, 2013; Peele & Brodsky, 2000), provide space to unwind from the pressures of work (Measham, 2004), and reduce anxiety to enhance cognitive performance (Maier, Ferris, & Winstock, 2018). However, alcohol use is also a major contributor to global ill health (Griswold et al., 2018) and because of this, the World Health Organization (WHO) has set a target of a 10% relative reduction in harmful alcohol use by 2025 (WHO, 2014). Consumption of alcohol is not only directly harmful to the consumer but also can indirectly be harmful to adults and children both physically and emotionally (Bellis et al., 2015; Ferris, J. A., Laslett, Livingston, Room, & Wilkinson, 2011; Laslett et al., 2010; Laslett, Ferris, Dietze, & Room, 2012).

Patterns of drinking vary between different countries (Gordon, Heim, & MacAskill, 2012; Labhart, Ferris, Winstock, & Kuntsche, 2017; Savic, Room, Mugavin, Pennay, & Livingston, 2016). Previous Global Drug Survey (GDS) studies have shown that there are smaller proportions of low risk drinkers in countries such as Portugal and Switzerland compared to the Republic of Ireland and Denmark where higher risk drinking is more prevalent (Davies, Conroy, Winstock, & Ferris, 2017). GDS data from the has also suggested that a third of drinkers may be intending to reduce their drinking in the next 12 months (Davies et al., 2017), with country variations.

There is evidence that brief interventions in primary care settings can help people reduce their drinking and result in sustained reductions in consumption (Kaner et al., 2018) . However, health professionals and researchers have begun to focus on digital interventions for alcohol

reduction because of their potential to reach larger numbers of people at low cost (Kaner et al., 2017). In this paper we explore regional variations in intentions to reduce drinking, and the preferred sources of support for doing so, with a focus on identifying characteristics of drinkers who could be helped by digital tools and face to face services.

At present, the market for digital interventions is unregulated (Wicks & Chiauzzi, 2015), meaning that those with no evidence for efficacy are still widely available. Researchers have begun to systematically code the content of digital interventions (Crane, Garnett, Brown, West, & Michie, 2015). However, findings suggested none were based on theory, and few mentioned effective behavior change techniques (BCTs), leaving questions remaining about whether their development was based on evidence, and their efficacy. However, digital interventions do engage younger drinkers, and those at higher levels of risk (Garnett et al., 2017). A review found young people were particularly receptive to digital interventions that were tailored to their interests, and allowed them to engage with a community similar people (Milward et al., 2016).

A recent Cochrane review examined 57 studies and provided support for the use of digital interventions for alcohol reduction (Kaner et al., 2017). However, when performance bias was controlled for, the overall number of drinks per weeks reduced compared to controls was smaller, and there was considerable heterogeneity within included studies. Publication bias may be an issue, and although the authors found no problems within any of the included studies there may be unreported iatrogenic effects.

Research into the efficacy of digital interventions to reduce risky drinking is still in relative infancy compared to face to face interventions, and a greater number of robust primary studies will give rise to better quality evidence for reviews. However, alongside understanding which interventions change behavior, it is also important to identify the population groups who are most likely to benefit from online support, as this approach may not be universally appealing.

For example, a study among college students identified that they preferred informal sources of support, such as talking to friends, over online tools (Buscemi et al., 2010). Other research suggests that anonymity offered by online tools may be more appealing for those with harmful alcohol use, who may be concerned about stigma associated with help seeking (Khadjesari, Stevenson, Godfrey, & Murray, 2015), and they may be convenient for people who work full time (Boss et al., 2018). However, digital interventions may not be accessible to some population groups such as the homeless, those in prison, or the elderly.

Irrespective of an individual's preference for online or face to face support to reduce their drinking, they must first recognize they have a need for such support. There are often substantial delays in treatment seeking for alcohol use disorders (AUD) (Blanco et al., 2015; Chapman, Slade, Hunt, & Teesson, 2015), and many of those who do wish to seek treatment often face considerable barriers. For example, people with heavy drinking patterns and those with co-morbid psychiatric disorders might be more likely to experience financial treatment barriers and those with higher income and education levels may perceive stigma (Schuler, Puttaiah, Mojtabai, & Crum, 2015).

Although more severe symptoms are associated with greater help seeking, there may be further challenges for individuals to overcome to recognize they have a need to reduce their drinking (Glass, Grant, Yoon, & Bucholz, 2015). People with heavy drinking patterns are often surrounded by others who drink heavily themselves. Therefore, they may downplay the harms associated with heavy drinking in order to normalize their own behavior (Ferris, J., Devaney, Davis, & Mazerolle, 2016). Other people within an individual's social circle may also exert positive influence on their drinking. Pressure from friends and family may be a powerful motivation to cut down (Polcin, Korcha, Greenfield, Bond, & Kerr, 2012).

1.2 Aims

The overall aims of this paper were to explore 1) regional variations in intentions to reduce drinking by AUDIT scores and 2) regional and sociodemographic variations in the preferred sources of support for reducing drinking for those who intended to seek help.

Regional differences in AUDIT scores and intention to reduce drinking within AUDIT categories were compared. Intention to reduce drinking, intention to seek help, selecting online tools and selecting counselling at a specialist doctor were analyzed by gender, age, AUDIT ≥16, education, employment status and being current medication for a mental health condition. Country differences in the preferred sources of support for those who wished to cut down were analyzed.

2. METHODS

2.1 Design and Procedures

Global Drug Survey (GDS) is the largest anonymous cross-sectional online survey of individuals who use or have used alcohol and other drugs. GDS uses an anonymous, confidential, encrypted platform and is promoted by media and harm reduction partners in Europe, Scandinavia, North America, South America, and Australasia. GDS data on alcohol related behavior have already been effectively used to explore country variation around pre-drinking behavior (Labhart et al., 2017) alcohol related harms in the nigh-time economy (Bellis et al., 2015)(Bellis et al 2015) as well as motivations to drink less (Davies et al., 2017).

Full details about the composition of the survey, history of GDS and recruitment and sampling information are available elsewhere (Barratt et al., 2017). GDS does not adopt a probability based sampling method and thus cannot claim to be fully representative of the populations in the countries included in this paper. However, previous work has shown that GDS is able to recruit a similar sample of cannabis and alcohol users compared to general household surveys in terms of age and sex within Australia, the United States and Switzerland (Barratt et al., 2017)

GDS2017 took place between November 2016-January 2017, collecting anonymous data from respondents around the world and was available in 10 languages (Danish, Dutch, English, French, German, Hungarian, Italian, Portuguese, Spanish, and Swedish). Ethical approval was obtained from the Joint South London and Maudsley and Institute of Psychiatry NHS (no:141/02), University of Queensland (No: 2017001452) and The University of New South Wales (HREC HC17769) Research Ethics Committees.

2.2 Participants

In total, 119,108 respondents took part in GDS 2017. Inclusion criteria for analyses were limited to male and female respondents aged between 16-80 years. Furthermore, for sufficient numbers to compare countries, the current analysis only draws on data from countries with at least 50 respondents to the question about the most preferred source of support to reduce drinking.

2.3 Measures

Alcohol consumption: GDS2017 collected data on alcohol consumption using the Alcohol Use Disorders Identification Test (AUDIT) which is a 10 item questionnaire to assess alcohol consumption and harms (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). Participants received a score from 0-40 (0-7= low risk, 8-15= increasing risk 16-19= higher risk; 20+= possible dependence).

Drinking less and sources of support: After a series of questions relating to drinking practice, Respondents were asked *'would you like to drink less alcohol over the next 12 months?'* and '*would you like help to drink less over the next 12 months?'* (options; yes/no). Those who indicated interest in support to reduce drinking were then asked *'which of the following would you be most likely to use to get help with your drinking?'* Respondents could select one of the following options: self-help tool (online or via app); counselling via email; counselling via

phone; counselling via Skype/live video; counselling at a family doctor (GP); counselling or therapy at a specialist doctor; alternative therapy. The subsequent questions were '*are you planning to seek help to support you cut down on your drinking'* (options; yes/no) and '*If you went to the doctor next week and were honest about how much you drank what do you think they would say?*' (drink less/drink more/nothing/don't know). GDS2017 also included granular demographic measures including gender, age, country of residence, employment status, education, and whether the respondent was currently taking medication for a mental health condition.

2.4 Analysis

Due to small numbers of respondents selecting these items, counselling via email (N= 102), phone (N= 62) and Skype/live video (N=30) were combined into a category named' non-face-to-face counselling'. Descriptive statistics and χ^2 were used to explore the measures by demographic factors and country of residence. Multiple correspondence analysis (MCA) was used to plot the associations between the selected countries and five sources of support. MCA is a technique used to detect underlying structures within categorical data. Categories on the MCA plot that cluster together are associated (Greenacre, 1991; Greenacre & Blasius, 2006). Logistic regression modelling was used to explore whether gender, age, AUDIT scores, employment and mental health were associated with the following outcome variables: wanting to drink less over the next 12 months, wanting help to drink less, selecting online self-help tools and selecting counselling or specialist support as the preferred method of support. As alcohol use, desire to drink less, and decisions around sources of support may vary by age, age in the final models (see Table 3) was entered into the model as either a linear or quadratic form. BIC, AIC or log-likelihood ratio test were examined to determine the best fitting model with respect to age. To account for variations in respondent numbers across countries, a full multivariate multilevel model, clustered by country, was undertaken. The MCA analysis and the multilevel models were undertaken using Stata V15 (StataCorp, 2017). Specifically, for the multilevel modelling the

multilevel mixed-effects logistic regression (with QR decomposition) command *meqrlogit* was used. All other analyses were undertaken using SPSS 25 (IBM, Armonk,NY).

3. RESULTS

Descriptive statistics

The final sample included 82,190 respondents from 12 countries (overall, 67.7% male; *M* age = 28.9; *SD*=11.8) with no missing data for country, age, AUDIT or 'would you like to drink less alcohol over the next 12 months'. Descriptive statistics are shown in Table 1. Median AUDIT score for the whole sample was 8 (5-13). In the whole sample (N=82,190) 34.8% reported wanting to drink less in the next 12 months (21.8% of N=37,851 people drinking at low risk, 40.0% of N=32,401 at increasing risk, 56.4% of N=6,680 at higher risk and 69.4% of N=5,258 at possible dependent levels (AUDIT 20+). In the remainder of the manuscript when we refer to 'possibly dependent' drinkers we are using this definition to describe those that scored 20+ on AUDIT. The highest proportion of people possibly dependent and intending to drink less was found in Australia. Smaller proportions of people with high risk drinking patterns from Denmark reported intending to drink less.

Nearly half of those who wanted help to cut down were planning to seek help. Greece and Australia had the greatest proportions of respondents expressing a desire to drink less, who wanted help to cut down. Smaller proportions of respondents from Germany wanted help to cut down. In the sample as a whole, 35.8% of N=72,863 respondents said their doctor would advise them to drink less if they were honest about their drinking. The country with the highest proportion of respondents who said they thought their doctor would tell them to 'drink less' was the United Kingdom.

[Insert Table 1]

Regional variations in higher risk drinking

Examination of Figure 1 shows significant differences between the countries with the highest and lowest proportions of respondents scoring 16+ on AUDIT as indicated by non-overlapping confidence intervals. The countries with the highest proportion of individuals scoring 16+ on AUDIT was Denmark (26.3% of N= 11,059) while Italy (8.4% of N=2,937) had the smallest proportions of respondents scoring 16+ (Figure 1).

[Insert Figure 1]

Relationships between preferred source of support, AUDIT scores and demographic measures

Bivariate relationships are displayed in Table 2. In this table the total N is 2118 reflecting the number of people who answered the question regarding their preferred source of support for help with reducing their drinking. There were a number of differences observed, for example, people with higher risk and possibly dependent drinking patterns were more likely to select counselling or therapy at a specialist doctor. People with low and increasing risk levels were more likely to select online tools. Respondents currently on medication for a mental health condition were more likely to select a specialist doctor. Respondents with an AUDIT score of 16+ who were also on medication for a mental health condition were also more likely to select specialist doctor than those with an AUDIT score of 16+ who were not currently on medication (Table 2).

[Insert Table 2]

Regional variations in preferred source of support

Figure 2 presents the biplot of country and preferred source of support. Dimension one shows online and non-face to face counselling on one side of the plot with GP, specialist counselling and alternative therapy on the other. Dimension two displays trained professionals at the top of the plot, with the online, non-face to face and alternative therapies on the bottom. As online sources of support are near the center, this suggests it could comprise a mixture of specialist

and non-specialist support. Switzerland and Germany are similar in their preferred sources of support, as are New Zealand, and the UK. Online tools appeared to be most preferred in English speaking countries such as New Zealand, UK, and Australia. Alternative therapy was preferred mainly in Southern European Counties and South America. In Switzerland, Denmark, and Germany, face to face approaches from either a specialist counsellor or GP were preferred.

[Insert Figure 2]

Logistic regression models

After accounting for clustering by country, logistic regression models reporting factors associated with wanting to cut down on drinking, help to cut down, choosing online self-help tools and choosing specialist doctor for support are shown in Table 3. The total N for each of the analyses reported in Table 3 relates to the number of respondents with no missing data for each predictor. Responding 'yes' to 'would you like to drink less in the next 12 months' (N=45,078) was associated with age and with higher AUDIT scores. Specifically, after controlling for other covariates, for those under 48 years of age (approximately) as age increase there is an increase in the probability of respondents reporting 'yes' to drinking less; after 48 years of age, this probability decreases. After controlling for other covariates, as the AUDIT scores increase there is almost a doubling in the odds ratio for respondents indicating a desire to drink less.

Responding 'yes' to 'would you like help to drink less in the next 12 months' (N=15,367) was associated with age, higher AUDIT scores and being on medication for a mental health condition. After controlling for other covariates, for those under approximately 67 years of age, as age increases there is an increase in the probability of respondents reporting 'yes' to wanting help; after 67 this probability decreases. After controlling for other covariates as AUDIT scores increases, the odds ratio for wanting help to cut down almost triples.

Analyses relating to preferred source of support (online or face to face) in Table 3 draw on data from 987 respondents. Choosing online tools for support was associated with AUDIT scores, mental health and education. Specifically, after controlling for other covariates, likely for those in higher AUDIT categories (16-19 and 20+) compared to the low risk (0-7) category as well as, for those respondents on medication for a mental health condition. However choosing online tools was more likely for respondents educated to degree level. Choosing counselling from a specialist doctor was associated with AUDIT scores and mental health. After other covariates were controlled for, this was more likely for respondents on medication for a mental health condition and compared to the low risk (0-7) AUDIT category. Choosing counselling was more likely for respondents in the possibly dependent category (20+).

[Insert Table 3]

4. DISCUSSION

In line with previous GDS research (Davies et al., 2017), one third of a large international sample intended to reduce alcohol use over the next 12 months while less than 10% were interested in professional support. Northern European countries had higher proportions of people with high risk drinking patterns indicated by higher AUDIT scores than Southern Europe for example, reflecting cultural differences in drinking practices (Kuntsche, Rehm, & Gmel, 2004). Countries with higher prices and taxes also seem to have more risky drinking patterns.

Being older in age was associated with intentions to drink less in the next 12 months, and with intentions to seek help to drink less in the next 12 months. This may reflect changing priorities in lifestyle or health in older respondents. Other research also suggests that older adults perceive fewer barriers to change than young people (Han et al., 2018).

Higher proportions of respondents wanted to reduce drinking in countries where heavy drinking was common such as the United Kingdom. Although Danish participants reported

heavy drinking, smaller proportions intended to drink less compared with the other countries where heavy drinking was common. In general, more respondents in higher AUDIT categories reported wanting to drink less. It appears that GDS respondents may be more likely to want to reduce drinking than respondents in the general population. For example de Vocht et al., (2018) found that 20% of people with increasing and higher risk drinking patterns in England reported wanting to reduce their drinking. However, in line with population studies, those who consumed more alcohol were more likely to report wanting to cut down (Dunne et al., 2018).

Only a small proportion of individuals who intended to reduce their drinking said they also wanted help to cut down (7.6%), and these respondents were asked to select their preferred sources of support for help. Regional differences were also observed, where online tools were most preferred as a source of support to reduce drinking by respondents from Australia, New Zealand, and the UK. Specialist counselling was most preferred by those from Germany, Switzerland, and Denmark. Higher AUDIT categories and being on medication for a mental health condition were associated with intentions to drink less, wanting help to drink less and preferring the support of a specialist counsellor. Lower AUDIT categories and not being on mental health medication were associated with preferring online tools.

The findings regarding preferences for online tools versus specialist counselling have important implications. Those working in public health have recognized the potential of exploiting increased access to technology in order to benefit more people, in conjunction with reduced funding for face to face treatment services (Drummond, 2017; Mohammadi, 2014). While some digital interventions can be effective, the overall effects are small (Kaner et al., 2017), and our findings suggest that online support may not be as appealing to those who might benefit the most from reducing drinking.

In combination with risky drinking, being on medication for a mental health condition and having used an illicit drug in the last 12 months were associated with preferences for face to face support. These individuals are likely to be more vulnerable to harm, which may be better addressed using traditional counselling and ongoing support. Access to good quality support is essential to help this group. Thus, online tools offering screening and brief intervention should be crafted to support referral into local specialist treatment services and could result in higher engagement of people drinking at higher risk. At present, only a very small proportion of people with AUD access treatment, for example in the US, only 6.7% of those with AUD have sought treatment in the last year (SAMHSA, 2015). Online support has been used to complement face to face treatment following residential programs in the US. Training was provided to patients before they left the facility and this additional online support meant they were more likely to seek additional face to face treatment once they had been discharged (Glass et al., 2017).

Engaging in self-help requires a good level of health literacy for the understanding of information provided by many online tools, and health literacy is associated with lower levels of education (Nutbeam, 2008). In England for example, only a third of people said they knew what alcohol guidelines were and a third of this group were actually wrong (Buykx et al., 2018). Thus, a high level of health literacy may be needed to convert the information within online tools into behavior change, unless such tools adopt effective graphical assessment and feedback approaches.

People with low risk drinking patterns, who were educated and not on medication for a mental health condition were more likely to select online tools. It is possible that using online tools may avoid the perceived stigma associated with help seeking for this group (Khadjesari et al., 2015). Other research has suggested that people who use digital tools for reducing drinking are younger, have higher AUDIT scores, and experience more harms from drinking than the general

population (Garnett et al., 2017). This may reflect higher levels of digital literacy in younger people who are initially seeking some support or information to drink less.

Country differences may be observed in part, because increased numbers of digital health interventions were designed in the English language, but there may also be cultural differences in the acceptability of help seeking from different sources. For example, alternative therapy was more likely to be selected by respondents from Brazil and Mexico and specialist counselling by those from Denmark and Switzerland. Cultural differences may also reflect access to healthcare preferences, for example in the US health care insurance can be expensive, meaning an online tool could be preferred.

4.1 Limitations

While the GDS sample is large the respondents are self-selecting and due to the way that it is targeted the survey reaches much higher proportions of people who report illicit substance use than in the general population (Barratt et al., 2017). As it is an online survey, people who are less comfortable using technology may be unlikely to participate. Nonetheless the sample does appear to share characteristics with other international surveys finding similar regional variations in drinking patterns, and it is a strength that higher proportions of male respondents take part as they tend to be underrepresented in other surveys. A large proportion of the sample was from Germany, whereas there were considerably fewer respondents from other countries, which is in line with previous waves of GDS. Thus, the sample is limited by primarily consisting European respondents, one that GDS is keen to address with future waves of the survey being translated into more languages and targeted within difference regions. An issue with the sources of support question is that the option 'alternative therapy' encompasses a broad range of possible approaches, from hypnotherapy to drug therapy. As this was a popular choice in some countries, the nature and legal context of such therapies warrant further exploration.

4.2 Conclusion

This paper demonstrated important differences in the intention to reduce drinking and help seeking attempts within a large international sample. Regional variations highlight divergences and convergences in drinking behaviors and the desire to drink less alcohol in this sample. Findings regarding preferences for sources of support may inform better targeted online tools, and highlight the need to provide access to good quality sources of face to face support for people with high risk drinking patterns.

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TABLES

Table 1: *Demographic characteristics of respondents including country of residence, median AUDIT score, % in AUDIT high risk category, whether they would like to drink less over the next 12 months, help to drink less and what % who said doctor would tell them to drink less*

Country	N(%)	Mean age (SD)	% male	AUDIT Median (P25, P75)	Drink less (% yes)	AUDIT 0-7N=37851 % Drink less	AUDIT 8-15 N=32401 % Drink less	AUDIT 16-19 N=6680 % Drink less	AUDIT 20+ N=5258 % drink less	Help to cut down (% yes)	Plan to seek help? (% yes)	Doctor drink less (%)N=72863
Australia	4,850 (5.9)	39.6 (15.9)	67.8	7 (4,12)	44.5	26.2	56.8	77.6	87.3	15.4	42.1	48.7
Brazil	2,314 (2.8)	29.4 (11.4)	55.1	7 (4,12)	37.1	25.8	44.4	54.9	78.1	13.7	44.9	29.6
Canada	4,576 (5.6)	26.7 (8.8)	64.4	9 (5,14)	39.2	22.0	41.8	61.5	77.8	13.3	51.0	43.9
Denmark	11,059 (13.5)	20.5 (4.7)	61.8	12 (8,16)	28.0	16.3	25.7	35.3	49.8	6.9	43.1	40.8
Germany	30,838 (37.5)	31.0 (11.6)	69.2	7 (4,11)	35.8	21.9	44.3	66.3	77.4	2.6	71.0	29.0
Greece	1,130 (1.4)	23.6 (7.7)	66.5	7(4,10)	30.8	22.2	38.6	54.7	56.0	19.5	24.5	29.0
Italy	2,937 (3.6)	28.4 (10.4)	76.1	7 (4,10)	30.0	19.8	39.0	49.6	75.2	6.3	25.0	38.7
Mexico	1,049 (1.3)	26.7 (8.6)	64.4	9 (5,14)	46.4	33.0	49.9	68.0	76.8	15.1	61.9	41.4
New Zealand	3,099 (3.8)	42.4 (14.5)	65.1	7 (4,12)	36.9	21.1	49.6	69.7	77.0	12.2	34.6	40.8
Switzerland	6,578 (8.0)	30.6 (12.1)	63.5	7 (4,11)	28.5	16.4	36.5	55.8	73.5	5.1	67.1	25.8
United Kingdom	5,878 (7.2)	25.8 (8.9)	70.7	10 (6,15)	39.0	25.5	38.5	54.9	68.7	11.0	39.9	51.5
United States	7,882 (9.6)	27.2 (11.7)	75.4	6 (4,11)	33.6	23.1	39.7	61.2	75.7	11.3	39.3	35.5

Whole sample	**82,190**	**28.9 (11.8)**	**67.7**	**8 (5,13)**	**34.8** N=28618	**21.8 N=8257**	**40.0 N=12945**	**56.4 N=3767**	**69.4 N=3649**	**7.6 N=2,148**	**46.9 N=1,411**	**35.8 N=26108**

Table 2: *Bivariate relationships between sources of support for reducing drinking and AUDIT score and demographic variables*

Demographic measure	N	Source of support N(%) Self-help tool (online or via app) N= 897 (37.3%)	Non face to face counselling N= 194 (8.1%)	Counselling or therapy at doctor (GP) N=220 (9.1%)	Counselling or therapy at a specialist doctor N = 618 (25.7%)	Alternative therapy N = 477(19.8%)	χ^2 *p*
AUDIT							
Lower risk (0-7)	**211**	98 (46.4)	16 (7.6)	16 (7.6)	30 (14.2)	51 (24.2)	
Increasing risk (8-15)	**620**	292 (47.1)	55 (8.9)	56 (9.0)	96 (15.5)	121 (19.5)	
Higher risk (16-19)	**392**	170 (43.4)	37 (9.4)	35 (8.9)	78 (19.9)	72 (18.4)	
Possible dependence (20+)	**895**	246 (27.5)	54 (6.0)	91 (10.2)	336 (37.5)	168 (18.8)	147.32 ***
Sex							
Male	**1,457**	554 (38.0)	101 (6.9)	135 (9.3)	384 (26.4)	283 (19.4)	
Female	**661**	252 (38.1)	61 (9.2)	63 (9.5)	156 (23.6)	129 (19.5)	4.53 ns
Age							
<25	**710**	253 (35.6)	62 (8.7)	58 (8.2)	178 (25.1)	159 (22.4)	
>25	**1,408**	553 (39.3)	100 (7.1)	140 (9.9)	362 (25.7)	253 (18.0)	9.70 ns
Education							
Below university first degree	**564**	182 (32.3)	39 (6.9)	48 (8.5)	182 (32.3)	113 (20.0)	
University first degree level or higher	**440**	204 (46.4)	40 (9.1)	43 (9.8)	86 (19.5)	67 (15.2)	32.87 ***
Employment							
Unemployed	**300**	97 (32.3)	19 (6.3)	30 (10.0)	90 (30.0)	64 (21.3)	
Employed	**694**	285 (41.1)	57 (8.2)	61 (8.8)	176 (25.4)	115 (16.6)	9.78 *
Mental health medication							
No current mental health	**1,740**	696 (40.0)	139 (8.0)	156 (9.0)	406 (23.3)	343 (19.7)	

medication							
Current mental health medication	**378**	110 (29.1)	23 (6.1)	42 (11.1)	134 (35.4)	69 (18.3)	30.92 ***
Higher risk + mental health medication							
AUDIT 16+ no current medication	**1,024**	354 (34.6)	76 (7.4)	92 (9.0)	308 (30.1)	194 (18.9)	
AUDIT 16+ current medication	**263**	62 (23.6)	15 (5.7)	34 (12.9)	106 (40.3)	46 (17.5)	19.07 **
Higher risk + other drug use in last year							
AUDIT 16+ no other drug	**157**	54 (13.6)	18 (21.2)	22 (14.0)	43 (27.4)	20 (12.7)	
AUDIT 16+ other drug use	**1,061**	343 (32.3)	67 (6.3)	94 (8.9)	349 (32.2)	208 (19.6)	13.92 **
All respondents	**2,118**	806 (38.1)	162 (7.6)	198 (9.3)	540 (25.5)	412 (19.5)	

Notes: Non face to face counselling = phone, email and Skype counselling combined; * p<05, **p<01, ***p<001

Table 3: *Results of regression models: Adjusted odds ratios, significance and confidence intervals showing factors associated with wanting to cut down on drinking in the next 12 months, wanting help to cut down, choosing online self-help tools and choosing specialist doctor for support*

			Preferred source of support	
	Would like to drink less in next 12 months N =45078	Would like help to drink less in next 12 months N =15367	Online self-help tool N =987	Counselling from specialist doctor N =987
	AOR (95% CI) p	AOR (95% CI) p	AOR (95% CI) p	AOR (95% CI) p
Male	.98 (.94-1.03) ns	.92 (.79-1.07) ns	.97 (.72-1.31) ns	1.19 (.85-1.66) ns
Age (five year differences)	1.56 (1.49-1.65) ***	1.42 (1.21-1.68) ***	.99 (.93-1.05) ns	.93 (.87-1.00) *
Age^2	.98 (.97-.98) ***	.99 (.98-.10) **	-	-
AUDIT 8-15	3.16 (3.01-3.30) ***	2.30 (1.82-2.89) ***	.75 (.46-1.21) ns	1.75 (.86-3.56) ns
AUDIT 16-19	6.97 (6.43-7.56) ***	5.74 (4.45-7.40) ***	.53 (.32-.90) *	1.91 (.91-4.01) ns
AUDIT 20+	13.27 (11.99-14.69) ***	14.08 (11.10-17.87) ***	.32 (.20-.52) ***	4.33 (2.19-8.55) ***
Educated to degree level	1.01 (.96-1.06) ns	.94 (.82-1.09) ns	1.53 (1.14-2.04) **	.68 (.49-.94) *
Employment	.96 (.92-1.01) ns	.95(.81-1.21) ns	1.16 (.85-1.59) ns	.96 (.69-1.35) ns
Medication for mental health	1.01 (.96-1.07) ns	1.81 (1.55-2.12) ***	.54 (.40-.73) ***	1.82 (1.33-2.51) ***
Constant	.05 (.04-.06) ***	.01 (.00-.01) ***	.99 (.48-2.05)	.20 (.08-.47) ***
REvar (SE)	.062 (.03)	.38 (.17)	.28 (.15)	.16 (.10)
ICC (CI)	.02 (.01-.04)	.10 (.05-.22)	.08 (.03-.20)	.05 (.01-.14)

Reference groups, sex = female, AUDIT = low risk, education = not educated to degree level, employment = unemployed, medication = not currently on medication for a mental health condition *p<05, **p<01, ***p<.001, ns not significant

FIGURES

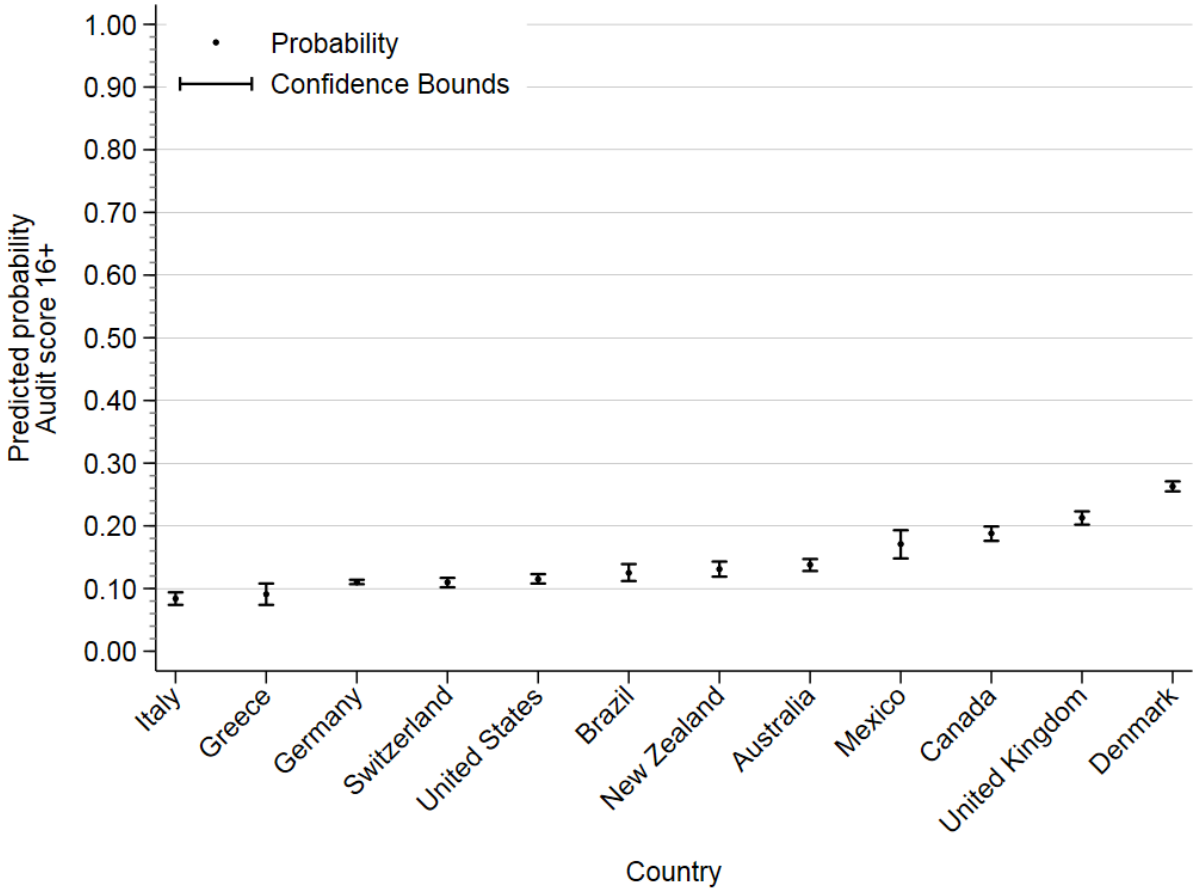

Figure 1: Predicted probability (and confidence intervals) of reporting AUDIT scores of 16+ ordered by country

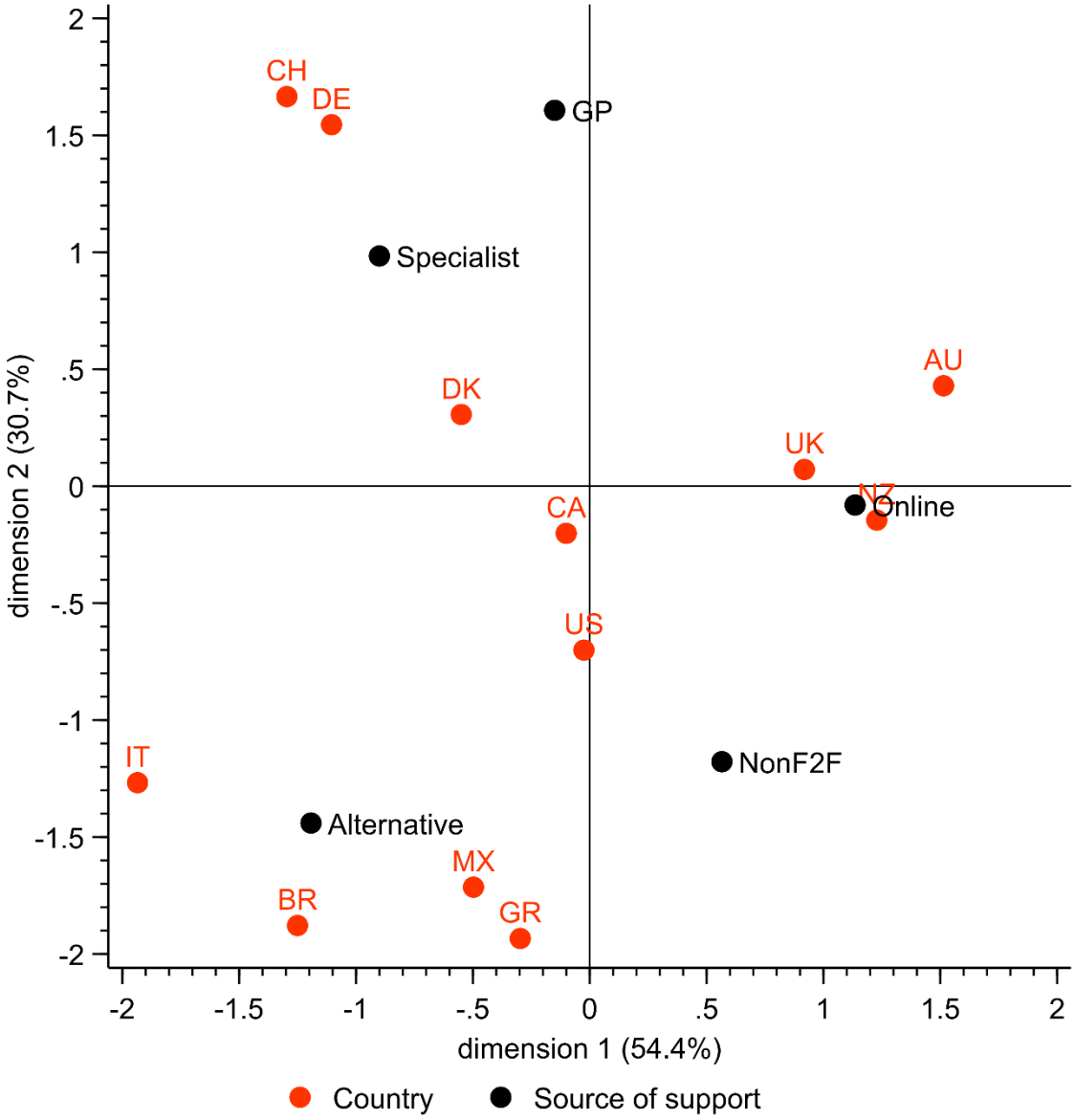

Figure 2: Results of multiple correspondence analysis including country of respondent (AU~Australia; BR~Brazil; CA~Canada; DK~Denmark; DE~Germany; GR~Greece; IT~Italy; MX~Mexico; NZ~New Zealand; CH~Switzerland; UK~United Kingdom; US~United States) and Preferred source of support (Online~Online tools; NonF2F~Non face-to-face counselling; GP~Counselling by GP; Specialist~Specialist counselling; Alterantive~Alternative therapies). Coordinates in standard normalization. Categories that cluster together on the plot are associated, for example countries like Switzerland and Denmark are similar in their preferred source of support and this tends to be more face-to-face approaches with specialists (or GPs)