Reducing loneliness among people with substance use disorders: Feasibility of ‘Groups for Belonging’

Isabella Ingram
University of Wollongong, ii841@uowmail.edu.au

Peter James Kelly
University of Wollongong, pkelly@uow.edu.au

Catherine Haslam

Owen O'Neil

Frank P. Deane
University of Wollongong, fdeane@uow.edu.au

See next page for additional authors

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Abstract
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Introduction and Aims: Although loneliness is common among people with substance use disorders, few interventions to reduce loneliness have been developed for this population. This study aimed to determine the feasibility of delivering a six-session group-based intervention, ‘Groups for Belonging’, that builds social group connectedness. Design and Methods: Participants were 41 individuals accessing residential substance use treatment services. The primary aims of the present study were to determine indicators of feasibility of Groups for Belonging; namely, demand (recruitment, attendance and retention) for and acceptability (program adherence and participant satisfaction) of the Groups for Belonging program in residential substance use treatment settings. Results: Over half of the people attending the services were interested in participating in Groups for Belonging. Of 41 participants who commenced the program, 20 participants completed the program per protocol. In terms of acceptability, the average number of sessions attended was 3.7 (SD = 1.76, range 1–6). Program adherence was 99.3% and overall satisfaction with the program was high, with 95% of participants reporting they enjoyed Groups for Belonging. Discussion and Conclusions: The Groups for Belonging program may be feasible for delivery in residential substance use treatment services. Findings from this study suggest that an adequately powered replication study is warranted.

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Authors
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Isabella Ingram¹,² GDipProfPsych, PhD Candidate (ingram@uow.edu.au)

Peter J. Kelly¹,² PhD, Associate Professor (pkelly@uow.edu.au)

Catherine Haslam³ PhD, Professor (c.haslam@uq.edu.au)

Owen J. O’Neil³, MPsyCh (Couns) Candidate (o.oneil@uq.net.au)

Frank P. Deane¹,² PhD, Professor (fdeane@uow.edu.au)

Amanda L. Baker⁴ PhD, Professor (amanda.baker@newcastle.edu.au)

Genevieve A. Dingle³ PhD, Associate Professor (g.dingle@psy.uq.edu.au)

¹ School of Psychology, University of Wollongong, New South Wales, Australia

²Illawarra Health and Medical Research Institute, University of Wollongong, New South Wales, Australia

³School of Psychology, University of Queensland, Queensland, Australia

⁴School of Medicine and Public Health, University of Newcastle, New South Wales, Australia

Author for correspondence: Isabella Ingram, School of Psychology, University of Wollongong, Wollongong, NSW, Australia, 2500. Telephone: 02 4221 4484, Email: ingram@uow.edu.au
Abstract

Introduction and Aims: Although loneliness is common among people with substance use disorders, few interventions to reduce loneliness have been developed for this population. This study aimed to determine the feasibility of delivering a 6-session group-based intervention, ‘Groups for Belonging’ (G4B) that builds social group connectedness.

Design and Methods: Participants were 41 individuals accessing residential substance use treatment services. The primary aims of the present study were to determine indicators of feasibility of G4B, namely, demand (recruitment, attendance, and retention) for, and acceptability (program adherence and participant satisfaction) of the G4B program in residential substance use treatment settings.

Results: Over half of the people attending the services were interested in participating in G4B. Of 41 participants who commenced the G4B program, 20 participants completed the program per protocol. In terms of acceptability, the average number of sessions attended was 3.7 (SD=1.76, range 1-6). Program adherence was 99.3% and overall satisfaction with the program was high, with 95% of participants reporting they enjoyed G4B.

Discussion and Conclusions: The G4B program may be feasible for delivery in residential substance use treatment services. Findings from this study suggest that an adequately powered replication study is warranted.

Key words: Loneliness, social connection, addiction recovery, intervention study, isolation
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Loneliness is a distressing emotional experience characterised by an incongruence between the relationships we have and those we desire (1, 2). Loneliness has been deemed a public health “epidemic”, with a meta-analysis comparing the detrimental health effects of loneliness to those of smoking, obesity and physical inactivity (3). There is also accumulating evidence to link loneliness to poorer mental health (4) and increased alcohol misuse and drug use (5, 6). A recent study found that people who report problems with substance use are seven times more likely to experience frequent loneliness than the general population (7). In addition, this study found that people with substance use disorders (SUD) are five times more likely to deem loneliness as a concern when compared with the general population (7). Addressing loneliness may be helpful for recovery, as close social ties have important implications for recovery (8) and those who have greater abstinence-specific support tend to achieve better SUD treatment outcomes (9-11).

Despite compelling evidence to suggest people with SUD are highly vulnerable to disconnection and that improving connections might positively impact treatment outcomes, just one study has examined the efficacy of an intervention to reduce loneliness in this population (12). In that study, a group-based intervention focused on goal setting to pursue values-congruent activities, but was found to have no effect on loneliness compared to people in the control condition who received treatment-as-usual. Reviews of studies comprising participants with problems other than substance use have examined the components of interventions that are effective in alleviating loneliness, as well as the theoretical foundations of these interventions (see 13, 14). The latter basis for these interventions draws on social and cognitive
theories of loneliness. Cognitive theory posits that lonely individuals tend to have an increased hypervigilance for social threat (15), hold negative expectations of social relationships (1, 16, 17), and act in ways that confirm these negative expectations, which in turn maintain feelings of loneliness. SUD populations can often face social challenges, such as high rates of stigma and relationship distress (18-21). This may mean that certain cognitions that influence loneliness - such as perceptions of support or social threat - are magnified for people with SUD. However, while there is some support for the cognitive approach in addressing loneliness, alone it is likely to be insufficient given it fails to fully address the wider social context within which individuals live (13).

The Social Identity Approach accounts for the influence of individuals’ group and community connections. This approach is underpinned by the Social Identity Theory (SIT; 22) and Self-Categorisation Theory (SCT; 23) and describes when, how and why social groups shape identity and influence behaviour, both in helpful and unhelpful ways. SIT focuses on understanding why it is that social groups have this power and SCT extends this to specify the conditions and circumstances in which groups have this influence. Key to both theories is the idea that social groups form an important part of people’s self-concept and that it is through them being internalised into the self that groups gain this power of influence. Extending this theorising to the health domain is the Social Identity Approach to Health (24, 25), commonly referred to as the “Social Cure”, reflecting the implications that positive group connectedness has for physical and mental health, and addiction recovery outcomes (24). Group connectedness is thought to impact health through the ‘sense of self’ derived from group memberships (see 24). The Social Identity Model of Recovery (SIMOR; 25) draws on the Social Identity Approach, to explain the shift in identity as one
progresses through stages of recovery; from identifying primarily as a ‘substance user’ and member of predominantly substance using groups, to identifying as someone in recovery through membership of recovery-supportive groups, and ultimately to identification as a ‘non-user’ of substances through membership of groups that do not use substances in problematic ways (25, 26). Research shows that the extent to which individuals differentially identify with their treatment and recovery, over their user groups, predicts positive outcomes in people attending Alcoholics Anonymous, attempting to quit smoking (26), and engaging in residential treatment for SUD (27, 28).

Through the lens of SIT, loneliness is considered to arise from a lack or loss of identification with meaningful groups, which can be either a trigger for problematic substance use or a consequence of moving away from heavy substance using groups during addiction recovery (29). Changes to social networks experienced by this population may be one reason why rates of loneliness are so high. While not necessarily the case for everyone, shifts into and out of active substance use and recovery may also bring about shifts in identity in terms of one’s group memberships, and subsequently their values, norms and behaviours (30). When participating in residential rehabilitation and mutual aid groups, individuals are sometimes encouraged to move away from substance using groups, and towards non-using groups. There is evidence to suggest that greater engagement with networks of people supportive of recovery can sustain longer maintenance of recovery (31). This suggests a need for interventions to facilitate connection and belonging with social networks that are supportive of recovery.

Both SIT and cognitive theories appear to be relevant to loneliness amongst people with SUD and appear to be supported by findings of intervention meta-
analyses and reviews across more diverse samples (13, 14). These reviews have examined the effect of intervention type and treatment modality on loneliness. They concluded that interventions aiming to promote meaningful relationships and to alter perceptions of one’s self and others in relationships, have the greatest impact on loneliness (13, 14). In addition, the meta-analysis by Masi, Chen (14) concluded that for non-randomised designs, interventions delivered in a group format led to significant improvements in loneliness, while those delivered in an individual format did not.

Guided by the outcomes of loneliness intervention studies across other populations, SIT and cognitive theories of loneliness, we developed an intervention to address loneliness for people recovering from substance use. Groups for Belonging (G4B; 32) is an adaptation of the SIT informed Groups 4 Health intervention (see 33, 34), developed specifically for the substance use treatment context. The adaptation included a focus on the unique social challenges faced by many people accessing treatment for SUD (e.g. stigma, fear of rejection, mistrust) and avenues to develop connections that are supportive of recovery. G4B’s SIT foundations focused on helping people to build and maintain valued group connections in ways that support their recovery goals. The additional cognitive behavioural components drew on evidence from the loneliness intervention literature (e.g. see 14), and focused on helping people to understand and manage feelings of loneliness through identification and management of specific cognitions that might serve as barriers to connecting with others. The resulting 6-session group-based intervention aimed to build social connections supportive of recovery, and in turn, reduce feelings of loneliness. The content of the six sessions is summarised in Table 1.
The primary aims of the present study were to determine indicators of feasibility of G4B, namely, demand (recruitment, attendance, and retention) for, and acceptability of the G4B program in residential substance use treatment settings. It was anticipated that G4B would be feasible for this population. While we did not intend to conduct efficacy analyses due to the underpowered nature of the study, measures of loneliness, stress, cognitive fusion, cravings for substances, wellbeing and sense of belonging to multiple groups were collected at pre- and post-intervention.

Methods

Participants

Participants were 41 individuals (Males = 62.5%; Females = 37.5%) accessing residential substance use treatment. The treatment services included two modified Therapeutic Communities, located in New South Wales, Australia, operated by The Australian Salvation Army Recovery Services (Eastern Territory Division) (see Kelly et al., 2015 for further details). Participants were aged 20-68 years ($M = 42.14$, $SD = 12.63$) and meth/amphetamines were deemed the primary substance of concern for 54% of the sample. Most (76%) of the sample had previously sought treatment for SUD (see Table 2).

Procedure

Ethics approval was granted by the Human Research Ethics Committee (HREC) at the University of Wollongong, NSW, Australia (HE2018/543). A member
of the research team attended the treatment services between April and June 2019 (II). At both of the services, all residents were invited to attend a meeting where they were provided with information about the study and eligibility criteria. To be eligible for the study, participants were required to be: 1) residing at the services for the duration of the study (8 weeks) and 2) interested in enhancing belonging and pursuing connections with social networks. Loneliness was not highlighted as an eligibility requirement. This was based on prior research cautioning that people may tend to under-report loneliness due to its stigma (13). Participants first completed the consent procedures, followed by the baseline survey. Measures were administered one-week prior to session 1 of G4B, and post-intervention measures were administered one-week following session 6 of G4B, while participants were still attending the residential services. A registered psychologist (II) delivered the program at the two study sites. At each site, participants were at different stages of their residential treatment at the time of attending G4B (i.e. some had just entered the treatment service and some were in a later stage of the program). The G4B sessions were delivered weekly at each site, and each session ran for 90 minutes. Completion of G4B was defined as attendance at a minimum of four sessions and completion of two catch-up sessions. Three closed groups were conducted. At treatment service 1, G4B was run as a mixed-gender group once per week. At treatment service 2, two groups were run (female-only and male-only) in order to comply with the residential treatment centre’s program.

Measures

Feasibility: Key components of G4B feasibility that were assessed included: demand (recruitment, attendance, and retention) and acceptability (45). Acceptability was captured through program adherence and participant satisfaction with G4B.
Program adherence was measured using a session checklist (‘yes/ no’ response format) that was developed based on the program manual and completed by the facilitator at the end of each session. The overall percentage of components completed across G4B was calculated. Participant satisfaction with the program was measured using six ‘yes/ no’ items. These items included statements such as “I found this program to be helpful in managing my emotions”. The percentage of participants that responded ‘yes’ to each of the items was calculated.

Demographics: Demographic variables related to participants’ gender, date of birth, ethnicity, relationship status, education, occupation and income.

Loneliness: Two measures were used to capture loneliness. The Roberts UCLA Loneliness Scale (RULS-8; 35) is a brief 8-item measure that is based on the widely used, psychometrically robust, UCLA Loneliness Scale (36). The RULS-8 consists of eight items that are rated on a 4-point scale (1 = ‘Never’, 4 = ‘Always’). Higher scores indicate greater loneliness. Cronbach’s alpha in the current sample was .78. Based on previous research indicating a need to capture social and emotional loneliness (see 7), the 6-item De Jong Gierveld Social and Emotional Loneliness Scale (37) was used. This scale is widely used and has demonstrated good reliability across other adult samples (α = .70 - .76). However, Cronbach’s alpha in the current sample was .45. It consists of three items indexing emotional loneliness (e.g. “I experience a general sense of emptiness”) and three tapping social loneliness (e.g. “I miss having people around me”). Response options are ‘no’, ‘more or less’, and ‘yes’. Scoring procedures outlined in De Jong Gierveld and Van Tilburg (37) were followed.
We'llbeing: Participants rated their wellbeing using the 7-item Short Warwick-Edinburgh Mental Well-Being Scale (SWEMWBS; 38, \( \alpha = .91 \) for current sample). An example of the items is, “I’ve been dealing with problems well”. Response options were 1 = ‘None of the time’ to 5 = ‘All of the time’. Scores are calculated by summing all items and converting the raw total scores to metric scores provided by the scale authors. Total scores range from 7 to 35, with higher scores indicating enhanced wellbeing.

Stress: The Perceived Stress Scale-4 (PSS-4; 39, \( \alpha = .78 \) for current sample) was used to assess the perception of one’s life as stressful. Participants respond using a 5-point scale (0 = ‘Never’, 4 = ‘Very often’). An example of the items is, “How often have you felt that things were going your way?”. Items 2 and 3 are reverse scored, and the total (range 0 - 16) is obtained by summing the 4 items.

Cognitions: Cognitive fusion refers to a tendency for cognition to influence and regulate behaviour (40). When an individual ‘fuses’ with their distressing or unhelpful thoughts, then that individual tends to act as if these thoughts are true and their behaviour becomes dominated, often negatively, by these thoughts. The Cognitive Fusion Questionnaire (CFQ-7; 40, \( \alpha = .92 \) for current sample) was used to assess fusion with distressing thoughts. An example item is “My thoughts cause me emotional distress or pain”. Participants were instructed to consider thoughts about relationships when completing this measure. Responses are made using a 7-point Likert scale (1 = ‘Never true’, 7 = ‘Always true’). Responses are summed and higher scores reflect greater fusion with distressing thoughts.

Multiple Group Membership (41, \( \alpha = .87 \) for current sample): This scale is an adaptation of the Exeter Identity Transition Scale (42) and comprises three items (“I
am a member of lots of different groups”, “I am active in lots of different groups”, and “I have friends in lots of different groups”) to index people’s sense of belonging to multiple groups. Responses were rated on a 5-point Likert scale (1 = ‘Strongly disagree’, 5 = ‘Strongly agree’) with the average used in analysis. Higher scores indicate stronger connectedness with multiple groups.

Substance use: Participants were asked to identify their primary substance of concern; length of problems with substances (number of years); frequency of substance use prior to entering treatment (1 = ‘Once a month’, 5 = ‘More than once a day’); duration of current abstinence (weeks); and whether the current treatment episode was their first.

Cravings were measured using an adapted version of the Desires for Alcohol Questionnaire-6 (DAQ-6; 43, α = .82 for current sample) which is a brief 6-item version of the original DAQ (44). Response options on the DAQ-6 range from 1 – ‘Strongly disagree’ to 7 – ‘Strongly agree’ and all items are summed to produce a total score. An example item is “I want to drink/ use drugs so much I can taste it”.

Analyses

All analyses were conducted using IBM SPSS Statistics 25. Data missing at baseline were excluded from analysis and there were no missing data at post-intervention. The study was not adequately powered to determine treatment efficacy, and as such efficacy testing was not undertaken. Rather, average scores on key outcome measures were observed and described at baseline and post-intervention (see Table 3). Chi-square and t-tests were used to compare demographics between completers and non-completers of G4B.
Running head: Reducing loneliness for people with SUD

Insert Table 3 about here.

Results

Feasibility

Demand (participant recruitment, attendance & retention). Figure 1 shows participant numbers at each stage of the study. The research team approached 134 people, of whom 74 expressed interest in the study and 69 completed a baseline assessment. A total of 41 participants commenced Groups for Belonging, with 20 completing the program. The average number of sessions attended was 3.7 (SD=1.76, range 1-6). Eight participants attended all 6 sessions, while eight attended 5 sessions, and six participants attended at least 4 sessions (as per the protocol requirement). Of the 21 who were lost to follow-up, n = 8 (20%) left the treatment service during the course of the study, and data from n = 5 (12.5%) were removed from the analysis due to the protocol requirement of attending a minimum of 4/6 + 2 catch-up sessions. Figure 1 lists all reasons for attrition at each stage of the study.

There were no differences at baseline between people who completed G4B (n = 20) and those who did not complete the program (n = 21) on demographic variables. However, differences at baseline between program completers and non-completers were found on measures of emotional loneliness, \(t(39) = 2.29, p < .05\), and overall loneliness using the DeJong Gierveld loneliness scale, \(t(39) = 2.10, p < .05\), indicating that those participants who did not complete the G4B program were less lonely.

Acceptability (protocol adherence). Program adherence was high, with the facilitator rating 99.3% overall adherence to the program protocol across the three G4B groups. One key component of G4B was not covered which involved review of
practice tasks. This was due to participants having not attended the previous week’s session, and having only completed the missed session catch-up on the day before the next scheduled G4B session. This meant that they had little opportunity to complete the relevant between-session practice tasks.

Acceptability (participant satisfaction). Overall satisfaction with the program was high, with 16 participants (88.9%) endorsing all satisfaction items. All participants (100%) agreed with the items “I was able to have a say in the group”, “I would recommend G4B to a friend”, “I am spending more time doing activities not involving substances”, and “I am making progress towards my recovery goals”. Ninety-five percent endorsed the item, “I enjoyed G4B” and 94% agreed, “G4B helped me manage my emotions”.

Discussion

The current study aimed to determine the feasibility of a 6-session group-based loneliness intervention (G4B) in residential substance use treatment services. Demand for the program appeared to be modest, while acceptability of the program was high. Participant satisfaction ratings indicated that participants enjoyed and benefitted from G4B and responded well to the specific intervention components. Importantly, participant satisfaction ratings showed that all participants indicated they could “have a say in the group”. Given G4B focuses on reducing barriers to isolation and loneliness, such as difficulty showing emotions and fear of negative evaluation, participants’ ability to share during G4B sessions was an important in-vivo group experience to promote modelling and the opportunity to practice emotional vulnerability in a safe environment.
In terms of recruitment, loneliness was not an entry criterion into the study and may have impacted on recruitment into the study. Based on research indicating a tendency for people to underreport loneliness (13), the research team anticipated that discussing G4B as an intervention to reduce loneliness may have prevented potential participants from enrolling in the study. Alternately, we chose to discuss G4B as aiming to promote connectedness to others and increase belonging. However, it is possible that without having explicitly discussed loneliness, potential participants may not have identified G4B as being relevant or helpful for them. How explicitly loneliness should be raised warrants further consideration for future researchers, in terms of the potential impact of language used throughout recruitment procedures. Related but distinct concepts such as “belonging” may not be sufficiently equivalent for potential participants to recognise the relevance of a particular group for their needs. In addition, motivational work may be a useful consideration for future iterations of the program in order to promote recruitment. This might include more time in orientation to the program to ensure participants understand the specific nature of the intervention, as well as the provision of information about how loneliness and social connectedness can impact on longer-term SUD treatment outcomes.

As the study revealed, there were certainly some challenges in retention of participants. Of note are changes made to program scheduling in the days preceding the first G4B session, for two of the three groups (male-only and female-only). This led to significant attrition between recruitment and commencement of the G4B sessions, where some participants (n = 17 lost) elected to join a new depression and anxiety treatment program that had been announced. Additionally, attrition for those who started G4B may be related to lower baseline levels of loneliness amongst those not completing the group. Those feeling less lonely may have questioned the
relevance of the program and subsequently dropped out. While attrition was an issue in this study, persons with low social support, and fears of social stigma, have been identified as being prone to research participation dropout (47). Our study sought to target a population reflecting all of these susceptibilities since loneliness is known to be a stigmatised experience (13). Future research that explores participant’s perceptions and experiences of the program through qualitative interviews would be of benefit in order to further understand how G4B influences recovery trajectories.

In addition, building loneliness interventions into mainstream programs is one way that stigma associated with this experience could be eliminated. Future research might also consider including partnering organisations in all stages of project planning, as this is likely to facilitate better understanding of what the intervention involves and help avoid any scheduling challenges such as that encountered in this study.

While efficacy testing was not undertaken, we observed mean scores on our secondary outcomes measures at pre-and post-intervention (see Table 3). While we are unable to draw conclusions about any changes in these variables, some interesting observations were made that may inform future studies that examine similar variables across residential settings. Scores on measures of cravings for substances and social loneliness appeared to be similar at pre- and post-intervention. A floor effect was observed for these variables, which was likely explained by study participants residing in abstinence-based treatment centres where they were living with their peers, and potentially less likely to experience a change in loneliness as a consequence. This seems somewhat at odds with the observed increase in mean scores of multiple group membership from pre-to post-intervention. This might be explained in part by G4B encouraging participants to consider groups they could pursue that reflected their values and interests that could be extended beyond the treatment
service. As part of G4B, participants were encouraged to reconnect with existing groups and develop new, recovery supportive, groups that could be sustained beyond the treatment service. For example, some participants pursued their interests to form fishing clubs and book clubs with others residing in the service and indicated that these types of groups were ones they could pursue further when they left the residential service. Future research might benefit from determining whether this change in group membership is due to an increase in recovery-oriented groups specifically.

Methodological limitations of our study include the small sample size and lack of longer-term follow-up. Our study was underpowered and as such efficacy testing was not undertaken, meaning we were unable to determine the effects of G4B on key outcomes. While observation of mean scores on outcomes measures provides some insight into possible effects of G4B, these findings should be interpreted with caution. Future research in this area should consider inclusion of a control condition and use of experimental methodology to ensure that any changes examined are not attributable to treatment as usual. While one study has found that those who had recently entered into residential treatment were lonelier than participants who had resided there longer (7), another study suggests that residing in a Therapeutic Community treatment setting might contribute to feelings of loneliness and social distancing (48). Future researchers should consider the timing of providing loneliness interventions for this population (i.e., early in treatment), and endeavour to conduct longer-term follow-up to examine the enduring impact of such interventions on loneliness, social networks and substance use outcomes. Longer-term follow-ups post-residential treatment may also help to understand whether aspects of G4B, such as the formation of new groups, are lasting and transferrable outside of residential
A full-scale effectiveness trial across residential services, as well as outpatient and aftercare settings would also be of benefit for future research.

An unexpected limitation of the current study was that the De Jong Gierveld Loneliness Scale yielded a low Cronbach’s alpha. Closer inspection of the scale’s alpha value revealed that the emotional loneliness subscale is likely to have affected the scale’s reliability in this sample. This may be due to the item/s related to ‘sense of emptiness’ and/or ‘feeling of rejection’, both of which are characteristic of borderline personality disorder (BPD). While the current study did not ask participants to report a mental health diagnosis, high rates of BPD have been reported across people accessing treatment for SUD (49), and it is possible that responses on the De Jong Gierveld Loneliness Scale may have been influenced by comorbidity. Future research would benefit from collecting information related to BPD across their sample and considering the impact of any potential mental health conditions on responses on this scale.

This study addresses important gaps in the literature, in terms of developing and piloting a loneliness intervention that is both empirically and theoretically driven. To the authors’ knowledge just one loneliness intervention has previously been trialed with people who experience substance dependence, and this study had no significant effect on loneliness (12). Findings of the current study are promising in that Groups for Belonging appears to be acceptable for this population, and may be feasible for delivery across residential treatment services.

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Disclosure of interest

FD and PK have previously received research grants from The Salvation Army.

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References

11. McCrady BS. To have but one true friend: implications for practice of research on alcohol use disorders and social network. Psychol Addict Behav. 2004;18(2):113-21.


Enrollment
Attended recruitment presentation
(n=134)

Baseline Assessment
Completed baseline assessment (n=69)

Groups for Belonging program
Commenced groups (n=41)

Completion
Completed program (n=20)

Follow-up Assessments
Completed follow-up assessment (n=19)

Interested in participating (n=74)
Declined to participate (n=60)
  • Not eligible (n=8)
  • Overlapping commitments (n=12)
  • No reason provided (n=31)
  • Not relevant to individual (n=7)
  • Not feeling well enough (n=2)

Withdraw prior to commencing program
(n=28)
  • Left service (n=9)
  • Overlapping commitments (n=17)
  • No reason provided (n=2)

Continued to attend G4B yet missed >2
sessions (n=5)
Withdraw (n=16)
  • Left service (n=7)
  • Overlapping commitments (n=5)
  • Found group emotionally challenging (n=2)
  • No reason provided (n=2)

Left service (n=1)
Table 1. Session summaries of Groups for Belonging

<table>
<thead>
<tr>
<th>Session</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
<td><em>Belonging, health, and wellbeing</em>: Welcome and overview. Understanding link between social relationships and health. Create map of social world. Identify connections that are supportive of recovery or risky to recovery. Personal practice tasks set.</td>
</tr>
<tr>
<td>Session 3</td>
<td><em>Valued relationships</em>: Highlighting difference between quantity and quality of relationships. Identify values surrounding relationships and existing connections that reflect one’s values. Mindfulness practice. Personal practice tasks set.</td>
</tr>
<tr>
<td>Session 4</td>
<td><em>Reconnecting with others</em>: Identification of prior groups that meet one’s needs and reflect their values. Goal setting and problem solving surrounding reconnecting. Overcoming barriers to connecting module: Dealing with knock-backs and stigma. Pathways into and out of addiction. Personal practice tasks set.</td>
</tr>
</tbody>
</table>
Table 2. Baseline characteristics of participants

<table>
<thead>
<tr>
<th>Participant characteristics</th>
<th>M (SD) or % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age^1</td>
<td>42.14 (12.63)</td>
</tr>
<tr>
<td>Gender^2</td>
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<tr>
<td>Male</td>
<td>62.5% (25)</td>
</tr>
<tr>
<td>Female</td>
<td>37.5% (15)</td>
</tr>
<tr>
<td>Identify as Aboriginal or Torres Strait Islander^3</td>
<td>5.1% (2)</td>
</tr>
<tr>
<td>Marital Status^4</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>52.5% (21)</td>
</tr>
<tr>
<td>In a relationship^5</td>
<td>15% (6)</td>
</tr>
<tr>
<td>Divorced/ Separated</td>
<td>30% (12)</td>
</tr>
<tr>
<td>Widowed</td>
<td>2.5% (1)</td>
</tr>
<tr>
<td>Primary Substance^6</td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>35.9% (14)</td>
</tr>
<tr>
<td>Methamphetamine/ Amphetamines</td>
<td>54% (21)</td>
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<tr>
<td>Cocaine</td>
<td>2.6% (1)</td>
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<tr>
<td>Heroin</td>
<td>5.1% (2)</td>
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<tr>
<td>Other^7</td>
<td>2.6% (1)</td>
</tr>
<tr>
<td>Substance use</td>
<td></td>
</tr>
<tr>
<td>Prior treatment episodes^8</td>
<td>75.6% (31)</td>
</tr>
<tr>
<td>Frequency of substance use^9</td>
<td></td>
</tr>
<tr>
<td>Once a month</td>
<td>2.4% (1)</td>
</tr>
<tr>
<td>More than once a month</td>
<td>4.9% (2)</td>
</tr>
<tr>
<td>At least once a week</td>
<td>9.8% (4)</td>
</tr>
<tr>
<td>Daily</td>
<td>12.2% (5)</td>
</tr>
<tr>
<td>More than daily</td>
<td>70.7% (29)</td>
</tr>
</tbody>
</table>
Running head: Reducing loneliness for people with SUD

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration of abstinence</td>
<td>16.18</td>
<td>(23.32)</td>
</tr>
<tr>
<td>Length of problems with substance use</td>
<td>17.77</td>
<td>(11.24)</td>
</tr>
<tr>
<td>Cravings</td>
<td>11.60</td>
<td>(6.42)</td>
</tr>
<tr>
<td>Group-based variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple Group Membership</td>
<td>7.56</td>
<td>(2.67)</td>
</tr>
<tr>
<td>Cognitive fusion</td>
<td>30.76</td>
<td>(8.89)</td>
</tr>
<tr>
<td>Mental health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td>8.17</td>
<td>(2.63)</td>
</tr>
<tr>
<td>Wellbeing</td>
<td>23.39</td>
<td>(4.69)</td>
</tr>
<tr>
<td>Loneliness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RULS-8</td>
<td>15.78</td>
<td>(1.97)</td>
</tr>
<tr>
<td>De-Jong Gierveld Total</td>
<td>4.66</td>
<td>(1.26)</td>
</tr>
<tr>
<td>De-Jong Gierveld Social</td>
<td>1.95</td>
<td>(1.22)</td>
</tr>
<tr>
<td>De-Jong Gierveld Emotional</td>
<td>2.71</td>
<td>(0.51)</td>
</tr>
</tbody>
</table>

Note. Total N=41 at baseline. 1^n=40 reported their age at baseline 2^n=40 reported their gender at baseline. 3^n=39 reported whether they were of Aboriginal or Torres Strait Islander descent. 4^n=40 reported their marital status. 5^In a relationship included people who were married, defacto, or in a relationship and not residing together. 6^n=39 identified their primary substance of concern. 7^Other included people who specified ‘synthetics’. 8^Refers to percentage of participants that reported having a prior treatment episode. 9^Frequency of substance use prior to entering into treatment. 10^n=40. Duration of abstinence is in weeks. 11^Length of problems with substance use measured in years. n=35 reported their length of problems with substances. 12^n=40. Desires for Alcohol Questionnaire (DAQ-6). 13^Cognitive Fusion Questionnaire (CFQ-7). 14^Perceived Stress Scale (PSS-4). 15^Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS).
Table 3. Pre- and post-intervention outcomes

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Pre-intervention (M, SD)</th>
<th>Post-intervention (M, SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cravings(^1)</td>
<td>12.32 (5.14)</td>
<td>10.00 (4.67)</td>
</tr>
<tr>
<td>Group-based variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple Group Membership</td>
<td>7.05 (2.63)</td>
<td>9.47 (2.01)</td>
</tr>
<tr>
<td>Cognitive Fusion(^2)</td>
<td>31.32 (7.65)</td>
<td>23.84 (8.65)</td>
</tr>
<tr>
<td>Mental health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress(^3)</td>
<td>8.42 (2.93)</td>
<td>5.89 (2.13)</td>
</tr>
<tr>
<td>Wellbeing(^4)</td>
<td>23.53 (4.69)</td>
<td>27.21 (3.77)</td>
</tr>
<tr>
<td>Loneliness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RULS-8</td>
<td>14.42 (2.76)</td>
<td>12.16 (3.89)</td>
</tr>
<tr>
<td>De-Jong Gierveld Total</td>
<td>4.58 (1.12)</td>
<td>3.32 (1.53)</td>
</tr>
<tr>
<td>De-Jong Gierveld Social</td>
<td>1.68 (1.11)</td>
<td>1.53 (1.07)</td>
</tr>
<tr>
<td>De-Jong Gierveld Emotional</td>
<td>2.89 (0.32)</td>
<td>1.79 (1.18)</td>
</tr>
</tbody>
</table>

Note. Average scores for pre- and post-intervention are only reported for \(n=19\) participants who completed the G4B program. \(^1\)Desires for Alcohol Questionnaire (DAQ-6). \(^2\)Cognitive Fusion Questionnaire (CFQ-7). \(^3\)Perceived Stress Scale (PSS-4). \(^4\)Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS).