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The feasibility of conducting longitudinal, quantitative research within and about a managed alcohol program for men in Scotland, UK

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ABSTRACT

Background: Managed alcohol programs (MAPs) are a harm reduction intervention for people experiencing homelessness and alcohol dependence. Research on MAPs can be challenging. Scotland's first MAP, a male-only service, opened in Glasgow in 2021. This paper aims to describe the feasibility of conducting longitudinal quantitative data collection including recruitment, retention, and questionnaire applicability.

Methods: We recruited 10 MAP residents and 10 matched controls to complete questionnaires at baseline, 3, 6, and 12 months on alcohol dependence, mental and physical health, quality of life, and social support.

Results: Recruitment was feasible for this population. Retention was more challenging, particularly in the control group (50% loss vs 25% in MAP), requiring intensive researcher input. Problems with the standardized questionnaires included scoring, literal interpretation of time-referenced questions, and relevance. Some controls were a poor match to MAP in terms of treatment goals.

Conclusion: This paper demonstrates that research on MAPs is needed but can be methodologically complex. The small size of MAP facilities, high attrition, difficulty in appropriate comparison groups, and limits of measures due to retention difficulties are a challenge for fully powered studies. Future research should prioritize mixed-methods designs, explore mechanisms to recruit and retain, and develop context-sensitive outcome measurement tools.

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Introduction

Those experiencing homelessness are more vulnerable to alcohol and related harms, and are more likely to face increased stigma, and health, social, and structural inequalities compared to people who are housed (Fountain et al., 2003; McVicar et al., 2015; Pauly et al., 2018). Alcohol use disorders (AUDs) are characterized by harmful or dependent alcohol use and related harm (National Institute on Alcohol Abuse and Alcoholism, 2021; National Institute for Health and Care Excellence, 2025). Alcohol dependence, at the severe end of AUDs, is defined as 'craving, tolerance, a preoccupation with alcohol and continued drinking in spite of harmful consequences' (National Institute for Health and Care Excellence, 2025, Section Alcohol-use disorder (AUD)). 'Alcohol dependence' is the terminology currently used in Scotland and throughout this research, which would equate to the DSM-5 sub-classification of 'severe alcohol use disorder' (National Institute on Alcohol Abuse and Alcoholism, 2021). There are significant interconnections between experiencing both homelessness and alcohol use (Carver et al., 2020): alcohol use can be a response to trauma and a way of coping with difficult life circumstances such as poverty, lack of employment, and family conflict (Pauly et al., 2021). People who experience both homelessness and alcohol dependence are vulnerable to a range of harms such as: alcohol poisoning and seizures; chronic health conditions; premature death; poor mental health; assault and injury; and social exclusion (Grazioli et al., 2015; Luchenski et al., 2018; Novotna et al., 2023). The rate of alcohol dependence among adults experiencing homelessness in high income countries is around 38%, approximately 10 times higher than for the general population (Fazel et al., 2014).

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Existing treatment options may be inadequate for those experiencing long-term alcohol dependence and homelessness (Carver et al., 2020). For example, they can be difficult for some individuals to comply with and may not effectively address underlying issues such as poverty and trauma (Carver et al., 2020). Abstinence-based treatments are also less likely to be effective for those who are unwilling, or unable, to stop drinking (Carver et al., 2020). Instead, alcohol harm reduction approaches aim to reduce harms associated with alcohol use, without the need for individuals to stop drinking (Ivsins et al., 2019; Witkiewitz & Marlatt, 2006). The UK clinical guidelines for alcohol treatment, published in 2025, specifically include the need for harm reduction interventions (UK Government, 2025). Harm reduction interventions may be more appropriate where existing treatment options are inadequate or ineffective.

Managed alcohol programs (MAPs) are a harm reduction approach specifically tailored to those experiencing homelessness and alcohol dependence. MAPs provide alcohol throughout the day in managed doses, alongside other physical and mental health support, often in residential settings with supports for welfare and social connection (Pauly et al., 2018). Since the 1990s, MAPs have been growing in number in Canada and can now be found across the world (Smith-Bernardin et al., 2022), including in the United States (US) (Brocious et al., 2021; Mehtani et al., 2021), Australia (Thompson et al., 2025), the United Kingdom (UK) (McLachlan, 2023), and the Republic of Ireland (Depaul Ireland, 2010). A recent realist review described 11 program theories to understand how MAPs work, for whom, and in which contexts (Carver et al., 2026). The review highlights that MAPs should be provided for those experiencing alcohol dependence and homelessness in contexts where other services are unsuitable or expect abstinence.

Evidence from Canadian studies, combining data from multiple programs, shows positive impacts of MAPs including reducing alcohol consumption, non-beverage alcohol use, legal and social harms, withdrawal seizures, use of ambulances and emergency departments, and contact with the police; improvements in relationships, housing retention, use of routine healthcare; and a move away from survival drinking to more stabilized intake (Davis et al., 2025; Evans et al., 2015; Goulet-Stock, 2021; Pauly et al., 2016, 2019, 2021; Stockwell et al., 2018, 2021; Vallance et al., 2016). One study, using a longitudinal quasi-experimental design involving 205 MAP participants and 128 controls (Zhao et al., 2022), found reduced morbidity and mortality among MAP participants compared to matched controls. Collectively, these studies have demonstrated the ability of MAPs to improve the health and wellbeing of participants.

However, conducting larger-scale research on the effectiveness of MAPs can be challenging when there are limited services and number of program participants in a region or country. While the Canadian evidence cited above is based on pooling data from multiple programs, this is much more challenging to conduct in the UK given the limited number of MAPs in operation. Although the UK clinical guidelines for alcohol treatment mention MAPs, specific guidance on their operation is not included therein. This is due to policy makers' and clinicians' concerns related to a lack of 'high-quality' evidence, the small number of MAPs currently operating, and a perceived deficit in clinical expertise (UK Government, 2025). Further research on MAPs within the UK is therefore recommended (UK Government, 2025).

Additionally, there is currently a lack of guidance regarding the best ways in which to conduct research on and within MAPs, given the challenges of conducting randomized controlled trials (RCTs) in this field (Muckle et al., 2012; Podymow et al., 2006). This paper aims to address this gap through consideration of the challenges experienced in this study. Our team conducted a two-year evaluation of Scotland's first MAP, which was opened in the city of Glasgow in 2021. We do not present any primary data in this paper; instead, we reflect on experiences and the feasibility of conducting longitudinal quantitative data collection in a single program, both with the people who were using the service and matched controls, and overall recruitment and retention. We believe this is of value to the wider research community, to further the understanding of how to conduct research with this group, and to inform future research, including large scale multi-site studies.

Methods

Background to the first Scottish MAP

Glasgow is the largest city in Scotland, with a population of around 650,000 (National Records of Scotland, 2025b). The local authority (council area) of Glasgow City has the highest rate of alcohol-specific deaths in Scotland, at an average 32.9 per 100,000 people between 2020 and 2024 (Scotland as a whole is 21.9 per 100,000) (National Records of Scotland, 2025a), and the highest levels of homelessness, with 223

households per 10,000 households assessed as homeless (Scotland as a whole is 133 per 10,000) (Scottish Government, 2025). Glasgow has a range of services to support people experiencing homelessness, including drop-in services, hostels, and supported accommodation, either run by the local council or third sector (not-for-profit) providers. There are also a range of detoxification services delivered by both residential and community-based providers. In NHS Greater Glasgow and Clyde, 93% of people can access community-based detoxification provision within three weeks (Public Health Scotland, 2024), however, the length of time waiting for residential detoxification can be much longer.

The Glasgow MAP is the first in Scotland and was opened in 2021 by Simon Community Scotland, a third sector organization who are the largest provider of homelessness services in Scotland (Simon Community Scotland, 2026). It is a male-only service, accommodating up to 10 men in en-suite bedrooms with shared lounge, kitchen, garden, and laundry. There are no restrictions on when the residents can enter and leave the building. The MAP arranges regular outings, gym and swimming visits, quiz nights, film evenings, a walking group, and gardening. As no meals are provided except for a communal Sunday lunch, residents do their own shopping and cooking, supported by staff. The main goal of the MAP is to reduce alcohol-related harms and help engagement with services, and there is no defined time limit that a participant can stay in the MAP (Managed Alcohol Programme, 2026)

Residents' alcohol is managed daily by staff; they are provided with regular doses of alcohol between 8am and 9.30 pm according to their own individual alcohol management plan. Each resident purchases their alcoholic drink of choice, and there are no restrictions on this: spirits are allowed although residents are encouraged toward 'long' or 'tall' drinks (drinks with a high volume of liquid relative to alcohol content) such as beer, cider, or spirits with mixers. These drinks are then stored in a locked office for distribution throughout the day. Residents must return to their room to drink their alcohol (known as a 'pour'), with no drinking allowed in communal areas. Staff do not manage residents' money or tobacco.

We carried out an independent evaluation of the MAP, with data collection taking place between January 2024 and April 2025. The evaluation comprised four work packages (WPs) involving: a realist review (WP1); the collection of quantitative questionnaire data from MAP residents and locally matched controls, and routine MAP data for MAP residents (WP2); the collection of qualitative interview data and participatory photography with the MAP residents (WP3); and qualitative interview data collection with staff, families of MAP residents, controls, and local stakeholders (WP4). We used Learning Alliance methodology throughout the study (Moreno-Leguizamon et al., 2015), bringing together a group of 15 relevant stakeholders including those with lived/living experience of alcohol dependence and homelessness, healthcare professionals, policy makers, Simon Community Scotland staff, and those delivering MAPs or similar services in England and Canada. Learning alliances are a form of patient and public engagement and knowledge production which bring together a wide range of individuals to address inequalities and innovation in policy and practice (Moreno-Leguizamon et al., 2015). Essentially, they acted as an advisory group for the study. In this paper, we report on the feasibility of recruitment and retention and participant experiences of completing the various outcome measures used within WP2, which involved a range of outcome measures with the MAP residents and locally matched controls. We also draw on relevant experiences from the qualitative work conducted in WP4 with the MAP participants and control group.

Identification of participants

All MAP residents who were in, or entered, the MAP service during our recruitment period (January–December 2024) were eligible to take part. As part of the evaluation the MAP service provided anonymized basic information (age, ethnicity, and level of alcohol consumption) for all the men in the service, which was then used to identify locally matched controls. Previous studies struggled to identify control participants across Scotland, who exactly matched the eligibility criteria of the MAP (Parkes et al., 2021, 2022). For this evaluation, we sought to find services that fulfilled the following criteria: (1) willingness to engage in the research and support recruitment and data collection; (2) operated as a homelessness service; (3) worked with enough men who would be potentially eligible (in terms of age, ethnicity, and alcohol use); (4) was not a drugs only service (participants could use illicit drugs but alcohol dependence must be their primary concern to make them applicable controls for MAP participants); and (5) was a third sector (not-for-profit) service in Glasgow. Two services were identified: one was a supported accommodation service and the other a crisis

center/detoxification service. We decided to recruit five control participants from each service and the study team worked with staff in the two services to identify men who met the MAP eligibility criteria (experiencing alcohol dependence, homelessness, and other related problems) and were similar to the MAP residents in terms of age, ethnicity, and a history of high alcohol use. Keeping our recruitment criteria broad allowed the team to assess the feasibility of approaching participants from a wider sample.

Recruitment of participants

We aimed to recruit 10 MAP residents and 10 control participants. As the MAP is a 10-bed service this limited the number of potential participants who could participate in the study. MAP residents were recruited directly from the service. At the start of the study a researcher gave a talk about the study at the weekly meeting for all residents and spoke to residents individually and provided them with written information about the study. Participants consented individually for quantitative data collection and qualitative interviews. It was made clear that they could complete one element without the other. MAP participants were asked to consent to the study team accessing anonymized data held by the service from when they entered the MAP until May 2025. These data included demographics, drug and alcohol use, hospital admissions, criminal justice contact, and interactions with family/friends.

When potential control participants were identified, staff in the services provided information about the study and, if they were interested, they met with EK to discuss involvement and were asked to sign a consent form. Control participants were given the opportunity to take part in an optional qualitative interview. For both groups we implemented a 48-hour wait period between having the study explained to them and signing the consent form to ensure that participants had time to reflect on the study information, to ask questions, and did not feel pressured to participate.

Data collection

A range of standardized quantitative scales and other relevant measures were completed with participants at four timepoints: baseline, three, six, and 12 months later. At each data collection timepoint participants were asked about: demographics (age, ethnicity, housing status); alcohol consumption (frequency, amounts, non-beverage alcohol use); drug use (frequency, types, amounts); alcohol dependence (AUDIT and SADQ; (Babor et al., 2001; Stockwell et al., 1979)); mental health (PHQ-9 and GAD-7; (Kroenke et al., 2001; Spitzer et al., 2006)); quality of life (ICECAP-A; (Al-Janabi et al., 2012)); health status (EQ-5D-3L; (EuroQol Group, 1990)); and social support (adapted IPDA; (Zywiak et al., 2009)). Table 1 provides more information about these standardized scales. Participants also answered questions about their hypothetical agreement to future data linkage involving third sector services, healthcare, and criminal justice. This was included to understand their willingness for data linkage to inform future studies, given that little is known about the willingness of this client group to do so.

Data were collected on paper forms in a quiet location, such as a meeting room in the service, an area of the local library, or semi-private area in a local fast-food restaurant, depending on participant preferences. Participants were told that they could have a member of staff with them if they wished. On a couple of occasions, a staff member waited in the next room to ensure researcher safety as the participant preferred to meet in their own flat within the service. Participants received a £30 shopping voucher at completion of each quantitative questionnaire session or qualitative interview to acknowledge their time in supporting the study.

Throughout the data collection period the team, and particularly EK, spent a large amount of time in the services, speaking to staff and participants, attending social functions within the MAP (e.g. regular quiz nights and summer BBQs), and sending occasional check-in text messages to control participants. This allowed the researchers to build more trusting relationships with participants and staff. A research diary was also kept by EK, which detailed, for example, each visit to services, why participants may not have been available, and observations about how the MAP and other services operated. Diary entries were analyzed using inductive reflexive thematic analysis (Braun & Clarke, 2022). Coding was supported by NVivo 14 software (Lumivero, 2025) and codes were refined through discussion between [EK, JG, and HC].

Ethical approval was granted by University of Stirling's NHS, Invasive or Clinical Research Ethics Committee (NICR 2024 14952); Simon Community Scotland; Turning Point Scotland; and the Ethics Subgroup of the Research Coordinating Council of The Salvation Army.

Table 1. Details of scales used to compare alcohol and other measures in participants using MAPs and controls.

Scales	Description of scales	Validation and previous use in this population
Demographics and alcohol consumption	Questions about age; ethnicity; current living situation; years consuming alcohol; and alcohol consumption (frequency of use, type of alcohol drunk, amount per day, use of non-beverage alcohol)	Developed for this study based on previous research in the field
Drug use	Questions about frequency of use of illicit drugs; types of drugs used; and amount used per day	Developed for this study based on previous research in the field
Alcohol dependence—AUDIT	10-item standardized alcohol harm screening tool, with scores of 16–19 indicating higher risk and 20 or more indicating possible dependence	AUDIT is one of the most widely used and tested scales for identifying hazardous and harmful patterns of drinking. Developed by the World Health Organization, it has undergone extensive validation and testing in different countries and samples (Allen et al., 1997; Babor et al., 2001). Previous studies have used AUDIT for people experiencing both homelessness and alcohol dependence (for example Parkes et al., 2021; Wells et al., 2025)
Alcohol dependence—SADQ	20-item standardized alcohol dependence tool, with scores of 16–30 indicating moderate dependence and 31 or more indicating severe dependence	Studies of populations experiencing both homelessness and alcohol dependence primarily use the AUDIT tool, but the SADQ has been used in housed populations experiencing alcohol dependence (for example Owens et al., 2011). The SADQ was originally developed and validated with people experiencing alcohol dependence (Stockwell et al., 1983), although there is no evidence of formal validation in populations experiencing homelessness. There is significant correlation between the AUDIT and SADQ scales (Pradeep et al., 2015)
Mental health—PHQ-9	9-item standardized measure of depression. Scores of 10–14 indicate moderate depression and 15–19 indicate moderately severe depression	PHQ-9 has been used in a number of similar populations experiencing problem substance use (Parkes et al., 2022), homelessness (Wang et al., 2020) and hazardous alcohol use (Hirschtritt et al., 2018). PHQ-9 has been validated in a variety of populations (Cheung, 2025)
Mental health—GAD-7	7-item standardized measure of anxiety. Scores of 10 or more indicate moderate anxiety, and 15 or more indicate severe anxiety	GAD 7 has been used in similar populations to the PHQ-9 for people experiencing homelessness and substance use problems (Molander et al., 2023). GAD-7 and PHQ-9 have been validated together in a population experiencing substance use, but not necessarily homelessness (Punia et al., 2025)
Quality of life—ICECAP-A	5-item standardized measure of capabilities that are important for wellbeing. A higher capability value represents higher self-efficacy/wellbeing	Has been used for people experiencing opioid dependence (Goranitis et al., 2016) and substance dependence (Parkes et al., 2022) but little evidence of use in populations experiencing homelessness, or a combination of homelessness and alcohol dependence. It has been validated in other populations (Xiong et al., 2021)
Health status—EQ-5D-3L	5-item standardized measure of health-related quality of life, plus score of 0–100 of current health status (VAS)	EQ-5D-3L has been used in previous studies with populations experiencing alcohol dependence (Günther et al., 2007) and homelessness (Lewer et al., 2019), although not specifically in people experiencing both. There is some validation in people experiencing alcohol dependence (Günther et al., 2008)
Social support—IPDA (adapted)	Tool used to gather information about individual's social networks, focusing on relationships affecting their substance use. We adapted the full IPDA by asking only the additional alcohol questions and not the ones related to illicit drug use	Adapted for this study to focus on alcohol dependence rather than illicit drug use

Results

In presenting the results below we do not report on participant outcomes due to the low retention rate. Instead, we reflect on the feasibility of recruitment, retention, and data collection, including the applicability of these questionnaires for our participants.

Feasibility of recruitment

Ten MAP residents and 10 controls were recruited within our timeframe, which indicates that recruitment is feasible for this population. The majority of MAP participants and all control participants were recruited within the first two months of data collection. Due to empty beds in the service at the start of data collection, two MAP participants were recruited six months and nine months after the other MAP participants, which is something that would need to be factored into future studies, where relevant. Participant recruitment and retention are shown in Figure 1.

Recruitment of MAP participants

All MAP participants were living in the MAP at the time of recruitment. Recruitment into the study was independent of the length of time an individual had lived in the MAP. This MAP has a 10-bed capacity. Because two beds at the MAP were empty when baseline data collection started, two residents were recruited later and therefore completed baseline data collection seven and 10 months behind the initial cohort. While we were aware that these last two participants would not complete the full 12 months of

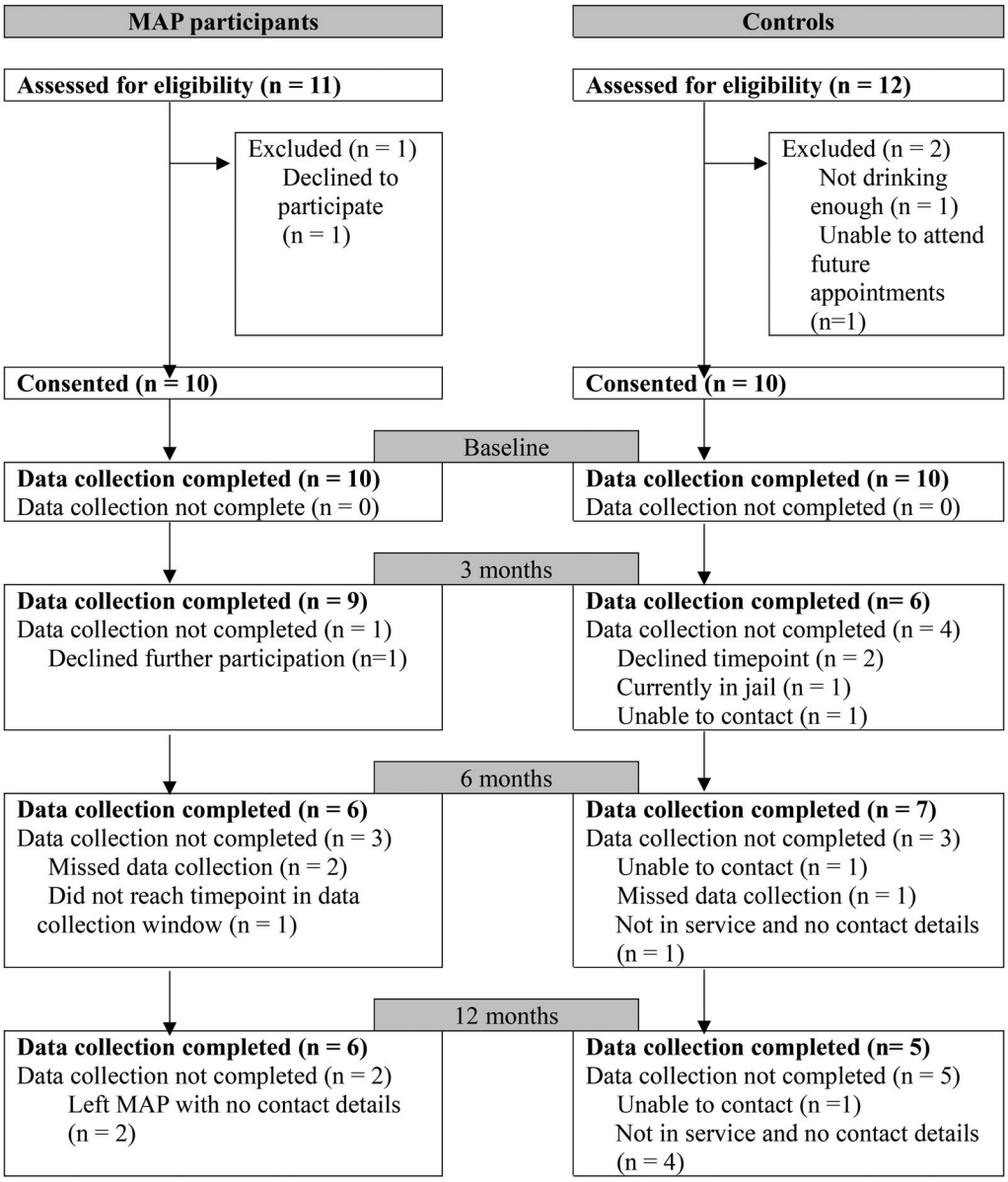


Figure 1. Flow diagram of participant retention at each timepoint.

data collection (because they entered the MAP too far into our fixed data collection window) it was important, for feasibility reasons, to collect as much data as possible. There is no time limit on length of stay in the MAP, so the population was relatively stable, and people do not readily permanently leave the service. Stays can range from a few months to many years. Eleven residents in total were either resident or joined the MAP during the 11-month recruitment period. Consent was not obtained for one resident, who did not wish to take part.

Recruitment of control participants

The first service was a large, supported accommodation service for people experiencing homelessness, comprised of individual flats for men only. A member of staff identified and then approached potential participants. Those willing to participate met with the study researcher. This recruitment method relied on members of staff being familiar with the residents and their levels of alcohol use, and willing to support the study. Some residents were not approached as staff considered their mental health to be too poor for them to participate. Two potential participants declined to meet with the researcher as they stated that they did not want to think about their past or current drinking.

The second service operated as a crisis center but also had facilities for residential detoxification. Staff identified several suitable individuals and approached

them to see if they would speak to the study researcher. One participant lived in the community and came to the center to meet with the researcher and brought along a friend who also met the recruitment criteria. Two had recently entered residential detox and were willing to meet the researcher in the service. One met the researcher in a central location. One person was deemed unsuitable by service staff due to sporadic recall of alcohol intake, and another met with the researcher but was not eligible due to not drinking enough alcohol to meet the criteria of experiencing AUD. One further person met with the researcher but stated that they did not make arrangements or appointments, so would not return for consent or to do future questionnaires.

Feasibility of retention

Retention of participants at different timepoints is shown in Table 2. Some participants missed an earlier timepoint but then took part in later timepoints. One MAP participant did not reach the 6-month follow-up in the study time period, and two MAP participants did not reach 12-month follow-up.

Retention of MAP participants

At 12 months we had lost contact with 2/8 MAP participants recruited at the start of the study period (25%). Two men left the MAP: one to another supported accommodation service and one to a hostel, and we could not follow up with them due to these participants changing phone numbers after leaving the MAP and moving between different accommodation providers. Another man who was recruited later (reaching the 6-month timepoint but not the 12-month timepoint during the data collection period) left the MAP to return to his own home. He declined to complete any further questionnaires but was happy to be interviewed. Seven participants stayed in the MAP for the duration of the study period. While the researcher spent a lot of time in the service and had focused on building a good trusting rapport with the residents, it nevertheless took multiple attempts for data collection with each participant due to poor mental or physical health on the day or not wanting to complete data collection on that occasion.

Table 2. Total number of participants completing data collection at each time point.

Participants taking part in data collection	Baseline	3-month follow up	6-month follow up[a]	12-month follow up[a]
MAP	10	9	6 ($n=9$)	6 ($n=8$)
Controls	10	5	7	5

[a]Due to being recruited later in the study period, one MAP participant did not reach the 6-month follow-up, and two MAP participants did not reach the 12-month follow-up, resulting in a reduced *n* at these data collection points.

Retention of control participants

At 12 months we had lost contact with 5/10 control participants (50%). Control participants from the supported accommodation service were followed up in-service and, in these cases, staff were vital in arranging rooms and locating participants. It was more difficult to engage participants recruited from the crisis/detoxification service once they had left and returned to their usual accommodation: three participants returned to their own homes; two remained engaged and were willing to meet the researcher at a central location, and the third declined the 3-month data collection and did not respond to future contacts (via text/call or email). We located the other two participants at a different supported accommodation service and staff there were also willing to help the study researcher by finding a suitable room to meet participants in and with locating participants.

The levels of data collection we obtained for the control participants were largely due to a substantial investment in researcher time. Participants were often not present at the service, or were unwell, intoxicated, asleep, in custody, or simply did not want to engage on that occasion. This involved many trips to different services and waiting in services for the potential of one or two participants. Because one of the supported accommodation services provided meals, the researcher often attended the service at mealtimes to maximize the likelihood of meeting with participants. This high level of engagement also served as a form of observation, allowing for more detailed research diaries which helped to situate the participants and services. Although this takes time, it is a valuable addition to this type of research.

If a participant left the supported accommodation service, they were lost to follow-up due to a lack of ongoing contact details. Although we asked for these at each visit, this group of individuals change mobile phone numbers regularly and are often without phone credit or phone access due to financial pressures, time in residential detoxification services, and/or prison. As we could never assume that a participant had phone credit, we would often have to tell them where and when to meet us and hope that they attended. To retain participants, the lead researcher (EK) also searched the streets around the central Glasgow area and spoke to outreach teams, as some men were known to spend time in this area.

Another consideration of relevance to follow-up was that local city changes to the Glasgow bus system of electronic tickets meant it was extremely difficult to get a bus ticket for somebody in advance. So, although we could provide reimbursement or buy the participant a meal, it was difficult to get participants to meet with the researcher in the first place if that was their preferred option.

Reflections on the consent process

All participants were asked to sign a formal consent form before the start of data collection. Data from our research diary showed that participants had a good reading standard, although we also went through the information sheets and consent forms verbally with each person. A few had sight problems so we re-printed information sheets and consent forms in larger font, as well as going through them verbally with all participants.

Our protocol stated the need for a 48-hour period between being given the participant information sheet and having the study explained and then signing the consent form. This was not problematic for MAP participants but for control participants we did lose one potential participant due to the requirement for appointments. This 48-hour window also resulted in the two participants in residential detoxification being some days into their detoxification at the time that the first scales were completed.

Consent was ongoing throughout the data collection period. We experienced situations, mainly with control participants, where we made the decision that the participant was too intoxicated to understand the consent process and complete the scales on that occasion and that we would need to return later. Eight MAP participants consented to take part in a qualitative interview and six subsequently took part. The two other participants were asked at multiple points if they would like to do the interview but always declined, citing physical or mental health reasons. Five control participants consented and took part in a qualitative interview.

MAP participants were also asked to consent for data held by Simon Community Scotland to be accessed by the research team as part of the evaluation. All those who consented to take part in the study also consented to have their data accessed (n = 10). Whilst there was a lot of information provided in detailed staff notes and records of pours, these records were not that useful from a research perspective. This was mainly due to a lack of standardization across records, for example around hospital visits vs. hospital admissions or descriptions of health concerns, which were unable to be coded in a standardized way to enable comparison. Pour records were detailed but did not consider alcohol consumed outside the service and did not record if a participant had received no alcohol or was not in the service that day (e.g. if they were in hospital), which led to skewed averages.

Data linkage

Participants were asked if they would, hypothetically, consent to a study that used data linkage between NHS, criminal justice system, local authority housing, and third sector organizations. Nine MAP and nine control participants were asked. One MAP participant was not asked as they struggled with harder to grasp/theoretical concepts and one control participant was missed due to researcher error. Seven MAP participants were in favor of consenting to data linkage, and two said they would decline. Two control participants were in favor, six said they would decline, and one was unsure. The participant who was unsure stated that he felt that the idea of 'a big file' being collated about him was quite overwhelming. Those who said they would decline consent felt that data linkage would be too in-depth and that they would like to maintain privacy. All the control participants cited any involvement with police data as the primary reason. Although we explained this would be for research purposes it was mainly that participants did not trust the police and felt the data held in police records would not be truthful.

Use of incentives

Participants were given a £30 Love2Shop voucher for each completed data collection session or interview. We specifically chose this voucher as it can be spent in a variety of shops and does not require a mobile phone or to be connected to an app. MAP participants spoke about using their voucher to buy clothes or stocking up their freezer from one of the food shops available. The other accommodation services were nearer to other brands of supermarkets that were not covered by the Love2Shop voucher and vouchers for these local supermarkets may have been easier for participants to access. Some university ethics committees do not approve of the use of supermarket vouchers or cash due to the belief that participants may use these to purchase alcohol. Since we started the study, new guidance has been published which re-iterates research incentives should not discriminate against people who use substances. This echoes longer-standing guidance

on paying participants in cash as experts through experience (International HIV/AIDS Alliance, 2015; Neale et al., 2017; Southwell et al., 2022).

Relevance of the control group

Control participants were purposely sampled to match the MAP residents based on age, sex, ethnicity, and years of drinking at baseline. Both groups were 100% male and 100% white (including White Scottish, White British and White Irish). Ages at baseline were well-matched between the MAP and controls, with means of 46 (range 26–61 years) and 43 years (range 28–69 years), respectively. Years of drinking at baseline were also well-matched between MAP participants and controls, with means of 28 (range 14–45 years) and 22 years (range 1.5–43 years), respectively.

Our control group were successfully recruited and well-matched to the MAP residents on our target variables, however, mean levels of alcohol consumption at baseline were higher in controls than in MAP participants (MAP 15.6 ± 9.8 units/day; Controls 33.1 ± 28.8 units/day). Qualitative findings also suggest that many of our control group would not be eligible for the MAP as they may not have wanted their alcohol independently managed. This was due to a variety of factors: being happy with their current level of drinking; aiming for complete abstinence; enjoying the social side of drinking and being unwilling to enter a program where this was not allowed; or having a lifestyle which may have also included heavy drug use. Those recruited from the detoxification center were likely to be more interested in obtaining abstinence over the course of the study.

One member of the control group was interested in exploring a move to the MAP. In future studies, it may be important to make provision for what happens regarding data collection if a control participant subsequently becomes a MAP resident. For example, other researchers have compared time on and off the MAP to account for potential moves between the MAP and non-MAP services (Vallance et al., 2016).

Feasibility of questionnaires

Our participants struggled to answer some of the standardized scales, despite being validated with similar populations (see Table 1). General challenges with the quantitative data collection included participants feeling that they needed to give the 'correct' answers, which required some reassurance from the researcher that we were not looking for particular answers. Such response bias is an ongoing problem with questionnaires gathering self-reported data (Grimmond et al., 2025). Some struggled to answer more complex questions, such as how they would describe their health on a scale of 1–100, or to work out if something happened more or less than half the days in the previous week.

Many of our participants interpreted questions literally. For example, nine of the 20 SADQ questions refer to 'in the morning' but many of our participants commented they did not wake up until the afternoon; we had to reframe as the period after they woke up. This also affects the AUDIT question 'How often do you need an alcohol drink in the morning to get yourself going?'; without researcher involvement many would have answered 'never'. Whilst the AUDIT has been shown to have good reliability, this demonstrates that ecological validity could be low for this population and setting (Andrade, 2018). Finally, most participants did not know what 'at the edge of despair' meant for SADQ question 7, so the researcher talked through the meaning of this phrase with the participants to ensure understanding. The researcher described 'despair' as feeling absolutely hopeless or extremely unhappy.

Questions about alcohol consumption per day were preferred by participants to 'on a single occasion' (AUDIT) as this caused some confusion over whether it was in one sitting or in the course of a day. The SADQ asks participants to remember a period of heavy drinking and we discovered that this was actually easier to complete with the control participants who might drink heavily and then be abstinent for periods and more difficult for those who had a long-term history of daily heavy, but stable, drinking (as may be the case for MAP participants). One participant became distressed when asked SADQ questions 15 and 16, which asks how often the participant drank more than one or two bottles of spirits a day, as he believed the question stemmed from people in a previous hostel telling the researchers about his alcohol intake. We reassured him it was a standardized scale and not at all personal.

Some participants struggled to answer the SADQ section on imagining how you would feel drinking heavily after not drinking for two weeks (questions 17–20, for a maximum score of 12 points). Participants commented this was difficult to imagine or that they had never been abstinent from alcohol for long enough to know how they would feel. This was easier for control participants to recall, who were more likely to have had some time away from drinking in more recent months, even if it was not the full two weeks. We did try to encourage the participants to imagine the scenario or to have a go at answering, but some simply could not give any answer. The overall scoring of these

scales is thus likely to be much lower than reality due to the volume of missing responses.

We concluded that the PHQ-9 and GAD-7 scales may not fully capture the mental health status of our participant population. For example, some reported extremely low scores (indicating good mental health), despite these participants requiring multiple attempts at engagement and with staff that knew them well reporting ongoing and long-standing mental health struggles. Because participants appeared to understand the questions, the reason for this variation in scores is unclear. For this study, we were interested only in data from the participants' self-ratings and did not collect any data from staff. Having a researcher embedded in the service meant that we were in the unusual position of hearing reports from both participants and service staff regarding participants' ongoing health and felt this was an interesting observation as to the validity of our questionnaires.

Participants were also unsure how to answer the concentration question which refers to 'reading the newspaper' (PHQ-9, Q7) as they do not generally buy or read newspapers. Some participants also reported poor appetite, which is something that can be a symptom of alcohol dependence rather than indicating mental health problems specifically. Other studies report a correspondence between the scores for the PHQ-9 and GAD-7 scores (Newman, 2022), e.g. that an individual with a high PHQ-9 score would be expected to have a high GAD-7 score, and vice versa. In our study this pattern occurred for about half the participants; for others, we saw a wide variation with individuals with very high PHQ-9 scores and low GAD-7 scores, or vice versa. Individuals also reported widely differing scores over the course of the study.

Finally, the adapted IPDA scale was a useful tool to capture social networks but posed some problems for our participant group. When administering the scale, we explained alcohol treatment as 'wanting to manage or cut down your alcohol use', as many MAP residents did not consider the MAP to be 'alcohol treatment' and assumed this referred only to abstinence-based approaches. The scale focuses on 'people you have spent the most time with in the past 3 months and are likely to see in the next 2 weeks'. The lowest option for contact available for respondents to choose is 'once in the past 3 months'. This requirement to have had contact in the last three months, and the questions about whether their contact person drank alcohol, caused confusion where close family members were currently in prison. It is also possible that participants viewed 'support' as referring to professional support, which may be why we did not capture many friendships, despite explaining it was anyone they had been in contact with.

Our findings have demonstrated that it was possible to recruit 10 MAP participants and 10 controls over an 11-month period, but that retention of the control group was understandably much more difficult. Our control group may also not have been eligible for the MAP due to not having motivation to enter a harm reduction service or a clear understanding of what a MAP would involve, given the novelty of the service. Importantly, substantial researcher time was required for data collection with both groups. Overall, participants in both groups struggled to understand some of the standardized scales and completing these required a lot of researcher support. Many of these tools have been previously used and validated in the same or similar populations (see Table 1), with AUDIT, SADQ and IPDA being specifically developed around substance use.

Discussion

Our study has shown that it is feasible to recruit 10 MAP participants and 10 controls. Whilst this may be a modest sample size it is reflective of the sample available in a small service and we achieved 100% recruitment rate for MAP residents. We also recruited the majority of participants within a two-month period. Empty beds at the MAP service were the main reason why it took additional months to recruit the final two MAP residents. Overall, both MAP and control participants presented with high levels of alcohol dependence and long histories of alcohol use at baseline. This is consistent with previous research highlighting the complex needs of this population (Fountain et al., 2003; McVicar et al., 2015; Pauly et al., 2018).

Our study also highlighted several challenges for recruitment and retention in studies of MAPs, including the small service size; the requirement for high researcher input; the applicability of the control population; challenges with retention; problems with the appropriateness of standardized questionnaires; limitations in administrative data and willingness for data linkage; and the ethical implications of RCTs of MAPs. We discuss these in turn and reflect on potential mitigations. A summary of findings and mitigations is shown in Table 3.

Small size of MAP services

The small size and low turnover rate of many MAPs represents a challenge to recruitment. The maximum size of the Scottish MAP (10 beds), with no defined

Table 3. Overview of study findings and potential mitigation strategies for consideration in future work.

Findings	Considerations for future work
It was feasible to recruit 10 MAP participants and 10 controls, although the sample size was limited by the small size of the MAP service and the low turnover of residents	MAPs tend to be low turn-over services. Strategies for overcoming modest sample sizes could include: recruiting from larger services; recruiting from more than one service; increasing the ratio of controls to MAP residents; following individual trajectories of participants; using administrative data
Success in recruitment and retention was largely due to a high amount of researcher input, given the vulnerable and sometimes transient nature of the participants, particularly in the control group	Relationship building is important in recruiting and retaining participants. This needs to be factored into time and budgets when planning projects
In hindsight, despite our controls being well matched on our criteria of age, sex, ethnicity and years drinking, many of the control participants would have not wished to enter a MAP	To ensure controls are directly comparable to MAP participants is more difficult without withholding the intervention from controls. This does highlight the value of accompanying qualitative work. Recruiting more controls than MAP residents may also allow for variations in the control group
We experienced challenges in retaining participants, particularly controls, who left a supported accommodation service with no follow-on contact details. This may have also been affected by attrition bias, meaning we lost our more vulnerable participants	Strategies may include: gathering more personal data from participants, including email addresses as many change phone numbers regularly; obtaining consent for accommodation services to pass on contact details; more regular text reminders/ data collection or contact; obtaining contact details of family members or support services the participant uses
Standardized questionnaires designed to measure levels of alcohol consumption were unsuitable for our participants, who were experiencing very high levels of alcohol dependence and co-occurring homelessness	Work with MAP services to improve program records related to consumption may give more accurate history of intake within the MAP and contribute to future data linkage. Future work could be necessary on designing appropriate tools for this population. Testing questionnaires and giving researchers experience in explaining questions to participants can help to obtain more accurate data
Use of incentives for recruitment recognizes the time involved for participation	Vouchers or reimbursement should be chosen with the population in mind, for example avoiding vouchers that require phone apps. They should also be for shops that participants can access easily

time limit for a stay, makes it very difficult to calculate future turnover or to anticipate how long it may take to reach the recruitment levels required for a larger study. Low study participant numbers meant changes in alcohol consumption by a few individuals had a large impact on the averages reported which is why these data are not reported here. Studies of MAP impact internationally have been restricted by small numbers of residents, a lack of power for quantitative data analysis, and, generalizability (Pauly et al., 2016; Podymow et al., 2006; Vallance et al., 2016). The slow turnover of participants has also been reported elsewhere as a barrier to research recruitment from MAPs although this would be viewed positively in terms of the stability provided to participants in these services (Stockwell et al., 2021).

There are several alternatives to the potential restriction of small participant numbers such as following the trajectories of individual participants (Goulet-Stock et al., 2025), although this may not overcome the challenge of finding required numbers of participants during the study period. Other researchers have used a comparison across multiple sites or 'pooling' to overcome small participant numbers. Stockwell et al. (2021), for example, used six MAP sites in different Canadian cities, although authors reflected that pooling participants from different MAP programs may have affected outcome results. The difference in individual programs may have masked some benefits to participants, as later analysis showed the most benefits were from programs with stricter measures against outside drinking. Pooling across sites is not always possible, however, and would not have been possible for this study as there is only one MAP in Scotland, although we note there are others in the UK and in the Republic of Ireland.

Another approach would be the use of administrative data: Zhao et al. (2022) used retrospective data on mortality and hospitalization from consenting participants. Administrative data is largely limited to the data that an organization needs to conduct its work (Thomas & Tweed, 2022), so low threshold services, such as drop-in centers, may not routinely collect verified data. In our evaluation at least one of our participants was routinely known by a name that was not his 'official' name, which would make it more difficult to follow this individual through multiple services. Many of our participants also reported a history of moving back and forth between Scotland and England, but the two health systems fail to connect well. Similarly, there are several MAPs in Northern Ireland and Republic of Ireland who may not have similar systems to allow comparable data.

Requirement for high researcher input

Our success in recruitment and retention was largely due to the research team, particularly the lead researcher, developing relationships with the MAP participants, controls, and staff in the services. This included regular visits and spending time in the MAP, check-ins by text with control participants, spending

time in the local area, and visiting a variety of different services across Glasgow where participants lived. We also gave people the option of meeting in services, or in a neutral place in the city center, to ensure that participants felt comfortable. We have shown benefits in building relationships with participants and aiding data collection, but the time investment required has an impact on costs and on scalability and must be a key consideration for any future studies in this area and with this population. In developing future research there would need to be additional time and costs allocated for relationship building, which is a key factor of working with groups experiencing problem substance use and homelessness. For this study we had one main researcher, which can make the time investment look intensive, however we believe the overall time spent is actually comparable to other studies with similar populations (Parkes et al., 2019). Other options for recruitment, which may also aid retention, could be explored in future work including incentivizing staff at MAPs/control services alongside participants (Parkinson et al., 2019).

Applicability of the control population

Recruiting true controls (who matched the eligibility criteria of the MAP) was challenging within the limitations of practical study recruitment. We struggled to identify relevant services for this population group in Glasgow, which led to us recruiting from a crisis/detoxification service. Although our MAP participants and controls were well matched by demographics, supporting qualitative data showed our controls were not a good match to our MAP participants because they either aimed for abstinence or were unwilling to have their alcohol managed. Our study has highlighted the value of the accompanying qualitative aspect of this evaluation as without it we may have been unaware of this mismatch between our controls and MAP participants. The small sample size was also a limitation of our work, as we matched our control participants to the MAP participants, which were limited to 10 due to the service size. In hindsight we should have recruited more control participants, similar to Stockwell et al. (2021) who recruited at a ratio of three controls for every MAP participant in anticipation of higher drop-out rates.

Challenges of retention

While retention was challenging across the study, it was particularly challenging among the control group. A particular consideration for this population is participants leaving the MAP or other supported accommodation service, with no follow-up contact details. At the 12-month timepoint, contact had been lost with four control and two MAP participants due to this reason. Similar retention challenges have been noted in other studies involving populations experiencing homelessness and problem substance use (Parkes et al., 2022; Stockwell et al., 2021; Svendsen et al., 2017, 2021) Subsequent data collection may also be influenced by attrition bias, with the most vulnerable individuals less likely to participate at later time points. Attrition can be affected by poverty, social factors, housing instability, incarceration, and poor health. (Western et al., 2016). People are often pre-occupied with survival and meeting the most basic of their needs (Shorter & Scher, in press). Similar selection bias has been discussed by Stockwell et al. (2018, 2021), who suggested that residents with more chaotic drinking or alcohol-related harms were more likely to leave the MAP.

Suggested strategies for mitigating retention challenges in future work include tailored organizational and motivational strategies to support inclusion, although many of these (e.g. text reminders) may require additional cost for research studies to support participants to keep engaged (Svendsen et al., 2017). These may, however, be inappropriate for this participant group due to the lack of mobile phone ownership and/or regularly changing contact numbers. One option may be to ask participants for alternative ways of contacting them, such as via support organizations or other contacts. Shorter interviews at monthly intervals, as used by Stockwell et al. (2018) and Vallance et al. (2016), rather than three months between data collection points, may help to improve retention by catching participants before they move away or change contact details. This is likely to only be feasible in a small-scale study due to the logistics required.

Regular check-ins (without data collection) might be more feasible in large-scale studies and would also help to maintain the relationship between the researcher and participants, which we found to be invaluable for retention, but could be challenging without participants having consistent access to a mobile phone. Options like a regular drop-in or coffee morning may be applicable in a single service but would have been challenging in our situation where relatively small numbers of control participants were living in different services across a large city. Judging the best time of day to conduct data collection can also be beneficial. For this study we aimed to attend at mealtimes when participants were likely to be in the service, but this could also include aiming for a time

when participants are up, but not yet had enough time to become intoxicated, for example late mornings and early afternoons. Similar practical strategies for retention of participants experiencing homelessness were also discussed by Ojo-Fati et al. (2017) in a US-based study.

Appropriateness of standardized questionnaires

Standardized scales designed to measure wellbeing and alcohol dependence may not be suitable for this participant group. With researcher explanation, many of the scales could be effectively used and remain relevant, however, problems arose with the SADQ, particularly regarding reporting how participants would feel drinking heavily after a period of abstinence, as many could not answer these questions accurately. The differing scores for the PHQ-9 and GAD-7 that we experienced, with some participants having high PHQ-9 but low GAD-7 scores, or vice versa, are more difficult to understand. One possibility is that these are used more routinely in services and participants are familiar with trying to answer them in a way they feel would please the researcher. The AUDIT is used routinely on entry to the MAP, and the PHQ-9 is used regularly by NHS Scotland. Care had to be taken that those in the MAP were not stigmatized by having to report daily drinking, as well as the applicability of daily drinking scoring highly, despite this being the outcome of the MAP and a significant harm reduction initiative. We had considered using the Substance Use Recovery Evaluator (SURE) (Neale et al., 2016), but this measure would not have provided detailed information about participant alcohol use in the way that the AUDIT and SADQ do. Additionally, use of the term 'recovery' may have been problematic if it was interpreted as meaning abstinence.

The diversity and challenge in measuring alcohol and other related outcomes are not new (Shorter et al., 2019). For example, Chow et al. (2018) compared participants' survey data on alcohol consumption with MAP records recorded by staff, to ascertain the accuracy of MAP service records. They found self-reported drinking was up to twice as high as that detailed on records, despite significant under-reporting of outside drinking. Working with MAP services to improve program records related to consumption is key to obtaining accurate long-term data. Indeed, there are attempts to standardize measurement in core outcome sets to improve estimation of effectiveness in individual studies or meta-analyses (Black et al., 2024; Shorter et al., 2021). It is unlikely that core outcome sets for treatment populations would be suited to MAP evaluations as many of the questions do not reflect MAP residents' experiences (Black et al., 2024), for example the focus on abstinence, the assumption that people wake up in the morning, or that their lifestyle includes particular activities (e.g. reading newspapers). Based on our experience, none of the existing tools were entirely appropriate for our participants and the data that we wished to capture. There is therefore much future work necessary on the adaptation and/or development of suitable tools for this population, which focus on harm reduction and homelessness. Co-design of tools with service users could help to create tools more sensitive to their goals, which was a key component of the SURE measure.

Another alternative is to use data linkage to collect data on the outcomes of MAPs. While removing the requirement for unsuitable scales and the potential of overburdening participants, this can also pose challenges. Data linkage is usually completed through linking an individual using personal information, such as name, date of birth, and address, criminal justice involvement, or through identifiers such as a health service number (Thomas & Tweed, 2022). In Scotland, each individual should be assigned a unique NHS Community Health Index (CHI) number, which can then be used to track people through NHS services. However, an individual is only traceable through other organizations, for example criminal justice or third sector, if they specifically capture the CHI number as part of routine administrative data. In one such study using data linkage, Waugh et al. (2018) give a comprehensive overview of a study conducted in Scotland using homelessness applications and NHS data, and linking individuals using first name, last name, date of birth, gender, and postcode. Other commentators have reservations and have argued that people experiencing homelessness are regularly absent from routinely collected health data, because they are often without a stable address or phone number, may move around areas (including across the UK where different health identification numbers are used in each nation), and may be seen by multiple health teams including addiction services, mental health teams, and emergency services (Fryer et al., 2024). The MAP provides a stable address and phone number for participants and has supported many of them to obtain ID and bank accounts, and register with GPs, dentists, and opticians, something that our control participants are less likely to have.

Thomas and Tweed (2022) explain that the scope of the data systems used in large-scale data linkage can mean that consent is often used under 'public benefit' rather than individual consent. We have shown that many of our participants, particularly the control group,

would have objections to the use of their data in this way. They particularly objected to the inclusion of police/criminal justice data, mainly due to prior experiences with these organizations. Building systems to keep linkage data safe and navigating the permissions needed is also time consuming and very expensive.

Ethical implications of RCTs of MAPs

While the UK guidelines currently mention MAPs, they fall short of including specific guidance due to a perceived lack of 'high-quality' evidence (UK Government, 2025). This is often interpreted as a lack of RCTs, due to these study designs traditionally being considered the gold standard for evidence (Fernainy et al., 2024). However, in recent years there has increasingly been criticism of RCTs, due to the lack of external validity, potential bias, high costs, and lack of generalizability (Fernainy et al., 2024). For MAPs in particular, there are particular concerns about feasibility and ethics (Resnik, 2008) which is why no RCTs have been conducted of MAPs to date (Muckle et al., 2012; Podymow et al., 2006). The first concern is that an RCT would involve withholding a potential harm reduction option from some participants which would be deemed unethical. There are potential ways to overcome this challenge, for example alternative randomization methods, such as a stepped wedge design, may overcome some of the ethical challenges associated with standard RCTs (Hemming et al., 2015). Secondly, an ethically valid RCT must demonstrate equipoise (Miller, 2012), which means that there is genuine uncertainty amongst the research community about which treatment will most benefit the participant. MAPs are not an alternative to detoxification services and should therefore not be compared with these. Instead, they are an alternative to street homelessness and alcohol dependence which have significant risks, especially of early death, and it would be difficult to demonstrate that it is ethical to leave a control group experiencing the known risk of this 'usual care.' Finally, any sort of RCT is unlikely to be feasible as they would require a much larger service provision than currently exists in the UK, so collaboration with MAPs internationally could be a solution.

We believe there are alternatives to potentially unethical and unfeasible RCTs, which can still provide high-quality evidence. For example, the national guidance on MAPs in Canada brings together systematic reviews, observational studies, and qualitative research to reflect a consensus on the benefits of MAPs (British Columbia Centre on Substance Use & Canadian Institute for Substance Use Research, 2023). We would encourage governments to consider the wider evidence base of MAPs as being 'high quality' without the fixation on evidence from RCTs. Administrative data, realist approaches, and large-scale international studies may be more appropriate in this field and still constitute high-quality evidence (Vatkar et al., 2025). This paper also provides guidance regarding considerations for future high-quality research in and about MAPs.

It is important to develop research in this area to understand the needs of those with very high levels of alcohol use and support them to improve their wellbeing through consensual intervention (Henssler et al., 2021). Our study has shown that, while it is feasible to recruit MAP participants and locally matched controls, retention requires substantial researcher input and flexibility. This is unlikely to be possible with much larger sample sizes and the importance of this relationship building should be considered in the timelines and costing of future studies with this population. Finally, there were many reasons for the diversity in both MAP participants and controls that acknowledges the complexity of the lives of individuals consuming higher levels of alcohol and illicit drugs (Shorter & Scher, in press). We have reflected on potential reasons for the apparent fluctuations seen between the control and MAP participants, with a view to future trial work. Overall, this paper shows that research on MAPs is feasible, but there are limitations in the available sample size and difficulty in retention of participants with competing priorities.

Strengths and limitations

This paper provides an overview of the challenges and potential mitigations for researchers who are conducting research about MAPs, which was previously missing from the literature. The strengths of our work lie in the considerable time spent by our researcher within the MAP service, building trusting relationships with staff and participants, which allowed for swift recruitment. We achieved our target recruitment of 10 MAP participants and 10 controls, with recruitment of MAP participants only delayed by empty beds within the service during the recruitment period. We also spent researcher time maintaining links with our control participants, recognizing the importance of ongoing data collection with this vulnerable group. The accompanying qualitative work has added considerable knowledge about the validity of our control group and allowed reflection on some of the mitigation strategies for future research.

Limitations of our work included the modest sample size and low turnover of residents in the MAP service. Our qualitative work also highlighted that our control

group may not have been a good match to our MAP participants, due to not aiming to have their alcohol managed. We also experienced higher attrition within our control group, which is reflective of this population with unstable housing and competing priorities, but in hindsight recruiting higher levels of control participants may have been beneficial.

What has been learnt about recruitment and retention for this evaluation of a MAP within Scotland has implications for future evaluations of MAPs more broadly. The use of larger sample sizes or comparison across different MAP sites is not currently possible in Scotland but would be in countries such as Canada, where MAPs are more embedded within alcohol service provision (Motta-Ochoa et al., 2025). MAPs where individuals can follow their own alcohol management plans may be more challenging for evaluation than the more standardized distribution of alcohol seen in traditional MAPs (Pauly et al., 2016). We have demonstrated that future work on designing appropriate standardized questionnaires would be beneficial, particularly those that are more suited to participants in a harm reduction intervention and that reflect the realities of those living in homelessness or alcohol-focused services. Future work would benefit from the recruitment of more controls, relative to MAP participants, such as was done by Stockwell et al. (2021). Larger MAP set-ups that have provision for different housing types (for example transitioning from emergency to more permanent accommodation) would also give options for following participants in different types of MAPs (Pauly et al., 2018). Canada, Australia, and the US also have MAPs designed for Indigenous communities, which provide scope for evaluation in different populations (Brocious et al., 2021; Campbell et al., 2026; Motta-Ochoa et al., 2026; Thompson et al., 2025). There are still wider challenges of conducting RCTs of harm reduction interventions but a focus on improving record keeping and the ability to track participants as they move through multiple services would be a step toward more feasible interventions of MAPs in the future.

Conclusion

In conclusion, this paper shows research on MAPs is feasible and offers significant strengths but is methodologically complex. While successful recruitment of MAP participants and locally matched controls was achieved, significant challenges relating to modest sample sizes and high attrition limit the scalability and generalizability of findings. These challenges are compounded by the difficulties in identifying appropriate comparison groups and retaining participants whose lives are often shaped by instability, poor health, and competing survival priorities.

The study further highlights important limitations in using standardized scales, many of which do not adequately capture the realities of harm reduction approaches or the lived experiences of individuals experiencing alcohol dependence and homelessness. This underscores the need for the development or adaptation of more appropriate, context-sensitive tools. Future research on MAPs should prioritize flexible, mixed methods designs that account for high attrition, invest in sustained participant engagement, and carefully consider the suitability of comparison groups and outcome measures. Although large-scale RCTs remain ethically challenging in this context, robust research using other methodologies can still provide meaningful evidence. Advancing research in this field is essential to better understand and support a highly marginalized group of individuals, and inform the development of effective, person-centered harm reduction interventions.

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Ethics statement

Ethical approval was granted by University of Stirling's NHS, Invasive or Clinical Research Ethics Committee (NICR 2024 14952); Simon Community Scotland; Turning Point Scotland; and the Ethics Subgroup of the Research Coordinating Council of The Salvation Army.

Author contributions

CRediT: **E. King**: Data curation, Formal analysis, Investigation, Methodology, Writing – original draft; **J. Greenhalgh**: Data curation, Formal analysis, Investigation, Project administration, Writing – review & editing; **H. Carver**: Conceptualization, Formal analysis, Funding acquisition, Investigation, Methodology, Supervision, Writing – review & editing; **T. Parkes**: Conceptualization, Funding acquisition, Methodology, Writing – review & editing; **B. Pauly**: Conceptualization, Funding acquisition, Methodology, Writing – review & editing; **G. W. Shorter**: Conceptualization, Funding acquisition, Methodology, Writing – review & editing.

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