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Active ingredients of substance use-focused self-help groups

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ABSTRACT

Aims and methods This paper provides an overview of some of the probable active ingredients of self-help groups in light of four related theories that identify common social processes that appear to underlie effective psychosocial treatments for and continuing remission from these disorders. **Results** Social control theory specifies active ingredients such as bonding, goal direction and structure; social learning theory specifies the importance of norms and role models, behavioral economics and behavioral choice theory emphasizes involvement in rewarding activities other than substance use, and stress and coping theory highlights building self-efficacy and effective coping skills. A review of existing studies suggests that the emphasis on these active ingredients probably underlies some aspects of the effectiveness of self-help groups. **Conclusions** Several issues that need to be addressed to enhance understanding of the active ingredients of action of self-help groups are discussed, including consideration of indices of Alcoholics Anonymous (AA) affiliation as active ingredients, identification of personal characteristics that may moderate the influence of active ingredients on substance use outcomes, examination of whether active ingredients of self-help groups, can amplify or compensate for treatment, identification of potential detrimental effects of involvement in self-help groups and focusing on the link between active ingredients of self-help groups and other aspects of the overall recovery milieu, such as the family and social networks.

Keywords Abstinence, bonding, coping, goal direction, self-efficacy, self-help, structure.

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INTRODUCTION

Self-help groups, which are often called mutual support groups, are a key component of the system of informal care for individuals with substance use and psychiatric disorders. In fact, individuals make more visits to self-help groups (SHGs) for assistance with their substance use and psychiatric problems than to all mental health professional combined [1]. As many as 9% of adults in the United States have been to an Alcoholics Anonymous (AA) meeting at some time in their life [2] and almost 80% of adults who seek help for alcohol dependence participate in AA [3]. Attendance at SHGs is also very prevalent in Canada and Europe [4,5]. Moreover, there is remarkable generality in the association between participation in 12-Step SHGs and better substance use outcomes, which holds for individuals with alcohol and/or drug use disorders, individuals who have both substance use and psychiatric disorders, and women, youth and older adults [6–8]. Most of the relevant research has been conducted in the United States, but the general conclusions about the benefits of SHGs have been replicated in other countries [9,10].

Nevertheless, we still know relatively little about the active ingredients or social processes that account for the effects of 12-Step SHGs [11]. This issue is addressed here by describing four theories that specify some of the active ingredients that appear to contribute to effective psychosocial treatment of substance use disorders (SUDs), and considering research that identifies some of the probable active ingredients of SHGs. Several issues are highlighted that need to be addressed to further our understanding of the role and benefits of SHGs for individuals with SUDs.

THEORETICAL PERSPECTIVES AND REMISSION OF SUBSTANCE USE DISORDERS

Four main theories have been applied to identify some of the active ingredients that appear to protect individuals

from the development of substance use problems and may facilitate their resolution. These theories are social control theory, social learning theory, behavioral economics and behavioral choice theory and stress and coping theory; they identify comparable protective social processes in several life domains, including families, friendship networks and the work-place [12]. These theories also highlight some of the active ingredients that appear to underlie evidence-based treatments for SUDs, such as cognitive–behavioral treatment, 12-Step facilitation treatment and motivational enhancement treatment [13]. Accordingly, it is reasonable to speculate that comparable active ingredients may be involved in effective SHGs.

SOCIAL CONTROL THEORY

According to social control theory, strong bonds with family, friends, work, religion and other aspects of traditional society motivate individuals to engage in responsible behavior and refrain from substance misuse. These bonds encompass monitoring or supervision and directing behavior toward acceptable goals. When such social bonds are weak or absent, individuals are less likely to adhere to conventional standards and tend to engage in undesirable behavior, such as the misuse of alcohol and drugs. One set of causes of weak attachments to existing social standards is inadequate monitoring and goal direction, including families that lack cohesion and structure, friends who espouse deviant values and engage in disruptive behavior and lack of supervision and vigilance in work and social settings [14–16].

SOCIAL LEARNING THEORY

According to social learning theory, substance use originates in the substance-specific attitudes and behaviors of the adults and peers who serve as an individual's role models. Modeling effects begin with observation and imitation of substance-specific behaviors, continue with reinforcement for and expectations of positive consequences from substance use and culminate in substance use and misuse [17,18]. In essence, this theory proposes that substance use is a function of positive norms and expectations about substances and family members and friends who engage in and model substance use. Observing peers using alcohol and drugs can instill positive expectancies for the effects of these substances and provide models that show how to obtain and use them.

BEHAVIORAL ECONOMICS OR BEHAVIORAL CHOICE THEORY

The key element of the social context in behavioral choice theory is the alternative rewards provided by activities other than substance use. These rewards protect individuals from exposure to substances and opportunities to use them, as well as from maintaining and escalating substance use. The theory posits that effective access to rewards through engagement in educational, work, religious and social/recreational pursuits lessens the likelihood of choosing an alternative rewarding behavior, such as substance use [19]. For example, physical activity and substance use may both elevate mood and decrease anxiety, which may make them functionally similar and substitutable. Involvement in physical activities also encompasses social affiliation with individuals who do not use alcohol or drugs and reinforces the decision to refrain from using these substances.

STRESS AND COPING THEORY

Stress and coping theory posits that stressful life circumstances lead to distress and alienation and eventually to substance misuse [20]. Family stressors, such as physical and sexual abuse, continual conflict and lack of cohesion and structure, create alienation and distress. Life stressors may also generate anxiety by challenging an individual's self-image, such as when problems in the family or at work arouse doubts about self-competence. The theory assumes that stressors are most likely to impel substance use among impulsive individuals who lack self-confidence and coping skills and try to avoid facing problems and experiencing distress. For these individuals, substance use is a form of avoidance coping that involves self-medication to reduce alienation and depression.

To summarize this section, the key active ingredients posited by social control theory involve bonding or support, and the provision of goal direction and structure or monitoring (Table 1). The most important active ingredients of social learning theory are observation and imitation of family and social norms and models and the formation of expectations about substance use. The salient active ingredients of behavioral choice theory are fostering involvement in rewarding activities that protect individuals from temptation to use and misuse substances. Stress and coping theory focuses on the active ingredients of developing self-confidence and coping skills to manage high-risk situations and general life stressors. To note, although these four theories emphasize distinctive elements, they are interrelated. For example, abstinence-oriented role models and involvement in rewarding activities are likely to enhance social bonding and provide structure.

PROBABLE ACTIVE INGREDIENTS OF SELF-HELP GROUPS

Consistent with social control theory, many SHGs tend to provide such active ingredients as support, goal direction

Table 1 Key active ingredients specified by social control, social learning, behavioral choice and stress and coping theories.

Theory	*Active ingredients*
1. Social control	Bonding or cohesion/support
	Goal direction (from family, friends, work, religion)
	Structure or monitoring
2. Social learning	Observation and imitation of family/peer/community norms and models
	Expectations of positive and negative consequences
3. Behavioral choice	Involvement in protective activities
	Effective rewards from family, friends, work, religion, physical activity
4. Stress and coping	Identifying high-risk situations and stressors
	Building self-efficacy and self-confidence
	Developing effective coping skills

and structure by espousing positive social values and the importance of strong bonds with family, friends, work, and spirituality or religion [21]. Following social learning and stress and coping theories, many of these groups highlight active ingredients such as abstinence-oriented norms and role models and bolstering members' self-efficacy and coping skills. Consistent with behavioral economics, SHGs tend to focus on such active ingredients as engagement in rewarding pursuits, including substance-free social activities and helping others to overcome substance use problems.

The following sections consider the extent to which these interrelated active ingredients characterize effective SHGs. The majority of the empirical literature in this area focuses on 12-Step SHGs, primarily AA. However, there are some relevant studies on other sets of groups, including dual focus groups such as Double Trouble in Recovery (DTR), and recovery groups for individuals with psychiatric disorders such as GROW International.

SUPPORT, GOAL DIRECTION AND STRUCTURE

SHGs can be characterized by three sets of dimensions that appear to be active ingredients. Relationship dimensions reflect the quality of interpersonal relationships in a group and include the amount of cohesion and support. Goal orientation dimensions reflect the key areas in which the group encourages personal growth, such as responsibility, self-discovery and spirituality. System maintenance dimensions cover the extent to which a group embodies clear expectations and provides effective structure or monitoring of individual behavior. These three sets of dimensions constitute active ingredients that can bolster or limit the group's influence on members' outcomes.

A study of four AA groups that assessed these dimensions found that the groups had moderate to high emphasis on relationship dimensions (cohesion and expressiveness), aspects of goal direction (independence, self-discovery and spirituality) and organization [22]. On average, GROW International groups also tend to establish supportive, goal-directed and well-organized social climates oriented toward members' personal growth [23]. In general, members of groups with these characteristics tend to report more satisfaction and well-being and to experience better outcomes [24].

Consistent with these findings, individuals who are more involved in 12-Step groups are likely to have a larger number of friends and more support from their friends. For example, patients with SUDs who were more involved in 12-Step groups reported sharper increases between baseline and a 1-year follow-up in the size and frequency of contact with friends and better relationships with their friends. Involvement in 12-Step groups was associated with less substance use at a 1-year follow-up [25,26]. In addition, preliminary evidence indicates that increases in spirituality may mediate part of the effect of involvement in 12-Step SHGs on abstinence [27].

Individuals with both substance use and psychiatric disorders confront multiple challenges during recovery. Thus, social support may be a more important active ingredient in groups for dually diagnosed individuals than in traditional 12-Step groups. In a study of DTR, members who participated in the group perceived higher levels of social support more regularly and were less likely to use substances during the following year [28]. More social support was associated with less substance use in the following year. Moreover, higher levels of group support explained part of the association between participation in DTR in year 1 and less substance use in year 2. Spirituality also explains part of the association between affiliation in DTR and an increase in members' positive health behaviors [29]. These findings suggest that support and the goal direction provided by spirituality are active ingredients that help explain better substance

use and functioning outcomes among dually diagnosed individuals.

NORMS AND ROLE MODELS

Social control and social learning theories both emphasize the importance of norms and role models. Although group norms and models can emphasize non-problem drinking and harm reduction, in the vast majority of 12-Step SHGs they reflect abstinence orientation, which is a dominant goal direction and key active ingredient of these groups. Thus, as expected, individuals who are more involved in 12-Step groups tend to have more friends who abstain from alcohol and drugs and provide abstinence-specific support. Compared to baseline, at a 1-year follow-up patients with SUDs who were more involved in 12-Step groups reported fewer friends who used alcohol or drugs and friends who were more likely to support abstinence and recovery. Friends' support for abstinence explained part of the relationship between 12-Step group involvement and reduced substance use [25,26]. More contact with a sponsor and more 12-Step friends have also been associated with a higher likelihood of SUD patients' abstinence 2 years after discharge from an acute episode of care [30].

By encouraging abstinence-oriented friendships, involvement in 12-Step groups can shield individuals from the negative influence of substance-using friends. In this regard, clients whose social networks were highly supportive of drinking at treatment entry, but who attended AA regularly, were more likely to be abstinent and to drink less heavily on drinking days at a 3-year follow-up [31]. In another longitudinal study, more AA-based support for reducing drinking, a higher percentage of friends who encouraged reduced drinking and a lower percentage who were heavy or problem drinkers, predicted abstinence at both 1-year and 3-year follow-ups. Compared to individuals who did not have AA-based support, those who obtained such support between the 1- and 3-year follow-ups were more likely to be abstinent at the 3-year follow-up [32].

In a 5-year follow-up of this sample, individuals with stable AA attendance had about twice the number of friends who supported cutting down or quitting drinking than did individuals with low and declining attendance, and they had the highest abstinence rates. A group of individuals who attended AA frequently maintained abstinence even though they had some heavy drinkers and drug users in their social network. The abstinence-oriented support of AA appears to have been the active ingredient that protected these individuals from the potential negative influence of their social network [33]. AA-based support also appears to mediate or explain part of the relationship between AA involvement and reduced alcohol problems and abstinence [32,34].

In modified 12-Step groups, such as DTR, abstinence-oriented norms and role models reflect one important active ingredient. In addition, these groups encompass norms and role models who support adherence to prescribed medication regimens and teach ways of managing psychiatric symptoms. Accordingly, consistent attendance at DTR groups has been associated with better adherence to medication regimens, fewer psychiatric symptoms and a lower likelihood of hospitalization [35].

ENGAGEMENT IN REWARDING ACTIVITIES

Another active ingredient of many SHGs involves their role in engaging members in rewarding substance-free social pursuits, such as home groups, parties and community activities. Members who are more involved in group meetings and related activities, such as doing service and becoming a sponsor, are more likely to achieve and maintain abstinence [33]. Involvement in religious groups and educational organizations has also been associated with a higher likelihood of successful abstinence. In fact, community involvement predicted 1-year abstinence among drug-dependent individuals independent of attendance at AA/NA and being a sponsor. By helping their members become more socially integrated, SHGs increase the likelihood of sustained abstinence [36].

SHGs also provide members with an opportunity to help other individuals in need, which tends to increase the helper's sense of purpose and personal responsibility, rewards for remaining sober and commitment to recovery [37]. In a prospective study based on data from Project MATCH, recovering individuals who became sponsors or were otherwise engaged in helping other alcoholics were less likely to relapse [38]. Similarly, compared to DTR members who were less involved in sharing at meetings and helping other members, those who were more involved in these activities were more likely to be abstinent at a 1-year follow-up [39]. Individuals in GROW International who provide informational support and guidance to other group members also seem to improve more in social adjustment [40]. In addition, group members who provide support may experience more well-being than members who simply receive support [41].

Sponsors provide other members with support and direction, 12-Step instruction, tips to help promote abstinence and improve relationships and crisis intervention. Engaging in these helping activities can improve the sponsor's self-esteem and social standing, strengthen the

sponsor's social network and provide a model of successful commitment to live a sober life-style. Accordingly, SHG members who become sponsors are more likely to maintain abstinence than those who do not [36]. In fact, in a 10-year follow-up, a striking 91% of individuals who sponsored other AA members throughout the follow-up were in remission [42].

BOLSTERING SELF-EFFICACY AND COPING SKILLS

The active ingredients of SHGs reviewed thus far tend to enhance motivation for recovery, self-efficacy to resist substance use and effective coping skills. We turn now to focus more directly on self-efficacy and coping skills, the active ingredients that are associated with stress and coping theory.

Self-efficacy and motivation

Affiliation with AA tends to be associated with increases in members' self-efficacy and motivation for abstinence. For example, in a 16-year follow-up of initially untreated individuals with alcohol use disorders, longer participation in AA in the first year after initiating help-seeking was associated with more self-efficacy to resist drinking in high-risk situations at 1-, 8- and 16-year follow-ups. In turn, 1-year self-efficacy was associated with less alcohol consumption and fewer drinking problems at 16 years [6,43].

Similarly, an analysis of data from Project MATCH showed that participation in AA was related positively to self-efficacy to avoid drinking. Self-efficacy predicted a higher likelihood of abstinence and explained part of the association between participation in AA and abstinence [44]. AA attendance at 6 months post-treatment predicted self-efficacy at 9 months, which predicted abstinence at 15 months. Self-efficacy to avoid drinking explained part of the effect of AA attendance on abstinence for both less severe (Type A) and more severe (Type B) alcoholic individuals [45].

A study that assessed patients in 12-Step treatment during treatment and at 1- and 6-month follow-ups focused on several common change factors, including self-efficacy, commitment to abstinence, appraisal of harm due to substance use and active cognitive and behavioral coping. More affiliation with AA in the month after treatment was associated with increases in these change factors and with better 1- and 6-month substance use outcomes. In addition, these common change factors appeared to explain all of the effect of AA affiliation on 6-month substance use outcomes [46].

Coping skills

Affiliation with 12-Step SHGs promotes more reliance on coping responses directed towards reducing substance use. For example, individuals who are more involved in AA are more likely to rely on coping skills directed towards controlling substance use, such as spending time with non-drinking friends, seeking advice about how to resolve their drinking problems and rewarding themselves for trying to stop drinking [47]. The active ingredients of SHGs that foster improvement in coping skills probably include modeling of substance use refusal skills, ideas about how to manage relapse-inducing situations and practical advice for coping with craving.

Participation in SHGs is also associated with improvements in general coping skills; that is, increases in approach coping and declines in avoidance coping [46]. A 3-year follow-up of individuals who sought help for alcohol-related problems found that those who attended AA tended to rely more on approach and less on avoidance coping [48]. In another study, individuals who were more involved in 12-Step groups increased more in positive reappraisal and problem-solving coping; these approach coping responses explained part of the effect of involvement in these groups on the reduction of substance use [25].

SHGs also bolster dually diagnosed individuals' coping skills, in part by providing an opportunity to share information, engage in reciprocal learning and acquire new attitudes and skills. For example, patients with SUDs and post-traumatic stress disorder (PTSD) who were more involved in 12-Step groups during treatment relied more on positive reappraisal and problem-solving and less on emotional discharge after treatment [49]. In a study that focused on the active ingredients of DTR, members who engaged more in mutual learning and modeling by sharing information and developing new attitudes and skills were more likely to be abstinent at a 1-year follow-up [39].

ISSUES ABOUT ACTIVE INGREDIENTS AND THEIR EFFECTS

Although we have strong clues about some of the probable active ingredients of 12-Step SHGs, a number of issues remain to be resolved.

How can we formulate conceptually integrated measures of the active ingredients of self-help groups?

Previous studies have focused on one or more of the probable active ingredients of SHGs, but researchers have not assessed the full range of relevant factors or compared their relative strength in predicting the course of remission. An integrated inventory of some of the active

ingredients of SHGs would encompass the emphasis on three social control processes (support, goal direction, and structure), three aspects of social learning theory (abstinence-oriented norms and models, expectations of negative consequences of substance use), two behavioral choice processes (provision of rewards for abstinence and participation in substance-free activities) and three aspects of stress and coping theory (identifying high-risk situations and stressors, building self-efficacy and developing effective coping skills).

The development of an integrated inventory to assess these areas is a complex undertaking, but some initial models are available. For example, the Group Environment Scale assesses the emphasis on support, goal-direction and structure in groups [24]; the 12-Step Participation and Expectancies Questionnaire measures individuals' expectancies about 12-Step SHGs, such as obtaining support, having structured time, enhancing motivation for abstinence and learning skills to stay sober [50]; and the Addiction Treatment Attitudes Questionnaire assesses process factors associated with 12-Step treatment, such as commitment to SHGs, identification with others in recovery, and intention to avoid high-risk situations [51].

Once the active ingredients of SHGs can be measured, it will be possible to examine how well and consistently different types of groups 'deliver' them, and the extent to which they are associated with outcomes for specific groups of individuals. Such an inventory could be used to examine the consistency in active ingredients in one set of groups (such as AA) and their variation in different sets [such as between AA and Narcotics Anonymous (NA) or DTR]. With respect to outcomes, are members more satisfied and do they obtain more benefits in SHGs that are relatively supportive, goal-directed and structured, as suggested by some previous studies [40,41]? Does the overall social climate of SHGs bolster or diminish the potential effects of other active ingredients for change?

Are indices of group affiliation key active ingredients?

Several measures have been developed to assess affiliation with 12-Step groups, especially AA. These measures focus on such indices as self-identification with the group, socializing with group members, reading 12-Step literature and working the steps, obtaining and interacting with a sponsor, giving talks in the group, doing service work, becoming a sponsor and having a spiritual awakening [52,53]. These indices are proximal outcomes of group participation and, at the same time, active ingredients that foreshadow positive substance use outcomes [54,55]. Moreover, endorsement of 12-Step philosophy and engagement in recommended 12-step activities have been identified as mediators of the outcomes of 12-Step -oriented treatment for cocaine dependence [56].

From a conceptual perspective, self-identification as a group member is an indication of bonding, reading 12-Step literature, working the steps and enhancing spirituality or belief in a higher power provide goal direction; socializing with group members is associated with general and abstinence-specific support, a sponsor provides an abstinence-oriented role model, and giving talks, doing service work and becoming a sponsor accrue rewards that may substitute for those provided by substance use. These indices of SHG affiliation should be examined further as active ingredients that predict substance use outcomes.

Is there a typical progression such that bonding and support (self-identification as a group member, socializing with group members) develop first, followed by obtaining abstinence-oriented role models and doing service work? Or is more active participation in group meetings a necessary precursor for stronger bonding to the group? Do indices of affiliation foreshadow increased self-efficacy and coping skills? In this vein, even though 12-Step groups emphasize powerlessness over substance use, group involvement is associated with enhanced self-efficacy to refrain from substance use; what aspects of SHG affiliation contribute to this outcome?

A related question is the extent to which there is variation in the influence of these indices of affiliation or active ingredients in different kinds of SHGs. Are these indices different in Women for Sobriety (WFS) or Double Trouble in Recovery (DTR) than in AA or NA? Is their influence stronger in AA and NA than in other types of groups? Does WFS' emphasis on enhancing self-esteem and independence strengthen the influence of these two active ingredients [57]? Is DTR's goal-directed emphasis on the use of medications to improve mood and/or prevent relapse a unique active ingredient [35]?

Do personal characteristics moderate the influence of the active ingredients on substance use outcomes?

Some individuals may be especially open to the influence of the active ingredients, whereas others may resist them. For example, compared to men, women may be more responsive to the support, goal direction and structure involved in SHGs, as well as to abstinent role models and an emphasis on rewarding social activities and building self-esteem and coping skills. More broadly, specific personal characteristics may enhance integration into SHGs. In this regard, spirituality/religiosity appears to be associated with enhanced involvement in 12-Step groups, perhaps because individuals who have strong spiritual/religious beliefs are more aware of and likely to acknowledge their internal experiences and more able to confront their cravings. In fact, spirituality/religiosity predicts this type of acceptance-based responding, which foreshadows

increased 12-Step group involvement [58]. Thus, spirituality/religiosity may increase individuals' amenability to active SHG ingredients that promote reliance on effective coping and self-regulation skills.

Turning to another example, individuals with more severe and chronic problems and impairment may respond differently to SHGs than less impaired individuals do. In this regard, more impaired Type Bs may affiliate and benefit more from the support and structure of SHGs than do less impaired Type As, perhaps because they have less self-efficacy and coping skills and feel more at home in these groups. Affiliation with SHGs may provide Type Bs with the resources they need to sustain remission, whereas Type As, who have more personal resources and are less vulnerable to relapse, are less dependent on external resources to sustain good outcomes [59,60].

However, some individuals with substance use and psychiatric disorders, especially those with Axis I disorders, may not benefit from SHGs as much as do individuals with only SUDs. For example, individuals with SUDs and major depressive disorders may be less likely to make 12-Step friends and obtain a sponsor; more importantly, they may not benefit as much from contact with 12-Step friends or a sponsor. Depressed individuals have interpersonal problems that may make it harder to develop new 12-Step friends, and they may experience isolation and anxiety that make it difficult to acquire a sponsor and participate in rewarding social activities [30].

Can the active ingredients of self-help groups compensate for or amplify the influence of treatment on remission?

Many individuals who participate in SHGs have also been in treatment; in principle, these two sources of help could contribute independently to better outcomes or they could either bolster or detract from each other. Participation in professional treatment, especially treatment oriented toward 12-Step principles, tends to increase the likelihood that individuals will affiliate with 12-Step SHGs and obtain benefits from them [61]. Do these findings hold for patients who affiliate with SHGs that espouse principles that differ from those of AA, such as WFS or Moderation Management? Are patients treated in more supportive programs or in programs that emphasize a spiritual orientation more likely to affiliate with and benefit from 12-Step groups?

More information is needed about the extent to which participation in SHGs and treatment accrues benefits over and above participation in either modality of help by itself. Do individuals benefit more when they participate in treatment and SHGs that have a strong emphasis on the same active ingredients, or is it sufficient to be exposed to an emphasis on specific ingredients either in treatment or SHGs? Can participation in 12-Step groups compensate for low-intensity treatment, as suggested by the finding that 12-Step group attendance during treatment was associated with better substance use outcomes among patients treated in low service intensity programs but not among patients treated in high service intensity programs [62]? Given that some prevalent treatments, such as cognitive–behavioral treatment (CBT), and 12-Step SHGs differ substantially in orientation to SUDs and the path to recovery, can participation in CBT detract from the benefits of participation in 12-Step SHGs?

Can involvement in self-help groups have detrimental effects and, if so, how can such effects be minimized?

The vast majority of the literature in this area has focused on the benefits of SHGs, but there have also been some criticisms. The issues that have been raised include apparent coerced meeting attendance during treatment, overly strong cohesion that may socialize individuals to become overly dependent on the group, potential for psychological harm due to the emotional intensity of group discussions, encouragement of a sick-role identity by teaching individuals that they have a disease and life-long addiction and problems associated with the emphasis on powerlessness, especially for women [63–66].

These points highlight the possibility of negative effects of group participation. In this vein, among PTSD patients who assumed an alcoholic/addict identity, SHG participation was associated with less distress at 1- and 2-year follow-ups. However, for patients who did not self-identify as an alcoholic/addict, SHG participation was associated with more distress at both follow-ups [67]. More generally, if SHGs have curative power and contribute to individuals' improvement it is likely that, at times, they also have detrimental effects and may contribute to the exacerbation of substance use and/or psychiatric symptoms.

Between 7% and 15% of patients who participate in psychosocial treatment for SUDs may be worse off subsequent to treatment than before [68]. Probable treatment-related predictors of deterioration include lack of emphasis on the active ingredients described earlier; that is, lack of bonding and monitoring, lack of goal direction as reflected in low or inappropriate expectations and lack of challenge; confrontation and criticism rather than support; modeling deviant or problem behavior rather than abstinence; and the expression of stigma rather than building self-confidence [68]. Accordingly, research is needed to examine the prevalence of potential detrimental effects associated with SHGs, clarify the extent to which a lack of emphasis on the active ingredients of SHGs foreshadows these effects and identify approaches to prevent and counteract them.

How are the active ingredients of self-help groups linked to other aspects of the overall recovery milieu?

The active ingredients that characterize SHGs are related conceptually to active ingredients in other social contexts in the overall recovery environment, such as family, friends and the work-place. One example cited earlier is that involvement in SHGs and the abstinence-oriented norms and models they entail may counteract the potential negative effects of friends who are substance users.

Consistent with the four theories, the key sets of active ingredients that have been described appear to also enhance the development of personal and social resources that protect individuals against the re-emergence of substance use and promote the recovery process. These ingredients involve social bonding and monitoring, modeling and abstinence orientation, involvement in fulfilling activities and building self-esteem and coping skills [69]. Family members who strengthen family social bonds, goal direction and monitoring, bolster abstinence-oriented norms and models, promote engagement in rewarding social and recreational pursuits and build recovering individuals' self-efficacy and coping skills raise the likelihood of stable remission and eventual long-term recovery. Similarly, friends and peers who employ assertive guidance and monitoring, communicate traditional social values and engage individuals in rewarding activities tend to have a positive influence on recovery.

These ideas are consistent with the critical factors that appear to underlie stable recovery for individuals with addictive disorders, which include forming new social bonds and obtaining support, supervision or monitoring, involvement in substitute rewarding activities and obtaining a sustained source of hope or inspiration [70–72]. They point to the need to find out how much the influence of SHGs on remission depends on the same active ingredients that underlie the beneficial effects of families and social networks. Is there a synergy and added value when recovering individuals obtain support and structure from both SHGs and family members? Alternatively, can support and structure obtained in SHGs compensate for a lack of cohesion and monitoring in other aspects of an individual's social network? Comparable questions arise with respect to abstinence-oriented norms and models, engagement in rewarding activities and building self-confidence and coping skills.

CONCLUSIONS

There is reasonable evidence to indicate that support, goal direction and structure, abstinence-oriented norms and role models, involvement in alternative rewarding activities and a focus on self-efficacy and coping skills are some of the active ingredients responsible for the positive influence of SHGs. Because most of the existing research has been conducted on 12-Step SHGs in the United States, we need to consider whether the key findings apply to a broader range of support groups in diverse cultural contexts. A related issue involves the extent to which certain ingredients may be especially important in specific sets of SHGs, such as abstinence-oriented norms and models in 12-Step groups and building self-efficacy and coping skills in SMART Recovery.

Another important issue is to consider theories and potential active ingredients other than those discussed here. For example, specific practices in AA, such as conducting a moral inventory and developing an alternative life-style, have been linked to coping processes identified in the transtheoretical model of change, such as self-re-evaluation and social liberation [73]. Further, by highlighting the importance of internal psychological processes such as attitudes and intentions as key precursors to behavior, theories of reasoned action and planned behavior [74] suggest that communication patterns that promote these processes may be the key active ingredients of SHGs.

As these issues are addressed, we need to keep a broad perspective on the principles that underlie the active ingredients. In this regard, it is likely that ingredients such as goal direction, norms and models and rewarding activities will be effective in diverse group and cultural contexts even though the emphasis on specific goals, norms and activities is likely to vary. Thus, abstinence-oriented models are likely to promote abstinence, whereas harm reduction models are likely to promote harm reduction; in both cases, such findings would be consistent with the idea that dominant group norms and models are key active ingredients. Future research on these issues may help to identify active ingredients and curative social processes that are common to SHGs, formal treatment and relationships with family members and friends and underlie the long-term resolution of addictive disorders.

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