

Breaking good : breaking ties with social groups may be good for recovery from substance misuse

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Abstract

According to the Social Identity Model of Identity Change, maintaining social identities and support over time is good for health and wellbeing, particularly during stressful transitions. However, for individuals with addictions undergoing the transition of treatment, maintaining a “substance user” identity and ties with substance using groups may not be beneficial. This prospective study examined social identities of 132 adults entering a drug and alcohol therapeutic community (TC) at admission, three fortnightly intervals, exit; and at follow up in a representative subsample of 60 participants. Repeated measures ANOVA results showed that User identity decreased significantly over time, such that 76 percent of the sample decreased in User identity strength over the first month in the TC. At the same time, Recovery identity ratings increased significantly over time, with 64 percent of the sample staying the same or increasing their Recovery identity ratings over the first month. Identity change, indexed by the change in the difference score between User identity and Recovery identity over the treatment period, accounted for 34 percent of the variance in drinking quantity, 41 percent of the variance in drinking frequency, 5 percent of the variance in other drug use frequency, and 49 percent of the variance in life satisfaction at follow-up, after accounting for initial substance abuse severity and social identity ratings at entry to the TC. The findings indicate that moving from a substance using identity towards a recovery identity constitutes an important step in substance abuse treatment.

Keywords: *social identity change, substance use disorders, wellbeing, addiction, recovery, longitudinal.*

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Breaking Bad or Coming Good: Breaking Ties with Social Groups may be Good for Recovery from Substance Misuse

People experience substantial changes to their identity when they modify substance use behaviour – changes not only to their behaviour and routines but also their social life and the way they see themselves (Shinebourne & Smith, 2009). Substance use and misuse are often socially mediated behaviours, yet the predominant aetiological and treatment models for substance misuse take an individualistic perspective. As a result, the social factors that are implicated in substance use (and that could be harnessed in its treatment) have been largely neglected. In this study, we draw upon the Social Identity Model of Identity Change (Iyer, Jetten & Tsivrikos, 2008; Jetten, Haslam, Iyer & Haslam, 2009), which posits that transitioning to new social identities is part of the process of recovery from addiction, and that this identity transition can account for much of the benefit that people derive from treatment within therapeutic communities.

Social identity and networks of individuals with substance use disorders

It is clear that the onset and progression of drug and alcohol dependence has a profound impact on social networks. Individuals experience increasing difficulty in maintaining their usual role functioning (e.g. as a partner, friend, parent, worker), and a narrowing of their behavioural repertoire to activities related to obtaining, using and recovering from using substances. Studies have shown that the initiation and progression of use has a marked influence on individuals' social functioning, and even their self-perceptions and identity (Best, Manning, & Strang, 2007; Shinebourne & Smith, 2009). The negative impact of substance dependence on relationships means that by the time individuals seek treatment, they are often isolated and lacking in support from significant others and their network will largely consist of others who misuse substances.

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Much of the research pertaining to social networks and addiction has been done with individuals who attend mutual aid groups such as Alcoholic Anonymous (AA) or Narcotics Anonymous (NA) while they are in treatment and after care. Moos (2007) identified the active ingredients of mutual aid groups (in particular AA) associated with long-term stable recovery: bonding and support; obtaining an abstinence-focused role model; and doing service work within the group (Moos, 2007). Building these networks is particularly important in light of the findings that social bonds to recovery networks are stronger and the quality of friendship better in non-using than in substance using networks (Humphreys et al., 2004).

Additional evidence of the importance of social network changes to recovery comes from an analysis of data from 1726 adults with alcohol dependence who participated in AA (Project Match Research Group, 1997), which showed that adaptive social network changes and increases in social abstinence self-efficacy were the mechanisms that exerted the most influence in recovery (Kelly, Hoepfner, Stout, & Pagano, 2011). Further analysis of this dataset revealed that social network variables uniquely predicted 5-12% of the variance in drinking outcomes across 3 years, and AA attendance following treatment accounted for a further 1-6% of the variance in drinking outcomes (Stout, Kelly, Magill, & Pagano, 2012). The benefits of building social networks with others who support ones recovery or non-substance using goals may be particularly important in the period *after* treatment. For example, interviews with 205 Scottish individuals formerly dependent on heroin or alcohol (Best, Gow, Taylor, Knox, & White, 2011) revealed that belonging to a peer network that included people in recovery was one of the strongest predictors of a positive quality of life at follow up.

Therefore, it is clear that the research on treatment and recovery from substance misuse consistently highlights the importance of social factors. Despite this awareness of

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substance misuse as a social problem; however, theoretical and treatment approaches continue to adhere to individualistic models of substance misuse, and as a result, the field lacks a coherent theoretical model of the social factors and the transitional processes involved in recovery. We argue that the social identity approach (Tajfel & Turner, 1979) is well suited to address this process, as the theory has been well developed and validated in relation to many other health problems and life transitions (Jetten, Haslam & Haslam, 2012; Jetten, Haslam, Haslam, Jones & Dingle, 2014).

The Social Identity Approach to Health and Wellbeing

Social identification refers to the extent to which a person self-defines in terms of their group memberships (Tajfel & Turner, 1979). When we define ourselves in terms of a social identity (e.g., “us Catholics”, “us women”, “us alcoholics”) we see fellow group members as part of who and what we are. Importantly for our analysis, evidence has suggested that internalising groups in this way has substantial benefits for health and wellbeing, because groups provide us with a sense of belonging, meaning, and purpose, as well as enabling material benefits such as social support (Haslam, Jetten, Postmes & Haslam, 2009).

For example, people experiencing mental health problems benefit greatly from joining meaningful social groups – including both therapy groups and other community groups such as choirs, sporting and cultural groups (Cruwys, Dingle, Hornsey, Jetten, Oei, & Walter, 2014; Cruwys, Dingle, Haslam, Haslam, Jetten, & Morton, 2013; Dingle, Brander, Ballantyne & Baker, 2013). Social identities have also been found to improve health and wellbeing for individuals with multiple sclerosis (Wakefield, Bickley, & Sani, 2013), posttraumatic stress (Jones et al., 2012), and physical disabilities (Fernandez, Branscombe, Gomez & Morales, 2012).

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The social identity approach has also examined identity transition specifically in the context of the Social Identity Model of Identity Change (SIMIC; Jetten, Haslam & Haslam, 2012). Where the life transition involves a loss of identity (e.g., from a healthy person with full functioning to a person with disabilities due to a significant injury), continued membership of multiple social groups and continuity of the social identities associated with them is seen to result in significant health and wellbeing benefits. For example, in a study of stroke patients (Haslam et al., 2008), patients who had belonged to more social groups before their stroke experienced better adjustment afterwards. This was found to be due to the increased likelihood that people would be able to maintain at least some of their pre-stroke group memberships, thereby providing them with an increased sense of identity continuity. Similarly, a study of young adults making the transition from school to university (involving a loss of secondary school / home town identity, and the formation of a new identity as a student of a particular university) found that having multiple social identities before university predicted students' adjustment and wellbeing once at university. This was particularly the case where students saw their old and new social identities as compatible (Iyer et al., 2009).

From these studies it would be reasonable to assume that social groups are protective during times of transition and positively influence social support, wellbeing and health behaviour. However, an important difference between these previous studies and substance-users is that social influence among "using" groups is likely to encourage unhealthy behaviours – in particular, substance use. As previously theorised, there are some groups where social networks will not confer positive benefits for members (Jetten et al., 2014; Sani, 2012, pp. 26-27), particularly when normative content of the group endorses harmful behaviours (Cruwys, Haslam, Dingle, Haslam & Jetten, 2014). In a seminal study of 120 older widowed women, Rook found that negative social interactions, although less common

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than positive interactions, held a stronger influence on wellbeing for these women (Rook, 1984). In studies of adolescent smoking behaviour, the strength of social group identification enhanced conformity to peer group norms and was thus associated with increase smoking behaviour (Schofield, Pattison, Hill, & Borland, 2001, 2003). In relation to risky sexual behaviour, young men's social identification as "players" (men who have sex with multiple partners) is found to be strongly linked to their sexual attitudes and risky sexual behaviours such as younger age at first sex, number of non-dating sexual partners, and cheating on their partners (Giordano, Longmore, Manning, & Northcutt, 2009). There is a small amount of evidence, therefore, that in contexts where group norms encourage unhealthy behaviour, the benefits of social identities for health and wellbeing (typically through the mechanisms of belongingness and social support) might be outweighed by social identity harms to health and wellbeing (typically through mechanisms of social influence on behaviour).

To date, there has been only preliminary research into social identity processes among individuals in substance-use recovery. Best and colleagues (2014) conducted an in depth social identity and network mapping procedure with six residents of a TC in Victoria, Australia; however, this was done at a single assessment point and relationships with treatment outcome were not reported. Buckingham and colleagues (2013) conducted studies with two samples of former substance users in the United Kingdom: 61 members of Alcoholics Anonymous and Narcotics Anonymous; and 81 former smokers. In the first sample, the extent to which participants' addiction identity was evaluated more negatively than their recovery identity (which the authors called "evaluative differentiation") was significantly related to lowered relapse and reduced substance use. The extent to which participants identified more with the recovery identity, and less with the addiction identity (which was called "identity preference") was related to higher levels of self-efficacy, which was related to lower substance use. In their second study, evaluative differentiation was

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related to identity preference. Identity preference was also related to higher self-efficacy, which in turn was related to lower relapse into smoking (Buckingham, Frings & Albery, 2013). To expand on these findings, the current study adopted a longitudinal prospective design with participants entering residential treatment for substance misuse, to further investigate social identity change processes in drug and alcohol recovery.

The current study

In this study, we seek to examine how social identity changes over time in people recovering from substance abuse. Specifically, we examined social identification as a substance user (User identity) and as a member of a recovery social network (Recovery identity) among people participating in long-term treatment in a therapeutic community, whether changes in these social identities are related, and how identity change may be related to substance use and wellbeing outcomes from treatment. Definitions of recovery in the alcohol and drugs field are varied; however, there is a general consensus that recovery is broader than simply the behavioural change from substance use to abstinence and includes the development of a healthy, productive, and meaningful life (White, 2007). Substance use and wellbeing at follow up are considered equally important outcomes in the current study. **In this study, the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) was used as it is a brief global measure of psychological wellbeing that is commonly used in social research with disadvantaged populations (Biswas-Diener & Diener, 2006; Daraei & Mahajery, 2013).**

Of the range of treatment settings for people with substance use disorders, therapeutic communities (TC) offer the best context for exploring social identity and connections over time because clients reside together for an extended period of time (typically three to six months). TC treatment typically follows three phases: an early orientation to the program phase (a few weeks); a skills building and education phase (usually three months); followed

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by a ceremony and passage into the final phase of deeper psychological exploration (a further three or more months). There is also an emphasis on participation in community activities such as process groups, therapy skills groups, and work roles in the catering, gardening and housekeeping groups within the community. Social factors are accentuated and interactions with others and one's role in the community form an important part of the "community as method" approach (DeLeon, 2000, p. 92).

The present study was conducted among a sample of adults entering a Therapeutic Community using a prospective longitudinal design. Measures of social identity and wellbeing were collected upon entry to the TC, at four fortnightly intervals, on exit from the TC, and at follow up (an average of seven months after exiting the TC). On the basis of prior research, we made three hypotheses. The first hypothesis posited that the immersive treatment environment of a TC (DeLeon, 2000) acts to bolster an individual's identification with the TC while weakening ties with old social groups. That is:

H1. A) Participants' social identification as a member of substance using groups ("User" identity) will decline over time.

B) Participants' social identification as a member of the therapeutic community ("Recovery" identity) will increase over time.

The second hypothesis was that substance user identity and recovery identity will be seen by participants as increasingly incompatible over time, such that the individuals in the TC coalesce around one identity or the other. That is:

H2. Substance user identity and recovery identity will diverge, such that they will be weakly associated at T1 and have the strongest negative correlation at follow-up.

The third hypothesis was that social identity change is the "active ingredient" in substance-use recovery, such that social identity variables will strongly predict wellbeing and substance use outcomes. Specifically:

H3. The transition from a User to a Recovery identity (conceptualised as the difference score at follow-up¹, controlling for initial levels of each identity) will predict substance use and psychological wellbeing at follow up, even after controlling for individual-level predictors such as age, substance-use history and treatment history, **which have been found to predict treatment outcomes in clinical research (Carroll, Power, Bryant, & Rounsaville, 1993). These covariates were included to test the hypothesis that the social identity variables would predict outcomes over and above the variables that have been used in clinical studies.**

Method

Participants

Participants were 132 residents (63% male) of a residential drug and alcohol therapeutic community located in a regional area of Australia. The ages ranged from 20 to 64 years. Demographic and substance related variables presented in Table 1 indicate that participants were typically white Australians, never married, not in full time work, and had completed less than a secondary school education. This demographic profile is comparable in most respects with marginalised Australian populations (Cruwys et al., 2013), and Indigenous Australians are over represented in this sample - 7% compared with 2.5% in the general population (Australian Bureau of Statistics, 2009). Most participants used more than one substance, and nominated their most problematic substance as alcohol (38%), amphetamines (31.8%), heroin or other opiates (14.4%) or cannabis (8.3%). On average, participants had used their most problematic substance for 15 years and had undergone an average of 5.5 previous treatment episodes. Three quarters of the participants were self-referred to the TC and the remainder were referred from the Drug Court or Magistrates early referral system

¹ This difference score approach was taken by Buckingham et al 2013, p. 1134, whose variable "Identity preference" was calculated by subtracting addict identity from recovering addict identity such that positive values indicated higher levels of identification with the recovery identity (relative to addict identity) and negative scores the reverse.

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(both legal systems designed to divert individuals who have committed drug related offences away from prisons and into monitored therapeutic treatment).

Design and Treatment

The study followed a prospective longitudinal design, with the social identity measures taken in the first week of treatment, at two weeks, four weeks, six weeks, at exit from the TC, and at follow up planned for six months after they left the TC. There was some attrition at each time point, as is typical in TC treatment (e.g. Darke, Campbell & Popple reported that 17% of treatment entrants dropped out in the first week, and only 34% successfully completed the treatment program). The number of participants at each assessment point was: 132 at entry, 92 at two weeks, 71 at four weeks, 54 at six weeks, 27 at exit from the TC and 60 at follow-up. One reason for the low number at exit is that a substantial proportion of departures from the TC were unplanned and many occurred for rule violations (such as substance use while residing at the TC). This made it challenging for the researchers to obtain exit data in a majority of cases. An analysis of circumstances of leaving showed that 26% of the sample graduated the program, 41% left of their own accord before graduating; 15% were discharged for substance use; 11% discharged for misconduct; 4% transferred to other treatment services; and 3% withdrew from the study during their treatment. The average length of stay at the TC was 99 days ($SD = 76$ days).

The follow up sample comprised of individuals who were contactable and willing to complete a follow up interview and survey, and given common difficulties in making contact, these occurred an average of seven months after participants left the TC. Multiple attempts were made to contact every participant to ensure that the subsample was as representative as possible. A series of t-tests were conducted on demographic, substance use, and social identity variables at admission to the TC to investigate possible group differences between the subsample that were followed up ($N=60$) and those who were lost to follow up ($N=72$).

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The t-tests showed no significant differences on substance-use history, wellbeing, or identity variables. The only significant difference was on years of education completed, which was higher in those included in the follow up ($M = 11.18$, $SD = 2.017$) than in those lost to follow up ($M = 10.41$, $SD = 1.956$). However, as both subsamples had an average of lower than secondary school education, and education was not included in any of the main analyses, this difference was not considered to have any influence on the findings and the follow up subsample may be considered as representative of the original full sample.

[Insert Table 1 about here]

Measures

Addiction Severity Index (McLellan, Cacciola, Alterman, Rikoon, & Carise, 2006)

The 5th edition of this semi-structured clinician-administered interview was used to assess client status in seven functional domains: alcohol and drug use, medical and psychiatric health, employment/ financial support, family relations, and illegal activity. The ASI-5 is the most widely used structured interview for substance abuse and related problems, and it has adequate-to-good psychometric properties in English and a range of other languages (Snow & Tipton, 2009). Lifetime and past 30 days incidence and severity data are collected for each aspect of these domains. For the current study, participants' demographics and substance use variables were taken from this measure. Because all participants had to be detoxified prior to entering the TC and all were abstinent during their treatment (as a requirement of the TC), actual substance use was not a useful index of substance use severity. Instead, years use of most problematic substance, and number of substance abuse treatment episodes (current one inclusive) were considered the best indicators of substance use severity.

Social Identification (Doosje, Ellemers, & Spears, 1995)

A four item widely used scale assessed participants' identification with the therapeutic community. An example item was "*I see myself as a member of the [name of the therapeutic*

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community”. Participants rated each item from 1=*not at all* to 7=*very much*, and scores of the four items were averaged to give a mean value in the same range. In the current study, Cronbach’s alphas were .75, .85, .87, .91, and .88 at the five time points. Social identification with substance using peers was assessed with the items: “*Before I came to [the TC] I saw myself as being a member of a drug use or drinking social group*” (measured only at entry) and “*I miss my drug use or drinking social group*” (measured at each subsequent time point). These differently-worded items were used because after entry to the therapeutic community, contact with substance using peers was actively discouraged, especially in the early phase of the program. These items were also rated on the scale from 1=*not at all* to 7=*very much*. At follow up, social identification as a person in recovery was measured with four items, e.g. “*I identify with other people in recovery*” (Cronbach’s alpha was .88). Social identification as a substance user was similarly assessed with four items, e.g. “*I have strong ties with other drinkers / drug users*” (Cronbach’s alpha was .64). Transition from User identity to Recovery identity at follow up was operationalized as a difference between the User identity score and the Recovery identity score for each participant at follow up.

Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)

The Satisfaction with Life scale is a widely used 5 item measure including items such as: “*I am satisfied with life*”, and “*So far I have gotten the important things I want in life*”, which participants rate for agreement on a 7 point scale from 1= *not at all* to 7= *completely*. A total score is computed by adding the five items together. Cronbach’s alpha for Life Satisfaction at follow up was .84.

Timeline Follow Back (Sobell, Brown, Leo, & Sobell, 1996; Sobell & Sobell, 1995)

Alcohol and drug use at follow up was assessed using the Timeline Follow Back (TLFB) technique, in which participants were asked to record their alcohol and substance use over the

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past 30 days on a calendar, starting with the current day and working backwards. They were asked to use recent events, such as public holidays, religious holidays, birthdays or travel, as prompts for recalling their substance use during that time. Results were later coded by the researchers into standard drinks per drinking day for alcohol (SDA), percentage of the past 30 days abstinent from alcohol (PDA) and from substances other than alcohol (PDD). (As a low number of participants used drugs other than alcohol at follow up, and their estimates of quantity across various substances was difficult to reliably quantify, only the frequency of other drug use was included in the analyses). The TLFB has been validated for alcohol and other substances in both clinician-administered and client-administered forms (Sobell et al., 1996), giving a high degree of reliability for alcohol user ($r = .79$) and for other drug use ($r = .78$ to $.95$, depending on the substance type) (Fals-Stewart, O'Farrell, Freitas, McFarlin, & Rutigliano, 2000).

Procedure

Potential participants were identified by the manager of the TC when they were settled and ready to be interviewed, typically during their first week. They were then approached by a member of the research team who explained the nature and purpose of the study and obtained written informed consent from those willing to participate (95% of clients consented; however, a minority left the community before they completed any questionnaires and therefore their data could not be included in the analysis). Participants were interviewed using the Addiction Severity Index, and then given a packet of questionnaires to complete and return. The researcher remained nearby to offer help if required. Participants were offered chocolates and cans of soft drink as tokens of appreciation for completing each assessment point.

The follow ups were conducted using contact details that the participants had given on their consent form. Follow up surveys were conducted over the telephone (42%), in person

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(37%), and by mail (22%). Participants were reimbursed \$30 for their completed follow ups. All measures and procedures were approved by the University [blinded for review] Ethics Review Committee (approval #2011000953).

Results

H1: Social identification with substance using peers and with the therapeutic community

Participant ratings of social identity as a member of a drug using / drinking social group before admission was moderate ($M = 4.61$, $SD = 2.34$). Because residents were discouraged from making contact with outside people during the early phase of treatment, social identity with substance using social groups after entry to the TC was indexed by the item “I miss my drinking / drug using social group”, which was rated in the first week ($M = 3.04$, $SD = 1.93$) and decreased over time to a mean of 2.30 ($SD = 1.61$) at exit (see Figure 1, lower line). Confirming H1A, a repeated measures ANOVA showed that this decrease was significant over the five time points: $F(4, 172) = 9.943$, $p < .001$, $\eta^2 = .188$. When considered in terms of the proportion of residents identifying as a member of substance using peer groups (measured as the % of the sample whose mean social identity rating was 5 or above out of 7), this proportion was: 32.5%, 34.4%, 20.9%, 20%, over successive fortnights and finally 14.3% at exit from the TC.

[Insert Figure 1 about here]

In contrast, ratings of social identity as a member of the therapeutic community were high at the first time point ($M = 5.16$, $SD = 1.11$ out of 7), and continued to increase over successive fortnights to a mean of 6.03 ($SD = 1.11$) at exit (see Figure 1, top line).

Confirming H1B, a repeated measures ANOVA showed that this change was significant for the first four time points (representing approximately seven weeks in the TC): $F(3, 138) =$

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3.940, $p = .010$, $\eta^2 = .079$. (Note that there are fewer time points in this analysis because participants could rate their identification with substance using groups prior to entering the TC but could not sensibly rate their identification with the TC before entering it). The proportion of participants rating their “recovery” social identity as 5 or more out of 7 increased from 74.4% at entry, to 85.1%, 83.6%, 86% over subsequent fortnights and finally 91.5% prior to exiting the TC.

H2: Does change in User and Recovery identity occur in parallel or separate processes?

The mean social identity scores shown in Figure 1 indicate that identity change is occurring in parallel – that is, clients rate themselves less as members of their substance using social groups at the same time as they rate themselves more as members of the TC over time. To test this directly, User identity and Recovery identity scores were correlated at each time point as follows: $r_{\text{time 1}} = -.098$, $p = .252$; $r_{\text{time 2}} = -.297$, $p = .004$; $r_{\text{time 3}} = -.442$, $p < .001$; $r_{\text{time 4}} = -.399$, $p = .003$; $r_{\text{exit}} = -.310$, $p = .115$; and $r_{\text{follow up}} = -.477$, $p < .001$. The negative correlations become stronger over time. The finding that the correlation at exit from the TC was non-significant may be explained by the fact that the number of participants returning surveys at exit was low ($n = 27$) due to the circumstances of their leaving the TC.

H3: Social identity change will predict substance use and life satisfaction at follow up

At follow up (an average of seven months after leaving the TC), 55% of participants were abstinent from alcohol use and 72% were abstinent from other drug use. The average alcohol consumption was 4.89 standard drinks per drinking day ($SD = 7.66$), and average % days abstinent from alcohol was 82.55% ($SD = 28.94\%$). The mean percentage of days abstinent from other drugs was 91.89% ($SD = 20.67\%$). The mean life satisfaction rating had increased from 11.47 ($SD = 5.74$) at entry to the TC to 18.12 ($SD = 7.02$) at follow up, which represents over a standard deviation improvement in life satisfaction over this period. **A**

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repeated measures ANOVA on life satisfaction scores showed that this change over time was significant: $F(1, 52) = 71.213, p < .001, \eta^2 = .578$.

To assess relationships between follow up outcomes and predictors, bivariate correlations were conducted among participants' demographic variables, substance related variables, social identification with others in alcohol and drug recovery, identification with their substance using peers, substance use, and life satisfaction at follow up (see Table 2). Gender was not related to any other variables so it was omitted from subsequent analyses. Age was positively related to number of years using participants' most problematic substance, and negatively related to user identity at entry to the TC, so it was entered as a covariate in the first step of the regression equations. Neither user identity nor recovery identity measured in the first week at the TC was significantly related to follow up outcomes, although the negative relationship between user identity in the first week and % days abstinent from other drug use at follow up approached significance ($r = -.235, p = .071$). However, identity change – operationalised as the difference between user identity and recovery identity at follow up, controlling for T1 levels of these variables – was strongly related to % days abstinent from alcohol and other drug use, and life satisfaction, and strongly negatively related to alcohol consumption at follow up (see Table 2).

[Insert Table 2 about here]

A series of hierarchical regression analyses to predict follow up outcomes is shown in Table 3. The regression equation to predict average drinks per drinking day at follow up was significant overall: $R^2 = .438, F(6, 53) = 6.886, p < .001$. Age and substance use severity variables were entered in the first step and accounted for 10% of the variance: $F_{change}(3, 56) = 1.970, p = .129$. Social identity variables in the first week at the TC entered at step 2 added less than 1% of the variance to the model, $F_{change}(2, 54) = .175, p = .840$. At step 3, the difference between recovery identity and substance user identity at follow up accounted for

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34% of the variance, $F_{change}(1, 53) = 31.764, p < .001$. A similar hierarchical regression equation to predict % days abstinent from drinking over the 30 days prior to the follow up was significant overall: $R^2 = .458, F(6, 53) = 7.473, p < .001$. Age and the substance severity variables entered at step 1 explained 4% of the variance in the criterion, $F(3, 56) = .664, p = .578$, the social identity variables entered at step 2 added 2% of the variance, $F_{change}(2, 54) = .553, p = .578$. At step 3, the identity difference at follow up explained a further 41% of the variance in proportion of days abstinent from drinking, $F_{change}(1, 53) = 39.578, p < .001$.

[Insert Table 3 about here]

A somewhat different pattern of results emerged for the dependent variable % days abstinent from other drugs in the month prior to follow up. The overall model was significant: $R^2 = .438, F(6, 53) = 6.886, p < .001$. The step 1 covariates accounted for 24% of the variance in the model, $F_{change}(3, 56) = 5.779, p = .002$, with number of substance abuse treatment episodes the most important predictor. At step 2, early social identity ratings accounted for 8% of the variance in the model, $F_{change}(2, 54) = 2.944, p = .061$. At step 3, the social identity difference at follow up explained a further 6% of the variance in the model, $F_{change}(1, 53) = 4.732, p = .034$ (see Table 3).

Finally, a hierarchical regression equation to predict life satisfaction at follow up from this combination of variables was significant overall: $R^2 = .586, F(6, 53) = 12.497, p = .001$. At step 1, age and substance abuse severity accounted for 5% of the variance in life satisfaction, $F_{change}(3, 56) = .908, p = .443$. The social identity variables entered at step 2 explained a further 5% of the variance in life satisfaction, $F_{change}(2, 54) = 1.53, p = .226$. At step 3, the difference between user and recovery identity explained a further 49% of the variance in life satisfaction, $F_{change}(1, 53) = 62.505, p < .001$ (see Table 3).

Discussion

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This study was designed to examine social identity changes over time in a sample of adults entering a therapeutic community, and to analyse how social identity variables related to alcohol and other drug use and life satisfaction at follow up. The first hypotheses, that participants' social identification as a member of substance using groups ("User" identity) would decline over time, while their identification as members of the therapeutic community ("Recovery" identity) would increase over time, were supported by the findings. Despite the sample characteristics indicating that most participants were social isolated and disadvantaged (e.g. not in a relationship, not working) the majority reported that they identified strongly as members of the therapeutic community within the first week, and this rating significantly increased over time. The mean value for social identity in the first week was in the same range as a published value on this measure from members of work teams in stressful occupations (Haslam et al., 2005), who would presumably have worked together over a longer period of time. This finding suggests that people entering a therapeutic community typically experience a sense of belonging with other residents of the TC, an effect that cannot be accounted for by their one-on-one relationships with staff since these data were collected prior to clients being assigned an individual counsellor.

Participant age and gender were negatively related to identification with the TC, meaning that males and older participants were less likely to feel a sense of belonging to the TC in the first week, although the significance of these correlations was above .05. A recent review of research relating to gender and substance abuse treatment indicated that although women enter treatment at lower rates than men, once they access treatment they are no different in terms of retention, completion, or outcome (Greenfield, Back, Lawson, & Brady, 2010). Interestingly, neither of the variables indicating substance use severity was related to early social identification with the TC. This suggests that clients who used a range of

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substances and with varying treatment histories were equally able to identify and feel a sense of belonging within the community.

In contrast, participants' social identity as members of substance using social groups was rated lower after entry to the therapeutic community, and continued to decline over time. The pattern of social identity change over time shown in Figure 1 indicates that as individuals stayed longer in the TC, ties with their substance using social groups become less a part of their identity, while social ties within the therapeutic community became stronger. Thus hypothesis two, that substance user identity and recovery identity will diverge, such that they will be weakly associated at entry to the TC and have the strongest negative correlation at follow-up, was also supported by the findings.

It is unclear from these data what factors might account for such a rapid identification with the therapeutic community, although even at the first time point collected in the first week participants had several days to settle into the TC and were able to make an informed judgement about whether they felt a sense of belonging. In a related study, Beckwith and colleagues found that the social factors related to early identification with the TC were having children with whom the participants were close, those who experienced problems with their sexual partner in the month prior to entry to the TC, and being unsatisfied with the way they spent their free time prior to entering the TC. Conversely, participants who endorsed a substance user identity more highly in the first week in the TC were satisfied with the way they spent their free time prior to entry to the TC, those who did not have children, and those who had no problems with their sexual partner in the month prior to entry (Beckwith, Best, Dingle, Perryman & Lubman, in press).

This process of identity transition appears to be an important step in recovery from alcohol and other drug misuse. The regression analyses provided evidence that a substantial

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amount of variance in follow up outcomes was explained by the difference between user identification and recovery identification at follow up, accounting for initial differences in age, substance abuse severity and social identity. In fact, **between five percent and nearly a half of the variance in the outcome variables was accounted for by this identity transition, which is a greater amount of variance than was explained by traditional variables such as the duration of substance dependence and the number of treatment episodes in the individual's lifetime (Carroll, Power, Bryant & Rounsaville, 1993). A comparison of the drinking outcomes in this study with those of previous research shows that** the amounts of variance in outcomes are even higher than the 5-12% of the variance in drinking outcomes at 3 years follow up explained by social network change in previous research (Kelly et al., 2011), and consistent with the 27% of the variance in abstinence from drinking a year after a social network intervention reported by Litt and colleagues (Litt, Kadden, Kabela-Cormier, & Petry, 2009). Of course, further follow up at 1 and 3 years is required for a direct comparison between this study and the earlier ones.

These results confirm previous research showing a link between social identity, social support and wellbeing outcomes in samples undergoing stress (Haslam et al., 2005; Haslam et al., 2012). In this case, it is not the continuation of social identities during a period of transition that confers wellbeing benefits (Haslam et al., 2008; Iyer et al., 2009), rather it is the move away from former substance using social groups and towards a new social identity with others in alcohol and drug recovery that offers the most social support benefits. Indeed, participants who continued to identify with their substance using peers at follow up were experiencing much poorer outcomes across all measures of substance use and life satisfaction, while those who maintained their recovery social identity showed positive outcomes on substance use and life satisfaction.

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It could be argued that social identity at follow up is influenced by substance use behaviour rather than the other way around. However, the prospective longitudinal nature of this study shows that social identity at follow up was consistent with the values recorded at fortnightly intervals during treatment. Identity change occurred quickly within the first week of treatment, and could be said to occur either concurrently with substance use behaviour change (i.e. all clients were abstinent from substance use as a condition of entry to the TC), or that identity change maintained behavioural change. That is, the longer the clients stayed in the TC, the more they were exposed to others stating their commitment to abstinent behavioural norms and attitudes, and the stronger their identity as members of the recovery community.

The challenge for individuals leaving the TC is to sustain and build their social connections with other non-drinking, non-drug using peers as there is emerging evidence internationally that this social network support makes a sizeable difference to their likelihood of a successful recovery. This can be done through an existing network of mutual support groups such as Alcoholics Anonymous and Narcotics Anonymous (Kelly et al., 2011; Stout et al., 2012), or through a social network intervention (Litt et al., 2009; Soye, De Leon, Broekaert, & Rosseel, 2006). It may also be possible for individuals leaving alcohol and drug treatment to build abstinent support networks through joining meaningful activities with others in the general community. Forming a new social identification within the TC may form the basis of a transitional identity which that could serve as the basis for an assertive linkage with other groups in the wider community, such as sporting, cultural, or employment networks and new social groups (Best et al., 2013). Thus the social support and opportunities for participation in a wider range of activities in the community can be viewed as resources associated with the new recovery identity.

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The community based sporting and cultural groups run by (Australian) Non-Government organisation Reclink, are a good prototype of this approach, as the individuals can select low cost activities in their local community that suit their interests and social connections develop spontaneously out of these activity groups. In previous research, adults with chronic mental health problems and disabilities who joined a choir were able to improve their personal wellbeing, then build social connections within the choir and beyond it, which over the course of a year helped to build broader functional outcomes such as participating in volunteer or paid work in some cases (Dingle, Brander, Ballantyne, & Baker, 2012; Dingle, Pennings, Brander, & Jetten, 2010). Similarly, Landale and Roderick studied 19 adults in North East England with long histories of addiction and criminal offending, who joined the Second Chance sporting program (Landale & Roderick, 2013). Two cases in particular illustrated the importance of regular meaningful activity and later, the role of social network and support from others in the program, as key factors in maintaining abstinence from substance use.

Limitations and future directions of the research

While the results of this study demonstrate the profound consequences of identity transition for long term behavioural and wellbeing outcomes, more research is required to determine the precise mechanisms by which social identity transition is related to outcomes of alcohol and drug treatment in a therapeutic community. For example, it is possible that social identification enhances the link between peer group norms and behaviour, as was reported in studies of smoking and risky sexual behaviour (Giordano et al., 2009; Schofield et al., 2001, 2003). Anecdotally, we know that clients in the TC engaged in daily discussion about substance use and coping while abstinent; however, norms and attitudes to substance use behaviour were not measured directly in the current study. Similarly, it is unclear whether the link between social identity and outcomes is mediated by social support (in particular

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support for recovery goals), which would be consistent with previous research in other populations (Haslam et al., 2008; Haslam et al., 2005; Iyer et al., 2009; Jetten et al., 2014). Other potential mediators of this link include: finding an abstinence focused role model, doing service within the group (Moos, 2007), and increases in abstinence self efficacy (Kelly et al., 2011); factors that require investigation within the TC context.

A more nuanced understanding is needed of how social identification develops within a TC. That is, are residents of the TC feeling a sense of identity with the community as a whole, or with one or two others, or with a case worker and their house group? Is this a phenomenon of collective self-esteem (Falomir-Pichaster, Mugny, Berent, Pereira, & Krasteva, 2013)? These questions require a detailed mapping of clients' social networks and sources of recovery support as they enter treatment and at multiple points during treatment so that abstinent supportive social connections can be developed during treatment and continued afterwards. This is an area of research that the authors and other colleagues are pursuing (*BLINDED FOR REVIEW*). Other variables that may impact on the individuals' formation of a new social identity, such as co-occurring social anxiety or depression (Cruwys et al., 2013; Dermatis et al., 2001) which are common among individuals seeking treatment for substance abuse problems (Dingle & King, 2009), may be avenues for further investigation.

Like the majority of research with vulnerable populations, attrition was a limitation of the present study, and it is difficult to generalise the findings to the proportion of the sample that was lost to follow up. That said, the follow up cohort was representative of the full sample and included many people who had exited the program early.

Conclusion

In summary, the current study clearly shows that adults in residential alcohol and drug treatment transition from a "substance user" social identity to a "recovery" identity. Furthermore, there is evidence that this identity transition facilitates recovery from substance

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abuse. The fact that social identity variables explained outcomes more strongly than individual predictors (severity of substance dependence and demographic variables) supports a view of addiction as a social phenomenon that can appropriately be addressed in both the therapeutic and the broader communities in which the individuals live.

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Table 1.

Characteristics of 132 Residents of a Drug and Alcohol Therapeutic Community and the Subsample of 60 Who Were Followed Up After Leaving the Therapeutic Community

Variable	Full Sample (N=132)	Follow Up Subsample (N=60)
Gender		
Male	62%	55%
Female	37%	45%
Age at entry to treatment		
Mean	35.84	36.14
SD	9.07	8.64
Ethnicity		
Caucasian	87%	91%
Aboriginal/Torres Strait Is.	7%	7%
Asian or Pacific Islander	2.5%	2.5%
Black	1%	0%
Hispanic	1%	0%
Relationship Status		
Single	63.5%	68.5%
Married / in relationship	12%	9.8%
Separated / divorced	22%	21.5%
Widowed	1.5%	0%
Dependents		
No	85%	80%
Yes (1-4 children)	15%	20%
Years education completed		
Mean	10.71	11.18*
SD	2.01	2.02
Usual Employment on Admission		
Full time	36%	31%
Part time / casual	25%	29.5%
Unemployed	21%	18%

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Retired / disability	8%	15.7%
Controlled environment	9%	4%
Student	2%	2%
Years Use of Primary Substance	$M = 14.93$ $SD = 8.77$	$M = 16.51$ $SD = 9.18$
Number of substance treatments	$M = 5.47$ $SD = 6.40$	$M = 5.28$ $SD = 5.98$
Referral source		
Self	74%	80%
Drug Court / Magistrates Court	26%	18%

*Mean education (years completed) differed between the subsample followed up and those not followed up, $t(131) = 2.158$, $p = .033$. No other sample differences were significant.

Table 2. *Correlations among the Measures of Treatment Outcome and Substance Abuse Severity, Substance User Identity and Recovery Identity at Entry to the Therapeutic Community, and Identity Difference Scores at Follow Up.*

Variable	1	2	3	4	5	6	7	8	9	10
1. Gender	1.00									
2. Age	-.166#	1.00								
3. Years Use Primary Substance (lifetime)	-.053	.620***	1.00							
4. Number Substance Abuse Treatments (lifetime)	-.162#	-.033	-.026	1.00						
5. User Identity (entry)	.108	-.276**	-.114	-.085	1.00					
6. Recovery Identity (entry)	-.157#	-.176#	-.042	.098	-.098	1.00				
7. Recovery-User Identity difference (follow up)	-.175	.042	-.050	-.108	-.102	.139	1.00			
8. Standard drinks / drinking day (SDA, follow up)	.041	-.009	-.040	.308*	-.008	.040	-.587***	1.00		
9. % Days Abstinent Alcohol (PDA, follow up)	-.043	-.132	-.156	-.083	.084	-.113	.617***	-.684***	1.00	
10. % Days Abstinent Other Drugs (PDD, follow up)	-.251#	.165	.231#	-.450**	-.235#	.170	.309*	-.460***	.251*	1.00
11. Life Satisfaction (follow up)	-.018	-.072	-.152	-.105	-.159	.149	.746***	-.580***	.487***	.273*

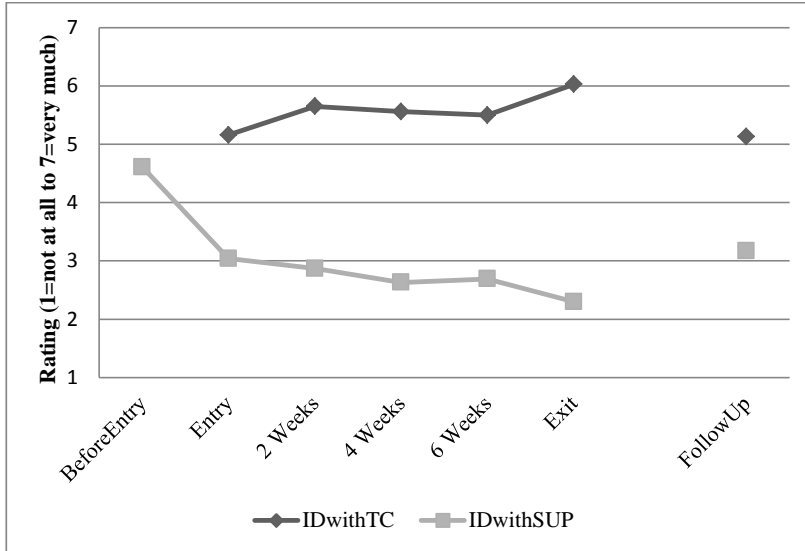
.10 < p < .05; * p < .05; ** p < .01; *** p < .001

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Table 3. Hierarchical regression equations to predict outcomes at follow up from social identity difference scores at follow up, accounting for severity of substance abuse and social identity variables at entry to the Therapeutic Community.

Variables in the Equation	Standard Drinks per Drinking Day (Follow Up) β	% Days Abstinent from Alcohol (Follow Up) β	% Days Abstinent from Other Drugs (Follow Up) β	Life Satisfaction at Follow Up β
Step 1 Covariates	$R^2 = .095$	$R^2 = .034$	$R^2 = .236^{**}$	$R^2 = .046$
Age	.027	.014	.001	.142
Years use of primary substance	-.028	-.178	.184	-.275
No. substance abuse treatments	.307*	-.101	-.430***	-.128
Step 2 Covariates	$R^2 = .006$	$R^2 = .019$	$R^2 = .075\#$	$R^2 = .051$
Substance User Identity (entry to TC)	.035	.025	-.242*	-.194
Recovery Identity (entry to TC)	.074	-.136	.120	.108
Step 3	$R^2 = .337^{***}$	$R^2 = .405^{***}$	$R^2 = .056^*$	$R^2 = .488^{**}$
Recovery–User Identity diff (follow up)	-.598***	.656***	.245*	.720***
Alternative Step 3	$R^2 = .338^{***}$	$R^2 = .405^{***}$	$R^2 = .116^{**}$	$R^2 = .490^{**}$
User identity (follow up)	.341**	-.329**	-.378**	-.417***
Recovery identity (follow up)	-.370**	.446***	-.062	.441***

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



Note: IDwithTC = social identification as a member of the Therapeutic Community
 IDwithSUP = social identification as a member of substance using peer groups

Figure 1.

Change over Time in Mean Ratings of Social Identification with the Therapeutic Community, and Identification with Substance Using Peers in Residents of a Drug and Alcohol Therapeutic Community.