Published in final edited form as:

J Drug Issues. 2014 October 1; 44(4): 457–465. doi:10.1177/0022042614542509.

Pressure to change drinking behavior: An exploratory analysis of US general population subgroups

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Abstract

Background—General population studies have shown that pressure from others to change drinking can come from different sources. Receipt of informal pressure (IP) and formal pressure (FP) is known to vary by quantity and consequences of drinking, but less is known about how pressure varies among subgroups of the population.

Method—This exploratory study utilizes data from the National Alcohol Surveys from 1995–2010 (N=26,311) and examines associations between receipt of pressure and subgroups of drinkers.

Results—Increased relative risk of receiving IP and FP were observed for individuals reporting an arrest for driving after drinking and illicit drug use while poverty and lack of private health insurance increased risk of receipt of formal pressures. Regular marijuana use increased IP.

Conclusion—The subgroups that were studied received increased pressures to change drinking behavior, though disentangling the societal role of pressure and how it may assist with interventions, help seeking, and natural recovery is needed.

Keywords

alcohol; pressure to change; legal problems; health insurance; drug use

Introduction

Numerous harms are attributable to problematic alcohol use including injury, disability and death (Room, Babor, & Rehm, 2005). Despite the problems associated with alcohol misuse, most individuals with alcohol problems do not seek out help to decrease or quit drinking (Cohen, Feinn, Arias, & Kranzler, 2007; Deborah A. Dawson, 1996; Kaskutas, Weisner, & Caetano, 1997; Wu, Kouzis, & Leaf, 1999). While there is indication that persons improve their alcohol-related problems without help (D. A. Dawson et al., 2005), those who receive treatment or attend self-help groups tend to have better outcomes than those who do not (Weisner, Matzger, & Kaskutas, 2003).

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Research suggests that a diagnosis of alcohol dependence alone does not predict treatment seeking but that more complex patterns of social and psychological traits compel individuals to find help (Korcha, Polcin, Kerr, Greenfield, & Bond, 2013; Ólafsdóttir, Raitasalo, Greenfield, & Allamani, 2009; Proudfoot & Teesson, 2002; Weisner, Greenfield, & Room, 1995). There is a strong body of work in treatment seeking samples examining the precipitating factors to entering treatment and a commonly reported reason to seek help is the pressure received from others (Cunningham, Sobell, Sobell, & Gaskin, 1994; George & Tucker, 1996; Matzger & Weisner, 2006; Polcin & Beattie, 2007; Polcin & Weisner, 1999; Storbjörk, 2006). Pressure to quit or change drinking behavior can be received from a multitude of sources though informal sources, such as family and friends, are the most likely to express concern, suggest cutting down or quitting, or suggest getting help. Other forms of pressure outside of the immediate social network include formal pressures such as those from co-workers or supervisors, physicians/medical personnel, and law officials.

Pressure to change drinking behavior is also reported in non-treatment seeking samples. Room (1996) found that 46% of respondents in an Ontario, Canada sample had ever said something to a relative about their drinking behavior and 65% had said something to a friend. Similarly, 39% of heavy drinkers and 45% of persons with any harms due to alcohol (e.g., alcohol harming health) reported receiving past year pressure from others to change drinking behavior in US general population samples (Polcin, Korcha, Greenfield, Kerr, & Bond, 2012). Furthermore, those that sought any help for their drinking problems in the past year were over 5 times more likely to report having received pressure from others to change their drinking (Korcha et al., 2013). The strong association between pressure and help seeking suggests that external pressure from others may work as a precursor to finding help for alcohol problems.

In addition to understanding the types of pressure, the characteristics of those that receive pressure to change drinking habits or seek assistance show some consistency across populations. Men report more informal pressures than women and spouses or intimate partners are more often applying the pressure though cultural variations exist (Holmila, Raitasalo, Knibbe, & Selin, 2009; Ólafsdóttir et al., 2009). Additionally, men with heavy drinking patterns or prolonged alcohol use are more likely to report receipt of pressure than women with equivalent drinking (Joosten, Knibbe, Derickz, Hradilova-Selin & Holmila, 2009).

While the characteristics of pressure and those that receive it have been given attention in the general population literature, little is known about subgroups of the general population and the types of pressures they may encounter to change their drinking. Of particular interest in this exploratory analysis of US general population data are subgroups of the population that may experience different hardships or marginalization that could differentially influence the types of pressure they receive. The subgroups selected include those that have had legal involvement due to alcohol use, those at or below the poverty level, illicit drug use, and health insurance status. Because there is insufficient prior research to support any specific a priori hypotheses, results are exploratory.

Methods

Survey Data

This study utilizes data from four National Alcohol Surveys (NAS) (1995 – 2010) collected at 5-year intervals at the Alcohol Research Group (ARG). The surveys were primarily designed to document trends in self-reported alcohol consumption and problems among U.S. residents age 18 and older and are inclusive of variables explored in this report, such as pressure to change drinking, legal problems, health insurance, and participants' economic status.

The 1995, 2000, 2005 and 2010 surveys are highly comparable, with identical or highly similar item content allowing for pooling. All surveys included over-sampling for Latino/Hispanics and African-Americans and use of random digit dial (RDD) telephone survey methods for the last three epochs while the 1995 survey used a multi-stage clustered sample with in-person interviews. The 2010 survey was inclusive of both landline and cell phone samples however, because the 2010 cell phone sample was not asked all questions included in the present exploration, these respondents were not included. All surveys were weighted to reflect the general population of the United States. For a detailed discussion of the NAS surveys and comparability of items across time see Polcin et al (2012).

Measures

Pressure (past 12 months)—Pressure was conceptualized as tangible pressures that were experienced rather than pressures that were perceived; questions about feeling pressured (i.e., felt that others were unhappy about your alcohol use) are excluded from this exploratory analysis. Because it can reasonably be assumed that pressures from family and friends are considerably different from other sources that are more formal, such as the workplace, we divided pressures into informal pressures (IPs) and formal pressures (FPs). IP assessed pressure received from a spouse/intimate partner, family, or friends. The wording of each item was geared to how we believed pressure from each source may have typically transpired. For example, pressure from a spouse/intimate was derived from “My spouse or someone I lived with got angry about my drinking or the way I behaved while drinking” while family and friends were indicated from “people who might have liked you to drink less or act differently when you drank” which included friends, boy/girlfriend(s), parents, or other relatives. FP also consisted of 3 questions, “A physician suggested that I cut down on drinking”, “People at work indicated I should cut down on drinking” and “A police officer questioned or warned me about my drinking.” Because the majority reported no pressure and pressure from 3 sources for either IP or FP were less often reported, IP and FP measures were coded into 3 categories of no pressure, pressure from 1 source, and pressure from 2–3 sources.

Alcohol Consumption (past 12 months)—Past year total alcohol volume was obtained using the graduated frequency (GF) methodology (Greenfield, 2000). The GF assesses the maximum number of drinks consumed in a sitting followed by questions on frequencies of drinking (e.g., how often did you have 12 or more drinks in a sitting?) at descending levels of quantity to estimate the total number of drinks in a year. A small

percentage of individuals reported extremely high levels of alcohol consumption (0.2%) and were capped to 13 drinks per day for a total of 360 days, achieving a capped total volume of 4680 drinks per year. The GF methodology has been tested extensively and shown to have excellent concurrent and predictive validity (Greenfield, Kerr, Bond, Ye, & Stockwell, 2009)

Any illicit drug use (past 12 months)—Survey respondents were asked about any past year non-prescription drug use for 1) marijuana/hashish/‘grass’/‘weed’, 2) cocaine/crack cocaine, 3) uppers/speed/amphetamines, 4) tranquilizers/Quaaludes/Librium/Valium/sleeping pills, and 5) heroin/opium. Some minor changes to the drug categories changed in survey year 2010; ‘grass’ was changed to ‘weed’, Ritalin and methamphetamine were added to the question on stimulant use (#3 above) and Quaaludes and sleeping pills were removed from #4. It is important to emphasize that we did not assess pressure to change drug use. This drug use variable identified individuals who used drugs and among this group, we assessed the extent to which they were pressured to change their co-occurring alcohol use.

Frequency of unprescribed marijuana use (past 12 months)—While illicit drug use was relatively less often reported (n=4440; or, 17.5% of the total sample), the most commonly used drug was marijuana. We examined this subgroup of substance users with a 3 category measure of ‘no past year use’, ‘less than weekly use’ and ‘weekly use’. There were slight differences in the 2010 wording of the marijuana question as noted above and survey years 2005 and 2010 specifically queried if marijuana use was prescribed if the individual lived in the states of California or Arizona. Those indicating that marijuana use was always used as prescribed were coded to ‘never’ while those indicating any non-prescription use were included as illicit marijuana users.

Driving after drinking (lifetime)—A lifetime measure of arrest for driving after drinking (“I have been arrested for driving after drinking”) was dichotomized. This question was also asked for past 12 month arrest for driving after drinking but rates were extremely low for all survey years and not analyzable. The lifetime measure was included in the analysis because it reflected a subgroup of persons that had concrete legal troubles due to alcohol use and of interest was whether this group received pressure differentially.

Health insurance (current)—This measure assessed whether the respondent currently had private health insurance, publicly funded insurance (e.g., Medicare, Medicaid, Veteran’s Administration, etc.), or no health coverage. About 7% of individuals with private health insurance also reported receiving some form of public health insurance but were included in the analyses as privately insured because they had the opportunity to use private health insurance if needed. Arguably this measure could be a reflection of economic status but it was chosen because some forms of health insurance may put individuals in contact with public agencies, especially social service agencies, and pressure might be received differently for these groups.

Poverty—Poverty was ascertained by past year income and number of persons in the household using government guidelines (U.S. Department of Health and Human Services, 2013). Because the NAS covers 15 years, poverty level was determined for survey year and

dichotomized to individuals at or below the poverty level versus above the poverty level. While this dichotomous measure is somewhat crude in its estimation of poverty and does not account for cost of living based on region, support received from others, etc., it represented a form of deprivation and potential marginalization worthy of exploratory study.

Analytic Strategy—Analyses include all respondents from all survey years. Reported sample sizes are unweighted while percentages and odds ratios are weighted. Rates for IP and FP for each of the subgroups of the population are not mutually exclusive. Models in Table 2 demonstrate associations between pressure and population subgroups using multinomial regression. Multinomial models predicted receipt of IP or FP pressure from 1 source and 2–3 sources, compared to no pressure. Because the incidence of pressure from 2–3 sources was especially low for some categories of marijuana use and health insurance status, models in Table 2 for these variables use dichotomous measures of FP. Data were analyzed using SPSS v17 (SPSS Inc., 2008) and Stata v13 (Stata Corp., 2013).

Results

Table 1 displays rates of IP and FP by each subgroup by number of pressure sources. Chi square comparisons were conducted for each group of interest by IP and FP and all were statistically significant at $p < 0.001$. With the exception of marijuana use and arrest for driving after drinking, the percentages of those receiving at least one source of pressure within a subgroup were generally low. Nearly 12% of those using marijuana less than weekly reported 1 source of IP and 10.7% reported 2–3 sources of IP from family and friends. This decreased for FP with 7.7% of less than weekly marijuana users reporting one source and 1.8% having 2–3 sources of FP. Similarly, those using marijuana at least weekly was 12.3% for a single source of IP and 13.6% for 2–3 sources of IP while FP was 10.2% and 1.7%, respectively. Those with no health insurance reported higher rates of IP and FP than those receiving private or public health insurance.

Regression models were conducted to explore the association between pressure and the selected subgroups (Table 2). A total of 10 separate models were conducted for each subgroup by IP and FP and analyses controlled for demographics, alcohol volume, and NAS survey year. Persons that had ever been arrested for driving after drinking and those that had used any drugs in the past year had increased risk of both IPs and FPs. Risk was over twofold for 1 source of pressure but increased to over threefold with 2–3 sources of pressure when compared to those with no pressures. Being at or below the poverty level and health insurance status were not predictive of IPs but elevated risk was observed for FPs. Conversely, less than weekly marijuana users had twice the risk of receipt of one pressure of IP for drinking while the risk for two to three sources of IP was over fourfold. FP was observed for less than weekly marijuana user but increased risk was not evident for past year weekly use of the substance. Because multinomial regression models in Table 2 comparatively assessed risk for one source and two to three sources of pressure to no pressure, models were rerun to see if significant differences in risk were evident when one source of pressure and 2–3 sources were compared. Driving after drinking, illicit drug use and marijuana use significantly increased the risk for 2–3 sources of pressure of IP than if

they were to report 1 source of pressure. Only poverty level was associated with increased risk for 2–3 sources of pressure from FP, compared to 1 source of pressure.

Discussion

Study findings show that IP and FP to change drinking behavior is targeted toward some groups more than others. While previous studies have shown that heavy drinkers and those with alcohol related harm are more likely than others to receive pressure (Polcin et al. 2012), the current findings show drinkers who also use drugs, lack proper health insurance, report a history of arrest for driving after drinking, or are at or below the poverty level are also more likely to receive some form of pressure. Results from the current study also show that pressure from formal sources, such as police, work or physicians occurred for all of the subgroups studied, yet IP was only observed for some groups. There are a number of possible explanations as to why these groups receive more pressure to change their drinking behavior. Individuals who use drugs as well as alcohol might receive pressure broadly directed toward reducing or eliminating both alcohol and drugs. Marijuana users reported the highest reported rates of IP and FP and, while we did not have exact frequencies of when marijuana and alcohol were used together, the majority of marijuana users reported alcohol use with marijuana at least ‘sometimes’ (not tabled). In addition, the informal and formal sources in contact with a known drug user may believe alcohol to be a sign of other substance use and therefore pressure the individual out of concern of legal repercussions due to drug use.

Poverty was predictive of FP. One motive for informal sources of pressure, such pressure from a spouse or other family member, might be financial. There is some evidence of this in previous work on IP that suggests that IP is exerted more often in economically less developed countries because of the threat of alcohol-related deprivation (Holmila et al., 2009). We did not observe this with our US sample though our measure of poverty was limited to a dichotomous measure that may have not have captured the nuances of IP received a varying income levels.

Interestingly, individuals with a lifetime history of arrest for driving after drinking report increased odds of past year pressures to change drinking behavior. It could be assumed that these individuals are heavier drinkers but models in Table 2 control for alcohol consumption and increased pressures were still observed. Potentially these persons have been in trouble in the past so family, friends, and others may be more vigilant to monitor drinking behavior and make comments. Further work to examine the types of FPs received for those with legal involvement due to alcohol could illuminate whether these individuals have FPs due to legal, medical, workplace or if they are somehow identified by other agencies. It would also be of interest to compare the characteristics of these individuals with those that encountered legal problems due to alcohol use in the past but no longer drink.

A predictor of receiving pressure from formal sources was insurance status, with those having no insurance or public insurance receiving more pressures than those with private insurance. One reason may be those with private plans are more likely to have coverage for substance abuse problems and therefore have the option of seeking out help earlier, before

they reach the point of receiving FP. Those with no insurance might have the option of seeking treatment but only if they receive a legal mandate that pays for it so receive pressures at a higher rate. As noted before, insurance plans are also indicators of economic status and those without insurance may be more prone to pressures because they lack access to few, if any, health resources. Relative to higher income groups, these individuals have more medical and legal problems that could be exacerbated by drinking.

Limitations and Further Research

There are a number of limitations that bear noting. All data are self-report and therefore have the potential for responder bias that is inherent in all self-report research. We used multiple cross-sectional surveys so we were not able to track how receipt of pressure may have changed for individual respondents over time. This paper only examined receipt of pressure and the association with subgroups, not whether the pressure resulted in changes in drinking or help seeking. Finally, we did not explore socio-cultural traits of pressure to change drinking.

While our previous research found receipt of pressure was associated with help seeking (Korcha et al., 2013), we need additional research on how pressure might have impacted help seeking among the groups examined in the current paper. We also need further understanding on how drinking patterns (e.g., binge drinking) might have been affected as a result of pressure, an issue that is separate from seeking help. Models examining health insurance status as a predictor of pressure might parse out effects for access to treatment, severity of problems exacerbated by alcohol, and social contexts where alcohol is consumed.

In addition to help seeking as it relates to pressure is understanding how pressure may precipitate ‘natural recovery’ or ‘unassisted change’ to resolve problems due to alcohol use (White & Kurtz, 2006). This would be especially important to consider because, while pressure from others may be indicator to seeking treatment, there is less indication that pressure to enter treatment results in improved treatment outcomes (Polcin & Beattie, 2007; Storbjörk, 2012).

This exploration examines subgroups of the population that receive FP but further work should identify how institutional pressure is exerted and if certain types of pressures within these institutions are effective. For example, Polcin and Beattie (Polcin & Beattie, 2007) found that persons that received only institutional pressure to enter treatment had lower severity scores for alcohol and drug use compared to those only receiving pressure from informal sources. Pressure to change alcohol use may be a staple discussion point for some institutions and less so for others. For example, only 1 in 6 adults have discussed drinking behavior with a health care professional (McKnight-Eily et al., 2014) but drug and alcohol use are standard discussion protocols for some social service agencies.

Pressure to change drinking behavior is greater for some subgroups of the US population. Further study should be given to disentangling the societal role of pressure to change drinking and how it may assist with intervention and help seeking for alcohol problems.

Acknowledgments

This work was supported by NIAAA grants R21 AA018174 and P50 AA005595.

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Table 1

Percentage receiving informal pressure and formal pressure, by number of sources, weighted[†]

	N	Informal sources of pressure			Formal sources of pressure		
		None	1	2-3	none	1	2-3
Income							
Above poverty level	17151	92.0	4.8	3.2	98.0	1.8	0.2
At or below poverty level	4738	94.5	3.8	1.8	95.9	3.2	0.9
Ever arrested for driving after drinking							
No	24719	95.1	3.3	1.6	98.2	1.6	0.2
Yes	1221	81.7	10.2	8.1	89.4	8.8	1.9
Past year drug use							
No	20993	96.1	2.8	1.1	98.6	1.3	0.2
Yes	4440	87.5	7.1	5.3	94.5	4.7	0.8
Past year Marijuana use							
Never	23798	95.9	2.9	1.2	98.4	1.4	0.2
Less than weekly	1052	77.3	11.9	10.7	90.5	7.7	1.8
Weekly+	537	74.1	12.3	13.6	88.1	10.2	1.7
Health Insurance Status							
None	4309	90.3	5.4	4.3	95.2	4.1	0.6
Private	16272	95.0	3.5	1.5	97.6	2.0	0.4
Public	5059	96.1	2.3	1.6	98.3	1.5	0.2

[†] All Chi2 comparisons significant at p<0.001 for IP and FP.

Table 2

Multinomial logistic regression and logistic regression models predicting informal and formal pressures⁺⁺.

	Informal sources of pressure			Formal sources of pressure		
	1 source RRR (95% CI)	2-3 sources RRR (95% CI)	1 source RRR (95% CI)	2-3 sources RRR (95% CI)	1 source RRR (95% CI)	2-3 sources RRR (95% CI)
Ever arrested for driving after drinking	1.9 ^C 1.3, 2.6	3.3 ^C 2.2, 4.8	2.7 ^C 1.8, 4.1	4.3 ^B 1.6, 12.2		
At or below the poverty level	1.3 1.0, 1.8	1.3 0.9, 1.9	1.5 ^A 1.0, 2.2	4.3 ^B 1.8, 10.3		
Past year illicit drug use	1.8 ^C 1.4, 2.3	2.9 ^C 2.1, 4.0	2.1 ^C 1.5, 2.9	3.1 ^B 1.3, 7.3		
Any formal pressure RRR (95% CI)						
Marijuana use (ref=Never) ^{&&}						
Less than weekly	2.3 ^C 1.7, 3.2	4.5 ^C 3.1, 6.6	2.6 ^C 1.7, 3.9			
Weekly +	1.8 ^C 1.2, 2.8	3.2 ^C 1.8, 5.6	1.7 0.9, 3.1			
Health insurance (ref=private insurance) ^{&&}						
No insurance	1.2 0.8, 1.7	1.3 0.8, 2.1	2.0 ^B 1.3, 3.4			
Public insurance	1.2 0.8, 1.6	1.5 1.1, 2.5	1.7 ^B 1.2, 2.5			

⁺⁺ 2 models were conducted separately for IP and FP for each subgroup, for a total of 10 models. Each model controls for gender, age, ethnicity, employment, alcohol volume, and survey year.

^{&&} Logistic regression models, predicting any FP, were performed due to small sample sizes in some cells.

^A p<0.05;

^B p<0.01;

^C p<0.001