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The role of social networks and social identity in recovery from addiction

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Abstract

This study explored the role of social network and social identity factors in recovery from addiction. 537 individuals completed a structured survey about their experiences of recovery. Results show that among this sample the transition from addiction to recovery was typified by an increase in social connectedness and changes in social network composition coupled with the emergence of a 'recovery' identity. These factors accounted for 14% of the variance in quality of life when controlling for known predictors, accounting for a greater proportion of variance than substance use variables. These findings indicate that recovery from addiction can be understood as a socially mediated transition typified by social network and social identity change, which drive broader improvements in quality of life.

Key words: Recovery, social identity, social connectedness, addiction, wellbeing

Alcohol and other drug (AOD) addiction is often viewed as chronic relapsing disorder, yet there is evidence to suggest that recovery over time, involving a reduction in alcohol and/or drug use coupled with an improvement in health and wellbeing, is common (Best & Lubman, 2012; Neale et al., 2015; UK Drug Policy Commission Recovery Consensus Group, 2008); Neale et al., 2014; Neale et al., 2015). Given the significant social and health care burden associated with addiction (Rehm et al., 2009), understanding what factors promote recovery has become an important research priority for governments (Best et al., 2010; HM Government, 2010; State of Victoria, 2013).

Over recent years, there has been increased interest in the social processes associated with recovery, with social network composition and support emerging as an important predictor of AOD use and wellbeing outcomes. For example, results from the COMBINE study, identified that moving from a social network supportive of drinking to a network that supported recovery was one of the strongest predictors of drinking cessation (Longabaugh, Wirtz, Zywiak, & O'Malley, 2010). Network support was also found to affect drinking outcomes in research conducted by Litt et al. (2009) among a sample of 186 drinkers who had undergone detoxification. Participants assigned to a network support intervention post-treatment that added at least one clean and sober person to their social network, reported a 27% increase in the likelihood of sustaining abstinence for the first year after detoxification. Ceasing contact with drug using peers and gaining support from non-using peers have also been identified as key factors influencing recovery from drug use (Best, Ghufran, Day, Ray, & Loaring, 2008). In the Glasgow Recovery Study , which included 98 heroin users as well as 107 drinkers, Best et al. (2012) found that spending more time with peers who were in recovery and engaging in more meaningful activities were the strongest predictors of a positive quality of life in recovery. However, with the exception of Best et al. (2012), few AOD studies have explored the role of social network factors on wellbeing outcomes, despite wellbeing and quality of life being viewed as the most salient indicator of recovery (Laudet, 2011).

Indeed, one way of conceptualising recovery from AOD addiction, is as a significant life transition; a transition towards state of improved health, wellbeing and quality of life (Laudet, 2011). In doing so, our attention is drawn away from focusing solely on cessation from AOD use, towards understanding the factors that facilitate a broader transition in quality of life, an area that is increasingly seen as an imperative for addiction research (Best et al., 2015). After all, the cessation of AOD use alone does not necessarily guarantee an improvement in wellbeing and is rarely enough to ensure the achievement of long term recovery (McLellan, McKay, Forman, Cacciola, & Kemp, 2005).

The social identity approach to health: multiple group memberships and wellbeing

Drawing on developments in social psychology, the social identity approach (SIA) to health and wellbeing is a promising and emergent school of thought that may bear light upon the transition from addiction to recovery by providing an explanation about why social network factors can affect wellbeing, particularly during times of hardship and stressful life transitions. In particular, the SIA highlights the significance of both our social group memberships and the identities that underpin them, in sustaining good physical and psychological health and wellbeing (Iyer, Jetten, Tsivrikos, Postmes, & Haslam, 2009; Jones & Jetten, 2011).

The SIA asserts that the association between social relationships and health and wellbeing (Cohen, 2004; Umberson & Montez, 2010) can be leveraged for significant health benefit across a range of

health care settings and contexts (Jetten, Haslam, & Haslam, 2012). Thus, it is proposed that by improving our social connectedness and the quality of our social group memberships, we can improve our health and wellbeing (Sani, 2012). Jetten and colleagues propose that we should conceive and operationalise this 'social cure' in terms of our social identity (the sense of self that we derive from our social group membership) (Jetten, Haslam, Haslam, Dingle, & Jones, 2014). In doing so, they propose that we are able to focus our attention upon "those crucial social connections that have the capacity to affect health and well-being in both positive and negative ways" (Jetten et al., 2014, p. 113), thereby anchoring our attention to salient social groups that have capacity to bear influence upon us.

Indeed research in the social cure tradition has specifically identified that belonging to multiple groups and the multiple social identities this confers, can be a wellspring of support during important life transitions and recovery from illness. For instance, multiple group membership has been shown to play a significant role in an individual's prospect of recovery from stroke, whereby both belonging to multiple groups prior to stroke and the retention of group memberships was shown to predict wellbeing post-stroke (C. Haslam et al., 2008). Multiple social identities have also been shown to be predictors of wellbeing in the transition from secondary school to university (Iyer et al., 2009). Similarly, Walter et al. (2015) found that multiple group memberships and identification with a homeless service were predictors of wellbeing amongst individuals residing in a homeless accommodation service. More recently, research has indicated that multiple psychologically important group memberships, to be of particular significance in driving psychological wellbeing (Jetten et al., 2015). Jetten and colleagues showed that belonging to multiple important social groups predicts self-esteem, highlighting that it is group salience and thus identification with the group that is of significance in driving wellbeing outcomes rather the sheer number of individual relationships (Jetten et al., 2015). By anchoring our attention in the quality of group memberships, this research underscores the fact that it is only when group memberships are psychologically important, and thus form the basis for shaping our sense of self, that individuals can utilise the psychological assets they provide.

The social identity approach to addiction and recovery

A social identity approach clearly has promise in facilitating better understanding of the processes involved the transition from addiction to recovery, both in terms of understanding recovery as a transition in health and wellbeing and in terms of how this is driven by social network and identity change. Following early work by Biernacki (1986) and the social cure tradition more recently (Jetten & Pachana, 2012), the Social Identity Model of Recovery (SIMOR; D. Best et al., 2015) and the Social Identity Model of Cessation Maintenance (SIMCM; Frings & Albery, 2015) have been proposed as social identity models to explain recovery from addiction.

Both SIMOR and SIMCM advance the idea that the emergence and establishment of a recovery identity is central to recovery from addiction (Best et al., 2015; Frings & Albery, 2015) with SIMCM also proposing that social cognitive factors also play a role, while SIMOR theorises that the emergence of a recovery social identity goes hand in hand with a corresponding reduction in the salience of AOD use identities. Significantly, both SIMOR and SIMCM theorise that recovery is a

socially mediated journey that is typified by changes in both social group membership and social identity, which in turn drive wholesale improvements in health and wellbeing.

Recent work suggests that ideas proposed by SIMOR and SIMCM might be supported empirically. For instance, Buckingham, Frings and Albery (2013) found that preference for a recovery identity over a using identity, was associated with increased self-efficacy and maintenance of abstinence among groups of ex-AOD users and cigarette smokers. Best et al.'s (2014) preliminary work among residents of Therapeutic Communities (TCs) (a type of residential AOD treatment) suggested the establishment of a transitional TC 'recovery' identity may prove to be an important aspect in the treatment of addiction. Likewise, Beckwith et al. (2015) showed that both identification with the TC and the process of social identity transition were important factors in treatment retention. More recently, Dingle et al. (2015) have described how processes of identity change play an integral role in AOD treatment outcomes of TC residents, finding that the preference for a recovery identity over a using identity was associated with improved treatment outcomes. This research extended previous work in the social cure tradition around social identity maintenance during stressful life transitions (Iyer et al., 2009), highlighting that, in an AOD context, cutting ties with AOD groups led to significantly better outcomes in terms of AOD use post-treatment and wellbeing. Importantly, this research showed how the emergence of a 'recovery' identity coupled with the reduction in salience of the AOD 'user' identity was able to predict people's self-perceived ability to maintain abstinence 6 months post-treatment. Frings and colleagues (Frings, Collins, Long, Pinto, & Albery, in press) have recently tested the SIMCM model with respect to self-help group processes and social control in particular. Importantly this research highlights that in mutual aid group settings, social identity salience underpins fundamental group processes relating to recovery and individual perceptions of abstinence self-efficacy (Frings et al., in press).

Dingle, Cruwys and Frings' (2015) research into social identity pathways in and out of addiction among a group of TC residents indicates that recovery pathways are distinctly different for individuals with a range of group memberships prior to addiction, than those who were socially isolated. This research found that individuals with multiple sources of valued social identities prior to addiction experienced addiction as an identity loss, whereas socially isolated individuals experienced addiction as an identity gain. This research highlights that social group membership plays a fundamental role in shaping the recovery trajectory in a psychosocial sense, by shaping social identity content and thus the meaning ascribed to the recovery transition itself.

This research highlights how multiple and diverse identities can function as resources in recovery both psychologically (Iyer, Jetten, & Tsivrikos, 2008) and in terms of providing a passport to group membership which can act as a basis for receiving and benefitting from of social support (S. A. Haslam, O'Brien, Jetten, Vormedal, & Penna, 2005). Those who are able to maintain as sense of belonging with a range of important groups prior to AOD addiction, are at an advantage to those who are socially isolated in terms of increasing their chances of re-establishing supportive social relationships in recovery. However, re-establishing lost connections does not necessarily guarantee a positive outcome. Re-establishing social relationships in recovery has also been shown to undermine positive outcomes following treatment (M. D. Litt, Kadden, & Tennen, 2015), which serves to underscore the significance of social network composition (in terms of associating with individuals who are supportive of recovery) and diversity (in terms of having multiple and diverse

group memberships) in driving the effect group membership and social identity content on wellbeing.

However, there remain key gaps in the literature and questions that need to be answered in relation to social identity models of recovery. Firstly, these models have not been comprehensively tested with respect to wellbeing and AOD use outcomes. Secondly, with the exception of Buckingham et al. (2013), and Frings et al. (in press) much of this work has been conducted with TC treatment samples, and there has been little evidence of the applicability of social identity factors on AOD use outcomes beyond TC settings. Thirdly, few empirical studies of social networks, identity and recovery have utilised wellbeing and quality of life indicators despite their relevance to recovery. Finally, to our knowledge, no studies from the social cure tradition have disentangled the influence of social network variables (size, composition and diversity of the network) and social identity variables (identity preference, identification as being in recovery), which means that the relative contribution of each to wellbeing is unknown.

The current research

We aimed to address these gaps in the literature by examining a large group of individuals in the community (n=573) who identified themselves as being in recovery. In terms of social network factors, we hypothesised that: The proportion of AOD users in participants' social network would decrease and the proportion of people in recovery in their social network would increase over time (H1A); Participants' social group membership and number of important people would increase over time (H1B). Secondly, in terms of social identity change, we hypothesised that: Participants' social identification with other AOD users would decrease over time (H2A); Participants' social identification with people in recovery would increase over time (H2B); AOD user and recovery identity would diverge over time, whereby the two identities would be weakly associated at T1 with the strong negative correlation at T2 (H2C). Finally, we hypothesised that: Social group membership, social network composition and a preference for a recovery identity over an AOD user identity would predict quality of life even after controlling for known predictors (H3).

Method

Design / Recruitment

The current study reports data from the Australian Life in Recovery (ALIR) Survey (Best, 2015), which examined people's experiences of recovery from addiction, adapted from a previous US version (Laudet, 2013). The ALIR survey was publicised to "anyone who considers themselves in recovery or to have recovered from alcohol and/or other drug problems", through local, regional and national networks across clinical, mutual aid and recovery settings using online promotion (through social network sites and email lists) and word of mouth (from research staff and volunteers). Inclusion criteria were left relatively open to capture a diversity of recovery experiences, which are in keeping with a consumer-driven model of recovery which advocates that "you are in recovery if you say you are"(Valentine, 2011, p. 264), as well as the mental health recovery model advanced by Deegan (Deegan, 1988). 58.3% completed the survey online, with 41.7% interviewed face-to-face. The survey took around 15 minutes to complete.

Participants

A total of 573 participants completed the ALIR survey between November 2013 and July 2014. The sample was comprised of 312 females (54.6%) and 257 males (45.0%) with 2 participants indicating their sex was 'other' (0.4%). Participants' ages ranged from 15 to 76 with a median age of 43.0. The majority of the sample (84.1%) reported that they were born in Australia, with 7.4% born in the United Kingdom, 3.3% in New Zealand, and the remainder (5.2%) in other countries. Over two-fifths of the sample reported having a university degree or higher qualification (41.4%), with almost half in a relationship (48.1%) and the majority employed (70.2%).

The majority of participants reported their primary substance of concern had been alcohol (66%), followed by heroin and other street opioids (14.1%), while methamphetamines (4.2%), cannabis (3.7%), cocaine (2.9%), other amphetamine type substances (1.9%) and pharmaceutical opioids (1.9%) were relatively less common. Participants reported 18.6 years (SD=9.3) of alcohol and/or drug use with an average of 12.5 years (SD=8.1) in "active addiction". The mean reported time abstinent from the primary drug of concern (PDOC) was 8.4 years (SD=8.5) with an average of 9.3 years (SD=9.2) in recovery. Most participants had accessed AOD treatment at some point in their life (69.8%) and 91.6% reported a history of 12 step mutual aid group attendance, of which 83.5% were attending a 12 step group at the time of the survey. 43.4% of participants reported attending multiple 12 step groups at the time of the survey, with Alcoholics Anonymous (AA) the most commonly attended group (83.0%), followed by Narcotics Anonymous (NA) (35.8%) and Alanon (16.5%).

Wellbeing

Participants' wellbeing was measured as a single item quality of life measure from the Australian Treatment Outcomes Profile (ATOP) which was been shown to have strong agreement with WHOQOL-BREF Question 1 (r=0.72) and Domains 1 (r=0.51), 2 (r=0.60), 3 (r=0.56) and 4 (r=0.69) (Ryan et al., 2014). Participants' quality of life was assessed using the question: "How would you rate your overall quality of life in the past four weeks?" the 11-item measure was anchored at 0 (Poor) and 10 (Good).

Alcohol and Other Drug use

AOD use history was determined using a range of single-item measures taken from the US Life In Recovery Survey (Laudet, 2013). Participants were asked to specify their primary drug of concern (PDOC), the total number of years they has used drugs and/or alcohol, the total number of years they were in "active addiction", the total number of years they had been abstinent from their PDOC and the total number of years they had been in recovery.

Social network and social identity measures; retrospective and present day accounts

While the survey utilised a cross-sectional design, participants were asked to describe their social network and identity characteristics at two time points: participants were first asked to retrospectively recall their experiences "at the peak of active addiction" (T1[1]). They were then asked to report their experiences 'in recovery', at the time of the survey (T2).

Participants' social networks were assessed across four domains:

[1] While these were not two distinct time-points in data collection, the terminology 'T1' and 'T2' will be used as a shorthand to describe and compare participants' experiences 'in addition' and 'in recovery' respectively.

1) number of important people;
2) proportion AOD users in the social network;
3) proportion people in recovery in the social network;
4) multiple group membership.

Domain one, two and three were measured using single-item Likert-type measures. Number of important people was measured with the question "how many people did/do you discuss important things with?", with response options ranging from 'None', 'One', 'Two', 'Three', 'Four or more'. The proportion of AOD users in the social network was measured with the question "how many of the people you spent/spend time with were/are problematic alcohol and/or drug users", response options ranged from 'None', 'Less than half', 'About half', 'More than half', 'All of them'. The proportion of people in recovery in the social network was measured with the question "how many of the people you spent/spend time with were/are in recovery?" with the same response options as Domain two.

The extent to which participants belonged to multiple social groups was measured using a 2-item Likert scale adapted by Jetten et al. (2010) from the Exeter Identity Transitions Scales (Multiple Group Membership - EXITS), originally developed by Haslam et al. (2008). These items ask participants to rate their agreement with following two statements on a scale from 1 (disagree completely) to 7 (agree completely): "I was a member of lots of different social groups" and "I had friends who were in lots of different social groups". These items have been proven to have good reliability in samples where people have undergone significant life transitions: students entering university (Iyer et al., 2009) and among people recovering from stroke (C. Haslam et al., 2008).

Participants' social identity was assessed across three domains:

1) identification with AOD users;
2) identification with people in recovery;
3) identity preference;

Identification with AOD users and people in recovery were measured using the single-item social identification measure (SISI) developed by Postmes, Haslam and Jans (2013), which has shown to have validity (convergent, divergent, test-retest) and reliability with a broad range of social groups (Postmes et al., 2013). This measure involves rating one's agreement with the statement "I identify with [my group (or category)]" on a scale of 1 (disagree completely) to 7 (agree completely) where, in this case, the groups of interest were "other people in recovery" and "other people who used alcohol or drugs".

The identity preference measure was adapted from Buckingham, Frings and Albery (2013) and used also by Dingle and colleagues (2015). Preference for the recovery identity over the AOD user identity at the time of the survey was determined by taking the difference of the SISI scores for the AOD user identity and recovery identities at T2. Higher scores indicated a preference for a recovery identity and negative scores indicated a preference for an AOD user identity.

Data analysis

Data was analysed using SPSS Version 21. Frequencies and descriptive statistics were used to describe the characteristics of the sample.

Hypothesis 1A and Hypothesis 1B were evaluated using descriptive statistics and repeated measures analysis. For H1A, descriptive statistics were used to evaluate changes in the proportion of AOD users and people in recovery in the social network (i.e. changes social network composition) between T1 and T2. For H1B, changes in number of important people and in multiple group membership (i.e. changes in social connectedness) were analysed using descriptive statistics for important people Likert-type item and paired-sample t-tests for the multiple group membership scale. In addition, chi-square analysis was conducted to explore the relationship between social network diversity and wellbeing

Changes in social identification between T1 and T2 for the AOD user identity (H2A) and the recovery identity (H2B) were evaluated using paired samples t-tests. Preference for the recovery identity (H2C) was evaluated using the identity preference measure and Pearson's r correlation analysis to establish the relationship between the AOD user and recovery identities at each time-point. One-way ANOVA was conducted to explore the relationship between identity change and network composition. Independent samples t-test were conducted to explore the relationship between social identity factors and AOD use outcomes.

A hierarchical regression model was developed to evaluate whether social network and social identity factors could predict wellbeing in recovery (H3). While the selection of covariates was theoretically informed (SIMOR; Best et al., 2015), it was also shaped by prior research (Buckingham et al., 2013; Dingle, Stark, et al., 2015) and driven by data analysis. A three step model was chosen to establish the effect of social network and social identity factors on wellbeing in recovery (step 3), while accounting for the effects of social network and identity factors in addiction (step 2) and known predictors (step 1). The model was initially adapted from the three-step hierarchical model used by Dingle et al. (2015), who similarly tested the hypothesis that the preference for a recovery identity over an AOD user identity predicted self-rated wellbeing following treatment for AOD problems (step 3) while accounting for social identity at treatment entry (step 2) and known predictors (step 1). Given the similarity in study design, the adaptation of this model would also allow for better comparison between the findings.

Covariates in step 1 consisted of variables shown to predict wellbeing outcomes both in prior research (Carroll, Power, Bryant, & Rounsaville, 1993 as cited in Dingle, Stark, et al., 2015, p. 240) and among our sample. Covariates in step 2 consisted variables relating to participants' social connectedness and social identity at the peak of their addiction (T1). Covariates in step 3 consisted of variables relating to participants' social network and social identity while in recovery (T2). Bivariate correlations were conducted to guide selection of covariates, exploring the relationship between (1) quality of life outcomes (dependent variable); (2) demographic variables; (3) social network and identity variables at T1; (4) social network and identity variables at T2. As a result: age, years abstinent from the PDOC and prior access to AOD treatment were entered into the model at step 1; identification with AOD users at T1, identification with people in recovery at T1 and a composite measure of social connectedness at T1[2] was entered at step 2; multiple group membership, low network diversity (those with a social network consisting solely of other people

[2] Owing to the small number of participants reporting high social connectedness at T1, a categorical composite measure of social connectedness was created with those scoring 5 or more on the two-item multiple group membership scale and/or those reporting at least 3 important people in their social network at T1 being considered as socially connected.

recovery) and preference for a recovery identity were entered at step 3. All variables entered into the model met assumptions around collinearity.

Results

Social network change and recovery

H1A - Changes in network composition

Participants typically reported that most of their social network was comprised of other AOD users at T1 (Mdn=3, range=4) with 58.9% of people reporting that more than half of their social group consisted of people with problematic AOD use. At T2, participants reported a reduction in the proportion of AOD users in their social networks (Mdn=1, range=4) with 89.6% reporting less than half of their social network was comprised of other AOD users at the time of the survey and 46.5% reporting no AOD users in their social network.

Conversely there was very limited involvement with other people in recovery reported at T1 (Mdn=0, range=4), with 88.4% reporting they had no contact with other people at this time-point. By T2, an increase in the proportion of people in recovery among participants' social networks was reported (Mdn=3, range=4), with 73.2% of participants reporting more than half of their social network was comprised of other people in recovery and 36.4% reporting that their whole social network was comprised of other in recovery compared with 1.5% and 0.6% respectively at T1.

Social network diversity and wellbeing

Participants who reported low social network diversity at T2 characterised by a social network solely comprised of other people in recovery were more likely than those with a more diverse social network to be attending a 12 step mutual aid group (χ^2 (1,N=414)=34.33, $p < .0001$). However, compared to participants with a diverse social network, participants who reported low social network diversity typically reported lower quality of life (M=6.1, SD=1.9 cf. M=7.4, SD=2.1, t(444)=-6.42, p< 0.0001).

H1B - Increase in social connectedness

Retrospective accounts of social connectedness demonstrate that participants typically reported a state of relative social isolation at T1. Respondents typically reported one important person in their social network (Mdn=1, range=4), with over one third of the sample (38.3%) reporting they had no important people in their lives. Moreover, participants reported that on average they did not belong to multiple social groups at this time point (M=2.6, SD=1.8).

Those reporting no important people in their network fell from 38.3% at T1 to 2.0% at T2 and participants reported a significant increase in their multiple group membership between T1 and T2 (M=5.1, SD=1.6), t(447)=24.7, p< 0.001. Participants also reported an increase in the number of important people in their social network between T1 (Mdn=1, range=4) and T2 (Mdn=4, range=4), with 90.1% reporting three or more important people in their network and 65.9% reporting four or more at T2, compared with 16.6% and 8.6% respectively at T1.

Social identity change and recovery

H2A – Decrease in social identification with AOD users

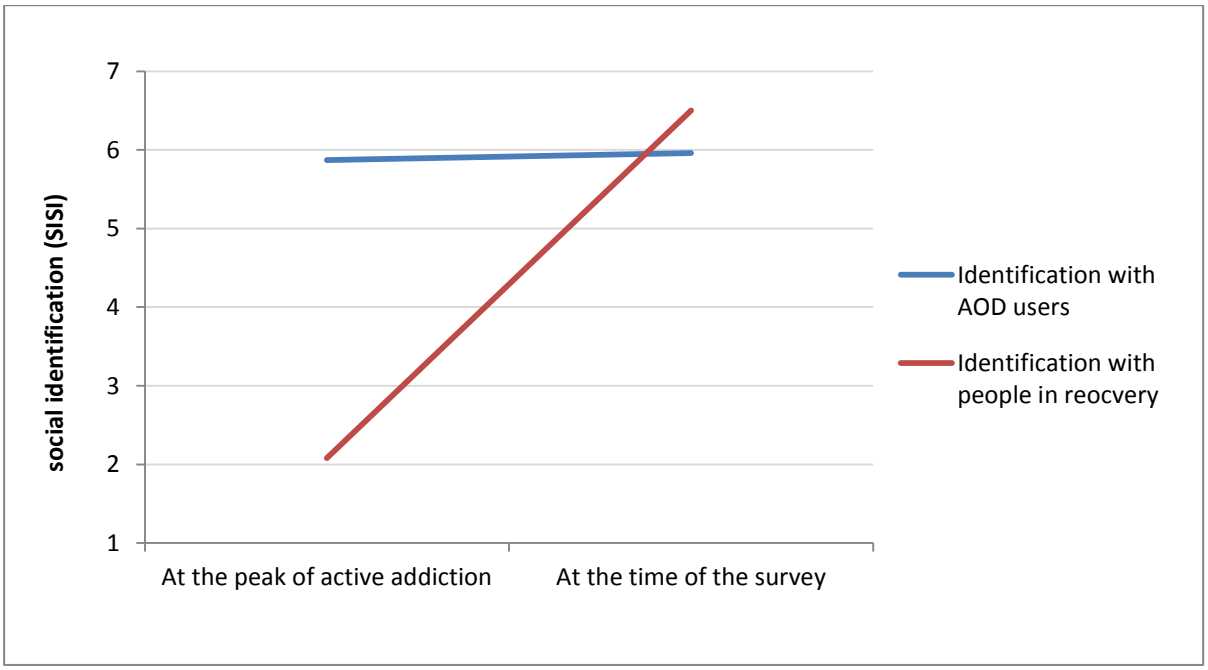
At T1, respondents typically identified strongly with people with problematic AOD use (M=5.9, SD=1.8). Repeated measures analyses identified that respondents did not report significant changes in identification with other AOD users between T1 and T2 (M=5.9, SD=1.8 at T1 cf. M=6.0, SD=1.8 at T2, t(451)=0.420, p = 0.67) retaining strong identification with AOD users while in recovery.

H2B – Increase in social identification with people in recovery

Conversely, participants did not identify with people in recovery at T1 (M=2.08, SD=0.53) however, by T2, a marked and significant increase in identification with other people was observed (M=2.0, SD=1.7 at T1 versus M=6.5, SD=1.2 at T2, t(449)=45.470, p< 0.001.

Insert Figure 1 here

Figure 1. Mean identification with AOD users and people in recovery: peak of active addiction vs at the time of the survey



H2C – Preference for a recovery identity of an AOD user identity in recovery

Given the strong identification observed with both AOD users and people in recovery at T2, it is not surprising that the median identity preference for the sample was 0 indicating a preference for neither identity construct. However, the mean identity preference (M=0.53, SD=1.75) did indicate there may have been a slight preference for the recovery identity of the AOD user identity. This is explained by the fact that identity preference scores were non-normally distributed. A skewness of 3.97 (SE=.115) and kurtosis of 1.23 (SE=.230) was observed with the vast majority of participants

(69.6%) reporting an identity preference of 0, 22.4% reporting a preference for the recovery identity (identity preference > 0) and 8% reporting a preference for the AOD user identity (identity preference < 0). While a no association was observed between the AOD user and recovery identities at T1 (r=-.024, p<.606), a positive correlation between AOD user and recovery identities was observed at T2 (r=.345, p<.001), indicating identity processes across both identity constructs at T2 were linked. An association was also observed between the recovery identity at T1 and the AOD user identity at T2 (-.148, p<001).

Identity change and network composition

Importantly, a significant association was observed between the proportion of participants' networks comprised of people in recovery and the strength of their recovery identity (Welch's F(4,110.86)=11.739, p<0.0001). Post hoc analyses using the Games-Howell post-hoc criterion for significance indicated that, participants who reported that the whole of their network consisted of people in recovery also reported significantly stronger identification with people in recovery (M=6.86, SD=0.60) than those with no people in recovery in their social network (M=4.55, SD=2.22), those with less than half of their network comprised of people in recovery (M=5.56, SD=1.48), and those with half of their network comprised of other people in recovery (M=6.48, SD=0.75).

In addition, analyses also showed that 12 step affiliation affected identity change. Participants who were not attending a 12 step group at the time of the survey, reported significantly lower identification with other AOD users (M=4.9, SD=1.9) than those who were (M=6.3, SD=1.6) t(82.44)=-5.306, p< 0.001.

Identity change and AOD use outcomes

The presence of a recovery identity at T2 had a significant effect on AOD use outcomes. Those reporting a recovery identity at T2 (recovery SISI score>4), typically reported a significantly longer time abstinent from their PDOC (M=8.96 years, SD=9.53) than those who did not report a recovery identity (M= 3.43 years, SD=4.24), t(40.40)=5.718, p< 0.001. Moreover, the strength of the recovery identity at T2 was moderately associated with longer reported abstinence from the PDOC (r= .197, p<.001) and a longer reported recovery (r= .174,p<.001).

Social network and social identity factors as predictors of wellbeing in recovery

Quality of life was moderately associated with years of abstinence from the PDOC (r=.233, p<.001) and years in recovery (r=.240, p<.001). Conversely years of active addiction (used by Dingle et al. (2015) as a 'known predictor' in step 1 of their model), was not significantly associated with either quality of life (r=.036, p=.418). Years of abstinence from the PDOC was added at step 1 as a known predictor owing to the demonstrated association with the dependent variable. Prior history of AOD treatment was not significantly associated with quality of life, but was retained in the model owing to the fact that an alternative treatment variable with an association to quality of life was unavailable and prior research has identified that treatment history has been found to predict wellbeing outcomes (Carroll, Power, Bryant, & Rounsaville, 1993 as cited in Dingle, Stark, et al., 2015, p. 240).

Age had a significant and strong association with wellbeing outcomes, with older participants more likely to report better quality of life (r=.231, p<.001) and was included in the model as a known

predictor. In addition, a range of social network and identity variables were significantly related to wellbeing outcomes. In particular, multiple group membership at T2 (r=.280, p<.001), low network diversity (network wholly comprised of others in recovery) at T2 (r=-.291, p<.001) and identity preference at T2 (r=.127, p=.007) did have significant effects upon wellbeing outcomes and were included in the regression model accordingly. AOD user and recovery identities at T1 did not have a significant association with wellbeing outcomes at T2 but were included in the model due to the significance of social identity factors on recovery trajectories as identified in prior research (Buckingham et al., 2013; Dingle, Stark, et al., 2015). AOD user and recovery identities were also included in the model at step 2 in order to explore the relative contribution of social identity factors at the peak of addiction upon wellbeing at T2, allowing comparison with other factors identified in prior research such as group diversity, identity preference and multiple group membership.

H3 – Social network factors and social identity as predictors of quality of life outcomes in recovery

The hierarchical regression model predicting quality of life was significant overall, accounting for 21% of the variance across all three steps R^2=.211, F(9,388)=11.496, p<.001. At step 1, known individual-level predictor covariates accounted for 7% of the variance F_{change}(3,394) =10.076, p<.001. At step 2, identity and social network variables accounted for 3% of the variance F_{change}(3,391)=4.064, p=.007. At step 3, identity and social network variables accounted for 11% of the variance F_{change}(3,388)=18.214, p<.001. Comparing the contribution of covariates to the model shows that social network factors contributed most to the model, followed by known predictors with social identity factors contributing least. Multiple group membership (β=.280, p<.001), low social network diversity (β=-.238, p<.001) and age (β=.144, p=.016) significantly contributed to the model over and above other covariates at step 3. AOD use outcomes did not significantly contribute to the model, with years of abstinence from the PDOC indicating no significant contribution at step 1 (β=.114, p=.060) or at step 3 (β=.040, p=.513).

Insert Table 1 here

Table 1. Hierarchical regression equations to predict quality of life at the time of the survey from social identity and social connectedness while accounting for known predictors

Variable	Quality of Life β
Step 1 – known predictors	**ΔR^2=.071*****
Age	.174**
Years of abstinence from primary drug of concern	.114
Ever accessed treatment for AOD problems (lifetime)	.065
Step 2 –Covariates (at peak of addiction)	**ΔR^2=.028***
Social connectedness (multiple groups and/or 3+ important people)	.073
AOD user identity	.103*

Recovery identity	.099*
Step 3 – Covariates (at the time of the survey)	**ΔR^2=.111***
Multiple group membership	.280***
Low network diversity (All friends in recovery)	-.238***
Identity preference for recovery identity	.062
Hierarchical Model (Sum of step 1, 2 and 3)	**R^2=.211***

*p<.05; **p<.01; ***p<.001

Discussion

This study explored the extent to which the transition from addiction to recovery can be characterised by social network and social identity factors, as well as exploring how these factors relate to wellbeing outcomes, with global health and wellbeing a key element of the consensus group definitions of recovery (UKDPC, Betty Ford Institute). The transition away from addiction was associated with significant changes in social networks. This was characterised by substantive improvements in social connectedness and what could be described as a shift from a state of social isolation to a state of relative social connectedness. The data also highlighted that the transition to recovery was also typified by changes in social network composition, including a transition from a social world composed mainly of other AOD users to a social world composed mainly of other people in recovery. This is important as wellbeing in recovery was better when people engaged with a diverse range of social groups rather than just with other people in recovery, a finding that is consistent with the social cure arguments about multiple group membership as a predictor of wellbeing.

Consistent with previous findings (Biernacki, 1986; McIntosh & McKeganey, 2000) and social identity models of social identity (SIMOR; Best et al., 2015; SIMCM; Frings & Albery, 2015), the current study found that recovery from addiction was associated with the emergence of a recovery identity. However, perhaps counter-intuitively, this was for many people also coupled with the retention of an AOD user identity. This is of particular importance, given that identity-driven theories of recovery have predicted a reduction in the salience of the AOD user identity as the recovery identity increases (Best et al., 2015). As both Buckingham and colleagues (2013) and Dingle and colleagues (2015) have shown, it may in fact be the preference for a recovery identity over the AOD user identity that best predicts recovery-related outcomes, although among our sample a preference for the recovery identity was not shown. Notably, Dingle et al.'s (2015) study was undertaken with populations drawn from a Therapeutic Community, with the assumption and underlying philosophy that recovery is about becoming an 'ex-addict', as opposed to a 'recovering addict' as understood within the 12-step philosophy and paradigm (Moos, 2007). Indeed, our findings demonstrate that identity change was significantly related to 12 step affiliation, whereby those with a history of 12 step attendance typically retained an AOD user identity, while it can really only be said of those from other recovery approaches that there was a clear transition from a using to a recovery identity. Thus, it is likely that for participants in our sample (many of whom attended 12 step groups), the recovery identity emerged as an extension of the user identity, maintaining the existing user identity concurrently with the recovery identity in recognition of the 12 step recovery model that enacts addiction as a chronic (often life-long) disease (Wallace, 2012). Hence, rather than exemplifying parallel identity processes involving a distinct AOD user and recovery identity, our findings may reflect the emergence of a single identity construct, a 'recovering addict' identity, consistent with the 12 step model of addiction and recovery, for those people whose route to recovery involved 12-step affiliation.

It is also important to note that while our findings appear to show that the retention of an AOD user identity is part of the recovery process among 12 step members, it is not possible to draw a conclusion with respect to whether social identity continuity may be helpful or harmful in recovery among this group. While Dingle and colleagues (2015) have shown that cutting ties with AOD using peers can be beneficial for wellbeing in recovery, providing evidence that the benefits of social identity continuity in recovery is limited to groups supportive of recovery. We would in fact contend

that 12 step groups present a special case in terms of identity change in recovery, in that for those subscribing to the 12 step method, the recovery identity is inexorably tied with identification as an addict in the form of a 'recovering addict' identity (Moos, 2007). Interestingly, in research conducted recently by Frings and colleagues (in press) the AOD user identity was shown to be unrelated to both collective and self-efficacy, while the recovery identity as indexed by identification with the self-help group was. This may indicate that among 12 step members, the recovering addict identity is more akin to a recovery identity than it is a type of AOD user identity.

However it is difficult to draw conclusions about these findings because our measures do not have sufficient granularity to distinguish whether the "addict" identity measured at T2 is one and the same "addict" identity measured at T1 – and it is possible and even likely that we are measuring two different identities with similar labels. For instance our data may be showing identification with AOD users at T1 ('active addicts'), while at T2 indicating identification with fellow 12 step members as 'recovering addicts' at T2. Further research is required to compare a range of recovery trajectories, in order to determine if the results seen here are unique to individuals with 12 step recovery group affiliation or whether in fact they are more broadly generalisable.

These are important findings for social identity models of recovery, including both SIMCM and SIMOR, as well as to 12 step models of recovery more generally, which are underpinned by the idea of identity change. Firstly, these findings have confirmed that the transition to recovery is among our sample characterised by an identity transition involving the emergence of a recovery identity. This research has also shown, we believe for the first time, that the strength of the recovery identity was associated with the proportion of one's network comprised of other people in recovery, thereby indicating that the emergence of a recovery identity may be driven by social network factors. These data may also point to the fact that the type of identity transition depends on the extent to which the new and old identities are compatible. While this was not the case for the samples in the Dingle et al. (2015) and Beckwith et al. studies (2015), which showed a reduction of the AOD user identity in a TC setting (where distancing from AOD user identities are encouraged). The retention of the AOD user identity in the current study may reflect the high level of affiliation with 12 step groups (in which the member never achieves the status of 'recovered' and is encouraged to continue to regard themselves as 'an addict/alcoholic in recovery'). This supposition is further strengthened in that a similar effect was shown by Buckingham and colleagues who found a very strong correlation between the 'addict' identities and the 'recovering addict' identities amongst AA members (Buckingham et al., 2013).

Social identity and social network factors played a significant role in predicting participants' wellbeing while in recovery. Social network and social identity factors predicted around 14% of variance in quality of life (see Table 1). While this is significantly less than reported by Dingle et al. (2015), who reported that social identity factors alone counted for 49% of the variance in life satisfaction, Dingle et al.'s (2015) findings were observed on average 7 months post-treatment, whereas the mean time in recovery for this sample was significantly longer in comparison (M=9.3 years, SD=9.2). While this model explained a relatively low amount of variance in wellbeing from social network and social identity factors, the fact these effects account for more variance across quality of life than a range of known predictors combined (age, abstinence from the PDOC and prior history of AOD treatment) is a significant finding in itself. In addition, Dingle et al.'s (2015) findings, along with other research informed by the social identity approach (Beckwith et al., 2015;

Buckingham et al., 2013) have solely explored the role of social identity upon wellbeing (and AOD use outcomes). The current research we believe is the first in this emerging field to empirically show that recovery from addiction is associated with an increase in social group membership. Indeed, our findings have shown that multiple group membership had a more pronounced effect on wellbeing than changes social identity. This is not to discount the effect of social identity processes in recovery. Firstly the multiple group membership measure simultaneously taps social connectedness processes (in that it is a measure of multiple social group membership) and identity processes (in that it is a measure of multiple identities) and it is therefore unclear the extent to which each of these factors are driving increases in wellbeing. While a preference for a recovery identity was found to be associated with improved wellbeing, the effect was fairly weak ($r=.127$, $p=.007$). It may therefore be possible that social identity processes are integral in recovery in that they are more strongly linked to AOD use outcomes as shown by both Dingle and colleagues (2015) and Buckingham and colleagues (2013).

It is also important to note that while our findings appear to show that the retention of an AOD user identity is part of the recovery process among 12 step members, it is not possible to draw a conclusion with respect to whether social identity continuity may be helpful or harmful in recovery among this group. We would in fact contend that 12 step groups present a special case in terms of identity change in recovery, in that for those subscribing to the 12 step method, the recovery identity is inexorably tied with identification as an addict in the form of a 'recovering addict' identity construct.

It is important to also recognise the following limitations when considering the study findings. The survey was only conducted at one time point, with participants asked to compare their current situation with a time in the past, and is therefore subject to potential recall bias. Another limitation relates to the complexity of social relationships, where social relationships can work to heal or harm, with effects that are often bi-directional (Sani, 2012). Further, while our findings identified an association between multiple group membership and better health and wellbeing, causality cannot be determined due to the cross-sectional design and thus reverse causality cannot be ruled out. Finally, while the measures we have used have been shown to have good reliability and validity in measuring social identification (Postmes et al., 2013), short-item measures, particularly single-item ones, are limited in their ability to describe something as complex as social identity, which is contextually dependent, heterogeneous, dynamic and in flux.

Clearly there is significant potential in gaining a better understanding about how social identity affects health decisions and behaviour in an AOD recovery context, especially because social identity formation is subject to external influence through changes in social and other contextual factors, making it a good candidate to be leveraged as an intervention. This research suggests that there is great potential for the applicability of a social cure type intervention in an AOD context. However, it is important that these models do not become too deterministic, overlooking the influence of both personal identity and individual agency.

Conclusion

In summary, this study reinforces the notion that recovery can be conceptualised as a socially-mediated process characterised by a transition from a state of isolation to a state of relative social connectedness coupled with a social identity transition. This involves the emergence of a recovery

identity, which is associated with changes in social network composition. In addition, the significant role of multiple group membership in predicting quality of life, above other factors, provides strong evidence that a 'social cure' effect (Jetten et al., 2012) may be a key factor in the pathway of recovery from addiction. Thus, in answering the question posed in the title of this paper, "Is it me or should my friends take the credit?", our findings suggest that the answer is "Yes".

More work needs to be done to explore the role of transitional identities in recovery and to determine whether the types of identity change observed in this research apply more broadly beyond a 12 step context. Further work is also required to better understand the nuances of social identity change in recovery and to disentangle the causal relationships between social network factors, social identity, AOD use outcomes and wellbeing in recovery. As such, these findings present a strong rationale for further research in this field involving both longitudinal and qualitative designs in particular.

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