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Effectiveness of Mutual Health Groups for Illicit Drug Use Disorders: A Review of the Current Literature

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Abstract

Purpose of Review Evaluate literature examining whether mutual help groups (MHGs) for illicit drug use disorders benefit participants.

Recent Findings Recent studies consistently show that MHG attendance and involvement predict reductions in drug use and addiction severity. More rigorous methodologies offer stronger evidence of effectiveness, but additional controlled trials are needed. Drug-focused MHG challenges include lower success rates of professionally-delivered interventions to facilitate participation compared to alcohol-focused MHGs, and stigma towards opioid agonist medications. Culturally-tailored MHG formats may benefit specific populations (e.g., racial/ethnic minorities). Non-12 step MHGs like SMART Recovery show promise, but research is limited. Online delivery formats positively affect retention.

Summary Evidence on the benefits of MHGs for drug use disorders is encouraging but incomplete. MHG engagement may be enhanced by cultural adaptations and reduced stigma towards medications. Future research should focus on non-12 step MHGs, treatment integration, optimizing online formats, and understudied groups (e.g. Indigenous populations). Selection bias remains a challenge in evaluations of MHG effectiveness.

Keywords Mutual help groups · Substance use disorder · Treatment outcome, systematic review

Introduction

Description of the Intervention

Mutual help groups (MHGs) have gained prominence as widely-accessed resources for people seeking recovery from illicit drug use disorders [1–3]. These non-professional, peer-led organizations offer a sense of community, recovering role models, spiritual development and coping strategies to promote and support recovery [1]. Most MHGs utilize the 12-step model pioneered by Alcoholics Anonymous (AA) which is effective at reducing alcohol related problems [4]. Other MHGs are affiliated with smaller but important organizations that offer an alternative approach (e.g., LifeRing, Recovery Dharma, SMART Recovery, Wellbriety, Women for Sobriety) [1]. Because MHGs require no paid professionals they serve as a free, widely accessible adjunct or alternative to formal treatment services [5, 6]. MHGs qualify as a low-barrier resource because they require no appointments, health insurance, identification, or other paperwork [7].

How the Intervention Might Work

Similar to AA, MHGs for illicit substance use may support recovery through multiple possible mechanisms. First, social support and increased accountability from peers, and the act of sharing experiences within the group setting can help foster a sense of community that mitigates feelings of isolation, shame and distrust [8]. Second, MHGs include role-models with personal experience of recovery who can increase motivation to change and self-efficacy [9]. Establishing a "therapeutic alliance" with a mentor (i.e., sponsor) has also been shown to have positive benefits to recovery [10]. Third, the spiritual principles and beliefs of many MHGs can provide members with a sense of meaning and purpose [11, 12]. Fourth, individuals have the opportunity

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to learn coping skills which can lead to improvements in psychosocial functioning (e.g. adaptive changes in social networks and reduced cravings) [13] and reduced substance use [14]. Through these interconnected mechanisms of peer support, modeling, spiritual growth, and coping skill development, MHGs offer a comprehensive framework for recovery.

Existing Research and Need for Review

Although substantial evidence supports the effectiveness of AA for individuals with alcohol use disorders, research specifically examining MHGs for illicit drug use is less developed and more methodologically heterogeneous [15]. Recent studies have identified positive associations between MHG participation and reduced substance use severity among individuals with drug use disorders [16, 17]. However, questions remain about replicability and generalizability of these findings across different populations and cultural contexts [15, 18]. We therefore review here peer-reviewed studies from the past five years that examined MHG effectiveness for illicit drug use disorders. Included studies utilized various methodologies: randomized controlled trials, quasi-experimental studies, longitudinal studies, cross-sectional surveys, qualitative analyses, and systematic reviews.

Objectives

This review critically evaluates key studies from recent literature (2019–2024) on the effectiveness of MHGs for individuals engaged in illicit drug use, with or without a formally diagnosed drug use disorder.

Why it is Important to do this Review

Understanding the effectiveness of MHGs for illicit drug use is critical for informing clinical practice and guiding the development of public health policies. For example, research indicates that untreated substance use disorders create substantial burden on healthcare systems [19]. This review is also important given the skepticism that some healthcare professionals maintain toward MHGs despite their widespread use and accessibility [2, 20, 21]. Consequently, our review aims to provide clinicians, researchers, and policy makers with an update and synthesis of recent findings from higher-quality studies (e.g., randomized trials, pooled analyses, longitudinal studies with comparison groups, and well-controlled observational studies) published within the past five years. By synthesizing this evidence, our review can help clinicians and policymakers make informed decisions related to MHG utilization for persons with illicit drug use disorders.

Methods

We searched the peer-reviewed literature published from July 2019 to July 2024. We found an initial set of 287 studies, sourced from PubMed, Medline and Web of Science. Our search terms included variations of "12-step group/program," "mutual help group," "peer support," and specific MHG names (e.g., Narcotics Anonymous [NA], SMART Recovery). Studies that were of adolescents, were unrelated to illicit substance use, did not include MHGs, were non-empirical, or lacked peer-reviewed data were excluded through title review. We screened abstracts of the remaining 147 articles, and 67 studies were excluded for various reasons, including methodological ineligibility (e.g. inadequate sample sizes or issues related to study design or analysis), leaving 80 studies eligible for further text review. Papers were excluded in the full text review if they focused on non-substance use topics, covered tangential areas like general social support, professionally-provided treatments without MHGs or other recovery support services (e.g., peer coaches). We finalized a set of 21 studies for our analysis of recent key evidence on MHGs for adults who engage in illicit substance use.

Summary of Findings

Primary Effectiveness and Substance Use Outcomes

Recent studies of addiction-focused MHGs have examined the magnitude and mechanisms of their effectiveness for drug use disorders. Older studies of MHGs tended to use cross-sectional designs without comparison groups [1]. The recent studies reviewed here utilized more rigorous research designs, such as pooled analyses of clinical trials, propensity score matching, and systematic reviews with meta-analysis components. Although selection bias is still a potential threat to validity given that most studies are non-experimental, most studies evaluating the effectiveness of MHGs for illicit drug use disorders reported consistent if modest improvements in substance use outcomes and reductions in addiction severity.

For example, Humphreys et al. [16] conducted a pooled analysis of six randomized clinical trials ($n = 1{,}730$) evaluating the effect of 12-step group participation (e.g., Cocaine Anonymous, Crystal Meth Anonymous, Narcotics Anonymous) facilitation on the drug and alcohol composite scores of the Addiction Severity Index [16, 22]. MHG attendance predicted improved outcomes, but effect-sizes were smaller than those typically seen in studies of individuals with alcohol use disorder who attended AA. Importantly, interventions to facilitate patient participation at 12-step MHGs were

less successful at increasing participation in drug-focused groups than alcohol-focused groups (e.g. AA). These differences may be explained by structural (e.g. number of available meetings) and population-specific challenges (e.g. higher rates of unemployment and psychiatric comorbidity among drug use disorder patients). Findings of this study suggest that illicit drug-focused 12-step MHGs are effective for reducing substance use and related problem outcomes (e.g. days of use and addiction severity). However, this conclusion could be affected by selection bias given the observational nature of the evidence.

Leurent et al. [23] conducted a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) of 55 studies of addiction-focused MHGs other than AA. A meta-analysis of 8 studies [24–31] revealed that greater MHG attendance was associated with decreased levels of addiction-related symptoms (e.g., substance use frequency, craving, relapse). The evaluators rated this evidence as medium to high methodological quality. In contrast, only lower quality evidence supported the conclusion that greater MHG participation positively correlated with better quality of life. Studies evaluating NA were generally supportive of its effectiveness with a robust level of evidence compared to other MHGs. However, the authors noted that some NA members and/or groups may stigmatize individuals that utilize opioid agonist therapies (e.g., methadone). Leurent and colleagues' findings add to the body of evidence suggesting that MHG attendance and involvement are effective at reducing a broad range of addiction-related symptoms and behaviors. Among the MHGs included in the review, NA was the most extensively researched and demonstrated the most consistently positive results across studies.

In another study on MHGs, Costello et al. [17] followed 254 individuals after inpatient treatment, and used propensity score matching to show that high involvement in 12-step MHGs (consistent meeting attendance, service work and sponsor relationships) predicted a significant reduction in substance use problems (i.e., any alcohol or drug use). Specifically, participants with high MHG involvement (e.g. having a home group, sponsor, attending weekly meetings) during the 3 months post-treatment were significantly less likely to use any substances at 12 months compared to those in a moderate to low involvement group. However, limitations include a high attrition rate and the potential risk of sampling bias. These findings demonstrate a potential causal effect between high 12-step MHG involvement and a lower likelihood of any substance use at 12-months post-treatment.

Recent research has examined the acceptability of different MHG types among individuals who use specific substances. For example, Galanter et al. [32] surveyed NA members in long-term recovery who reported methamphetamine as their primary substance ($n=647$). The study analyzed the elements that participants who used methamphetamine reported as supportive of their recovery, both within NA and through external resources. Factor analysis revealed that participants relied most heavily on social support elements within NA, followed by various spiritual elements, and then professional support outside of NA. In a separate study on MHGs, Beck and colleagues [33] conducted analyses of 22,185 SMART Recovery sessions across 3841 groups in Australia. They demonstrated that although alcohol was the primary reason for attendance (51.1%), methamphetamine emerged as the second most common reason (22.2%) for attendance. Moreover, SMART facilitators rated group cohesion using a validated measure [34] and reported consistently high levels of cohesion regardless of the proportion of participants attending for methamphetamine use. These findings suggest that people who use methamphetamine may find MHGs an effective source of social support.

The evidence from these above studies suggests that MHGs offer consistent, modest, yet meaningful benefits for individuals with illicit drug use disorders by improving substance use outcomes and reducing addiction severity. The increasing use of rigorous methodologies, including propensity score matching and pooled trials, marks an important advance in the field. However, the effects of selection bias in non-experimental studies persist as a significant challenge that needs further attention. Additional randomized trials using comparison groups are needed to provide more definitive evidence.

Delivery Format Effectiveness

Telehealth and digital health services are transforming the landscape of substance use disorder treatment [35–38]. Digital and telehealth modalities address treatment barriers like transportation challenges, service shortages in rural areas, and high healthcare costs [37]. MHG meetings shifted to online and hybrid formats during COVID-19 due to social distancing restrictions [39]. Emerging evidence suggests online formats are effective for facilitating meeting attendance in alcohol-related groups [40]. This section reviews recent literature on online MHGs addressing illicit drug use disorders.

Overall, recent studies examining outcomes for online MHGs show generally promising results. For example, Galanter et al. [41] conducted a cross-sectional study assessing the transition to virtual NA meetings during COVID-19 and their effectiveness in supporting abstinence. About two-thirds (64.9%) of participants reported that virtual meetings were at least as effective as face-to-face meetings for supporting their abstinence; about one-third reported that

virtual meetings were less effective. Black participants were more likely than White participants to find virtual meetings at least as effective as face-to-face meetings and additionally reported lower levels of loneliness and craving from virtual formats. In a follow-up study analyzing online NA formats, Galanter et al. [42] found that continuous meetings (i.e., available 24 h a day) increased engagement and were beneficial to individuals with social anxiety who reported feeling more supported compared to in-person settings. These findings highlight the benefits of flexible delivery formats to sustain engagement among diverse populations. However, evidence suggests that online meetings may not provide the same level of interpersonal connection as in-person meetings which may limit their effectiveness.

A similar study found that participant ratings of experience, engagement and perceived contribution to recovery of online meetings were largely positive [43]. Among 1,414 individuals from Australian SMART Recovery groups conducted online, over 90% reported positive experiences, feeling welcomed, supported, and committed to continuing online meetings. However, one-fifth of participants (21.5%) encountered technical difficulties which demonstrates potential challenges. A follow up study by Beck et al. [44] demonstrated high satisfaction with online formats with the majority of respondents reporting feeling welcomed, supported and able to contribute. Among 345 participants who had attended both in-person and online meetings, 89% felt that online groups were just as good (37%) or better (52%). However, the authors noted that only half of the organizations providing meeting spaces and infrastructure who had the capacity to convene online meetings offered at least one online meeting during the 12-month evaluation period, which suggests significant barriers from the provider side. Consequently, venue provider willingness and infrastructure capacity to deliver online services, and participant experiences with technical difficulties are potential barriers to online SMART facilitation [37, 45]. Finally, Krentzman [46] reviewed evidence on remote MHG effectiveness before and during COVID-19 and offered clinicians practical guidance for connecting patients to these resources. Findings suggest that providers should encourage patient resilience with technical issues, encourage active online group participation, and emphasize remote attendance benefits like accessibility and diverse connections.

In sum, recent literature suggests that remote MHGs may be effective at supporting recovery and be more accessible than in person meetings. However, online formats may not fully replicate the benefits of in-person engagement. Future studies of online formats should examine barriers to technological implementation, including both participant challenges and venue-related obstacles to delivering online services. Longitudinal studies are also needed to facilitate development of evidence-based implementation guidelines.

Cultural Considerations and Specific Populations

Cultural Considerations

Despite the increased accessibility of MHGs, evidence of their effectiveness in specific cultural contexts remains incomplete [3, 18]. This section examines recent studies on MHGs effective across different cultures, details adaptations that fit various cultural environments, and highlights common mechanisms of effectiveness across different contexts. A review of multi-national studies will provide insights into how cultural adaptations impact MHG effectiveness.

Findings from international research on MHGs has demonstrated varied effectiveness of NA across different cultural contexts. For instance, a 12-month prospective study by Mohseni et al. [47] compared "relapse" (i.e., continued use lasting at least two weeks) and "lapse" (i.e., return to use lasting one week or less) rates between NA participants and methadone maintenance patients in Iran ($n=100$ each group). Results suggest higher "relapse" rates among NA members compared to methadone patients, who experienced more "lapses." Social support was significantly associated with outcomes in both groups. Similarly, Aramideh et al. surveyed 300 individuals in Iran attending NA meetings versus rehabilitation centers over a 3-to-6-month period and compared rates of relapse among groups [48]. Results suggest that NA attendees experienced fewer relapses and higher rates of sustained remission than those in rehabilitation centers. Quality of life outcomes were examined by Bazazkahani et al. [49], who compared individuals participating in NA, Therapeutic Community (TC) group sessions, or methadone maintenance. Results suggested a significant improvement in quality of life for participants in NA and TC sessions after 1.5 months; NA group showed highest improvement in quality of life, followed by TC and methadone maintenance. Finally, Galanter et al. [29] conducted an international comparison of NA members in Iran ($n=262$) and the United States ($n=527$). Results suggest that NA was effective in both countries despite considerable cultural adaptations. Adaptations such as language modifications and religious adaptations (i.e., incorporating Islamic principles) facilitated NA's acceptance and effectiveness in Iran. Specifically, Iranian members reported high levels of NA involvement, spiritual experiences, and reduced craving intensity. Notably, NA members in Iran publicized the fellowship with public and religious figures and systematically worked the 12 steps in large sponsor-led groups. Consequently, studies from Iran show mixed but generally positive outcomes, with NA participants showing improved

quality of life and sustained remission rates compared to other treatment modalities. Social support emerged as a consistent mechanism of effectiveness across these studies.

Recent research from European contexts highlights the importance of specific programmatic elements for facilitating NA's effectiveness. For example, a cross-sectional study by Martinelli et al. [50] surveyed 367 individuals in recovery from drug use disorders in the UK, Netherlands, and Belgium; MHG participation was associated with engagement in additional social networks beyond the recovery group itself, greater levels of recovery capital [51], and a stronger commitment to sobriety. Dekkers et al. [52] examined NA in Flanders, Belgium and reported that the program's emphasis on connectedness and mutual support was a central component of recovery within the Flemish cultural context. Elements that enabled connectedness were (1) a non-judgmental approach, and (2) mutual understanding through sharing of experiences in NA meetings. Results provide evidence of the core elements that influence the effectiveness of NA for illicit drug use disorder in a European context across multiple national sites.

In sum, evidence from international studies suggests that MHGs can be effective across diverse cultural settings. Successful adaptation requires the alignment of spiritual and religious elements of MHGs with local beliefs. In the Iranian context, incorporating Islamic principles were a key feature of MHG adaptations whereas Western European contexts resulted in more secular interpretations. Moreover, social support structures should be tailored to cultural norms. Studies in Iran reported larger group formats and larger sponsorship networks than Western groups. These findings suggest that flexibility is crucial for the cross-cultural success of MHGs that still maintain the core elements of their mechanisms of change (e.g. peer support and spiritual growth).

Special Populations

Recent studies have examined MHG effectiveness across specific populations in the US, particularly focusing on justice-involved individuals and racial/ethnic minority groups. Justice-involved individuals and members of racial/ethnic minority groups may experience unique barriers to recovery due to the cumulative effects of trauma, intersectional stigma, and systemic inequalities [18, 53, 54]. Findings from recent studies highlight both unique challenges and opportunities for MHG adaptation to better serve these groups. For instance, Oser et al. [55] used latent class analysis to identify four distinct patterns of substance use, mental health symptoms, and social network drug use among Black women with criminal justice involvement (CJI) ($n=565$). Women in the high comorbidity needs class (i.e., those with co-occurring mental health and substance use issues) who also had high religious well-being scores [56] were more likely to participate in MHGs compared to women in other latent classes (low overall need, daily marijuana use, and high mental health needs). Women without criminal justice involvement showed lower engagement in both treatment and support groups compared to formerly incarcerated women. Findings highlight the importance of culturally tailored adaptations to improve treatment engagement and recovery outcomes among Black women with CJI. Cultural tailoring should include awareness of how racial dynamics around trust and comfort play out in American society, notably that both African-Americans and Whites are more likely to attend drug-focused MHGs if their own racial group is well-represented [57].

A systematic review by Dale et al. [58] examined MHG attendance among Indigenous populations of Australia, New Zealand, Canada, and the US. Findings suggest that cultural adaptation needs (e.g., integrating traditional healing practices and language adaptation) were crucial for MHG effectiveness among Indigenous groups. The authors highlighted an absence of empirical evidence examining either adapted or non-adapted MHGs for Indigenous peoples. Among the four published studies, the authors reported that Indigenous participants had mixed views about mainstream MHGs; some participants found MHGs helpful whereas others felt they were incongruent with their cultural values. In conclusion, although recent findings are promising, research on specific populations is limited and has largely focused on process measures (e.g., engagement, satisfaction). Consequently, more rigorous studies measuring substance use and recovery outcomes among specific populations are needed.

Mutual Help Groups and Medications for Addiction Treatment

Recent studies highlight tensions between some MHGs and the use of medications like methadone [59, 60]. This section reports on how members of MHGs engage with medications for addiction treatment (MAT) and examines how negative perceptions towards MAT within MHGs might impact engagement. In a national study, Wen et al. [61] analyzed treatment patterns among 447,966 individuals with OUD in specialty treatment. They demonstrated that 30.0% of individuals used either medication-only (i.e., buprenorphine, methadone, or naltrexone) or MHGs exclusively; a similar proportion (30.5%) did not engage with either treatment option. Notably, only one in ten individuals (10.4%) utilized both medication and MHGs in combination. Lower medication utilization rates were prevalent in residential facilities (i.e., inpatient), among justice-involved individuals, and in the Southern and Western United States regions. Outpatient

facilities compared to residential/inpatient facilities had higher rates of medication-only use (33.0% vs. 6.0% in residential/inpatient facilities) and higher rates of MHGs-only use (60.0% vs. 24.0% in residential/inpatient facilities). Black and Hispanic individuals were less likely than non-Hispanic Whites to use both MHGs and medications. Potential reasons include structural barriers (e.g., limited healthcare access and insurance coverage) and cultural factors (e.g., healthcare system mistrust and treatment stigma). This finding highlights a gap in treatment integration and suggests opportunities for improving care coordination for individuals receiving treatment for OUD.

Similarly, Andraka-Christou et al. [62] conducted a study with college students ($n = 1{,}281$) and demonstrated a negative correlation between using MAT and a measure of agreement with 12-step principles. Results indicate that young adults receiving MAT may feel less engaged with traditional 12-step programs. In a separate study, the same researchers [63] also conducted qualitative interviews with people on MAT and identified various forms of stigma within 12-step groups. These included stigma from healthcare professionals who questioned the appropriateness of medications, societal views perceiving people on medications as still dependent on a substance, self-stigma as individuals internalized shame about their treatment, and structural stigma due to some 12-step organization chapters restricting activities for those on medications. Participants mitigated stigma by either concealing medication use or seeking out more accepting support groups. Taken together, these studies highlight the persistence of barriers to individuals concurrently receiving MAT and participating in 12-step MHGs and indicate a need for targeted interventions to improve coordination between MAT and mutual help approaches.

Perhaps surprisingly, research indicates that individuals receiving MAT who participate in MHGs experience better substance use outcomes than those who do not attend [31]. That said, medication use by MHGs participants warrants more investigation [59, 60]. Medications for opioid use disorder are FDA-approved as they have been shown to significantly reduce illicit drug use, emergency department utilization, overdose rates, and improve quality of life [64, 65]. However, their acceptance within MHGs varies significantly. Qualitative studies have uncovered instances of explicit and direct stigmatization across different types of MHGs that may lead to discontinuation of MAT against medical advice [59, 60]. However, the literature lacks comprehensive quantitative data on both the prevalence and impact of stigma within MHGs.

Conclusion and Future Directions

Conclusion and Summary of Findings

Recent evidence suggests that MHGs for drug use disorders are effective at reducing drug and alcohol problems and substance use frequency while increasing rates of complete abstinence, but more rigorous studies are needed. Secondary outcomes like quality of life, cravings, and participants' supportive interpersonal connections may improve through MHG participation across diverse populations and treatment settings. MHG models can be effective in a range of cultural contexts (e.g. Europe, Iran) and among specific populations (e.g. justice involved individuals) though cultural adaptations may be necessary. The effectiveness of online MHG models is yet unclear, but emerging evidence suggests high acceptability and accessibility especially among individuals experiencing logistical barriers. Online MHG models may lack the depth of interpersonal connection found at in-person meetings. Challenges to 12-step MHGs include negative views about MAT treatment among some group members which can serve as a significant barrier to successful engagement; MAT-specific challenges have the potential to be mitigated through referrals to alternative MHGs (e.g. SMART, Methadone Anonymous). Taken together, recent findings support the effectiveness of MHGs for drug use disorders and highlight the need for clinicians to engage with patients to discuss the appropriate type and level of MHG participation.

Research Priorities and Future Directions

Future research should focus on three critical areas. First, studies must address MAT stigma in MHGs, compare use and discontinuation rates of medications across different mutual help groups, and evaluate how organizational policies affect medication acceptance. These questions are relevant given the emergence of new treatment options such as long-acting injectable buprenorphine [66]. Evidence suggests that long-acting injectable formulations of buprenorphine and naltrexone may be associated with different stigma dynamics due to their supervised administration and lower misuse potential [67, 68]. Understanding if the route of administration (injectable vs. oral) affects intervention stigma experienced within MHGs could help providers suggest appropriate support groups that align with their patients' medication decisions.

Second, targeted education campaigns and culturally tailored adaptations to MHGs should be studied as a way to increase accessibility and effectiveness of MHGs among diverse populations. Finally, additional studies are needed to evaluate the effectiveness of online models that have

become popular since the COVID-19 pandemic and to increase awareness of lesser known alternative MHGs such as such as SMART Recovery, Methadone Anonymous, and All Recovery [69]. Recent studies by Kelly et al. [70, 71] comparing characteristics and preferences of participants attending SMART Recovery versus AA are examples of the kind of rigorous comparative research needed to better understand non-12-step MHGs. In sum, although current evidence on MHG effectiveness for illicit drug use is promising, more experimental studies are needed to assess clinical outcomes with additional methodological rigor. Future research should prioritize controlled trials with study designs that can better evaluate causal relationships.

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Data Availability No datasets were generated or analysed during the current study.

Declarations

Human and Animal Rights and Informed Consent No human subjects by the authors were used in this study.

Competing Interests The authors declare no competing interests.

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