

Review

Substance Use and Addiction among Homelessness: A Scoping Review

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Background

Homelessness represents a multifaceted global challenge, closely linked to high rates of substance use disorders (SUDs). This intersection exacerbates health disparities and perpetuates social exclusion; however, effective, context-sensitive interventions remain limited.

Objective

This scoping review aims to synthesize present evidence on therapeutic, psychological, and social interventions for homeless individuals with SUDs, highlighting effective strategies and identifying gaps to inform future research and clinical practice.

Methods

Following the PRISMA Extension for Scoping Reviews guidelines, we systematically searched PubMed, Scopus, and ScienceDirect between January and June 2025. Inclusion criteria were peer-reviewed studies from the past decade, published in English, and investigating psychosocial or rehabilitative interventions targeting homeless individuals aged ≥ 14 with SUDs. Studies exclusively medical or without intervention components were excluded. A total of 23 studies were included.

Results

Integrated, multidisciplinary interventions—including Housing First combined with assertive community treatment, group-based motivational programs (e.g., AWARE, Tobacco-focused group motivational intervention), harm reduction approaches (e.g., Harm reduction treatment for alcohol, Extended-release naltrexone), and intensive case management—were most effective in reducing substance use, improving mental health and quality of life, and enhancing housing stability. However, the literature showed methodological variability, generally short follow-up periods, and limited incorporation of participants' perspectives.

Conclusion

This review underscores the importance of flexible, tailored, and relationship-centered interventions to address the complex needs of homeless populations with SUDs. There is

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an urgent need for more rigorous and long-term studies, including qualitative insights, to better capture acceptability and feasibility. Strengthening synergies between housing, health, and psychosocial services—particularly in under-researched contexts, such as Italy—could foster more sustainable pathways toward recovery, dignity, and social reintegration.

1. INTRODUCTION

Homelessness is widely recognized as one of the most severe manifestations of social exclusion, defined by the absence of a stable, safe, and adequate place to live.¹ It is a complex, multifactorial phenomenon arising from the intersection of structural determinants—such as economic inequality, unaffordable housing markets, and weak social safety nets—and individual vulnerabilities, including mental health disorders and adverse life events.^{2,3} In Europe, the European Typology of Homelessness and Housing Exclusion has broadened the operational definition of homelessness beyond rough sleeping to encompass people in insecure or inadequate housing situations.⁴ In contrast, the United States (US) Department of Housing and Urban Development employs a narrower definition, focusing primarily on individuals living in shelters, transitional facilities, or places unfit for habitation.⁵

Globally, homelessness is increasing at an alarming rate. In the US, recent data reported an 18% increase in homelessness in 2024, reaching approximately 771,480 individuals—its highest level since national tracking began.⁵ The phenomenon is unevenly distributed: California and New York reported the highest numbers, whereas southern states, such as Mississippi exhibited markedly lower rates.⁶ Demographically, homelessness in the US is predominantly male (59.6%), though women and gender minorities also face substantial risk.⁷

Europe shows similarly alarming trends. According to the European Federation of National Organisations working with the Homeless and the Abbé Pierre Foundation, homelessness in Europe has surged by 70% over the past decade, affecting roughly 3 million people, with about 700,000 sleeping rough or in emergency shelters each night.⁸ In Italy, the most recent national estimates indicate over 50,000 individuals access soup kitchens or shelters during winter, with northern regions disproportionately affected.⁹ Notably, approximately 58% of Italy's homeless population is foreign-born, reflecting the overrepresentation of minority groups seen in the US.⁸

1.1. SUBSTANCE USE DISORDERS (SUD) AMONG HOMELESS POPULATIONS

SUDs are among the most prevalent and detrimental health issues faced by individuals experiencing homelessness. Homeless individuals are estimated to be up to five times more likely to have a SUD than the general population, with studies showing prevalence rates as high as 68%.¹⁰ Substance use often serves as a maladaptive coping mechanism to manage physical discomfort, psychological distress, or trauma associated with life on the streets.^{11,12}

In the US, alcohol remains the most commonly used substance (affecting approximately 38% of homeless adults), followed by cannabis, heroin, and synthetic opioids (such as fentanyl),¹³ which are implicated in over 70% of fatal overdoses in cities, such as Philadelphia and Los Angeles.¹⁴ Tobacco use is also alarmingly high, with prevalence exceeding 70%—five times higher in homeless populations

than among housed adults.¹⁵ Contingency-based smoking cessation approaches have shown initial success in reducing tobacco use in these vulnerable groups.¹⁶

European patterns reflect similar challenges. Cannabis, alcohol, and heroin dominate among homeless populations, though prevalence rates vary across countries.¹⁷ In the United Kingdom, between 76% and 85% of homeless individuals smoke tobacco, contributing to a life expectancy of just 44 years for men and 42 years for women, compared to national averages of 76 and 81 years.¹⁸ In Italy, heroin and alcohol are most prevalent, with 58% of homeless individuals in addiction services treated for heroin use and nearly one-third for alcohol-related issues. Local studies also indicate extremely high rates of smoking—over 70% in shelters—compared to a national average of about 20%.

1.2. INTERVENTION STRATEGIES: DIFFERENCES ACROSS CONTEXTS

Approaches to addressing homelessness and co-occurring SUDs vary significantly between the US, Europe, and Italy. In the US, substantial federal funding supports integrated models, such as Housing First, which provides immediate permanent housing without pre-conditions of sobriety, coupled with optional supportive services.¹⁹ Assertive community treatment (ACT) teams play a key role, providing multidisciplinary outreach tailored to complex needs.²⁰

European responses also favor Housing First, but often operate within the framework of universal healthcare systems and more extensive social services.²¹ For example, Germany has dedicated medical centers for homeless individuals, though bureaucratic barriers still limit access.²² In Luxembourg and other countries, the emphasis is placed on relational and psychosocial interventions, recognizing the importance of trust and continuity in engaging marginalized individuals.

In Italy, Housing First is being progressively adopted with promising results, improving perceptions of stability and fostering therapeutic alliances crucial for psychological recovery.²³ However, challenges remain, including limited availability of public housing and fragmented coordination between social and mental health services. Adequate training and supervision for frontline staff have emerged as essential for faithfully implementing these person-centered models.²⁴

2. METHODS

2.1. OBJECTIVES

The primary objective of this review is to explore the existing scientific literature on psychological, social, and rehabilitative interventions targeting homeless individuals with SUDs. Across a systematic exploration of the existing evidence, this review aims to expand the scientific knowledge foundation, facilitate the design of novel and more targeted intervention strategies, and guide future research directions. A secondary objective is to identify practical and effective approaches that could inform and strengthen local intervention programs in the Italian context.

These objectives are summarized by the following research question: What are the characteristics of therapeutic, psychological, and social interventions for SUDs among individuals experiencing homelessness globally, with a specific focus on the European and Italian context?

2.2. SEARCH STRATEGY

This scoping review was conducted in accordance with the PRISMA Extension for Scoping Reviews guidelines.²⁵ The literature search was conducted from January 2025 to June 2025 across PubMed, Scopus, and ScienceDirect databases. The search covered studies published between 2010 and 2025.

The following combined search strategy was used, incorporating both controlled vocabulary and free-text terms: (“Homeless” OR “Homelessness” OR “Houseless” OR “Street-dwelling”) AND (“Substance Use Disorder” OR “Drug Addiction” OR “Alcoholism” OR “Substance Abuse”) AND (“Psychological Intervention” OR “Social Intervention” OR “Rehabilitation Program” OR “Treatment Outcome” OR “Harm Reduction” OR “Motivational Interviewing” OR “Housing First”).

2.3. ELIGIBILITY CRITERIA

Inclusion and exclusion criteria were defined using the Population, Concept, and Context framework recommended by the Joanna Briggs Institute,²⁶ which provides a structured approach for defining the scope and eligibility criteria in scoping reviews:

- (i) Population: Studies involving homeless individuals (regardless of nationality)—aged 14 years or older—who use substances, with or without psychiatric comorbidities.
- (ii) Concept: Studies examining psychological, psychosocial, or psychoeducational interventions aimed at reducing substance use, improving mental health, fostering social reintegration, and promoting autonomy.
- (iii) Context: Studies conducted in street settings, therapeutic communities, shelters, integrated social services, or third-sector programs.

2.4. EXCLUSION CRITERIA

We excluded:

- (i) Articles not written in English.
- (ii) Studies involving pediatric populations under 14 years.
- (iii) Studies describing exclusively medical or pharmacological interventions without any psychosocial component.
- (iv) Purely descriptive or observational studies with no applied intervention, or those that did not provide relevant measures related to substance use or treatment-related behaviors.
- (v) Qualitative studies, systematic reviews, meta-analyses, and case-control studies, as this review focused on quantitative studies evaluating applied interventions.
- (vi) Studies that did not include homeless individuals in the sample or did not involve populations with SUDs.

A PRISMA Extension for Scoping Reviews flow diagram (Figure 1) illustrates the selection process.

2.5. DATA EXTRACTION AND STUDY SELECTION

All data retrieved through the database search were exported to a reference manager, where duplicates were manually

removed. Study selection was conducted in two stages: (i) Title and abstract screening and (ii) full-text assessment. Both stages were performed independently by two reviewers. Discrepancies were resolved through discussion, and consensus was reached on all final inclusion decisions.

The initial database search yielded 1,231 records, of which 213 duplicates were identified and removed. The remaining 1,018 studies were screened by title and abstract. Following this screening, 90 articles were deemed potentially relevant and retrieved for full-text assessment. Of these, 67 were excluded as they did not meet the predefined inclusion criteria. Finally, 23 studies were included in this scoping review (Table 1).

3. RESULTS

The analysis of the 23 studies included in this review revealed a diverse range of behavioral interventions aimed at addressing SUDs among homeless individuals. These interventions demonstrated benefits across several domains, such as reducing substance use, improving mental health, increasing housing stability, and strengthening engagement with health and social services. Despite promising results, the literature exhibited considerable heterogeneity in study designs, target populations, and follow-up durations.

Only a small number of eligible studies were conducted in Europe or Italy. This limited representation reflects a broader gap in rigorously evaluated psychosocial interventions for homeless individuals with SUDs in European contexts; therefore, the intended comparison across regions could only be described narratively.

Among the included studies, most were randomized controlled trials, while a smaller subset consisted of pilot or feasibility studies. Findings from these small-sample studies are reported as preliminary and should be interpreted cautiously, with an emphasis on feasibility and acceptability rather than effectiveness. In addition, one quantitative observational study was included, as it provided relevant measurable data on harm perceptions, dependence, and quit attempts among homeless smokers, aligning with the objectives of this review. Qualitative studies were excluded, but quantitative observational designs were retained when they contributed outcome-level data on substance use or related behaviors.

3.1. HOUSING-BASED INTERVENTIONS

Among the most common and effective approaches was the Housing First model. For example, Kirst *et al.*,²⁷ in a study involving 575 participants, reported significant reductions in days of problematic alcohol use and money spent on substances. Similarly, O’Campo *et al.*²⁸ reported improvements in social functioning and quality of life among participants assigned to a Housing First program with ACT support, although without significant differences in substance use compared to controls. Ferreiro *et al.*²⁹ reported improved alcohol and cannabis use outcomes and reduced psychiatric symptoms in participants enrolled in Housing First programs. Among youth at risk for opioid use disorder, Slesnick *et al.*³⁰ showed that the HOME program led to decreased substance use and improved cognitive functioning, with no new onset of opioid use disorder at 6 months. Laliberté *et al.*,³¹ evaluating the Partnership for Recovery in Shelter-based Mental Health program, showed that over half of participants secured permanent housing after the intervention. Similarly, Morin *et al.*³² highlighted positive impacts of transitional housing combined with clinical support and harm

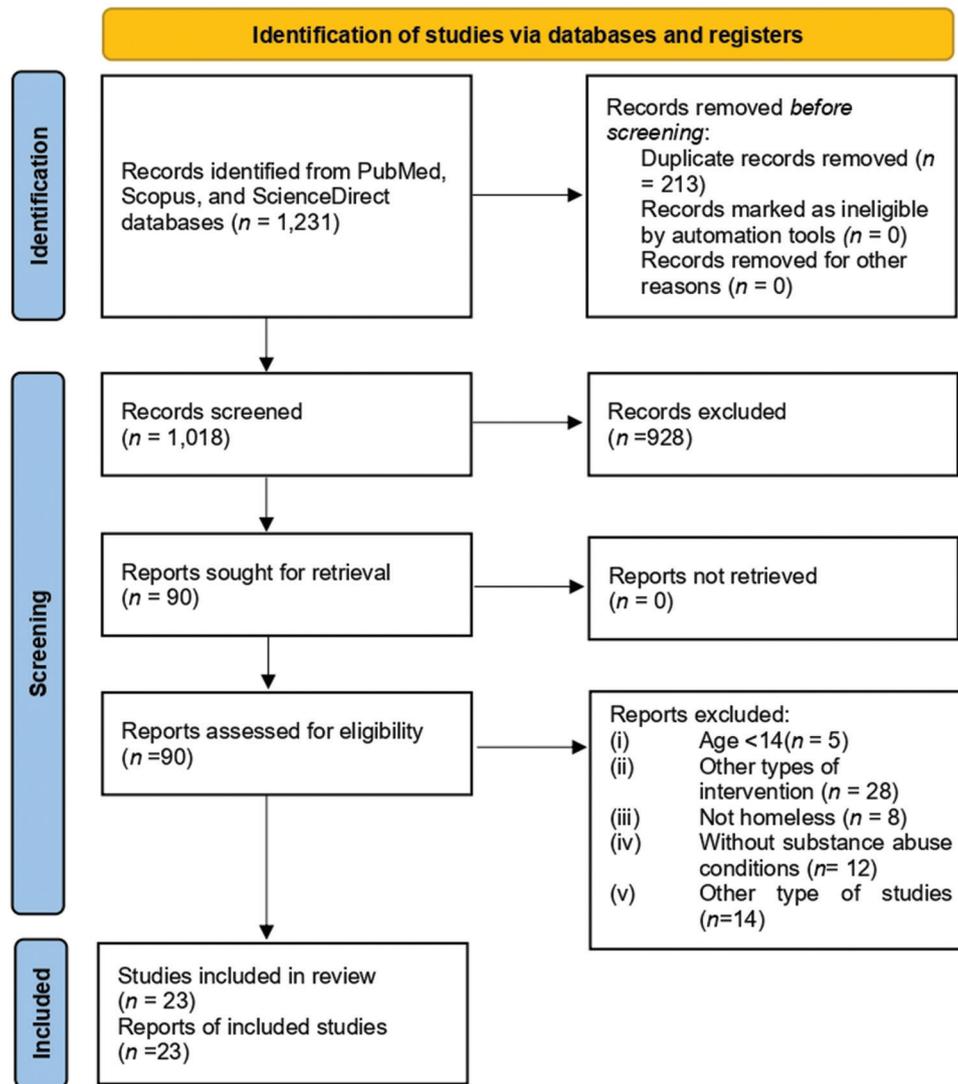


Figure 1. Flow diagram of PRISMA Extension for Scoping Reviews

reduction, reporting reductions in substance use and better mental well-being.

3.2. MOTIVATIONAL AND GROUP INTERVENTIONS

Motivational interviewing and group-based programs showed particular promise, especially among young adults. The AWARE program was evaluated in several studies: D'Amico *et al.*³³ found that the program increased participants' readiness to change substance use and risky sexual behaviors. Tucker *et al.*³⁴ confirmed the acceptability of the program, showing reduced alcohol use and greater motivation to change. Follow-up data revealed sustained benefits at 12 months³⁵—with fewer alcohol-related consequences and risky sexual encounters—and at 24 months,³⁶ with lower alcohol use and increased protective strategies. In addition, Santa Ana *et al.*³⁷ demonstrated that a tobacco-focused group motivational intervention (T-GMI) enhanced engagement in cessation efforts among homeless veterans.

3.3. HARM REDUCTION AND COMBINED APPROACHES

Several studies examined harm reduction interventions, sometimes paired with pharmacological treatments. Collins

*et al.*³⁸ showed that integrating behavioral therapy with extended-release naltrexone (XR-NTX) led to significant improvements in four out of five primary clinical indicators. Parkes *et al.*³⁹ evaluated the Supporting Harm Reduction through Peer Support program, a peer-led harm reduction intervention designed to reduce substance-related harm and improve health and well-being in people experiencing homelessness with problematic substance use. The study, though primarily a feasibility trial, reported reduced risky injecting and sexual practices, improved engagement with opioid substitution therapies, and enhanced self-reported empowerment and service access. Kertesz⁴⁰ reported that even the behavioral component alone (harm reduction treatment for alcohol [HaRT-A] intervention) effectively reduced alcohol use, alcohol-related harm, and craving, while improving quality of life.

3.4. SMOKING INTERVENTIONS

Smoking cessation was also addressed in multiple studies. Ojo-Fati *et al.*⁴¹ reported that an integrated program combining cognitive behavioral therapy (CBT) for smoking and alcohol cessation with nicotine replacement therapy (NRT) demonstrated no significant differences compared to usual care at 26 weeks, although a slight trend favored increased abstinence. Rash *et al.*⁴² demonstrated that contingency

Table 1. Included studies

Authors	Year	Title	Study design	Objective	Sample	Interventions	Outcomes
Kirst <i>et al.</i> ²⁷	2015	The impact of a Housing First randomized controlled trial on substance use problems among homeless individuals with mental illness	RCT	Assess whether HF reduces substance use problems over a 24-month follow-up	575	HF	(i) ↓ Days with alcohol-related problems (ii) ↓ Money spent on alcohol (iii) Greater improvements versus TAU at 24 months
O'Campo <i>et al.</i> ²⁸	2016	How did a Housing First intervention improve health and social outcomes among homeless adults with mental illness in Toronto? 2-year outcomes from a randomised trial	RCT	Evaluate the impact of HF + ACT on housing stability, service use, justice involvement, and health outcomes over 2 years	197	HF+ACT versus TAU	(i) ↑ Community functioning (ii) No significant differences in health care use, community integration, or substance use versus TAU
Ferreiro <i>et al.</i> ²⁹	2022	Impact of Housing First on psychiatric symptoms, substance use, and everyday life skills among people experiencing homelessness	RCT	Assess outcomes after 21 months in an HF program versus TAU	87	HF versus TAU	(i) ↓ Alcohol and cannabis use (ii) ↑ Psychiatric outcomes (psychotic symptoms, anxiety, depression) (iii) ↑ Social relationships and daily life skills
Slesnick <i>et al.</i> ³⁰	2021	Housing, opportunities, motivation and engagement (HOME) for homeless youth at-risk for opioid use disorder: Study protocol for a randomized controlled trial	Pilot study	Test whether a housing+prevention program reduces risk for OUD and improves functioning among homeless youth.	240	Motivational interviewing, strengths-based advocacy, and HIV prevention within a housing program	(i) ↓ Substance use (ii) ↑ Cognitive functioning (iii) No new OUD cases at 6 months
Laliberté <i>et al.</i> ³¹	2022	PRISM: A shelter-based partnership for people experiencing homelessness and severe mental illness	Quantitative observational study	Evaluate housing outcomes among participants in a clinical residential program within a shelter	579	PRISM	(i) 52% obtained permanent housing (ii) 11% found temporary housing (iii) 11% lost to follow-up
Morin <i>et al.</i> ³²	2025	Perspectives on a transitional housing program for people who use substances who experience homelessness and live with a mental health issue: A pilot study in an urban northern city in Canada	Quantitative pilot study	Explore participant perspectives on a transitional housing program integrating clinical, social support, and harm reduction	12	Transitional housing with integrated clinical, social support, and harm reduction strategies	(i) ↑ Access to services (ii) ↑ Mental and emotional well-being (iii) ↑ Sense of belonging (iv) ↓ Substance use (v) Need for more individualized support
D'Amico <i>et al.</i> ³³	2017	Group motivational interviewing for homeless young adults: Associations of change talk with substance use and sexual risk behavior	RCT	Examine how change talk during AWARE sessions relates to substance use and sexual risk behavior	100	AWARE, a group-based MI program	(i) ↑ Importance and readiness to change AOD use (ii) ↓ Risky sexual behaviors (iii) ↓ Number of partners and unprotected sex events (iv) Additional qualitative feedback supported acceptability
Tucker <i>et al.</i> ³⁴	2017	A group-based motivational interviewing brief intervention to reduce substance use and sexual risk behavior among homeless young adults	RCT	Evaluate a four-session AWARE intervention for reducing AOD use and sexual risk among homeless young adults	200	AWARE	(i) ↓ Alcohol use at 3 months (ii) ↑ Motivation to reduce drug use (iii) ↑ Condom use self-efficacy (iv) ↓ Unprotected sex among participants with multiple partners

(Cont'd)

Table 1. (Continued)

Authors	Year	Title	Study design	Objective	Sample	Interventions	Outcomes
Tucker <i>et al.</i> ³⁵	2023	A randomized controlled trial of a brief motivational interviewing-based group intervention for emerging adults experiencing homelessness: 12-month effects on substance use and sexual risk behavior	RCT	Evaluate the 12-month effects of AWARE on substance use and sexual risk behaviors	276	AWARE, a brief MI-based group risk reduction intervention	(i) ↓ Alcohol use and drinking-related consequences (ii) ↑ Protective drinking strategies (iii) ↓ Unprotected sex with casual partners (-29%)
Tucker <i>et al.</i> ³⁶	2024	A randomized controlled trial of a brief motivational interviewing-based group intervention for emerging adults experiencing homelessness: 24-month effects on alcohol use	RCT	Assess 24-month alcohol outcomes following AWARE	276	AWARE	(i) ↓ Alcohol use at 24 months (ii) ↓ Negative drinking consequences (iii) ↑ Protective drinking strategies
Santa Ana <i>et al.</i> ³⁷	2016	Impact of group motivational interviewing on enhancing treatment engagement for homeless veterans with nicotine dependence and other substance use disorders: A pilot investigation	Pilot study	Assess whether tobacco-specific GMI enhances engagement in smoking cessation among homeless veterans	57	T-GMI	(i) ↑ Engagement in smoking cessation programs (ii) ↑ Participation in combined cessation plus NRT programs (iii) Higher engagement compared to standard GMI
Collins <i>et al.</i> ³⁸	2021	Combining behavioral harm-reduction treatment and extended-release naltrexone for people experiencing homelessness and alcohol use disorder in the USA	RCT	Evaluate HaRT-A combined with XR-NTX for reducing alcohol use in homeless adults	308	HaRT-A+XR-NTX versus HaRT-A+placebo versus HaRT-A alone versus usual care	(i) HaRT-A + XR-NTX showed ↑ improvements in 4/5 primary outcomes at 12 weeks (ii) Combined approach outperformed behavioral treatment alone
Parkes <i>et al.</i> ³⁹	2022	A peer-delivered intervention to reduce harm and improve the well-being of homeless people with problem substance use: The SHARPS feasibility mixed-methods study	Pilot study	Test a peer-led relational intervention to reduce harm and improve functioning	68	SHARPS	(i) ↓ Drug use (ii) ↑ Opioid substitution therapy uptake (iii) ↓ Risky practices and sexual behaviors (iv) ↑ Service engagement and self-efficacy (v) Strong participant-rated peer navigator relationships
Kertesz ⁴⁰	2021	A new approach to treating alcohol use disorder in people experiencing homelessness	RCT	Assess the effectiveness of HaRT-A with or without XR-NTX versus usual care	308	HaRT-A+XR-NTX; HaRT-A+placebo, HaRT-A alone	(i) ↓ Alcohol use (ii) ↓ Alcohol-related harm (iii) ↑ Quality of life versus TAU
Ojo-Fati <i>et al.</i> ⁴¹	2016	Integrating smoking cessation and alcohol use treatment in homeless populations: study protocol for a randomized controlled trial	RCT	Integrated program combining CBT for smoking/alcohol use with NRT versus brief counseling improves abstinence.	645	CBT; NRT; counseling	(i) No significant differences versus usual care (ii) Slight trend toward ↑ smoking abstinence at 26 weeks
Rash <i>et al.</i> ⁴²	2017	Substance abuse treatment patients in housing programs respond to contingency management interventions	RCT	Evaluate the effectiveness of contingency management among individuals in housing programs receiving substance use treatment	355	CM	CM effective across different housing contexts Benefits comparable to individuals not enrolled in housing programs

(Cont'd)

Table 1. (Continued)

Authors	Year	Title	Study design	Objective	Sample	Interventions	Outcomes
Rash <i>et al.</i> ⁴³	2018	A randomized trial of contingency management for smoking cessation in the homeless	RCT	Examine smoking cessation outcomes when standard care (NRT+counseling+CO monitoring) is combined with CM	70	CM; NRT; eCO	(i) ↑ Consecutive abstinence periods (ii) ↑ Proportion of CO-negative samples (iii) CM improved cessation outcomes versus standard care alone
Alizaga <i>et al.</i> ⁴⁴	2020	Alternative flavored and unflavored tobacco product use and cigarette quit attempts among current smokers experiencing homelessness	Cross-sectional observational study	Evaluate quit attempts and perceptions of harm/dependence related to ATP among homeless smokers	470	ATP	(i) ↑ Perceived harm and dependence for cigars, smokeless tobacco, and similar ATPs (ii) Attitudinal factors may influence quit attempts
Hartman-Filson <i>et al.</i> ⁴⁵	2022	A community-based tobacco cessation program for individuals experiencing homelessness	RCT	Assess whether pharmacist-led tobacco cessation counseling + NRT reduces smoking	52	Pharmacist-led cessation counseling+NRT	(i) 70% expressed readiness to quit (ii) 84% used NRT (iii) Meeting with the pharmacist resulted in 40% reduction in weekly cigarette consumption
Upshur <i>et al.</i> ⁴⁶	2015	A randomized controlled trial of a chronic care intervention for homeless women with alcohol use problems	RCT	Evaluate whether a chronic care model reduces alcohol use and improves health outcomes among homeless women	82	PCP; CM	(i) Significant ↓ in alcohol use at 6 months (ii) ↑ Access to addiction treatment services
Malte <i>et al.</i> ⁴⁷	2017	Providing intensive addiction/housing case management to homeless veterans enrolled in addictions treatment: A randomized controlled trial.	RCT	Whether AHCM improves housing, substance use, mental health, and functioning versus HSG in homeless veterans	181	AHCM program; HSG	(i) AHCM ↑ treatment duration by +52.7 days (ii) ↑Service engagement (iii) Both groups showed improvements in substance use and psychiatric outcomes
Morse <i>et al.</i> ⁴⁸	2020	Improving outcomes for homeless people with alcohol disorders: a multi-program community-based approach	RCT	Assess intensive community-based programs for homeless individuals with alcohol use disorders	322	CRA; ACT/IDDT	(i) ↑Improvements in alcohol use, mental health, housing, employment, and healthcare access (ii) Gains largely sustained from 6 months to discharge
DiGiuseppi <i>et al.</i> ⁴⁹	2021	Comparing the effectiveness of three substance use interventions for youth with and without homelessness experiences prior to treatment	RCT	Compare A-CRA, MET/CBT, and TAU among youth with and without homelessness histories.	855	A-CRA, MET/CBT, TAU	(i) All interventions ↓ substance use and related problems (ii) MET/CBT showed added benefits for youth with homelessness experience

Abbreviations: A-CRA: Adolescent community reinforcement approach; ACT: Assertive community treatment; AHCM: Addictions Housing Case Management; AOD: Alcohol and other drug; ATP: Alternative tobacco products; CBT: Cognitive behavioral therapy; CM: Contingency management; CO: Carbon monoxide; CRA: Community reinforcement approach; eCO: Exhaled carbon monoxide; HART-A: Harm reduction treatment for alcohol; HF: Housing First; HIV: Human immunodeficiency virus; HSG: Housing support group; IDDT: Integrated dual disorder treatment; MET: Motivational enhancement therapy; MI: Motivational intervention; NRT: Nicotine replacement therapy; PCP: Primary care provider; PRISM: Partnership for Recovery in Shelter-based Mental Health; RCT: Randomized controlled trial; SHARPS: Supporting Harm Reduction through Peer Support; TAU: Treatment as usual; T-GMI: Tobacco-focused group motivational intervention; XR-NTX: Extended-release naltrexone.

management (CM) interventions were effective in promoting smoking abstinence among homeless individuals engaged in substance use treatment. In a subsequent trial, Rash *et al.*⁴³ demonstrated that CM combined with NRT significantly increased consecutive periods of smoking abstinence and the percentage of carbon monoxide-negative samples compared to standard care. Alizaga *et al.*⁴⁴ investigated perceptions of alternative tobacco products (ATP) among homeless smokers, reporting that ATP were generally seen as more harmful and addictive than conventional cigarettes, although this did not translate into higher quit attempts.

Finally, Hartman-Filson *et al.*⁴⁵ found that a program combining pharmacist-led counseling with NRT resulted in a 40% reduction in weekly cigarette use among participants who had recent contact with outreach workers.

3.5. CASE MANAGEMENT AND INTEGRATED CARE

Intensive case management emerged as another impactful strategy. For instance, Upshur *et al.*⁴⁶ evaluated a chronic care model involving a care manager and primary care provider for homeless women with alcohol problems. The intervention led to a significant reduction in alcohol use after 6 months and facilitated increased access to substance use treatment services. Malte *et al.*⁴⁷ found that homeless veterans in an Addictions Housing Case Management program remained in treatment longer and reported better alcohol and drug abstinence outcomes. Morse *et al.*⁴⁸ showed that community reinforcement and assertive approaches (e.g., community reinforcement approach, ACT/integrated dual disorder treatment) produced gains across mental health, substance use, employment, and housing domains.

3.6. COMPARATIVE INTERVENTIONS

DiGuseppi *et al.*⁴⁹ compared three interventions—community reinforcement approach, motivational enhancement therapy/CBT, and treatment-as-usual—among homeless and stably housed youth. They reported that all treatments effectively reduced substance use, with motivational enhancement therapy/CBT particularly effective for homeless youth.

4. DISCUSSION

SUDs represent one of the most prevalent and debilitating problems among individuals experiencing homelessness. The literature consistently documents higher rates of problematic substance use in homeless individuals compared to the general population. This elevated vulnerability stems from a complex interplay of multiple factors, including social exclusion, extreme poverty, untreated mental health conditions, histories of trauma, and limited access to effective healthcare.^{3,11,12} In turn, substance use often sustains and deepens homelessness, perpetuating a vicious cycle of marginalization, relapse, and disengagement from support systems.⁵⁰

Given this complexity, it is critical to identify interventions that are not only clinically effective but also feasible in high-vulnerability contexts, where even minimal stability and continuity cannot be assumed. Traditional approaches based on abstinence, rigid rules, or high-threshold residential programs often prove unsuitable or alienating for this population; instead, these individuals often require

flexible, accessible, integrated, and harm-reduction-oriented pathways.³

This scoping review highlights a range of behavioral interventions targeting SUDs among the homeless population that share several core features, including strong therapeutic alliances, nonjudgmental attitudes, practical support, and goal flexibility.

Housing-based interventions—particularly Housing First models—have been proven to be particularly effective in improving housing stability and reducing alcohol and cannabis use, enhancing mental health, and facilitating engagement.²⁸⁻³³ However, several researchers highlight that the effectiveness of Housing First depends not only on the provision of housing but also on the quality and continuity of the support services that accompany it.⁵¹ Without stable, multidisciplinary, and person-centered assistance, housing-based interventions alone may not be sufficient to meet the complex needs of individuals with co-occurring mental health and SUDs.^{29,32,33} Moreover, implementing Housing First in resource-limited contexts, such as many European and Italian settings, presents additional challenges. These include the lack of affordable housing, the fragmentation of local service systems, and limited funding for integrated support teams.^{52,53} These barriers likely contribute to the scarcity of European studies identified in this review and highlight the difficulty of transferring North American models to different welfare structures.

Brief motivational programs, including AWARE and group motivational interventions, have shown promise, especially among young adults, producing tangible improvements not only in substance use but also in risky sexual behaviors and overall quality of life.³⁴⁻³⁷ Their simplicity and brief format make them particularly suitable for mobile or unstable contexts, where contact time may be limited. Similarly, Santa Ana *et al.*³⁷ demonstrated that T-GMIs enhanced engagement among homeless veterans with nicotine and other SUDs. However, an important limitation concerns the uncertainty surrounding the long-term maintenance of these changes. Although some studies reported benefits at 12³⁶ and 24³⁷ months, the broader literature on homelessness indicates persistent risks of relapse and service disengagement over time, reflecting the structural instability and frequent disruptions that characterize this population's daily life.⁵⁴

Harm reduction approaches, such as the HaRT-A intervention, have been crucial in engaging individuals who are not ready or motivated for abstinence, offering them a more humane and realistic alternative.^{39,41} When combined with pharmacological treatments (XR-NTX), these interventions have shown further improvements in clinical outcomes.³⁸ Despite their demonstrated effectiveness, harm reduction strategies often encounter systemic resistance. Many treatment systems—especially in parts of Europe—remain oriented toward abstinence-based models, creating philosophical and operational tensions that can hinder their implementation.^{55,56} Peer-delivered interventions, such as the Supporting Harm Reduction through Peer Support program evaluated by Parkes *et al.*³⁹ underscore the additional value of integrating lived experience into service delivery. This approach contributes not only to reductions in drug use and risky sexual practices but also improves engagement with services and participants' perceived ability to navigate support systems autonomously. However, the literature indicates that while peer involvement can enhance trust and program acceptability, it requires structured training,

supervision, and organizational support, resources that are often insufficient in many service contexts.⁵⁷

Other behavioral strategies, such as CM and digital tools (e.g., Short Message Service reminders), have been proven valuable for supporting smoking cessation and treatment engagement, even without formal therapeutic structures.^{43,44} Perceptions of ATPs, as examined by Alizaga *et al.*,⁴⁴ also highlight attitudinal factors that may inform future cessation efforts.⁴⁸⁻⁴⁹ At the same time, although CM shows strong efficacy in reducing tobacco and other substance use, implementation remains challenging.

Intensive case management approaches have contributed additional benefits across mental health, substance use, employment, and housing stability, underscoring the central importance of continuity, trust, and relational engagement.⁵⁸ In many cases, the therapeutic relationship emerges as a key determinant of success, often outweighing the specific techniques employed.¹⁰

Moreover, an intersectional perspective is essential to fully understand the complexity of substance use among homeless individuals. Gender, ethnicity, sexual orientation, mental health, and histories of violence or abuse intersect and amplify individual vulnerability and treatment responsiveness.³

A key finding of this review is the marked underrepresentation of European and Italian studies, likely linked to limited research funding, more restrictive ethical requirements for conducting randomized controlled trials with vulnerable populations, and fragmented welfare systems that complicate rigorous evaluation. As a result, practitioners in these contexts often rely on evidence developed in settings with very different housing, healthcare, and social policy structures, raising questions about transferability.^{59,60} Although qualitative studies were excluded to maintain the review's quantitative focus, this creates a methodological tension: Many mechanisms highlighted here, such as therapeutic alliance, acceptability, and lived experience, are best explored through qualitative inquiry.⁶¹

Overall, these findings confirm that there is no one-size-fits-all solution. Homeless individuals with SUDs benefit most from modular, person-centered approaches that account for both their material conditions and readiness to change. Addressing this issue requires multi-level strategies that integrate individual care with systemic efforts to tackle structural determinants, such as housing shortages, income inequality, and gaps in mental health services.⁶² Only by bridging clinical and social interventions can sustainable pathways out of homelessness and addiction be created.

5. LIMITATIONS

Several limitations of this scoping review must be acknowledged. The included studies were highly heterogeneous in terms of intervention type, duration, target population, and outcome measures, limiting direct comparability and the ability to draw rigorous, generalizable conclusions. As a scoping review, this study did not include a quantitative synthesis of effect sizes (e.g., meta-analysis), preventing conclusions about the relative efficacy of different approaches.

Another limitation concerns the inherent diversity of the homeless population itself. The studies included individuals living on the streets, in shelters, in transitional housing, or in unstable accommodation. While this diversity enriches our understanding of the issue across different living contexts, it also introduces complexity when interpreting

comparative data. Furthermore, most studies employed follow-up periods of 3–6 months, which further restricts our ability to assess the sustainability of interventions over time. Long-term data are crucial to understanding whether improvements in substance use, mental health, or housing stability persist beyond initial program engagement.

There is also a risk of selection bias due to the exclusion of non-indexed studies, gray literature, and non-English publications, which may limit the global applicability of our findings.

Finally, very few studies incorporated the direct perspectives of people experiencing homelessness. Although qualitative studies were excluded to maintain methodological coherence, this omission restricts insight into acceptability, feasibility, and contextual relevance—dimensions essential for successful implementation.

6. FUTURE PERSPECTIVES

These findings and limitations underscore the urgent need for continued investment in realistic, context-sensitive interventions for homeless individuals with SUDs. One of the goals of this review was to offer researchers, practitioners, and service planners an updated evidence base to inform the design of new, concrete initiatives—particularly in contexts, such as Italy, where scientific literature remains limited.

Future research should prioritize rigorous and structured studies with large sample sizes, controlled experimental designs, and long-term follow-up periods to evaluate sustainability. Mixed-methods designs are particularly essential, integrating quantitative outcomes with qualitative approaches to explore mechanisms of change, barriers, and lived experience. In addition, cost-effectiveness studies are necessary to demonstrate that investing in psychosocial and housing interventions can translate into net savings for health and social systems.

On the programmatic side, the evidence suggests that future initiatives should be flexible, integrated, and tailored so as to address the multiple needs of individuals, which often extend beyond substance use to mental health, housing instability, social isolation, and trauma. The most effective interventions do not impose rigid models but adapt to complex situations, facilitating active engagement even without immediate readiness for abstinence. Harm reduction strategies, empowerment, and stepwise service access—ideally incorporating peer support from individuals with lived experience—are crucial for building the trust that conventional clinical approaches may fail to achieve.

In addition, simple, low-cost digital technologies, such as Short Message Service, health applications, or online platforms, hold promise for reaching and supporting individuals living in extreme instability. When designed accessibly, these tools could have a concrete impact even in contexts, such as Italy, where resources are often limited and engagement with the most vulnerable can be inconsistent.

In summary, this review offers valuable insights to stimulate new pilot studies and experimental interventions in the Italian and European context, adapting best practices validated abroad to local social and cultural realities. Italy hosts many volunteer-based or informal support initiatives for homeless people, but often lacks a systemic framework linking these actions to scientific research and outcome evaluation. Promoting partnerships among universities, social services, third-sector organizations, and institutions

could thus be a key step toward transforming theoretical knowledge into concrete, evidence-based actions capable of producing real change in the lives of the most vulnerable.

7. CONCLUSION

This scoping review highlights the complex interplay between homelessness and SUDs, emphasizing the urgent need for tailored, evidence-based interventions. Integrated, multidisciplinary approaches, such as Housing First, motivational group therapies, harm reduction models, and intensive case management, have been shown to improve treatment adherence, reduce substance use, enhance housing stability, and promote overall quality of life. However, several gaps remain, including a lack of long-term studies, challenges in adapting interventions across diverse cultural contexts, and a need for more personalized, sustained care pathways.

By synthesizing findings from these international studies, this work provides an updated evidence base to inform future research and guide the development of innovative intervention models, particularly in settings like Italy, where service integration is often fragmented. Addressing SUDs among people experiencing homelessness must move beyond emergency responses to become a public health and social priority, requiring coordinated, long-term, and person-centered strategies that respect local contexts. Only through such approaches can we offer not just assistance, but meaningful opportunities for recovery, dignity, and sustainable reintegration.

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AUTHOR CONTRIBUTIONS

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