ADOLESCENT'S EXPERIENCES AND PERCEIVED EFFECTIVENESS OF SELF HELP GROUPS FOR ADDICTION: A SYSTEMATIC REVIEW OF QUALITATIVE RESEARCH EVIDENCE PRIOR TO 2013

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Adolescents' experiences and perceived effectiveness of self-help groups for addiction: A systematic review of qualitative research evidence prior to 2013.

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Onderzoeksverslag Centrum voor Sociologisch Onderzoek (CeSO)

CeSO/KH/2017-2

CENTRUM VOOR SOCIOLOGISCH ONDERZOEK
CENTRE FOR SOCIOLOGICAL RESEARCH

Belgian Science Policy Office
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CEBAM
Belgian Centre for Evidence-Based Medicine
Cochrane Belgium

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D/2017/1192/5

ISBN:9789067842075
EAN: 9789067842075

Abstract

Addiction in adolescence is a complex problem, influenced by a variety of personal and contextual factors. It has substantial individual consequences and an important impact on society. A number of treatment programs for adolescents have been developed and tested, including the use of self-help groups. Previously published systematic reviews have mainly reported on the effectiveness of self-help groups in adolescents. Qualitative studies focusing on adolescents' experiences of participating in these self-help groups and their own personal assessment of these programs have not systematically been synthesized. We conducted a systematic review of qualitative research evidence, using a selective search strategy targeting major databases in health and humanities. We opted for the meta-aggregative approach to synthesis developed by the Joanna Briggs Institute. A sensitivity analysis was conducted to evaluate the potential impact of excluding lower quality studies on the overall study findings. Most adolescents have positive experiences with self-help groups and stress the importance of the group component of the therapy and the learning experiences they have when participating. Network support appears to be an important facilitator to stimulate participation. Awareness should be raised in program developers and initiators for the many psychological and environmental obstacles that prevent adolescents from participating in the self-help groups.

1. Introduction

Alcohol and drug misuse is a complex problem. It has an impact on the individual client level as well as on society. According to the World Health Organization, alcohol results in 2,5 million deaths each year. In 2008, 3,5% to 5,7% of the world's population aged 15-64, used psychoactive substances other than alcohol (cannabis, amphetamines, cocaine, opioids and non-prescribed psychoactive prescription medication) (WHO, 2014). The European Union has the highest alcohol consumption of the world (WHO, 2010), particularly amongst youngsters. At the age of thirteen or younger, nearly six in ten European students have consumed at least one glass of alcohol (Hibell et al., 2012). In the United States three-quarters of the high school students have used addictive substances, including for example cigarettes, alcohol, marijuana or cocaine. Of all United States high school students, 46% currently use addictive substances, while 12% meets the clinical criteria for addiction (National Center on Addiction and Substance Abuse [CASA], 2011). Approximately 20% of the European students has used cannabis at least once in their life, with 6% reporting that they have tried one or more of the other drugs. Three percent of the students used ecstasy and 3% used amphetamines. Cocaine, crack, LSD and heroin were less commonly reported (Hibell et al., 2012). Statistics indicate a reduction in alcohol consumption, inhalants and cocaine amongst adolescents (National Institute on Drug Abuse [NIDA], 2014). However, the age of onset of substance misuse drops within the youth category. The younger they start, the more likely they will developing an addiction due to their increased sensitivity to addictive properties of these substances (Chen, Storr, & Anthony, 2009). It is therefore crucially important that addiction remains on the policy agenda.

Addiction is a reward-seeking type of behaviour that involves impulses or cravings and may results in significant harm. It may also induce physical or psychological dependence and intoxication. In addition, it may influence the choices people make, because of an emotional attachment to the object of desire, and lead towards unacceptable habitual behaviour (West, 2006). Adolescents are especially vulnerable in potentially developing such behaviour. Diverse factors may affect addiction patterns in adolescence, both in a positive and negative way, including individual factors, environmental factors and infectious agents (Duncan, 1975). Several authors have suggested that there is an interaction between these factors and that

they may influence each other (CASA, 2011; Matthys, Vanderschuren, Nordquist, & Zonnevylle-Bender, 2006; NIDA, 2007; Quinn & Fromme, 2011).

The agent. Different agents have different appropriateness levels. Consequently, they lead to different consequences in terms of withdrawal, reinforcement, tolerance, dependence and intoxication (Cleveland, 2006). Each agent has its own set of short –and long-term physical, psychological and/or social risks. Effects differ depending on the quantity the user is taking, the route of administration (for example smoking versus injecting) and the chemical properties of the substance (Trimbosinstituut, 2013). The choice of adolescents to use one or the other is further influenced by their availability, cost, and fit for purpose (Northern Territory Government, n.d.). (Trimbosinstituut, 2013). Alcohol and marijuana are more easily available to adolescents (Ogilvie, Gruer, & Haw, 2005). Alcohol is therefore the most commonly used substance among adolescents (26.3%), followed by marijuana (13.5%) (Substance Abuse and Mental Health Services Administration, 2013).

Individual factors. Individual factors include genetic susceptibility, resiliency, nutritional status, motivation, etc. (Matthys et al., 2006). Adolescence is a sensitive period for substance misuse. It is a life stage of profound social cognitive change and continued neural development (Blakemore, 2012). Drug use might have radical consequences on these important evolvements. There is converging evidence for the potential neurotoxic effects of substance ingestion on young people's brain (Hart, 2007). Although adolescents are less sensitive than adults for the direct negative impacts of substances, the learning behaviour related to substance use is stronger in adolescents (Matthys et al., 2006). Furthermore, research shows that adolescents have a higher level of sensation seeking behaviour. Due to remodeling of the dopaminergic system, the search for what is new or exciting becomes more important, especially in the presence of other peers. Sensation seeking behaviour in turn, is connected to drug and alcohol use among adolescents (Steinberg, 2008). Negative personality changes, such as demotivation, unpredictable mood swings, depression or conning behaviour due to substance misuse are common in this age group (MacDonald, 1989).

Environmental factors. Genetic vulnerability is more likely to manifest itself in certain environments. Adolescents' substance misuse partly depends on the level of tolerance displayed by parents, schools and communities. Also advertising and the media play an important role (CASA, 2011). According to Matthys and colleagues (2006) factors from the

broad social context, such as the price of substances, advertisement, the legally permissible age of using, the availability of resources and unfavorable neighbourhood characteristics stimulate the use of substances in children and adolescents. In the immediate social context family characteristics play an important role in substance use, for example parents or siblings using substances, family or marital disharmony (Matthys et al., 2006). Studies have shown that substance use is also influenced by peers showing anti-social behaviour or are involved in substance use themselves (Kandel, 1982). Presumably this makes adolescence a challenging period. Adolescents distance themselves from their families and peers become more important (Ardelt & Day, 2002). On a social level, behavioral problems such as theft, shoplifting, vandalism and involvement in traffic accidents are positively correlated with drug use (Steketee, Jonkman, Berten, & Vettenburg, 2013). There is also a correlation between drug use and health related problems such as unintended pregnancies, asthma, depression, anxiety, psychosis impaired brain function and decreased academic performance or educational achievement (Miller, 1989).

Given the amount of age related problems described above, treatment programs that respond to the specific needs of adolescents should be considered. Adults and adolescents go through different developmental phases. It has been suggested that the options for treating addiction in adolescents and adults should differ (Mason & Luckey, 2003; Berlin, 2002). The three major types of treatment for adolescents currently are: therapeutic community programs, hospital inpatient therapy and hospital outpatient therapy. In addition, self-help groups are commonly used as a psychosocial intervention for adolescents, particularly the twelve-step mutual program. Self-help groups are peer-operated organizations devoted to help individuals who have addiction-related problems. Mutual support is central in these groups. Group members give and receive advice, encouragement and support (Humphreys et al., 2004). They can be established and maintained with relatively low financial input (Cortese & Andresen, 2005). Self-help groups originated in the United States and were developed to respond to the needs of the population and to increase social awareness on the impact of substance misuse. Examples include Alcoholics Anonymous (AA) and Narcotics Anonymous (NA). These programs initially targeted adults, but have been used for adolescents as well (Kelly, 2003). A recent survey in Canada and the U.S. revealed that only 2% of the members are aged less than 21 (Alcoholics Anonymous [AA], 2011), which may suggest that adolescents have difficulties to

connect with the central and peripheral (e.g. employment, marital relations) topics addressed in these mixed population self-help groups (Vik, Grizzle & Brown, 1992). To date, it remains unclear whether these groups have been adapted to fit the need of adolescents and how adolescents experience their involvement in such self-help groups.

1.1. Review Objectives and Questions

The objective of this systematic review is to synthesize insights concerning the experience and perceived effectiveness of self-help groups for adolescents. With this review we respond to the invitation of Bekkering and colleagues (2016), who conducted a systematic review evaluating the effectiveness of self-help groups for adolescent substance misuse and made a case for the inclusion of qualitative insights in future reviews to better understand the benefits as well as the potential side-effects of interventions or programs evaluated. In this paper, we present the findings of a qualitative evidence synthesis in order to increase our understanding of adolescents' experiences and perceived effectiveness of self-help groups for addicts.
The following research questions were examined:

- How do adolescents (mis)using substances experience their involvement in self-help groups?
- How do self-help groups help adolescents in dealing with their addiction and their struggle in daily life?
- What do adolescents perceive as potential positive and harmful effects of being involved in these groups?
- What suggestions for improvement do they have in order to create self-help group program that respond to their needs?

2. Methodology

We used the meta-aggregative approach to synthesis developed by the Joanna Briggs Institute to conduct our systematic review (Joanna Briggs Institute, 2011). In a meta-aggregative type of synthesis a comprehensive search of the literature is conducted to identify potentially relevant original studies. Each study considered for inclusion is assessed for methodological

quality. In general, only the high quality studies are included in the synthesis. The findings of primary research studies included in the review are extracted and categorized based on similarity in meaning (Hannes, 2010). The outcome of a meta-aggregative type of review is a set of synthesized statements, close to recommendations for practice, derived from the findings.

2.1. Search Strategy

We followed a four-step procedure to comprehensively search the literature. First, we searched five major databases: PsycINFO, Pubmed, ERIC, Web of Science and the Cochrane Library. The search terms used related to the population of adolescents, the self-help group intervention under study and our topic of interest which is addiction. We combined the different terms by using the Boolean Operators "AND" and "OR". An example of how the search terms were translated for the database PubMed can be found in Box 1. We adapted the search terms for each database and included all studies up to December 31, 2012.

Box 1: *Search Terms**

	➔ **AND**	➔ **AND**
1. adolescent (MESH)	2. self-help groups (MESH)	3. substance-related disorders (MESH)
OR	OR	OR
young adult (title/abstract)	self-help (title/abstract)	alcohol use (title/abstract)
OR	OR	OR
youngster (title/abstract)	support group (title/abstract)	alcohol misuse (title/abstract)
OR	OR	OR
youth (title/abstract)	alcoholics anonymous (title/abstract)	alcohol abuse (title/abstract)
OR	OR	OR
children (title/abstract)	narcotics anonymous (title/abstract)	alcohol dependence (title/abstract)
OR	OR	OR
child (title/abstract)	nicotine anonymous (title/abstract)	alcohol addiction (title/abstract)
OR	OR	OR
teenager (title/abstract)	smokers anonymous (title/abstract)	drug use (title/abstract)
OR	OR	OR
teen (title/abstract)	drug addicts anonymous (title/abstract)	drug misuse (title/abstract)
	OR	OR
		drug abuse (title/abstract)
		OR
		drug dependence (title/abstract)
		OR
		drug addiction (title/abstract)
		OR

	AA (title/abstract) OR NA (title/abstract) OR 12-step (title/abstract) OR twelve-step (title/abstract)	smoking addiction (title/abstract) OR cigarette use (title/abstract) OR cigarette misuse (title/abstract) OR cigarette abuse (title/abstract) OR cigarette dependence (title/abstract) OR nicotine addiction (title/abstract) OR nicotine use (title/abstract) OR nicotine misuse (title/abstract) OR nicotine abuse (title/abstract) OR nicotine dependence (title/abstract) OR substance use (title/abstract) OR substance misuse (title/abstract) OR substance abuse (title/abstract) OR substance dependence (title/abstract) OR substance addiction (title/abstract)
* This strategy is adjusted for all databases.		

An additional hand search was considered. However each of the potentially relevant journals we initially listed for the hand search appeared to be included in at least one of the databases consulted[1] and we abandoned the idea of the hand search. Thirdly, we searched the reference lists of articles that were included in the synthesis to detect relevant studies that may not have been picked up in the database search. Finally, we contacted experts involved in organizing

[1] Journals considered for an additional hand search: "Addiction", "Journal of Child & Adolescent Substance Abuse", "Addictive Disorders & Their Treatment", "Journal of Adolescence", "The American Journal of drug and alcohol abuse", "The American Journal of psychiatry", "British Journal of psychology", "Drug and Alcohol Dependence", "European child & adolescent psychiatry", and "International journal of mental health and addiction".

and coordinating self-help groups to ask them about potential non-published studies they were aware of that could be relevant for our systematic review.

Selection Process: Inclusion and Exclusion Criteria

We used a four-step screening procedure for the selection of studies. First, two reviewers independently screned the titles on relevance regarding the topic of our review. Second, the abstracts were screened independently by two reviewers for inclusion or exclusion. A full text of all articles fo which the outcome was unclear was retrieved for further examination.

Third, a detailed full-text analysis was conducted independently by two reviewers, using the screening sheet. The concrete version of our screening sheet with inclusion and exclusion criteria is included in Box 2.

Box 2: *Screening Sheet: Inclusion and Exclusion Criteria*

Topic:	Substance addiction	NOT: other addictions, behaviour like eating, gambling, sex, sporting, gaming,….
	Self-help groups	NOT: Involuntary placement/collocation
		NOT: self-help groups intended for family and caretakers of the addicted adolescent
Population:	Adolescents from 12-25 years	NOT: Articles that do not include people within this age range. Articles that include a broader or more limited age range were included.
Outcome:	Experiences, perceived effectiveness, (meaning, appropriateness, feasibility)	NOT: effectiveness
Type of study:	Qualitative study	NOT: purely quantitative
	Mixed method partially qualitative	
Language:	English	

We included adolescents involved in legal as well as in illicit drug use. The age of the adolescents of the included studies was set on 12 to 25, in order to cover adolescents

attending secondary school (high school) or higher education (university). Articles that covered a broader age group including adolescents between 12 and 25 were also considered. In terms of the programs reported on in the studies we excluded those primarily developed for relatives of addicted adolescents. We also excluded self-help group programs with forced or non-voluntary participation of adolescents. Studies that did not clearly describe whether participation was voluntary were initially selected for further data-extraction, taking the context of the storylines into account to grasp the nature of the participation. We only included studies with self-help group programs following the principles (Gielen et al., 2012): mutual support, providing information, practical help, social contacts and representation of interests. This has mainly been done to align the findings with a previously published review project (Bekkering et.al., 2016). Apart from primary qualitative research studies we also included mixed methods studies where quantitative and qualitative research findings could be separated. Disagreements between reviewers about the relevance of a study for inclusion were solved through discussion.

2.2. Critical Appraisal

To assess the quality of the included studies we used the QARI Critical Appraisal Instrument (see Appendix A), based on the findings of a study comparing different critical appraisal instruments (Hannes, Lockwood & Pearson, 2010). The findings indicate that the instrument was most sensitive to aspects of credibility. In addition, it is promoted for use within the meta-aggregative approach. Given the limited range of available articles, we decided not to apply the QARI Critical Appraisal Instrument as strictly as suggested by the meta-aggregative approach (JBI, 2011). Our goal was to capture the experiences of adolescents participating in self-help groups. We chose to emphasize content over methodological quality in building our line of argument and used the QARI (Qualitative Assessment and Review Instrument) checklist as a baseline measurement of quality. This baseline measurement allowed us to distinguish between higher quality and lower quality articles in a post-hoc sensitivity analysis conducted after the line of argumentation was build. We evaluated whether the removal of insights from lower quality studies made a difference at all in the development of the synthesized statements. Studies were considered ‘lower quality’ when the cut-off point of seven out of

ten criteria was not met. Regardless of their overall score, studies that did not meet criterion 8 on the representation of participant's voices were also considered 'low quality'. Two reviewers assessed the selected studies independently using the "QARI Critical Appraisal Instrument". Disagreements between reviewers were resolved through discussion. Where necessary, a third reviewer was involved to settle the argument.

2.3. Data Extraction

Descriptive level. After the selection of included articles, the descriptive features of the studies were extracted from the included articles using the QARI Data Extraction Instrument (see Appendix B). The extracted data included specific details about the phenomena of interest, population, setting, data analysis, study methods and methodology (JBI, 2014).

Analytical level. In addition to the descriptive level, findings were extracted on an analytical level. A finding in the context of a meta-aggregative type of qualitative synthesis "is a verbatim extract of the author's analytic interpretation of their results or data." (JBI, 2014, p. 20). These qualitative research findings were extracted as presented by the researcher(s) in the results. Notably, some articles had very thin descriptions in their results section, hence the discussion sections were also screened for relevant content. The review authors assigned a level of credibility to each of the analytical findings extracted, based on whether or not the finding was accompanied by an illustration or direct quote of a participant's voice. These citations allow review authors to trace the origins of statements made by authors (see Box 4).

Box 3: *The Levels of Credibility*

The levels of credibility were defined as (JBI, 2014):

Unequivocal	Findings accompanied by an illustration that is beyond reasonable and therefore not open to challenge.
Credible	Findings accompanied by an illustration lacking clear association with it and therefore open to challenge.
Unsupported	Findings not supported by data.

In order to obtain a shared understanding, two reviewers independently extracted the findings of a set of articles, accompanied them with illustrations and assigned a level of evidence. When all data extractions were finished, the reviewers compared and discussed their findings. Disagreements about the findings or the assigned level of evidence were discussed with a third reviewer. The findings extracted from the various studies were merged into newly defined categories through the process of meta-aggregation. “A category is a brief description of a key concept arising from the aggregation of two or more similar findings in the presence of an explanatory statement that conveys the whole inclusive meaning of a group of similar findings.” (JBI, 2014, p. 21). Hence, these findings were categorized on the basis of conformity in meaning. The data-extraction was independently done by two different review authors. The reviewer authors compared their categories to obtain a shared understanding, based on a substantial amount of discussion time in the interpretive phase of the synthesis project. The synthesized findings were formulated in a joined effort. “A synthesized finding is an overarching description of a group of categorized findings and is expressed as ‘indicatory’ statement that can be used to generate recommendations for policy or practice.” (JBI, 2014, p. 21).

2.4. Sensitivity Analysis

As discussed earlier, we did not exclude any studies from our review on the basis of the critical appraisal exercise. However, we explored the impact of low quality studies on the overarching line of argument via a sensitivity analysis. Following the procedure for a sensitivity analysis introduced by Caroll, Booth, and Lloyd-Jones (2012), the findings and categories of the lower quality and higher quality set of articles were compared. One review author explored whether or not some of the categories were developed from insights from articles with inferior quality. In addition, the review author investigated whether the thickness of detail or the richness of information was affected when articles with inferior quality were removed from the synthesis. The aim was to reach a conclusion about whether or not the inclusion of the articles of inferior quality had a relevant impact on the synthesized statements.

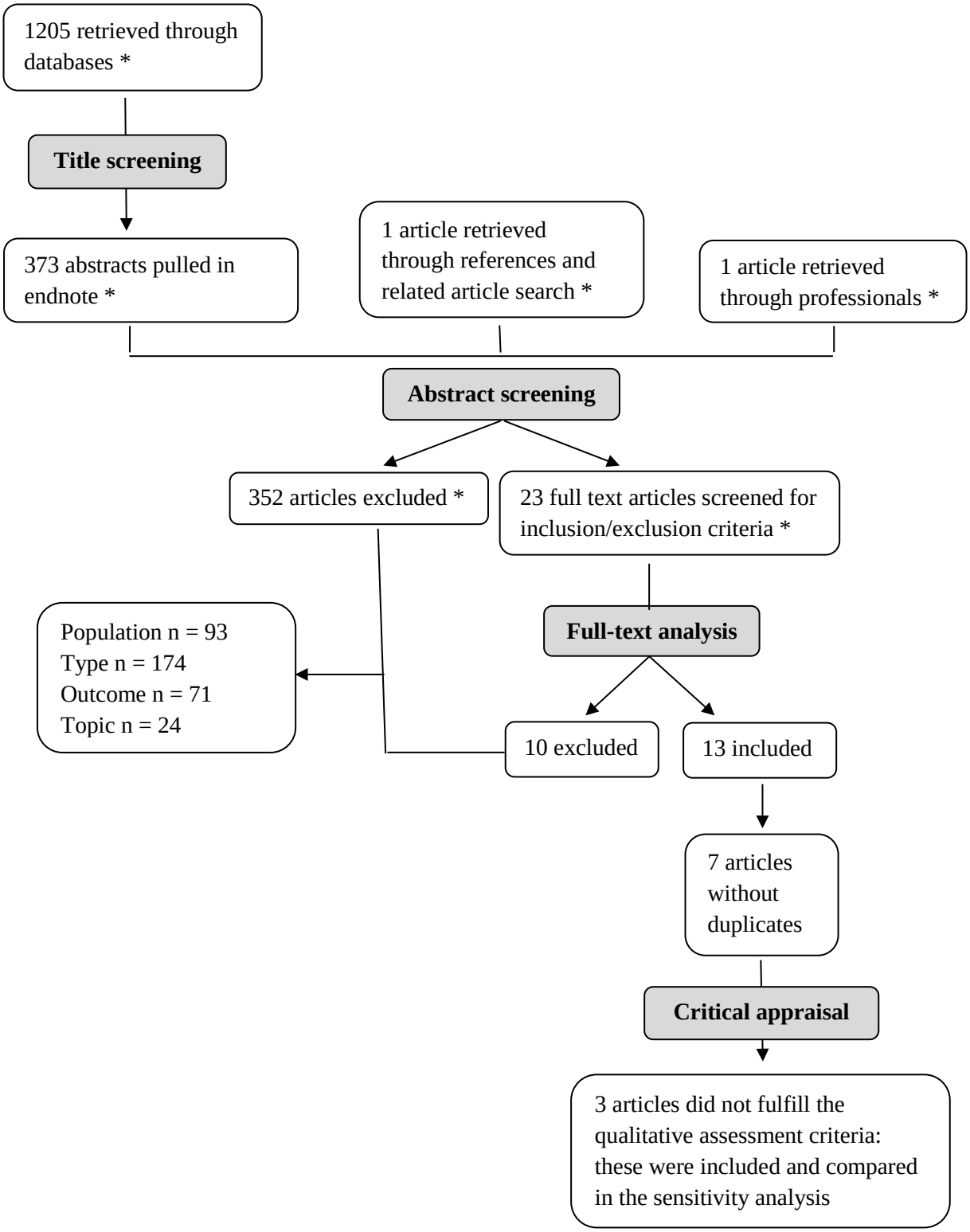
3. Findings

3.1. Search and Selection Findings

Our database search revealed a total of 1205 potential studies, including duplicates between databases (see Figure 2). A total of 373 titles* remained after the initial title screening. One article received from a professional and one article retrieved through references and related article search, were also added. The abstracts of 375 articles were screened for inclusion and exclusion criteria. A full-text version was retrieved for 23 abstracts*. A detailed analysis identified 13 articles* that measured up to our inclusion criteria. After removing duplicates, seven original articles were maintained. The majority of the excluded papers were quantitative reviews or were excluded for topical and population reasons.

The result from the search strategy are presented in Figure 1.

Figure 1: *Search results*



** Including duplicates*

3.2. Critical Appraisal

The results of the quality assessment are presented in Table 1. Most of the ratings assigned by different review authors matched. Study 2 did not meet our cut-off point. Articles 6 and 7 were subject for discussion. We decided to score study 6 as low quality, because of an overall lack of transparency on the methods applied. Study 7 did not score well on criterion 8 and was therefore also labelled as low quality. All studies were maintained for the data-extraction phase.

Table 1: *Assessment of the Quality of the Relevant Studies*

Title of the study	**Critical appraisal criteria***										**Conclusion**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
1. Dadich, A. (2010). Expanding our understanding of self-help support groups for substance use issues. *J. Drug Education, 40,* 189-202. doi: 10.2190/DE.40.2.f	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	R1 included
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	R2 included
											Discussion: included
2. de Miranda, J., & Williams, G. (2011). Youth in Recovery. *The Prevention Researcher, 18*(2), 16-19.	N	N	N	N	N	N	N	Y	U	N	R1 excluded
	U	U	U	Y	N	N	N	U	U	N	R2 excluded
											Discussion: excluded
3. Kelly, J.F., Dow, S.J., Yeterian, J.D., Myers, M. (2011). How safe are adolescents at Alcoholics Anonymous and Narcotics Anonymous meetings? A prospective investigation with outpatient youth. *Journal of Substance Abuse Treatment, 40*, 419-425. doi:10.1016/j.jsat.2011.01.004	Y	Y	Y	Y	Y	Y	N	Y	U	Y	R1 included
	Y	Y	Y	Y	Y	Y	Y	Y	U	Y	R2 included
											Discussion: included
4. Kelly, J.F., Myers, M.G., & Rodolico, J. (2008). What Do Adolescents Exposed to Alcoholic Anonymous Think about 12-Step Groups? *Substance Abuse, 29*, 53-62. doi: 10.1080/08897070802093122	Y	Y	Y	Y	Y	N	Y	Y	U	Y	R1 included
	Y	Y	Y	Y	Y	Y	U	Y	U	Y	R2 included
											Discussion: included

5. Vaughn, C., & Long, W. (1999). Surrender to win: How adolescent drug and alcohol users change their lives. *Adolescence, 34*(133), 10-24.	Y	U	Y	Y	Y	U	U	Y	Y	Y	R1 included
	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	R2 included
											Discussion: included
6. Vaughn, C., & Long, W. (2003). Adolescent addiction and recovery: A study in extremes. In T.A. Prester (Ed.), *Psychology of Adolescents* (pp. 1-14). Hauppauge, NY: Nova Science Publishers.	Y	Y	Y	Y	U	N	U	Y	N	Y	R1 excluded
	Y	U	Y	Y	U	U	Y	Y	N	Y	R2 included
											Discussion: excluded
7. Wu, L.-T., Blazer, D.G., Li, T.-K., & Woody, G.E. (2011).Treatment use and barriers among adolescents with prescription opioid use disorders. *Addictive Behaviors, 36*, 1233-1239. doi:10.1016/j.addbeh.2011.07.033	U	Y	Y	Y	Y	U	U	N	U	Y	R1 excluded
	U	Y	Y	Y	Y	Y	Y	U	N	Y	R2 included
											Discussion: excluded

Y = Yes R1 = Reviewer 1
N = No R2 = Reviewer 2
U = Unclear

*The criteria are listed in appendix A

3.3. Analysis

3.3.1 Descriptive Findings

The data extraction on a descriptive level, gave us a general overview of characteristics of the included articles (see Table 2, *the numbers correspond with the study order listed in table 1). Almost all of the studies (one open-ended questionnaire excepted), used interviewing as a method to collect data. The phenomena of interest were variable, but in line with the subject of this review. The topic mostly concerned drugs and/or alcohol, one time prescription opioid use disorders and no smoking addiction. It is noteworthy that most studies contain twelve-step based self-help groups. Most of the articles originated from the United States. A mix of cultures is included in the different studies, but the majority of the included participants are white. There were slightly more male than female participants. Data-analysis is not always

clearly described, especially regarding the mixed methods studies, it is not always clear how they analyzed the qualitative data.

Table 2: *Data Extraction on Descriptive Level*

Method	Phenomena of interest	Setting	Geo-graphical	Cultu-ral	Participants	Data Analysis
Semi-structured, open-ended interview schedule	To examine the experiences and perceptions of young people who were involved in a 12-step fellowship to address issues of substance use.	University of Western Sydney	Australia	Un clear	17 young people, all of whom experienced substance use issues and had been involved in a 12-step fellowship. Between 20 and 29 years The gender balance was almost equal (52.9% female)	Descriptions of the themes that emerged from research material. This interpretation is illuminated through the use of descriptive statistics and exemplary quotes.
(Open-ended) interviews	A preliminary exploration of the subject, and a call for a redirection of policy and resources to underwrite more funding for adolescent addiction treatment and recovery support services	Recovery school, (residential) treatment center, 12-step mutual aid groups	United States	Un clear	Youth	The qualitative data-analysis is not described
The timeline follow-back, questionnaires, close and open-ended questions	12-step attendance, perceptions of safety at meetings, reasons for not attending and for liking/disliking meetings	A private outpatient SUD treatment facility	North-eastern United States	Race / ethnicity: 86.6% white	Outpatient youth, between the ages of 14 and 19 + parents + clinical staff Gender: 75.6% male	Outside of the descriptive statistics, the qualitative data-analysis is not described

Table 2: *Data Extraction on Descriptive Level (continued)*

Phenomena of interest	**Setting**	**Geo-graphical**	**Cultural**	**Participants**	**Data Analysis**	**Nr***	**Methodology**
Study 1: What do youth like about AA/NA? *Study 2:* Reasons for discontinuing AA/NA participation.	*Study 1:* A 12-step oriented private adolescent-specific residential SUD treatment facility *Study 2:* Private residential SUD treatment facility	*Study 1:* Southwest U.S.: San Diego, California area *Study 2:* North-eastern U.S.	*Study 1:* 70% Caucasian, 18% Hispanic, 8% African American, 4% Asian/Pacific Islander. *Study 2:* Caucasian (81%) with a mixture of other ethnicities (5% Hispanic,2% African American, 2% Asian, 10% other).	*Study 1:* 14-18 years old, on average 16. Nearly two thirds were female (62%). All met criteria for SUD *Study 2:* 12-21 years old, on average 16,5 years old. Nearly half (49%) female. All met criteria for SUD.	*Study 1:* 8 rationally-derived, domains by the lead author *Study 2:* The reported reasons were clustered into seven, rationally-derived, categories by the lead author.	**1.**	Qualitative, interpretative methodology
						2.	Case studies
Investigating the uniqueness and complexity of adolescent recovery, particularly the early years and events catalyzing the surrender process	University of Oklahoma	United states	7 European Americans	Young adults who managed to surrender their addictions and constructed for 5 to 15 years sober identities 5 males and 2 females	Phenomenological analysis	**3.**	Mixed Methods (1-year naturalistic follow-up study)

Table 2: *Data Extraction on Descriptive Level (continued)*

Phenomena of interest	**Setting**	**Geo-graphical**	**Cultural**	**Participants**	**Data Analysis**	**Nr***	**Metho-dology**	**Method**
Generating a life history and in-depth responses to questions relating to their demise and subsequent efforts to become and remain clean and sober.	Family and Adolescent support systems, Oklahoma city. University of Oklahoma	United States	African, Jordanian-American, mixed native and Euro-Americans	7 former addicted teenagers, at the time of research aged from 21 to 32 and claimed 5 to 15 years without drugs or alcohol 5 male and 2 females	Transcribing the data and individually identifying meaning units and resulting themes, then comparing the results.	**4.**	*Study 1:* Prospective study *Study 2:* Assessment study	*Study 1:* Interviews with open-ended questions during treatment, and 3 months and 6 months post discharge *Study 2:* Consecutive admissions were asked to complete an intake assessment (ACDQ).
Trends, patterns, correlates, and barriers to substance abuse treatment use concerning opioid use disorders	Households including shelters, rooming houses, group homes and civilians residing on military bases	United States	Race/ethnicity: 60% white	Adolescents aged 12-17 years Gender: 51% male	Outside of the statistical analysis, the qualitative data-analysis is not described	**5.**	Phenomeno-logical study	Extensive individual interviews

*Numbers referring to the articles as numbered in Table 1

Nr *	Metho-dology	Method
6.	Existential phenomeno-logical study	Extensive interviews, open-ended interviews Ethnographic triangulation techniques: after a year re-interviewing
7.	Unclear	Computer-assisted personal interviewing and audio computer-assisted self-interviewing

3.3.2. Analytical Findings

From seven articles, 78 findings were extracted. Depending on relevant citations, a level of credibility was assigned by the reviewers. This process is represented in Appendix C. Through meta-aggregation, 56 of these extracted findings were assigned to five different thematic categories. These categories are based on similarity in meaning, and further synthesized into two overarching synthesized findings, leading to some recommendations for the future. Figure 3 included at the end of the narrative summary of the synthesized findings provides a visual overview of the information presented. The numbers mentioned in this section correspond to the order of articles as presented in Table 1.

Synthesized finding 1: Factors contributing to involvement in self-help groups.

Through combining the first two categories discussed below, we arrived at a first synthesized statement concluding that an increased network support and a decrease of psychological and environmental barriers will facilitate engagement of adolescents in self-help groups.

Category 1: Network support before entering treatment.

This category is subdivided into two subcategories, namely "Parental support" and "Support of concerned individuals in the broader social network". Parents may influence adolescents' attitude in a positive (Uns: 4, 7) or negative (U: 6) manner. Both prior parental involvement (Uns: 4) and parents' communication with adolescents about the dangers of substance use (Uns: 7) contributes to adolescents' motivation to seek help. Parents that are addicts themselves are generally perceived as unable to set boundaries to access drugs for their children and unable to give the necessary attention and love to their kids (U: 6). Other individual factors influencing the attitude towards participation in self-help groups include their responsiveness to a caring attitude rather than an accusative position of the mentors involved (U: 5) and previous experiences with twelve-step programs in other contexts that facilitate engagement in a self-help group (Uns: 4).

Category 2: Influences on the threshold to seek help.

This category contains "Psychological barriers and motivations" as well as "Environmental aspects". Adolescents may fear the stigma of being an addict in need of treatment. They also report on a lack of knowledge about the dangers of substance use or being unaware of the various sources of help that prevents them from engaging with a group (U: 7). The perceived

need for treatment plays an important role. Some adolescent do not perceive themselves as a person in need or a person with a problem (U: 4, Uns: 7). On the other hand, the fear of death and guilt over past actions seems to be a motivation for e.g. adolescent alcoholics to stop drinking (U: 5). Easy access to and availability of a product via family members or friends may also affect the motivation to seek help, since it appears to 'normalize' the problem (Uns:7). In addition, the perception that particular substances (legal prescription opioids) are perceived as safer than others (illicit drugs) influences their attitude to seek help (Uns: 7).

Synthesized finding 2: Influences during self-help group attendance.

A second synthesized finding is labeled as "Influences during self-help group attendance" and derived from the category social factors at play during treatment, therapeutic aspects and reasons for discontinuation of support. In order to achieve long-term commitment from adolscents and optimizing their experience, it is important to take into account the following advice. What seems to be of great influence on their engagement is social support from within-group members as well as therapeutic characteristics and conditions of the program. Whether or not these are perceived as appropriate has an impact on the discontinuation of the program. It is important to identify low extrinsic motivation and prior negative experiences early in the process.

Category 3: The Contribution of social factors during treatment.

This category contains the subcategories "Social support from group members" and "Connectedness". Sponsors and other group members play an important role in supporting the adolescent by showing empathy and care and by helping them to overcome grief, alienation and shame. They also seem to help adolescents to deal rationally with perplexing emotions, conflicts and identity issues (U: 1, 4, 6). Adolescents seem to prefer that this type of support extends the meeting times-slots and is available outside the formal group context (U: 1). Beside social support from group members, the feeling of connectedness influences adolescents' participation (U: 1, 5; Uns: 4). This offers a sense of belonging (U: 1, 4, 5). They learn to trust other adolescent and adult members who are confronted with similar feelings (U: 5). These connections reduce their sense of isolation (U: 4, 5). Instead of feeling stigmatized by substance use issues, it enable them to experience a sense of normality (U: 1).

Category 4: Therapeutic aspects.

Another category linked to this theme is "Therapeutic aspects", which includes "Group therapeutic aspects" as well as "Learning experiences" and "Specific adolescent needs". A core aspect of self-help groups seems to be the provision of a place to talk and to express feelings and thoughts (U: 5). Also, seeing and hearing others who have recovered and are feeling better, offers participants a sense of hope. (U: 4). These groups also offer a certain structure which brings stability into the sometimes erratic lives of these adolescents (U: 1; C: 4). Another important aspect contributing to continued treatment is feeling safe at meetings, which seems to be achieved in most self-help groups (U: 3; Uns: 3). Beside these broad group therapeutic aspects there are some specific learning experiences that stimulate positive self-help group experiences. Adolescents can increase both their knowledge and their skills in order to attain sobriety (U: 1, 4, 5). They are able to absorb useful information and to get advice from others to increase their insight (U: 1, 4). Through the twelve step program adolescents learn to deal with their emotions. Also, involvement in a self-help group may induce cognitive restructuring (Uns: 4). Also sponsors, recovered family members and friends setting examples help them establish sober, moral identities. (U: 5). Previous research suggests that AA-specific factors, such as working the steps, higher power, etc., are less frequently mentioned as important aspects of self-help (C: 4). However, some adolescents feel encouraged by experiencing spirituality. Believing in a God seems to be a key element in surrender for some of them. It enables them to forgive and be forgiven, to leave the past behind and to develop positive identities (U: 5, 6). At last, there are some specific adolescent needs contributing to their experiences in self-help groups. Adolescents may not need to attend as frequently as their more chronically dependent older adult counterparts in order to obtain similar outcomes (C: 2). What does seem important to adolescents in order to engage and influence more favorable substance use trajectories, is the presence of at least some similar-aged participants in these groups (Uns: 4). Also the presence of a positive social and educational environment has an impact on the treatment (U: 2).

Category 5: Reasons for discontinuation.

This includes "Negative experiences", "Demotivation" and "Practical reasons". Feeling safe or, on the contrary, experiencing negative incidents, is generally unrelated to reasons for discontinuation or nonattendance. Only a minority of participants mentions negative meeting experiences (which are more common for NA than AA members) (C: 3). Storylines reveal that

younger, less substance-involved adolescents find AA and NA groups somewhat more intimidating and less relevant. They feel more intimidated, harassed or threatened and therefore attend fewer meetings (Uns: 3). Several participants experience a lack of customized support, suggesting that the support does not always meet their specific needs (U: 1 ,4).

This may influence their motivation. They tend to be bored or do not feel like the group is of relevance or interest (U: 4). Some adolescents reveal that in the past they have stopped attending when the forced participation trigger from a parent or criminal justice official was removed. Others discontinue treatment when they experience relapse (U: 4). A final set of reasons to discontinue treatment are practical reasons. These include entering a formal treatment program or accessing other help (C: 4). Also logistical reasons such as lack of access to transportation may influence participation (U: 4).

The following legend should be considered when reading figure 3 below:

U = Unequivocal
C = Credible
Uns = Unsupported
Numbers referring to the articles as numbered in Table 1

Figure 3: *Summary of synthesized findings in table form*

Synthesized finding 1: Factors contributing to involvement in self-help groups

Category 1: Network support before entering treatment

Findings

Prior parental involvement*

Noteworthy was the finding that prior parental involvement in AA/NA groups was associated with youth attendance. *Uns: 4*

Influential individuals in the social network*

Having influential individuals with 12-step experience in the social network may further enhance the likelihood of patient' participation. *Uns: 4*

Concerned individuals*

The participants did not respond to accusations and lecturing, but rather responded to the care demonstrated by concerned individuals. When these youngsters were ready, someone helped them. *U: 5*

Parent's communication*

Parent's communications with adolescents about dangers of substance use are associated with increased odds of substance abuse treatment use and with decreased odds of reports of unmet need for treatment. *Uns: 7*

Mom and dad: Would they "flip out" or "give us candy?"

As children none of the participants was cradled by consistency or boundaries. Nor were most of their caretakers able to give them much attention and love because often the adults were addicts and mentally ill. *U: 6*

Category 2: Influences on the threshold to seek help

Findings

Barriers to treatment use

Adolescents also report psychological barriers to treatment use (stigma, lacking insight, unaware of sources of help). *U: 7*

No perceived need for treatment

An even higher proportion reported no perceived need for treatment. *Uns: 7*

Stigma*

Failure to seek treatment might be attributed to fears of stigma. *U: 7*

Lacking knowledge*

Failure to seek treatment might be attributed to lacking knowledge about dangers of drug use. *U: 7*

Availability *

The ease of availability of prescription opioids from family members/friends might affect motivation to seek help. *Uns: 7*

Perception*

The perception that legal "prescription" opioids are safer than "illicit" drugs might affect motivation to seek help. *Uns:7*

No perceived need/low intrinsic motivation

Not believing one has a substance-related problem or see no need for AA/NA. *U: 4*

Fear of death and guilt*

Also contrary to expectations, fear of death and guilt over past actions motivated the participants, just as it has spurred adult alcoholics to stop drinking. *U: 5*

Category 3: Contribution of social factors during treatment

Findings

Social support*

The participants used the sponsors, other NA and AA members, and some family members to help them overcome grief, alienation, and shame. *U: 6*

Support inside the group context

Through the 12 Step fellowship, there was extended support and empathy by fellow group participants. *U: 1*

Support outside the group context*

This support was often available outside of the formal group context, enabling the young people to access support when it was needed the most. *U: 1*

Positive attention*

Getting support from others/that other members care about them. *U: 4*

Connectedness

Through group participation, many young people were able to develop strong connections with other people who shared their experiences. This offered a sense of belonging and reduced feelings of isolation. *U: 1*

Connectedness*

Many youth also reported feeling quite connected to AA/NA groups. *Uns: 4*

Universality

Not feeling alone, a sense of belonging. *U: 4*

Connectedness *

The participants found the connections they so desperately needed. *U: 5*

Sense of belonging*

Largely because they trusted other adolescent and adult AA members who had confronted those same feelings, the participants felt they belonged somewhere. *U: 5*

Group cohesion*

Providing group cohesion. *Uns: 4*

Sense of normality*

This strong connections fostered a sense of normality in those who otherwise felt stigmatized by their substance use issues. *U: 1*

Synthesized finding 2 (continued)

Category 4: Therapeutic aspects

Findings

Cognitive restructuring

Providing cognitive restructuring. *Uns: 4*

Guidance*

AA and companion groups, such as Narcotics Anonymous know how to squire youngsters through their first few years of sobriety. *U: 5*

Insight

Providing insight. *Uns: 4*

Dealing with emotions*

The participants used the Twelve Steps to help them overcome grief, alienation and shame and to deal rationally with perplexing emotions, conflicts and identity issues. *U: 6*

AA-specific Content / Philosophy

Responses about AA-specific factors (working the steps, higher power, living one day at a time,…) were less frequent. *C: 4*

Adolescents limited exposure to treatment (intensity and frequency)*

Youth may benefit from even limited exposure to treatment.

Highly intensive adult-derived clinical recommendations [of 12-step participation] may not be critical for this age group. Adolescents may not need to attend as frequently as their more chronically dependent older adult counterparts so as to obtain similar outcomes. *C: 2*

Group-therapeutic factors*

More general, group-therapeutic, factors were more salient to these youth at this stage of their recovery and/or degree of post-treatment AA/NA exposure. *U: 4*

Opportunities to learn

The fellowships offered the young people opportunities to learn, to absorb useful information that offered hope as well as insight. *U: 1*

Interpersonal learning

Learning skills, getting information and advice from others. *U: 4*

Listening and setting examples*

Sponsors, recovering family members, and friends listened to their stories and set examples, helping them establish sober, moral identities. *U: 5*

Structure*

Some also valued the explicit structure of the fellowships, for it brought stability to lives that might otherwise be erratic. *U: 1*

Structure*

Providing structure. *C: 4*

Safety*

Overall, youth reported feeling very safe at meetings. *U: 3*

Parents' and treatment facility ratings of safety*

Parents and clinical staff, in general, also perceived adolescents' attendance at AA and NA meetings to be safe and staff did not mention safety as a barrier to AA or NA attendance. *Uns: 3*

Instillation of hope

Recovery is possible, feeling better, seeing/hearing others who have recovered, feeling inspired. *U: 4*

Catharsis

A place to talk, express feelings, thoughts etc. *U: 4*

Importance of 12-step recovery groups*
Youth tended to perceive these groups as quite important and most thought they were somewhat or very helpful. *Uns: 4*
Peer members*
The presence of at least some similar-aged participants at 12-step meetings may help engage youth and influence more favorable substance use trajectories. *Uns: 4*
Positive school environment during treatment*
A specialized school setting for students in recovery provides a positive social and educational environment for young people conducive to their recovery. *U: 2*
Spirituality*
Belief in God is a key element in surrender, shedding shame, and easing guilt through "higher" forgiveness. Surrendering to a higher power, the participants were able to forgive and be forgiven, leave the past behind, and begin to develop positive identities. *U: 5*

Synthesized finding 2 (continued)

Category 5: Reasons for discontinuation

Findings
No relation with safety*
Reasons for discontinuation or nonattendance were unrelated to safety or negative incidents. *C: 3*
Negative experiences*
There was a trend for younger adolescents to attend fewer meetings and to report feeling intimidated, harassed, or threatened, albeit only at the 3-month follow-up. This may reflect tendencies for less substance-involved younger adolescents to find AA and NA groups somewhat more intimidating and less relevant. *Uns: 3*
Negative meeting experiences*
A significant minority do report some negative meeting experiences, which may be more common for NA than AA attendees. *C: 3*
Iatrogenic factors as a reason for discontinuation*
AA/NA made specific or related problems worse (instead of better). *C: 4*
Lack of customized support*
A couple of research participants suggested that the support from the group did not always meet their needs. *U: 1*
Boredom
One of the main reasons for discontinuing AA/NA is boredom. *U: 4*
Lack of fit
Not feeling like AA/NA is of relevance or interest. *U: 4*
External Attendance Contingency Removed/extrinsic motivation
Attended only as part of a treatment program or until a parent or criminal justice official stated they need no longer attend. *U: 4*
Relapsed
Returned to drinking/drug use. *U: 4*
Entered Formal Treatment
Entered a formal treatment program or to access other help. *C: 4*
Logistical reason
Lack of access to transportation. *U: 4*

3.3.3. Sensitivity Analysis

A sensitivity analysis was conducted, comparing the results of all seven articles with the results of the three articles of inferior quality (Article 2, 6 and 7, referring to the numbers used in Table 1). The content of the categories is not depending on data from the three articles of inferior quality. The five different categories would remain in place when the studies of inferior quality would be excluded. However, category 2 "Influences on the threshold to seek help" that included six (4 findings unequivocal, 2 unsupported) out of eight findings extracted from article 7 would lose a couple of insights. Article 7 focuses on barriers among adolescents. On the level of findings, some of the barriers mentioned do not appear in other articles, including e.g. the theme stigma, knowledge gaps, perception and perceptions related to the availability of the products. The finding about how one communicates about substance abuse retrieved from article 7 and feeding into category 1 on "Network support before entering treatment" is also found in other studies. However, due to its specific focus on parent's communication part of the nuances would have been lost. Four extracted findings of article 6 are of some importance to the overall synthesis. In category 1, one finding from article 6 (U), highlights the lack of support by parents, which introduces another perspective. In category 3 "Contribution of social factors during treatment", the finding of article 6 (U) contributes little in terms of variety. Social support in general is already covered by other articles (Article 1, 4, 5). However, this finding explores the phenomenon in depth by clearly describing how the adolescents are supported. It explicitly mentions support from family members and sponsors. Furthermore, in category 4 "Therapeutic aspects", the finding extracted from article 6 (U) contributes little in terms of variety to the subcategory "Learning experiences", since all the generated insights are also reported in the high quality studies. Two findings extracted from article 2 are importance to the content of the category 4. In this case, the category would have been generated from the content of high quality studies but some details might not have been revealed. For example, the finding on differences between adults and adolescents that warrant a program that matches adolescent's specific needs would have been lost. We conclude that if we had excluded the three articles of inferior quality from the synthesis, it would not have had a significant impact on the overall synthesis. In general, the data of the articles of inferior quality brought similar content to the synthesis. All categories would have been found when excluding the articles of lower quality. Only 13 findings used to construct the synthesis, were extracted from article 2, 6 or 7. However, some of these findings were

deepening our insight. Excluding the three articles of inferior quality might would have had an influence on the richness of information or in other words on the thickness of detail. The conclusion would have been similar though.

4. Discussion

In this section, we will formulate answers to the different review questions based on our results. The first question examined is "How do adolescents (mis)using substances experience their involvement in self-help groups?" We found that overall, adolescents perceive their engagement in self-help groups as beneficial and important. We also explored the question "How do self-help groups help adolescents in dealing with their addiction and their struggles in daily life?" Various factors seem to contribute to feelings of connectedness and a sense of belonging. Self-help groups assist addicted adolescents in regaining a sense of normality. However, the support should continue after meeting hours to stimulate continuation in the program. These groups provide a place where adolescents can talk and express their feelings. Moreover, they provide structure and stability, create positive learning experiences and increase insight in their life situation. It also gives them a sense of hope that their situation can be changed. For some, this is further encouraged by including a strong spiritual dimension into the recovery process. In response to the question "What do adolescents perceive as potential positive and harmful effects of being involved in these groups?" we argue that what is perceived as harmful relates to encounters during treatment like being harassed or threatened. This has mainly been indicated by younger adolescents with a less problematic substance user profile. In addition, iatrogenic factors were mentioned as well as a lack of customized support. In response to the question "What can be improved on the level of self-help groups to create a better fit for adolescent addicts?" we argue that the inclusion of a substantial number of similarly-aged participants in each group facilitates continuation. The claim that adolescents may not need to attend self-help groups as frequently as their more chronically dependent counterparts in order to obtain similar outcomes should further be researched. The synthesis also provided insight in what could be considered to lower the barriers for initial participation. Network support from parents and other concerned individuals, before entering treatment, seems to be important, e.g. to overcome certain

psychological barriers preventing adolescents of attending self-help groups such as fear of stigma or a lack of awareness of the personal problem they have. The lack of knowledge about the dangers of substance use could potentially be overcome by integrating this knowledge base into the school curriculum. Furthermore, environmental aspects such as easy access to substances and society's perception of the non-problematic nature of some of them se substances prevents people from seeking help.

4.1. Implications for Future Practice and Policy

The meta-aggregation revealed some psychological barriers preventing adolescents to attend self-help groups. It is important to know how to reduce these barriers. Corrigan and Penn (1999) suggested three approaches: protest, education and contact. Protest suggests the need for counselors to be vocal in sending messages to the media and other sources to stop portraying mental illness, counseling, and clients in inaccurate ways (Vogel et al., 2007). This may have an important impact on the fear for stigma. Education refers to the need for counselors to provide accurate information about mental illness and treatment (Vogel et al., 2007). Through education we can also work towards reducing stigma, but moreover knowledge can be increased, as well as awareness of the sources of help and perceived need for treatment. Education efforts can take many forms, as books, videotapes, audiotapes, posters, advertisements and commercials (Stuhlmiller, 2003). According to Vogel et al. (2007), it may be particularly important to have positive role models in education campaigns. This is an excellent way to change one's perception of social stigmas. In general, this contact seems to be most effective when the person is (a) of at least equal status, (b) perceived as an in-group member, and (c) liked (Corrigan & Penn, 1999). Thus, having famous individuals such as sports stars or movie stars acknowledge that they have sought counseling, is one way to normalize help seeking, as is providing direct information to individuals who experience mental health problems (Vogel et al., 2007). This could help people to identify stigma and to develop coping strategies. Moreover, involving family or significant others can have an influence on the support perceived by the stigmatized individual. This is important as network support seems to contribute to the motivation to start attending self-help groups. Thus, the outreach and media suggestions mentioned above might be most helpful if they do not only

target the potential client, but also their peers, family, and friends. The internet offers great opportunities to reach out to people in need of support. Griffiths, Christensen, Jorm, Evans, and Groves (2004) implemented "BluePages", a web-based cognitive-behavioural intervention to reduce the stigma felt by individuals experiencing depression (see www.bluepages.anu.edu.au). This is a nice example of how the internet can be used to reduce stigma by reaching a large amount of people.

In addition to attempts to lower the barriers for initiating self-help, there are some factors to take into account in order to achieve long-term commitment and to optimize the self-help group experience. First of all, it is important to reduce negative experiences and to promote a positive environment. Involving a well-trained professional in guiding the self-help group might help to overcome iatrogenic effects. Regarding intrinsic motivation, one study states that among patients undergoing alcohol detoxification, motivational enhancement for twelve-step involvement may be beneficial only for those who have little experience with twelve-step groups, whereas brief advice to attend Alcoholics Anonymous was associated with relatively better outcomes at the high ends of the twelve-step experience (Kahler et al., 2004). Practical worries, such as transport, should be eliminated where possible by making self-help groups easy to reach. Also matching participants in a way that similarly-aged participants take part in the same group, could keep youth engaged.

4.2. Strengths and Limitations

In this report, we provided as much methodological detail as possible to increase transparency and to allow other review teams to update this review in due time. Unlike many other reviews we included a sensitivity analysis to contribute to the debate on the sense or non-sense of including low quality studies in a qualitative evidence synthesis. It allowed us to keep all relevant papers in the synthesis, yet permitted to make scientific sound statements about what the impact of the study of quality was on our synthesis. Our analysis suggests that the exclusion of studies of inferior quality from qualitative systematic reviews is defendable, as indicated in previous research. Previous sensitivity analyses, conducted by Thomas and Harden (2008) and Caroll et al. (2012), found that the studies of inferior quality contributed comparatively little to the synthesis and did not contain many unique themes. Excluding these data, however, seemed to have an impact on the richness of the data presented. Overall, the

contribution of the studies of poorer quality to the overall synthesis was modest, considering the invested work and time spent to extract and synthesize these studies. Therefore, we would carefully recommend that studies of inferior quality can be excluded from qualitative systematic reviews for future practice.

As mentioned before, the topic 'self-help groups' has extensively been researched from a quantitative methodological perspective. According to Bekkering and colleagues (2016) there are low attendance rates of youth in self-help groups. Our synthesis provides insights in the conditions that may need to be created to keep adolescents motivated to continue their engagement in self-help groups until they can independently solve their problems within their own network. The number of studies included in this synthesis is rather modest and may point to an overall gap in the literature concerning experiences of addicted adolescents with self-help group trajectories. Research could be expended in the direction of other types of self-help groups, since we only considered programs adopting the principles of Gielen (2012; see inclusion criteria section). We also suggest to explore the duration and frequency of attendance to programs in relation to the experiences of adolescents and the differences between perceived outcomes reached in adults as compared to adolescents with similar problems. A potential limitation of this review of which the impact on the findings is unclear is the decision to only include articles written in English. Most articles included in the set originated from the U.S. This may influence some results, for instance the role of spirituality in self-help programs. There might be important cultural differences in the weight that is given to spirituality in healing processes.

5. Conclusion

This article aims to fill in a gap by reporting on qualitative research evidence concerning adolescents' experiences and perceived effectiveness of self-help groups for addiction. We conclude that adolescents involved in self-help groups, in general perceive their involvement as quite helpful. Self-help groups offer social support and connects people. They also offer a sense of belonging that may help adolescents to overcome fear of stigma. Therapeutically inspired domains of attention include the provision of a safe place to talk and to express

personal feelings, the provision of structure and stability. Furthermore, there are some more specific learning experiences, i.e. learning to deal with emotions and gaining new insights that provide them with a sense of hope for recovery. AA-specific factors contribute to a lesser extent. Furthermore, low extrinsic motivation and negative experiences are mentioned as reasons for non-attendance or discontinuation, as are iatrogenic factors and a lack of customized support. Adolescents mentioned some specific needs, such as the presence of other adolescent group members with similar age characteristics. An increase in network support and psychological wellbeing are perceived as beneficial for continuation of the engagement. The impact of cultural differences on these synthesized findings should further be explored.

Funding

Funding was received from the Belgian Science Policy Office (BELSPO) in context of the ADAPTE-youth project (project DR/00/059). The ADAPTE-youth project aims to develop guidelines for preventions, assessment and treatment of adolescents with alcohol and drug misuse in the Belgian context.

Conflict of interest

None to declare.

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* The selected studies used in the meta-aggregation of this reviews.

Appendix A: QARI Critical Appraisal Instrument

Assessment for (Author – Journal):

……..

……...

Criteria	Yes	No	Unclear
1. There is congruity between the stated philosophical perspective and the research methodology.			
2. There is congruity between the research methodology and the research question or objectives.			
3. There is congruity between the research methodology and the methods used to collect data.			
4. There is congruity between the research methodology and the representation and analysis of data.			
5. There is congruity between the research methodology and the interpretation of results.			
6. There is a statement locating the researcher culturally or theoretically.			
7. The influence of the researcher on the research, and vice-versa, is addressed.			
8. Participants, and their voices, are adequately represented.			
9. The research is ethical according to current criteria or, for recent studies, there is evidence of ethical approval by an appropriate body.			
10. Conclusions drawn in the research report do appear to flow from the analysis, or interpretation, of the data.			
TOTAL			

Reviewers Comments:

Appendix B: QARI Data Extraction Instrument

Extraction details (Author – Journal):

……..

……...

Methodology	
Method	
Phenomena of interest	
Setting	
Geographical	
Cultural	
Participants	
Data Analysis	
Authors Conclusion	

Reviewers Comments:

Appendix C: Data extraction on analytical level

1. Expanding our understanding of self-help support groups for substance use issues

Finding	Citation	Level
Connectedness Through group participation, many young people were able to develop strong connections with other people who shared their experiences. This offered a sense of belonging and reduced feelings of isolation.	"I'm part of something." "it's good to… know… that I'm not the only one going through it… no one's better than anyone else… it's a big relief… there's always someone whose… going through what you're going through."	Unequivocal
Sense of normality* This strong connections fostered a sense of normality in those who otherwise felt stigmatized by their substance use issues.	"I'm… not ashamed to actually tell the truth on how it is... you sort of think, 'Okay that wasn't me... the real me is when I'm off drugs; but when I'm on drugs, that's totally different person and you do things that you really ashamed about'." "they weren't judgmental when I told them what I'd been doing the last couple of years, they were, 'That's okay, just keep coming back'."	Unequivocal
Support inside the group context Through the 12 Step fellowship, there was extended support and empathy by fellow group participants.	"I can go to a meeting and tap into a whole bunch of people who care about me… they might not even know me, but they care about whether or not I go out and drink and take drugs… that was incredibly important for me… that I had that support... I think 12 step fellowships are really important sources of support" "I was grateful to meet someone who was so… selfless, for want of a better word, who had so much time for me."	Unequivocal
Support outside the group context* This support was often available outside of the formal group context, enabling the young people to access support when it was needed the most.	"it's good. It's not like… a therapist who I have to make an appointment with; I can ring them up and you know, talk to them; and they don't cost me 80 dollars a pop!"	Unequivocal
Lack of support* A couple of research participants suggested that the support from the group did not always meet their needs.	"When you're craving drugs... I don't want to ring someone whose going to talk me out of it... You just think, 'I want to get these drugs!'" "People were generally afraid for me like, they'd be like, "If you don't start doing these things… you'll go back to where you were."	Unequivocal
Opportunities to learn The fellowships offered the young people opportunities to	"we have worries and issues and things that are on our mind and we come to this forum to be able to express them and find the answers for them."	Unequivocal

learn, to absorb useful information that offered hope as well as insight.	"as you're talking, sharing in front of a group of people, it's a way of reminding myself and reinforcing in myself, and realizing how glad I am to be clean."	
Structure* Some also valued the explicit structure of the fellowships, for it brought stability to lives that might otherwise be erratic.	"The reality is, that meeting has gotten so many people sober because it's so structured; it's so rigid."	Unequivocal

* Relabeled by the reviewers

2. Youth in recovery

Finding	Citation	Level
Positive school environment* A specialized school setting for students in recovery provides a positive social and educational environment for young people conducive to their recovery.	"… I think it's the best thing that has ever happened to me when it comes to school… I was able to manage my sobriety and school in one building. I love Hope Academy and I love going to school today. I think that is so amazing that I am around a group of people that understand my everyday life."	Unequivocal
Importance of recovery support services (RSS)* In recent years, recovery support services have become increasingly important as an adjunct to formal treatment, as well as to create "recovery friendly" communities for those in recovery who do not participate in a treatment program.		Unsupported
4 Types of RSS* ▪ Emotional support ▪ Informational support ▪ Instrumental support ▪ Companionship		Unsupported
Adolescents limited exposure to treatment (intensity and frequency)* Youth may benefit from even limited exposure to treatment. Highly intensive adult-derived clinical recommendations [of 12-step participation] may not be critical for this age	"When I decided to give in is when my life started to change. Now that my obsession with drugs has been relieved, I can be there for other people, which is the biggest high and for an adrenaline junkie like me, is the best buzz in the world. I feel like I have a purpose in life today, to carry a message of hope."	Credible

group. Adolescents may not need to attend as frequently as their more chronically dependent older adult counterparts so as to obtain similar outcomes.		

* Relabeled by the reviewers

3. How safe are adolescents at Alcoholics Anonymous and Narcotics Anonymous meetings? A prospective investigation with outpatient youth

Finding	Citation	Level
Safety* Overall, youth reported feeling very safe at meetings.	"A safe place to talk" and "feeling safe"	Unequivocal
Negative meeting experiences* A significant minority do report some negative meeting experiences, which may be more common for NA than AA attendees.	"People coming drunk and harassing others."	Credible
Differences in experiences between AA and NA* It's unclear as to why exactly NA may be associated with more negative experiences than AA. It may relate to the illicit nature of the substances of focus in NA that may correlate with more antisocial characteristics or possible gang-related histories among its members.		Unsupported
No relation with safety* Reasons for discontinuation or nonattendance were unrelated to safety or negative incidents.	Only one reported reason for not attending was related to harassment (unsafety):"People coming drunk and harassing others.". Of the 296 reasons for liking (attending) AA or NA, (only) two participants mentioned AA/NA being "A safe place to talk" and "feeling safe" (safety).	Credible
Parents' and treatment facility ratings of safety* Parents and clinical staff, in general, also perceived adolescents' attendance at AA and NA meetings to be safe and staff did not mention safety as a barrier to AA or NA attendance.		Unsupported
Negative experiences* There was a trend for younger adolescents to attend fewer		Unsupported

meetings and to report feeling intimidated, harassed, or threatened, albeit only at the 3-month follow-up. This may reflect tendencies for less substance-involved younger adolescents to find AA and NA groups somewhat more intimidating and less relevant.		

* Relabeled by the reviewers

4. What do adolescents exposed to alcoholic anonymous think about 12-step groups?

Finding	Citation	Level
Importance of 12-step recovery groups* Youth tended to perceive these groups as quite important and most thought they were somewhat or very helpful.		Unsupported
Connectedness* Many youth also reported feeling quite connected to AA/NA groups.		Unsupported
Group-therapeutic factors* More general, group-therapeutic, factors were more salient to these youth at this stage of their recovery and/or degree of post-treatment AA/NA exposure.	"To know I am not the only one with this problem" "They always care what I have to say" "Hearing stories of how other people got through" "Get my feelings out"	Unequivocal
Universality Not feeling alone, a sense of belonging.	"To know I am not the only one with this problem"	Unequivocal
Positive attention* Getting support from others/that other members care about them.	"They always care what I have to say"	Unequivocal
Instillation of hope Recovery is possible, feeling better, seeing/hearing others who have recovered, feeling inspired.	"Hearing stories of how other people got through"	Unequivocal

Catharsis A place to talk, express feelings, thoughts etc.	"Get my feelings out"	Unequivocal
Interpersonal learning Learning skills, getting information and advice from others.	"Principles for everyday life"	Credible
AA-specific Content / Philosophy Responses about AA-specific factors (working the steps, higher power, living one day at a time,…) were less frequent.	"One day at a time philosophy"	Credible
Structure* Providing structure	"Something to do to stay busy"	Credible
Group cohesion* Providing group cohesion		Unsupported
Insight* Providing insight		Unsupported
Boredom One of the main reasons for discontinuing AA/NA is boredom. *U*		Unsupported
Lack of fit Not feeling like AA/NA is of relevance or interest.	"Lost interest"	Unequivocal
Relapsed Returned to drinking/drug use.	"I started drinking and using drugs again"	Unequivocal
No perceived need/low intrinsic motivation Not believing one has a substance-related problem or see no need for AA/NA.	"I felt like I didn't need AA"	Unequivocal

External Attendance Contingency Removed/extrinsic motivation Attended only as part of a treatment program or a parent or criminal justice official stated they need no longer attend.	"I left the hospital"	Unequivocal
Logistical reason for discontinuation Lack of access to transportation.	"No ride"	Unequivocal
Entered Formal Treatment Entered a formal treatment program or to access other help.	"To get help"	Credible
Iatrogenic factors AA/NA made specific or related problems worse (instead of better).	"AA seems like a cult"	Credible
Spirituality / Religious content Notable was the absence of any explicit mention of the spiritual/quasi-religious content of 12-step fellowships as a reason for discontinuing.		Unsupported
Prior parental involvement* Noteworthy was the finding that prior parental involvement in AA/NA groups was associated with youth attendance.		Unsupported
Influential individuals in the social network* Having influential individuals with 12-step experience in the social network may further enhance the likelihood of patient' participation.		Unsupported
Peer members* The presence of at least some similar-aged participants at 12-step meetings may help engage youth and influence more favorable substance use trajectories.		Unsupported
Cognitive restructuring Providing cognitive restructuring		Unsupported

* Relabeled by the reviewers

5. Surrender to win: How adolescent drug and alcohol users change their lives

Finding	Citation	Level
Availability of drugs* All seven had at least one alcoholic parent and easy access, often in the home, to drugs and alcohol.	"I had seen the 'Brady Bunch', and I knew that we did not have a normal family life." "I'll quit when Mom quits"	Unequivocal
Feelings of alienation fostered by a family member suffering from a mental illness* All of their mothers, with the possible exception of Jesse's, suffered from depression or other mental illnesses, which fostered feelings of alienation in their children.	"That could be pretty disruptive to a household, scary. She'd get weird. We'd be out on a vacation, and she would be kind of silent and moody, and obviously in a space where we couldn't ever really reach her – just be real weepy. And so we'd be out on this vacation, and we'd have to go home all of a sudden. [I was] 13, 14 when I realized this was going on. And I blamed myself."	Unequivocal
Filling a void* Early drug and alcohol use seemed to fill a void resulting from the lack of parental nurturing.	"I liked the feeling that [drugs] gave me. I didn't feel like crap all of the time, because they were always telling me what a piece of crap I was."	Unequivocal
Intimacy and boundaries* None of the participants exhibited good sexual boundaries. Regarding intimacy, all had to learn to relate to members of the opposite sex.		Unsupported
Suicidal thoughts* The participants were all suicidal from time to time.	"I wanted to die. My mother had a gun, and I would put it to my head. I would watch commercials on TV, and at the end of the commercial think that it could all be over in about thirty seconds."	Unequivocal
Surrender and long-term recovery* Contrary to some studies that have predicted high relapse rates (long-term, as opposed to short term, lapses) for youngsters who use a multitude of substances early in life, the participants experienced surrender and long-term recovery.	"If you could, what would you change about your life?" "Nothing. Everything I did got me to where I am today, and that's a good place." "At about two weeks into AA, I knew I was an alcoholic, and I hated it, [but] I stayed sober."	Unequivocal
Fear of death and guilt* Also contrary to expectations, fear of death and guilt over past actions motivated the participants, just as it has spurred adult alcoholics to stop drinking.	"… because there was nothing left to do. I weighed 150 pounds and I'm six foot. I looked bad. My face was sunken in. My left eye was wide open all the time -bugged out- and my right eye was almost closed. I was desperate for some answers. How in the world did my life get so fucked up? I thought I was going to die…."	Unequivocal

	"… I remember looking at myself and thinking about the things I had done and knowing that I was out of control due to alcohol. I knew that my life was bad due to alcohol…"	
Concerned individuals* As other research has noted, the participants did not respond to accusations and lecturing, but rather responded to the care demonstrated by concerned individuals. When these youngsters were ready, someone helped them.	"She got in my face, yelling at me. I didn't want to listen to what she was telling me, 'It's not your fault that you got molested, that your dad didn't want any part of your life, that your brother beat you up.' It took everything I had to keep that stuff in. And that was the first realization that came to me that it wasn't my fault…. She had to get back to work, and I went to the only place I felt comfortable, Wino Park, where I had slept strung out on crank. And I just said [to God], 'Help!' And right at that moment, the crying stopped. I knew I was going to be OK. And I went to a meeting and cried – in front of a bunch of people."	Unequivocal
Identity issues* The participants were emotionally arrested and had to deal with myriad identity issues.	"I was just resigned to the fact that, man, I can't beat this. Saying I am an alcoholic is saying, 'I don't know what to do'". He learned that "I wasn't a bad person. I had a disease. There was a reason I did all of these crazy things."	Unequivocal
Grief, alienation and shame* They were faced with the same problems any recovering substance abuser must confront, such as grief, alienation, and shame.	"… And I went to a meeting and cried – in front of a bunch of people." "At about two weeks into AA, I knew I was an alcoholic, and I hated it, [but] I stayed sober."	Unequivocal
Connectedness* The participants found the connections they so desperately needed.	"I was a kid from a war-zone home who managed to stumble into AA and be safe enough, long enough, for the steps to heal me. I built a family there."	Unequivocal
Sense of belonging* Largely because they trusted other adolescent and adult AA members who had confronted those same feelings, the participants felt they belonged somewhere.	"… AA offered instructions. Some genuinely nice people who wanted to help me live told me to ask God for help in the morning and I thank Him at night. And I did. And it worked. Just belonging -to know that people understood my insane thinking- I found myself believing that God was going to help me. I could see it working in my life and other people's lives."	Unequivocal
Listening and setting examples* Sponsors, recovering family members, and friends listened to their stories and set examples, helping them establish sober, moral identities.	A few days later, Noah went to an AA meeting and told an older member how he felt. The man became his sponsor. As a result, "I got into the whole one-day-at-a-time thing", Noah explained.	Unequivocal
Guidance* AA and companion groups, such as Narcotics	"… AA offered instructions…."	Unequivocal

Anonymous know how to squire youngsters through their first few years of sobriety.	"I was a kid from a war-zone home who managed to stumble into AA and be safe enough, long enough, for the steps to heal me…."	
Spirituality* Belief in God is a key element in surrender, shedding shame, and easing guilt through "higher" forgiveness. Surrendering to a higher power, the participants were able to forgive and be forgiven, leave the past behind, and begin to develop positive identities.	"God grant me the serenity to accept the things I cannot change, the courage to change the things I can, and the wisdom to know the difference." One desperate night, he prayed to God: "'If you really do exist, and you are paying attention to me, and if you want the best for me, show me how I can live.' That was the first time I had prayed since I was 7 years old, when I asked for my parents not to get divorced."	Unequivocal

* Relabeled by the reviewers

6. Adolescent addiction and recovery: A study in extremes

Finding	Citation	Level
Mom and dad: Would they "flip out" or "give us candy?" As children none of the participants was cradled by consistency or boundaries. Nor were most of their caretakers able to give them much attention and love because often the adults were addicts and mentally ill.	"She said she couldn't handle us kids…. And her solution was just to go to her room and not to look at it… I wanted them back together because it really hurt and everything because I missed my dad, and it wasn't the same." "We didn't know what he was going to be like when he came in… if he was going to flip out about what happened at work today or if he was going to bring some candy to us."	Unequivocal
Numbing the pain	"It was the only relief I could find… to live and not feel my life" "I liked the feeling that drugs gave me. I didn't feel like crap all the time, because they were always telling me what a piece of crap I was."	Unequivocal
Availability of substances* Parents kept alcohol if not drugs in their homes, making them readily available to children.	"Mom came to rescue me by sending me grass (marijuana) in the mail" "I never paid for it [drugs]. The only thing I've ever bought was a six-pack of beer".	Unequivocal
A sense of false intimacy* Associations with drug abusing siblings also engendered a sense of false intimacy and brought on intense situations in which the teenagers were unable to differentiate themselves from those with whom they formed "close" bonds.	"afraid to use, but they started teasing me and calling me names, and I felt I had to. … I thought they would stop being my friends."	Unequivocal

The need for acceptance* Other participants' claimed that they began using explicitly to be accepted by peers.	"Our school was big on wrestling and I thought this would make me popular. When a guy who was kicked off the wrestling team invited me to his house I thought this was the beginning for me. All they did was get high, and before long I was getting high with them , buying drugs, and giving them away so that students would like me."	Unequivocal
Using beats Living	"I'll never make it"	Credible
Crisis, surrender Each of the survivors talked about what twelve steppers call a 'bottom'. It is a crisis when the user realizes that all human assistance seems futile and only spiritual commitment can save her/him.	"I just couldn't do it anymore. I knew I needed some help. I could hear them, but I couldn't see them. I was lying on the floor, and my best friend's mom was the only person I would listen to, because I thought she was the greatest person in the world. Even though she had said I wasn't allowed in her house anymore, I felt like that was the best thing that she could have done for her daughter, and I respected her for that, because I knew what I was." "When I went into treatment, I remember looking in the mirror when someone told me that my behaviour was alcoholic. I remember looking at myself and thinking about the things I had done and knowing that I was out of control due to alcohol. I knew that my life was bad due to alcohol- not due to my mom, not due to my dad, not due to not doing well in school, not due to being dumb. I sat there crying, saying: 'I am an alcoholic.'"	Unequivocal
Spirituality and reason	"'Ok damn it, I'm going to try this thing. And I can't remember what I said, but it wasn't a long prayer, because I wasn't sure how to pray anyway. I just said a simple prayer, and I instantly felt better. I was crying hysterically, and I instantly quit crying. I just felt a little peace. And that's when I started believing in God, and that's when I knew that this deal (AA Twelve step program) was going to work for me. I just gave some part of me over to him." "When I finally decided to stop I asked God to help me with my drug problem, and He did. I [continue to] pray because without Him I know I would be using again and back to my old ways."	Unequivocal
Dealing with emotions* The participants used the Twelve Steps to help them overcome grief, alienation and shame and to deal rationally with perplexing emotions, conflicts and identity issues	"I was a kid from a war-zone home who managed to stumble into AA and be safe enough, long enough, for the steps to heal me. I built a family there."	Unequivocal
Social support* The participants used the sponsors, other NA and AA members, and some family members to help them	I don't know what I would do without my mother. We used to have so many fights and problems. She told me she loved me, and she wanted me to stop using drugs. …"	Unequivocal

overcome grief, alienation, and shame and to deal rationally with perplexing emotions, conflicts and identity issues.	"I was involved with gangs, guns, and drugs all while I was staying in his home and he [sponsor] was patient with me, never pressuring me. He asked me if I wanted help with my drugs use. If needed he would get me into treatment or counseling."

* Relabeled by the reviewers

7. Treatment use and barriers among adolescents with prescription opioid use disorders

Finding	Citation	Level
Barriers to treatment use Adolescents also report psychological barriers to treatment use (stigma, lacking insight, unaware of sources of help).	"Wasn't ready to stop using" "Didn't want others to find out" "Treatment might cause neighbors to have negative opinions" "Could handle the problem without treatment" "Didn't need treatment" "Insurance didn't cover treatment or cost concern" "Didn't know where to get it" "Didn't think treatment would help" "Didn't have time"	Unequivocal
Treatment use* The majority of adolescents who endorsed a pattern of symptoms consistent with opioid dependence, abuse or subtreshold use didn't receive any substance abuse service or treatment.		Unsupported
No perceived need for treatment An even higher proportion reported no perceived need for treatment.		Unsupported
Stigma* Failure to seek treatment might be attributed to fears of stigma.	"Didn't want others to find out, treatment might cause neighbors to have negative opinions."	Unequivocal
Lacking knowledge* Failure to seek treatment might be attributed to lacking knowledge about dangers of drug use.	"Thought or hoped that the problem would go away" "Did not know where to get help"	Unequivocal

Availability* The ease of availability of prescription opioids from family members/friends might affect motivation to seek help.	Unsupported
Perception* The perception that legal "prescription" opioids are safer than "illicit" drugs might affect motivation to seek help	Unsupported
Parent's communication* Parent's communications with adolescents about dangers of substance use are associated with increased odds of substance abuse treatment use and with decreased odds of reports of unmet need for treatment.	Unsupported
Additional barriers* Blacks, Hispanics and adolescents in non-metropolitan areas may face additional barriers to treatment.	Unsupported
Need factors* Need factors (comorbid SUD, criminal justice system involvement) increase treatment use.	Unsupported
Self-help groups Self-help groups are a common source of help.	Unsupported

* Relabeled by the reviewers

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