Does Identity as a Drinker Predict Problem Recognition Motivation in Harmful Drinkers?

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Abstract

Harmful drinking is associated with significant negative health and social outcomes, but drinkers are reticent to recognise personal drinking problems, hindering natural recovery or help-seeking. Recent evidence suggests that social identity as a drinker is associated with various drinking-related factors but has not been examined in relation to likelihood of problem recognition. In a group of ninety-six harmful drinkers (61 females, *M* age = 34 years) we explored how identity components associated with ingroup self-investment and ingroup self-definition in combination with implicit identity as a drinker accounted for degrees of problem recognition. In addition to demographic information, addiction experience and drinking behaviour (AUDIT), respondents completed measures of ingroup self-investment (identity centrality, solidarity, and satisfaction), ingroup self-definition (ingroup homogeneity and self-stereotyping), a “self as drinker” identity implicit association test and problem recognition (four items from theStages of Change Readiness and Treatment Eagerness Scale**)**. After controlling for possible covariates (age, gender and alcohol addiction experience) increased problem recognition was accounted for by explicit and *not* implicit identity components. More specifically, increasing perceived chronic saliency of one’s drinker identity (self-investment in the drinker ingroup) and not an implicit association between the self and being a drinker was related to increased likelihood of problem recognition. This suggests that how chronically and explicitly accessible the identity of the drinker is for individuals might operate to stimulate the willingness or motivation to recognise potential drinking related harm.

*Keywords:* Implicit drinker identity; Explicit drinker identity; Self-investment; Self-definition; Identity centrality; Harmful drinking.

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**Problem Recognition in Drinkers**

Harmful drinking, or that level of alcohol consumption that is increasingly likely to result in significant harm, is associated with a significant health and social cost burden and is estimated as the seventh most prominent risk factor for disability and death globally (World Health Organization, 2019) with recent evidence suggesting that harmful drinking accounts for twenty per cent of UK hospital admissions ([Roberts et al., 2021](https://www.sciencedirect.com/science/article/pii/S0306460321002781?casa_token=0Qk9H-bp6J8AAAAA:cuje2WkhUnc1iteMB7kpMPEjOpg0DXR6V7-ZtTRX60VemCSvN1BESaRgydIEWafjYLWCoY8H#b0255)). That some of these drinkers may not appear to recognise that they have a ‘problem’ with alcohol is a consistent finding (see Morris, Albery, Moss & Heather, 2021; Smith, Spanakis, Grible, et al, 2022; Spanakis, Gribble, Stevelink et al, 2023). They will, for example, significantly underestimate personal consumption patterns ([Garnett et al., 2015](https://www.sciencedirect.com/science/article/pii/S0306460321002781?casa_token=0Qk9H-bp6J8AAAAA:cuje2WkhUnc1iteMB7kpMPEjOpg0DXR6V7-ZtTRX60VemCSvN1BESaRgydIEWafjYLWCoY8H#b0085)), assess personal drinking risks or problems associated with that drinking at low levels in much the same way as non-harmful drinkers ([Morris et al., 2020](https://www.sciencedirect.com/science/article/pii/S0306460321002781?casa_token=0Qk9H-bp6J8AAAAA:cuje2WkhUnc1iteMB7kpMPEjOpg0DXR6V7-ZtTRX60VemCSvN1BESaRgydIEWafjYLWCoY8H#b0180), 2024), and are more likely to characterise others as problem drinkers rather than themselves (Morris et al, 2021; Khadjesari et al, 2019, [Parke et al., 2018](https://www.sciencedirect.com/science/article/pii/S0306460321002781?casa_token=0Qk9H-bp6J8AAAAA:cuje2WkhUnc1iteMB7kpMPEjOpg0DXR6V7-ZtTRX60VemCSvN1BESaRgydIEWafjYLWCoY8H#b0220), [Wallhed Finn et al., 2014](https://www.sciencedirect.com/science/article/pii/S0306460321002781?casa_token=0Qk9H-bp6J8AAAAA:cuje2WkhUnc1iteMB7kpMPEjOpg0DXR6V7-ZtTRX60VemCSvN1BESaRgydIEWafjYLWCoY8H" \l "b0330)). With this in mind studying how different groups of drinkers problem recognise (i.e., the extent to which a drinker explicitly recognises the harms caused by their drinking) may be important to aid understanding of factors important for adherence to and engagement with directed interventions, to facilitate natural recovery processes and should be a candidate for public health intervention initiatives ([Dunne et al., 2018](https://www.sciencedirect.com/science/article/pii/S0306460321002781?casa_token=0Qk9H-bp6J8AAAAA:cuje2WkhUnc1iteMB7kpMPEjOpg0DXR6V7-ZtTRX60VemCSvN1BESaRgydIEWafjYLWCoY8H#b0070); Morris et al., 2021; Morris, Boness & Witkiewitz, 2023; Probst et al., 2015; Smith et al, 2022; Witkiewitz et al., 2019, 2021).

So, the question becomes, why might harmful drinkers be seemingly less inclined to recognise a drinking problem? Some work has concentrated on factors outside of the individual such as a deficit in identifying problematic drinking by primary care medical staff (e.g., Oyefeso et al., 2008) and a public (or normative) belief that abstinence alone is the primary acceptable goal (e.g., Morris, Cox, Moss & Reavey, 2022), while other work has emphasised motivational issues squarely rooted in the drinker themself (May et al, 2019). Among these are those factors that are related to the experience (or anticipated experience) of stigma (Glass et al, 2031; May et al, 2019). People perceived as ‘problem drinkers’ are amongst those most widely stigmatised (Morris & Schomerus, 2023; Peter et al, 2021; Schomerus et al, 2022), and negatively stereotyped as untrustworthy, to blame for their issues, weak and dangerous (Crisp et al., 2005, Nieweglowski et al., 2018). Being the subject of this type of typicality is hugely threatening for an individual’s self-worth and esteem (e.g., Schomerus et al, 2022; Strickland, Tang, Wekerle, & Stewart, 2023). It is of little surprise that drinkers will *avoid* being labelled as problem drinkers (including labelling by the self) with such avoidance acting to protect against any anticipated threat. Indeed, even among those who are in active recovery, and who have adopted such an identity, there is a strong desire not to disclose their “recovery” identity through fear of stigmatised responses (Romo et al, 2016). It seems, therefore, that the motivation to recognise a drinking problem may be linked to mechanisms associated with how one categorises (or *identifies*) oneself as an ingroup member relative to outgroup member.

**Social Identity**

One’s social identity is conceptualised as those characteristics attributed to the self that is derived from their membership of an ingroup relative to groups to which they do not belong (i.e., out groups) (Tajfel, & Turner, 2004). This identification process is grounded in beliefs associated with minimal perceived differences (i.e., similarities) with other ingroup members and, at the same time, maximal differences with out-groups and their members (Turner, Oakes, Haslam & McGarty, 1994). This process is usually experienced adaptively to secure, realise, preserve, and protect our needed positive self-concept (Spears, 2021). It moderates all forms of behaviour such that *what we do* as a group member underlines which beliefs (e.g., perceptions related to self-efficacy, confidence, and personal control) and actions are allowed, legitimate and available to us as invested and committed in-group participants (Haslam, Haslam, Jetten, Cruwys, & Steffens, 2021; Häusser, Junker, & van Dick, 2020).

It has been argued that one’s social identities can be experienced with a degree of conscious awareness (i.e., explicit experience) and / or in a way that involves little awareness of the experience (i.e., implicit experience) (see Devos & Banaji, 2006). This dissociation between implicit and explicit self-identity is articulated as the former (implicit identity) characterised by an associative representation of the self (e.g., me = male, me = sociable, me = drinker) and the latter (self-identity) as a form of propositional reasoning about who you are (e.g., I am male, I am sociable, I am a drinker) (Lindgren, Neighbors, Gasser, Ramirez, & Cvencek, 2017).

In terms of explicit identity Leach et al’s (2008) hierarchical model of in-group identification differentiates two features central for identification. The first, *self-definition*, is determined by an individual’s appraisal of similarities with other in-group members comprising how far they think of oneself as similar to their beliefs about the in-group prototype (i.e., individual *self-stereotyping*) as well as how coherent the character of the in-group is perceived to be and how distinct they are from out-group members (i.e., *in-group homogeneity*). The second feature refers to the subjective experience of sense of self-investment in the in-group. It is argued to be comprised of centrality (i.e., how salient and important the in-group is for one’s self-identity), solidarity (i.e., the degree of a sense of belonging and connection to an in-group), and satisfaction (i.e., the extent of positive evaluation of the in-group). Acknowledging these foundations for conceptualising the process of experienced identity as an in-group member has been shown to be fundamental across several addictive behaviours (Albery et al, 2021; Albery et al, in press; Hertel et al, 2019; Lindgren et al, 2017). For example, in Instagram users (Albery et al, in press), Facebook users (Albery et al, 2021), gamblers (Albery et al, 2024) and drinkers (Hertel et al, 2019) increasing self-investment in an in-group (in terms of how chronically salient one’s identity is for oneself) predicted increasing problematic use.

Other work has argued that perceived associations between the self and our group memberships directly influence how we think, our motives, goals, preferences and what we do in context without being aware of any such influence (Devos & Banaji, 2006; Greenwald & Lai, 2020). This associative understanding argues that the self (or “me) is an essential node in a network of cognitive associations that characterise social information (Greenwald, Banaji, Rudman, Farnham, Nosek, & Mellott, 2002). This network also includes other nodes related (or connected) to the self which represent both valanced-based (e.g., pleasant, or unpleasant, good or bad, etc.,) and non-valence-based information (e.g., drinker or non-drinker). These co-existing and related nodes become active depending on context (or exposure to external or internal cues) (Nosek, Hawkins & Frazier, 2011). The strength of an implicit self-identity is the potential for (and speed with which) one node activates an associated one and vice versa (e.g., activating “drinker” results in the activation of “me”). The repeated coactivation of these nodes in context will facilitate this processing to become increasingly fast, reflexive, and unintentional (Rudman, 2004) and operate outside of conscious awareness (Gawronski & Bodenhausen, 2014).

The significance of this implicit understanding of drinker self-identity for explaining drinking behaviour has been demonstrated across a growing body of work (see Lindgren et al, 2017; see Cummins, Lindgren and De Houwer, 2021) and across multiple drinking-related dependent measures including alcohol expectancies, motives to drink, social norms and in-the-moment drinking behaviour (Caudwell & Hagger, 2014; Blevins et al, 2018; Lindgren Ramirez, Olin & Neighbors, 2016; Frings, Melchiar & Albery, 2016).

**Social Identity in Addictive Behaviours**

The function and significance of related social identities in understanding engagement with and severity of addictive behaviours has recently become a focus of work (see Ingram & Finn, 2023; see Frings & Albery, 2015, 2021; see Montes & Pearson, 2021). This evidence suggest that social identities are related to behavioural engagement and frequency as a function of the saliency of a desired identity and investment in that identity, as well as being strongly implicated in levels of self-efficacy, recovery confidence and behavioural change (e.g., see Shono et al., 2023; Buckingham, Frings & Albery, 2013; Albery et al, 2021; Frings, Wood & Albery, 2021; Frings, Kim & Albery, in press; Frings, Wood, Lionetti & Albery, 2019; Best, Beckwith, Haslam, Haslam, Jetten, Mawson, & Lubman, 2016 ; Dingle, Cruwys, & Frings, 2015). Findings have accumulated to suggest that the magnitude of our social identities as, for example, a drinker, a smoker, a gambler, or a Facebook user, explains variability in related behaviours (Savolainen, Oksanen, Kaakinen, Sirola, Zych & Paek, 2021; Albery et al, 2021; Frings et al., 2016; Marino et al, 2016; Buckingham et al., 2013; Hutchinson et al., 2018). It also enables engagement in recovery, how efficacious we are and how much social control we have (Frings & Albery, 2015, 2021; Frings, Wood & Albery, 2021; Frings, Wood, Lionetti, & Albery, 2019; Dingle, Cruwys, & Frings, 2015). When people see themselves as an invested and committed member of a group, for example, as recovering problem drug or alcohol users, they believe that they can persist more easily in their change attempts and are less likely to return to past addictive behaviours in the presence of cues that may trigger desires to use (Frings & Albery, 2015, 2021; Dingle at al., 2019; Haslam et al, 2019; Hutchison et al., 2018).

**Drinker Identity and Motivation for Problem Recognition**

How do experienced social identities influence whether a drinker is motivated to recognise their drinking as problematic (i.e., drinking at levels associated with significant personal, social or physical risk/harm)? Let us take the starting point that drinkers will implement strategies to avoid the stigma-related threat posed by the potential experience of the label *problem drinker*, and that these strategies are likely to increase relative to how much a person consumes (see Morris et al, 2021; Morris et al, 2022; Morris, Tatten-Birch, Albery, Moss & Heather, 2024). One mechanism through which people might do this is through investment in a particular social identity that maximises positive feelings for the self (Buckingham et al, 2013; Frings & Albery, 2015, 2021). In this case drinkers may adopt the “positive” identity of a *drinker* by searching for and endorsing perceived similarities with others *like* them whilst, at the same, maximising perceived differences with the out-group (i.e., the *problem drinker* group).

It is wholly plausible that this need to identify with the *drinker* identity and avoid the *problem drinker* identity will necessitate prototypical perceptions of other ingroup members that share common characteristics with the self. This may involve *illusory* beliefs that ingroup members’ drinking behaviours are similar to their own irrespective of actual consumption patterns (i.e., “If they do not have a problem and I am like them then neither do I”) and very different from those perceived of the *problem drinker* outgroup regardless of reality (i.e., “I am not like those problem drinkers”). With repeated reinforcement of this desirability for ingroup membership, drinker identity is strengthened becoming increasingly salient and accessible for the individual (Frings & Albery, 2021). For a person to then transition to a *problem drinker* identity would require significant re-evaluation and transition. Given that this re-evaluation would involve the adoption of a stigmatised identity which *needs* to be avoided or inhibited, the chances of a transition in investment from *drinker* to *problem drinker* are decreased. Indeed, it could be that the motivation to avoid acceptance of a stigmatised label and the new problem drinker identity might actually serve to further reinforce the original social identity as a drinker.

If this is the case, when drinkers are consuming at risky or harmful levels, how might their motivations for personal problem recognition be influenced? One prediction is that the motivation to problem recognise may be inversely related to drinker identity. The more one identifies with other drinkers by maximising the evaluation of perceived differences with the outgroup, the less likely they may be to problem recognise because that is what problem drinkers should do not your group who by definition do not have drinking problems.

This, however, does not allow for the formulation of individual drinker social identities to vary across individuals. The point is that drinkers who according to categorial convention (e.g., increased alcohol consumption indicators) consume above a predefined level suggestive of problematic drinking may still identity as a drinker and not a problem drinker. This is consistent with the idea that drinking-related problem recognition is an incongruity between (a) the *self-monitoring* of personal drinking behaviour and (b) *self-evaluation* in comparison to an inferred standard (Nye et al, 1999). Individual differences in motives to problem recognise are dependent upon an individual’s perception of what this ‘problem’ looks like, which itself subject to influence form socio-cultural and social cognitive factors (Boness et al, 2023; Morris et al, 2021).

If one accepts that questioning the effects of one’s own drinking is a fundamental component or characteristic of your drinking in-group (irrespective of whether you be a risky, harmful or dependent drinker according to diagnostic measures e.g., quantity / frequency measures) and not associated with the stigmatised out-group (to generate the social identity and avoid relabelling), then one should be more likely to endorse problem recognition beliefs as a function of increasing social identity. In other words, the process of problem recognition is perceived as a responsible action that is a shared characteristic among *you* and *your* ingroup members – it is not something that *those* out group members are willing to do because they are “in denial”. Drinkers will endorse problem recognition because they value and have self-invested in their drinker group identity and need to resist the transition to a problem drinking identity and associated loss of benefits associated with their current social identity. We are therefore motivated to problem recognitise to reinforce the identity as a drinker and avoid or diminish the threat of re-identification as a problem drinker.

**Aims and Predictions**

Based on this reasoning the current study tested the pattern of association between components of in-group identity as a drinker, both implicitly (i.e., reflexively) and explicitly (i.e., reflectively) experienced, and motivational beliefs related to problem recognition in a group of individuals whose drinking behaviour was indicative of increasing risk of possible harm. To our knowledge, no work has examined how either implicit and explicitly experienced identity relate to personal problem recognition nor how they covary to account for increasing or decreasing likelihood of such recognition. It is predicted that both self-investment and self-definition components of explicit ingroup identification and an implicit preference for the self as a drinker will account for variability in the likelihood of being motivated to problem recognise. Whether this nature of the association between identity components and motivation to problem recognise is positive or negative, however, cannot be specified *a priori*.

**Method**

Participants

Ninety-six self-identified drinkers (*M* age = 33.6 years, SD = 14.3, range = 18 - 67) took part in the study. Participants were recruited online between September and February 2022 through the social media platforms Instagram, Snapchat and Reddit and using a Research Participation Scheme (RPS) in exchange for course credit at the host University. The sample was comprised of 60 females (*M* age = 31.7, SD = 13.4 years) 35 males (*M* age = 37.1 years, SD = 15.5 years) and 1 other (*M* age = 22 years). As per inclusion criteria, all participants scored five or more on the AUDIT - C test (*M* = 6.96, SD = 1.30, range = 5 - 10) indicative of drinking behaviour increasingly the risk of potential harms. Approximately two-thirds (n = 64, 66.7%) of the sample reported no addiction-related experience (either personal or interpersonal) and 33 (33.3%) indicated at least one source (*M* = 6.91, SD = 1.54, range 6 – 12).

**Design**

A cross-sectional correlational design was used to explore the relationships between implicit identity, explicit identity, and problem recognition motivation in harmful drinkers.

Materials

*Demographics*

Age (years) and gender (male, female, other, prefer not to say) were requested.

*Harmful Drinking Behaviour*

The AUDIT-C is a three-item questionnaire used to measure harmful alcohol consumption levels (Bush et al., 1998; Saunders et al., 1993). Participants responded to each of the following questions: ‘How often do you have a drink containing alcohol in it?’ (Never = 0, Monthly or less = 1; 2-4 times a month = 2; 2-3 times a week = 3; 4 or more times a week = 4); ‘How many units containing alcohol do you have on a typical day when you are drinking?’ (1 or 2 = 0; 3 or 4 = 1; 5 or 6 = 2; 7 to 9 = 3; 10 or more = 4) ‘How often do you have six or more units on one occasion?’ (Never = 0; Less than monthly = 1; Monthly = 2; Weekly = 3; Almost daily = 5). Possible scores ranged from 0 to 12.

*Problem Recognition*

We used a four-item problem recognition approach which has been used previously to experimentally assess problem recognition outcomes (e.g. (Agostinelli et al., 2004; Leonhard et al., 2022; Morris et al., 2020, 2022). The scale uses four items from the 19-item Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) (Miller & Tonigan, 1996). Two Ambivalence Scale items (‘There are times when I wonder if I drink too much’ and ‘Sometimes I wonder if I am in control of my drinking’) and two Recognition Scale items (‘If I don’t change my drinking soon, my problems are going to get worse’ and ‘My drinking is causing a lot of harm’) were included. The need for further testing of problem recognition scales has been identified (Morris & Albery, under review). Participants responded on a five-point Likert scale (1 = *‘Strongly disagree’* to 5 = *‘Strongly* *agree’*). Higher scores indicated higher levels of problem recognition (Cronbach’s alpha = .82). Possible scores ranged from 4 to 20.

*Addiction experience*

Participants answered six questions to measure individuals' personal histories with alcohol problems: ‘Do you know a close friend or family member who has or has had alcohol problems?’ (yes, no); ‘Are you in close contact with a close friend or family member who has or has had alcohol problems?’ (yes, no); ‘Have you ever experienced alcohol problems yourself’ (yes, no); ’Have you ever been or are you considering seeking help/ advice for alcohol problems?’ (yes, no); ‘Would you describe yourself as having overcome or in recovery from alcohol problems?’ (yes, no); ‘Are you a professional who works with people with alcohol problems?’ (yes, no). Higher total scores were indicative of greater experience (possible range 6 – 12).

*Explicit Identity as a Drinker*

The 14-item questionnaire measuring in-group identification measure developed by Leach et al (2008) was used to examine self-definition and self-investment dimensions of in group identity. Three sub-components were used to measure self-investment: solidarity (e.g., ‘I feel solidarity with other drinkers’) [three item; Cronbach’s alpha = .85; possible score range 3 - 21], satisfaction (e.g., ‘I think drinkers have a lot to be proud of’) [four items; Cronbach’s alpha = .91, possible score range 4 - 28] and centrality (e.g., ‘The fact that I am a drinker is an important part of my identity’) [three items, Cronbach’s alpha = .92; possible score range 3 - 21]. Self-definition was made up of two sub-components: individual self-stereotyping (e.g., ‘I am similar to the average drinker’) [two items; Cronbach’s alpha = .94, possible score range 2 -14] and in-group homogeneity (e.g., ‘Drinkers have a lot in common with each other’) [two items; Cronbach’s alpha = .90; possible score range 2 -14]. Responses were recorded using a seven-point Likert scale (1 = ‘*Strongly disagree’* to 7 = *‘Strongly agree’*) with higher scores indicative of higher levels of drinker identity.

*Implicit Identity as a Drinker*

The drinking identity Implicit Association Test (Drinker-IAT) (Cummins, Lindgren, & De Houwer, J., 2021; Lindgren et al 2012; Frings, Melichar & Albery, 2016) was used to measure implicit drinker identity. The IAT is a reaction time-based test which measures the speed with which an individual associates various stimuli representative of the categories *self* and *other* and *drinker* and *non-drinker* when they either share, or do not share, a location on the computer screen (i.e., presented on the left or right). The idea is that when, for example, *self* and *drinker* or *other* and *non-drinker* share the same location related stimuli will be sorted more quickly according to where the categories to which the stimuli belong are (i.e., left or right) [congruent trials] compared to when the categories do not share a location [incongruent trials]. Faster reaction times for congruent relative to incongruent trials are interpreted as highlighting the strength of associations in memory for the categories that share the location.

The Drinker-IAT use in the current study measured respondents’ associations with “Drinker” + “Me” (& “Non-drinker” + “Not Me”) versus “Drinker” + “Not Me” (& “Non-drinker” + “Me”). All attribute stimuli for the “Me” (i.e., *self*, *me, mine, my*) and “Not Me” (i.e., *they, them, their, other*) and the “Drinker” (i.e., *drinker, partier, drunk, drink*) and “Non-drinker” (i.e., non-drinker, abstainer, sober, abstain) categories were derived from earlier work utilising the Drinker-IAT (e.g., Lindgren et al, 2012). The Drinker-IAT contained seven blocks of trials, three of which were used to familiarise participants with the task requirements, the attribute stimuli, and the sorting instructions (block 1 [20 trials], block 2 [20 trials] and block 5 [20 trials]) (see Greenwald et al, 2021). In blocks 3 [20 trials] and 4 [40 trials] and blocks 6 [20 trials] and 7 [40 trials]) (the critical trial blocks) participants were required to sort attribute stimuli according to the four concepts of the Drinker-IAT (i.e., Drinker, Non-drinker, Me, Not Me) as quickly and as accurately as possible. They were asked to do this by pressing either a left (“F” key) or right (“J” key) key to indicate the location of the relevant category. The order of the pairings was counterbalanced across participants. For example, in one order stimuli belonging to “drinker” or “me” categories were sorted using the left key and stimuli belonging to the “non-drinker” or “not me” categories were sorted using the right key. In this example, after completing two blocks (60 trials], the pairings were switched such that stimuli belonging to the “drinker” or “not me” categories were sorted using the left key and stimuli belonging to the “non-drinker” or “me” categories were sorted using the right key (60 trials). Between each trial, a fixation point was presented in the same position as the stimuli for 500ms. A correct response was required to move to the next stimuli.

Drinker-IAT scores were calculated using the D-measure algorithm for built in error penalty procedure specified as good practice in Greenwald et al. (2021)[[1]](#footnote-1). Positive D scores indicated an implicit association for the self as drinker and other as non-drinker and negative scores an implicit association for the self as non-drinker and other as drinker. Possible score range = -2 to +2.

Procedure

After giving informed consent, participants provided their age and gender and completed the AUDIT-C. Those who scored less than five were excluded from the experiment as they did not meet the inclusion criteria of at risk/harmful drinking and were thanked for their time and debriefed. Remaining participants progressed to the main experiment.

Participants were randomly allocated to one of two identity measure presentation orders (i.e., half to AB and half to BA). In order AB participants completed the Drinker-IAT first and then the explicit drinker identity measures while in order BA they completed the explicit identity measure before the IAT.[[2]](#footnote-2) All participants then completed the addiction experience measures and the problem recognition measures in that order. Finally, participants were then thanked for their time and debriefed.

The study was programmed and presented via the Gorilla platform ([www.gorilla.sc](http://www.gorilla.sc)). The study protocol was designed and implemented in accordance with ethical guidance provided by the British Psychological Society. The University Research Ethics Panel of London South Bank University approved the study. Study protocol, hypotheses and analytical framework were not preregistered.

**Analysis Framework**

To examine the effects of in-group identification dimensions self-investment (centrality, solidarity, and satisfaction) and self-definition (self-stereotyping, group homogeneity) dimensions and implicit identity as a drinker on problem recognition a hierarchical multiple regression was used. Age and gender (step 1) and addiction experience (step 2) were entered initially as possible covariates. Centrality, solidarity, and satisfaction (in-group self-investment), self-stereotyping and homogeneity (i.e., in-group self-definition) were entered in step 3 and implicit identity in the final step. The potential moderating effect of addiction experience on the relationship between identity centrality and problem recognition was tested using Hayes’s PROCESS version 3.2 model 1 with 5000 bootstrapped samples (Hayes, 2018). The interaction term for identity centrality X addiction experience was entered as the predictor (both predictors were centred).

Results

Problem Recognition and Identity

Prior to analysis multiple regression assumptions were examined. First, a sample size of 96 was adequate given eight predictors entered in the regression (Tabachnick, Fidell, & Ullman, 2018). Table 1 shows that intercorrelations between predictor variables and collinearity statistics were, for the most part, within conventional limits, indicative of low multicollinearity [tolerances >0.10: average VIF <10]. However, that the ingroup identity satisfaction component was corelated .85 with ingroup solidarity indicated a potential source of multicollinearity. As such, satisfaction and solidarity were combined as a single measure in subsequent analysis. Finally, scatterplots suggested that normality, linearity, and homoscedasticity (Durban-Watson = 2.06) assumptions were met. Descriptive statistics and intercorrelations (Pearson’s r coefficients) are shown in Table 1.

Table 1 about here

*In-Group Self-Investment, Self-Definition, Implicit Identity and Problem Recognition*

Results showed that at step 1 the combination of age and gender did not account for significant variability in problem recognition, *F* (2, 93) = 1.72, *p* = .185, *R*2 = .04, Adj. *R2 =* .02. Adding addiction experience to the equation resulted in a significant equation, *F* (3, 92) = 13.17, *p* < .001, *R*2 = .30, adj *R2 =* .28., and a significant 27% increase in the variance explained, *F* (1, 92) = 34.82, *p* < .001, Δ*R*2 = .27. Adding centrality, solidarity + satisfaction (i.e., *in-group* *self-investment*), self-stereotyping and homogeneity (i.e., *in-group* *self-definition*) and implicit Identity at step 3 also accounted for significant variance in problem recognition, *F* (8, 87) = 8.92, *p* < .001, *R*2 = .45, Adj. *R2 =* .40, Cohen’s *f*2 = .82. This amounted to a significant 15% increase in the proportion of variance explained in problem recognition, *F* (5, 87) = 4.76, *p* < .001, Δ*R*2 = .15. Only identity centrality and addiction experience were shown to significantly predict problem recognition in the final step (*p*s < .01) (see Table 2).

Table 2 about here

*The interactive effects of identity centrality and addiction experience on problem recognition.*

Our final analysis examined whether addiction experience moderated the effect of identity centrality on problem recognition. The explicit (centrality) X addiction experience interaction was not significant, *b* = .02, *SE* = .05, t = .362, *p* = .362, 95% CIs [- 0.08, 0.12].

Discussion

How one views oneself in terms of (in)group membership is important for determining the beliefs we hold, the activities we engage in, and is fundamental for personal self-worth and esteem (Turner, Oakes, Haslam & McGarty, 1994). We will align ourselves with an ingroup (in this case, the *drinker*) to maximise feelings associated with related self-worth and esteem based on that categorisation. This is achieved by emphasising perceived similarities with others in our ingroups and maximising perceived differences with members of related outgroups (Tajfel, & Turner, 2004).

Whilst the significant role of social identity has been shown for numerous addictive behaviours (see Savolainen, Oksanen, Kaakinen, Sirola, Zych & Paek, 2021; Albery et al, 2021; Frings et al., 2016; Marino et al, 2016; Buckingham et al., 2013; Hutchinson et al., 2018), how it accounts for an individual’s motivation to recognise a (drinking) problem has not been studied. In the current study we examined how one’s identity as a drinker influenced whether potentially harmful drinkers were prepared to recognise a personal drinking problem. To do this we operationalised the understanding of experienced identity in several ways. First, it was argued that how we develop and utilise our experienced identity is determined by several core psychological components associated with perceptions of our relationship with our ingroups. In broad terms these were factors based on either beliefs and perceptions about *self-investment* (i.e., centrality, solidarity, and satisfaction) and / or *self-definition* (ingroup homogeneity and self-stereotyping) (see Leach et al, 2008; Albery et al, 2021).

Second, we argued that our understanding of the self in relation to ingroup identity might operate as a reflective (i.e., accessible to awareness) understanding or in more reflexive / intuitive manner (i.e., less accessible for conscious inspection) manner. For the later we adopted the position that the generation of identity as drinker is based on how efficiently and easily associations between related “self as drinker” type representations are activated and become accessible for processing. We differentiated this more reflexive (i.e., implicit) perspective from the reflective (i.e., explicit) version by presenting participants with self-report identity measures (based on the core self-investment and self-definition components of ingroup identification [Leach et al, 2008]) and a reaction time-based association task (i.e., the self as drinker implicit association task [see Cummins et al, 2021; Lindgren et al, 2016]).

On this basis it was predicted that self-investment and self-definition constituents of (explicit) ingroup identification and an implicit association for the self as a drinker would account for variability in drinking-related problem recognition beyond variability accounted for by the degree of experience a person has of alcohol addiction problem (see Morris et al, 2020). Findings showed that, in general, increasing problem recognition motivation was significantly accounted for *only* by indicators of self-investment. The more invested in your drinker ingroup you are the more likely you are to be motivated to problem recognise, but increasing self-definition as a drinker was not related to degrees of motivation for problem recognition.

In addition, a specific component of self-investment, namely drinker identity centrality, appeared as the sole prominent identity attribute. This suggests that self-investment, the greater the saliency of your identity as a drinker (i.e., centrality) the more you are prepared to problem recognise. It seems that preoccupation with thoughts about being a member of the drinker group is related to increased likelihood of problem recognition confirming our initial predictions. Whilst this finding might appear contradictory to the extent that recognising a problem might be construed as a threat to one’s ingroup identity and to be avoided, we argued that this recognition could operate to reinforce our shared commitment. In other words, the more salient our explicit identity as drinker the more we may be motivated to problem recognise because recognition is a “good” and responsible thing to do. It reflects the types of values and behaviours that other ingroup members (i.e., other prototypical drinkers) are motivated to endorse. This becomes even more convincing if one considers the alternative of recognising a problem and then having to “deal” with the incompatibility experienced between one’s current identity and a seemingly incongruent action. If this is the case the need for identity transition becomes more apparent but that transition will involve the abandonment of *self as drinker* and the adoption of *self as problem drinker* because only the latter have a problem that needs recognising. For the self-invested drinker this identity abandonment needs to be resisted and one mechanism to do this is to reinforce the strength of the original drinker identity (see Frings, Kim & Albery, 2022).

These results detail that components of explicit ingroup identity account for greater likelihood of drinking-related problem recognition. But does that component of identity as a drinker that is not as accessible for conscious awareness (i.e., implicit identity) add any more meaningful explanatory power above and beyond that accounted for by explicit identity components? Our results showed that implicit identity as a drinker does *not* account for significantly more variance in problem recognition in a model that included the self-investment component, identity centrality, and alcohol addiction experience. In essence, there is no relationship between how tightly and implicitly associated the self is with being a drinker and problem recognition. In terms of the effects of the degree of self-investment in one’s drinker identity for predicting problem recognition, implicit drinker identity does not play an additional complimentary role as predicted. Only identity centrality (identity saliency), or one aspect of identity that we are aware of, is related to an increasing likelihood of drinking-related problem recognition. These findings suggest that the likelihood to problem recognise is accounted for by cognitive conceptualisations of social identity as a drinker that are characterised as explicit (accessible for inspection) but not implicit (associative and intuitive). In other words, problem recognition is accounted for by identity-based cognitive systems that are reflexive but not reflective processing modes.

Whilst this evidence points to the importance of identity centrality for being motivated to problem recognise, it is important to note that addiction experience was also shown to significantly predict increasing motivation to problem recognise. Increased number of experiences associated with drinking problems (whether they be for the self or for known others) was associated with higher motivation to recognise a drinking problem replicating previous experimental work (see Morris et al, 2020). But what is the nature of the relationship between alcohol addiction experience and identity centrality in predicting problem recognition motivation? Previous work has already detailed that experience-based factors are linked to indicators of problem recognition motivation such that motivation is more likely among those with such experience (e.g., Morris et al, 2020). But does such experience moderate the effect of increasing identity centrality on motivation to recognise a drinking problem? The moderation analysis suggested not – the effects of identity centrality on motivation to problem recognise was not accounted for by variability in alcohol addiction experience suggesting a that identity centrality and addiction experience are independent variable and not do not covary with one another.

Whilst identity centrality was shown to be important in accounting for variability in problem recognition other aspects of self-investment were not. Although both an increasing psychological affiliation with other drinkers which manifest as beliefs about how they belong to or are attached to other ingroup members (i.e., perceived solidarity), and an increasing endorsement of positive feelings towards the ingroup and one’s group membership (i.e., ingroup satisfaction) were related to increasing problem recognition, neither was important when included alongside the chronic saliency of the drinker identity nor the implicit self as drinker factor. As with previous work, the concept of centrality appears to be reliably predictive of addictive behaviours at the expense of other indicators of ingroup self-investment (Albery et al, 2021, in press). In terms of self-definition, neither increasingly perceiving oneself as characteristically similar to a shared ingroup prototype (i.e., individual self-stereotyping) nor perceived ingroup homogeneity were related to greater likelihood of problem recognition. This suggests that problem recognition is not likely to result from those aspects of identity that relate to how stereotypically we think of ourselves in relation the ingroup nor how harmonised or consistent we believe the ingroup to be, which again reflects work in other addictive behaviours (i.e., Albery et al, 2021, in press).

Limitations and Recommendations

Irrespective of results obtained our conclusions need to be tempered by some methodological limitations. First, our results show association between explicit identity and motivation for problem recognition in potentially harmful drinkers. Using a cross sectional correlational design, we cannot conclude that the effect of identity (and addiction experience) is causally related to changes in problem recognition. Future research could manipulate identity accessibility in an experimental design and measure observed differences in motivation to problem recognise. An alternative to examine identity change and transition as a function if likelihood of problem recognition could be to adopt a longitudinal study in which change in identity and change in problem recognition are observed over time. Secondly, our findings might reflect the validity of the measures adopted. For example, whilst both the explicit and implicit identity measures have been utilised across numerous studies (e.g., Cummins et al, 2022; Albery et al, 2024), the problem recognition motivation measure used has been more limited in its application (e.g., Morris et al, 2020). As such future work should seek to replicate this work and extend the measure of problem recognition to include alternatives (see Smith et al, 2022).

Summary

The current study extends our current understanding of why some harmful drinkers might be more or less likely to be motivated to recognise that they have a potential problem with their drinking. It details how increasing identity as a drinker might be related to an increased propensity for problem recognition, and that identity experienced more consciously (i.e., specifically in terms of the how salient the drinker ingroup identity is for the individual), but not implicitly, is important in this relationship. These findings provide support for recognising how identity mechanisms are involved in the problem recognition processes as an important initial stage of behaviour change in alcohol use disorder populations.

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*Table 1.*

Mean, Standard Deviations and Intercorrelations for Problem Recognition, Explicit Identity Component Scores, and Implicit Identity Scores.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1. Drinking Problem Recognition | 7.88 | 3.39 | — |  |  |  |  |  |  |  |  |  |
| 2. ID Centrality | 10.85 | 4.39 | .44\* | — |  |  |  |  |  |  |  |  |
| 3. ID Solidarity | 11.73 | 3.61 | .46\* | .76\* | — |  |  |  |  |  |  |  |
| 4. ID Satisfaction  5. ID Solidarity + ID Satisfaction | 16.23  27.69 | 5.11  8.39 | .27\*  .36\* | .70\*  .75\* | .85\*  N/A | —  N/A | — |  |  |  |  |  |
| 6. ID Self-Stereotyping | 7.63 | 2.83 | .43\* | .78\* | .79\* | .78\* | .78\* | — |  |  |  |  |
| 7. ID Homogeneity | 7.67 | 2.81 | .32\* | .72\* | .67\* | .68\* | .70\* | .77\* | — |  |  |  |
| 8. Implicit ID (IAT Score)  9. Age  10. Gender  11. Addiction Experience | 0.53  34.02  —  6.91 | 0.65  14.65  —  1.54 | .04  .17  .05  .52\* | -.36\*  .21  -.18  .18 | -.12  .07  -.04  .24 | -.15  -.03  -.07  .15 | -.14  .12  -.06  .19 | -.16  .09  -.04  .26 | -.26  .08  -.12  .26 | —  -.18  .06  .11 | —  -.18  .08 | —  -.08 |

*Note: n* = 96; Bonferroni correction \**p* < .004; Gender (1 = male, 2 = female)

*Table 2.*

Regression coefficients for predicting drinking problem recognition from identity self-investment (centrality, solidarity, and satisfaction), self-definition (self-stereotyping and ingroup homogeneity), implicit identity, age, gender, and addiction experience.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Effect | Estimate | *SE* | *β* | *t* | 95% CI | | *p* |
|  |  |  |  |  | LL | UL |  |
| *Step 1*  Constant  Age  Gender  *Step 2*  Constant  Age  Gender  Addiction Experience | 5.52  .04  .55  -2.42  .04  .78  1.14 | 1.56  0.02  0.72  1.90  .02  .61  .19 | —  .19  .08  —  .15  .11  .52 | 3.53  1.80  0.77  1.27  1.69  1.28  5.90 | 2.42  -0.00  0.87  -6.17  -0.01  -0.44  0.75 | 8.62  0.09  1.97  1.35  0.08  2.00  1.52 | < .001  = .075  = .441  = .206  = .094  = .205  <.001 |
| *Step 3*  Constant  Age  Gender  Addiction Experience | -4.87  .02  1.08  .96 | 1.95  .02  .58  .19 | —  .10  .16  .44 | 2.50  1.12  1.89  5.13 | -8.74  -0.02  -0.06  0.59 | -0.98  0.06  2.23  1.33 | <.05  = .264  = .063  < .001 |
| ID Centrality | .35 | .12 | .45 | 2.92 | 0.11 | 0.58 | < .005 |
| ID Solidarity + ID Satisfaction  Self-stereotyping  Homogeneity | -.02  .16  -.16 | .06  .20  .16 | -.05  .13  -.14 | 0.34  0.80  1.01 | -0.14  -0.24  -0.49 | 0.10  0.57  0.16 | = .736  = .425  = .316 |
| Implicit identity | .96 | .62 | .14 | 1.55 | -0.27 | 2.20 | = .124 |

*Note:* *n* = 96; Gender (1 = male, 2 = female)

1. Trials in blocks 3, 4, 6, and 7 with latencies > 10,000 ms were eliminated and subsequently all participants for whom more than 10% of remaining trials showed reaction times faster than 300 ms were removed prior to D score calculation. [↑](#footnote-ref-1)
2. No differences were shown for IAT D score, *t* (94) = .34, *p* = .74, or explicit identity as a drinker measures, between presentation orders AB and BA, *t*s (94) < 1.7, *p*s range = .09 - .55. [↑](#footnote-ref-2)