Current Psychology
https://doi.org/10.1007/s12144-023-04267-z

Structured programs for the self-management of substance addiction consequences in outpatient services: A scoping review

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Accepted: 12 January 2023

Abstract
Structured intervention programs are an important resource for supporting people with substance addiction. Although evidence suggests that they improve health outcomes, such as specific symptoms, less is known about their impact on patients' ability to self-manage the consequences of substance addiction. The aim of this review is to scope outpatient intervention programs focused on the self-management of substance addiction consequences. Approach. This review followed the Joanna Briggs Institute (JBI) methodology for scoping reviews. MEDLINE and CINAHL (through Ebsco), Psychology & Behavioral Sciences Collection (including PsycINFO) and Web of Science were screened to identify articles published in the last 10 years. Only primary research was included. Out of 891 records, 19 were eligible for this review—12 randomized controlled trials (RCT), 6 quasi-experimental study and 1 observational study. Those studies reported group interventions (10), individual interventions (8) and 1 mixed approach. The most common interventions were based on motivational strategies, relapse prevention and definition of active plans for risky situations. 10 studies reported positive effects. The identification of structured programs may support the development of new approaches focused on empowerment and quality of life of people with substance addiction. Programs to empower patients for self-management of substance addiction consequences are often complex and rely on health professionals' commitment. Nevertheless, they are a feasible approach that seems to benefit patients managing chronic conditions associated with substance addiction.

Keywords Substance-related disorders · Substance addiction consequences · Addiction severity · Treatment program · Interventions

Introduction

Psychoactive substance use is common in most societies (World Health Organization (WHO), 2018). It is estimated that about 3.5 millions of Europeans used cocaine last year and 1 million are high-risk opioid users (EMCDDA, 2022). Europe is the region of the world with the highest alcohol consumption rate, especially in Eastern Europe (Griswold et al., 2018; WHO, 2018). Over the next few years about 1.2 million people will undergo treatment for the use of illegal substances in Europe (EMCDDA, 2018) and a significant burden on health systems, caused by the high incidence and frequently chronic consequences of substance use, will increase.

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Published online: 23 January 2023

Substance use negatively impacts on physical, mental and social health of patients, families and communities[3]. It may cause comorbidities, such as sexually transmitted diseases, chronic conditions related to risky behaviours or careless health surveillance, mood and anxiety disorders, functional impairment (including the capacity to maintain a job), social and family disfunction and suffering (Carew & Comiskey, 2018). This set of complex and multidimensional problems can be defined as the "consequences of substance addiction", and they compromise both health status and social functioning (Seabra et al., 2018).

Since the second half of the twentieth century, specialized care for people with substance addiction have been developed in many countries. Since then, users are often supported by health professionals in different specialized intervention programs, that include medication and/or psychotherapeutic and psychosocial support. Access to this type of care has increased the average life expectancy of the population of substance users, meaning that today many users are older and have more comorbidities. These comorbidities result both from the greater number of years of consumption, and from the ageing process itself. Despite the attempt that has been done by the health systems to promote a more functional and positive life for these people, they still suffer from social exclusion (Carew & Comiskey, 2018; Gowing et al., 2015).

Most of the available intervention programs focus primarily on maintaining abstinence, preventing relapse, or improving the relationship with addictive substances by enhancing the ability to manage their use. Despite the well-recognised consequences of substance use and its often-chronic nature, increasing the capacity to self-manage these consequences still seems to be a less common focus for these programs.

Self-management is defined as the "*intrinsically controlled ability of an active, responsible, informed, and autonomous individual to live with the medical, role and emotional consequences of his chronic conditions in partnership with his social network and the healthcare providers*" (Velde et al., 2019). This concept is particularly useful to promote users' engagement and responsibility, which is particularly important given the chronic nature of many of the consequences of substance use. Also, this concept appeals to a community context as it is in the proximity to the environment in which the person lives that the support can be most effective.

The development of training programmes to improve self-management of substance addiction consequences is recommended (Velde et al., 2019). Interventions targeting specific substance use consequences, such as anxiety (Erim et al., 2016), depression (Spilsburry, 2012), aggressive behaviour and consumption impulse (Jones et al., 2016) have already been reported as effective, allowing for improved self-management of substance addiction consequences. The identification of available intervention programmes is important to understand their scope, structure, results, and limitations, which may inform the development of new programmes focused on promoting self-management of the consequences of substance use. The problem is that many times research and clinical practices does not entitle a group of interventions as "programs" with a structure (objectives, target population, number of sections, type of intervention, time of execution, outcomes, follow-up) and detail set of content interventions (Sousa & Sequeira, 2012).

In September 2020, an initial search on PubMed (Medline) and PsycINFO (APA) was undertaken, but no literature reviews focused on self-management of substance addiction consequences were found. We have also searched Cochrane Database of Systematic Reviews, the Joanna Briggs Institute (JBI) Database of Systematic Reviews and Implementation Reports, the Center for Open Science, and the PROSPERO platform. No registered protocols or completed reviews were identified. Only one review protocol with similar objectives was found but it focused exclusively on substance abstinence.

This review aims to identify outpatient structured programs that focus on empowerment for the self-management of substance addiction consequences. The following research question was formulated, based on the PCC acronym (Population, Concept and Context): What are the existing intervention programs focused on self-management of substance addiction consequences for adults in outpatient services?

Materials and methods

This scoping review followed the JBI methodology for scoping reviews (Peters et al., 2020) and used the Preferred Reporting Items for Systematic Reviews and Meta-Analysis Extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018).

Protocol and registration

The protocol was registered prospectively in the Open Science Framework on 14th June 2020 (https://osf.io/bry9n/).

Eligible criteria

We have searched for English, Spanish, and Portuguese articles published between December 2010 and December 2020.

The search strategy included keywords based on PCC:

- Participants—Adults (more than 18 years), both sex, undergoing any kind of treatment in a drug addiction health outpatient facility (medication-assisted or non-medication assisted treatments), with problematic use of

all psychoactive substances (opioids, cocaine, cannabis, amphetamines, alcohol, nicotine), except caffeine.
- Concept—Structured programs or interventions to improve self-management and/or self-care of substance addiction consequences. The structure, objectives, content, time of execution, outcomes and existence or not of follow-up must be clearly defined.
- Context—Primary health care or community outpatient addiction units.

Exclusion criteria

Exclusion criteria were defined based on both population and intervention characteristics.

Population: all participants with the same psychological comorbidity; studies using financial incentives during or after completing the programs.

Intervention: interventions for inpatient units, even if continued in outpatient contexts; trials of pharmaceutical drugs; interventions not focused on improving self-management and/or self-care on patients with substance addiction consequences.

Search strategy

An initial limited search of MEDLINE and CINAHL was undertaken to identify articles on the topic. The words from titles and abstracts of relevant articles and the indexed terms were used to develop a complete search strategy. The following databases were screened: MEDLINE and CINAHL (through Ebsco), Psychology & Behavioral Sciences Collection (including PsycINFO) and Web of Science. We used Google Scholar and ResearchGate and contacted the author(s) by e-mail when full text access was not available. The search was conducted between 1st- 5th January 2021 (see Appendix 1). The search strategy, including all identified keywords and index terms, was adapted for each source. Reference lists of the identified articles were screened to identify additional studies.

Selection of sources of evidence

This scoping review considered primary qualitative and quantitative studies, economic and mixed methods, experimental and quasi-experimental studies, including randomized and non-randomized controlled trials, before and after studies and interrupted time-series studies. Observational analytical studies, including prospective and retrospective cohort studies, case–control studies, and cross-sectional analytical studies were also included. We have decided to exclude gray literature to ensure the inclusion of only the most rigorous studies.

Data charting process

All identified records were uploaded into Mendeley and duplicates were removed. The decision process, including the selection of titles, abstracts, and full texts, was guided by the inclusion/exclusion criteria. Articles were screened by three independent paired reviewers (PS and GB and IN). In case of disagreement, another reviewer of the team was consulted for discussion (CS or RS). The review decision process is presented in a PRISMA-ScR flowchart (Fig. 1) (Tricco et al., 2018). Two independent reviewers extracted data using a pretested form to register all the necessary information, according to the objectives and research question (Peters et al., 2020). This information is summarized in Table 1. All data can be found on Appendix 2.

Results

Synthesis of results

As shown in Fig. 1, 891 potentially relevant studies were identified. Of these, 873 were excluded since they were duplicated and did not fit the inclusion criteria. 18 studies were selected for this review, and 1 was included by screening the references of the articles. Table 1 presents the information about the 19 articles that have been included.

Different types of studies have been identified: 12 randomized control studies (RCT) (Amiri et al., 2016; Andersson et al., 2017; Carmody et al., 2012; Feldman et al., 2013; Ghasemi et al., 2014; Imani et al., 2015; Raes et al., 2011; Schuman et al., 2015; Tarp et al., 2017; Tiburcio et al., 2018; Walitzer et al., 2015; Wüsthoff et al., 2014), 6 quasi-experimental research designs with pre and post evaluation (Alfonso et al., 2011; Campbell et al., 2015; Khan et al., 2020; Tam et al., 2016; Wieben et al., 2018; Wodarski & Green, 2015), and 1 observational study (McKowen et al., 2018). Six of these studies were conducted in the United States of America (USA), three in Iran, two in Denmark, and the others in different countries. The mean age of participants was 23–55 years old, with greater representativeness of the age groups 20–30 years (Ghasemi et al., 2014; Raes et al., 2011; Schuman et al., 2015) and 31–40 years (Campbell et al., 2015; McKowen et al., 2018; Wodarski & Green, 2015).

Structure of the programs

A total of 3410 different substance users participated in the interventions identified by this review. 5 studies explicitly focused on alcohol problematic users (Andersson et al., 2017; Tarp et al., 2017; Walitzer et al., 2015; Wieben et al., 2018; Wüsthoff et al., 2014), 1 on methamphetamine

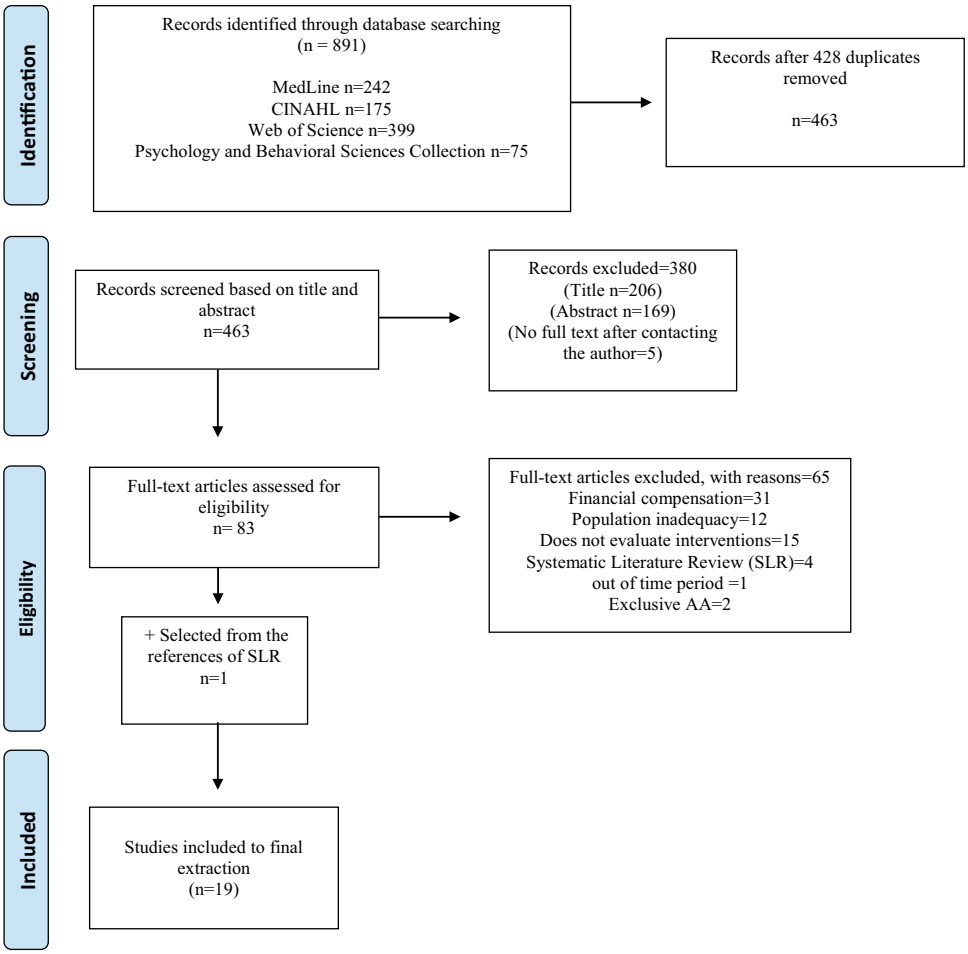

Fig. 1 Study selection and inclusion process

users (Amiri et al., 2016), 2 on patients under medication-assisted treatment with methadone (Feldman et al., 2013; Imani et al., 2015) and the remaining 13 addressed polysubstance users. The articles identified 10 group approaches, 8 individual and 1 based on a mix of individual and group approaches.

The most usual time frame for the intervention is 4 or 8 weeks (four studies each). In the remaining studies, the interventions took place between 5–28 weeks. The most frequent number of sessions were 12, followed by 8 sessions. In the remaining studies, the intervention ran between 5–40 sessions. The duration of each session was reported in only 12 studies. The most usual duration per session was 1 h (five studies), followed by < 1 h (three studies). The most frequent duration for the total intervention was 12 h.

The main objective of the programs was to reduce substance use (nine studies), improve health outcomes (seven studies), increase treatment compliance (five studies), followed by diverse objectives such as improving quality of life, decision-making and social skills and reducing relapses and mental suffering.

Therapeutic interventions

We found a wide range of individual and group interventions. They were delivered face-to-face, online (with synchronous and asynchronous sessions), or in hybrid mode. The most prevalent aim of the interventions was to empower patients to better cope with addiction and to self-manage its consequences.

Cognitive-behavioural therapy (CBT) underlies 13 of the studies and was the most frequent intervention, including the classical approach (six studies), web-based therapy (one study) and CBT techniques focused on emotion, anxiety, and mood (six studies). The second most used intervention may be designated as "Identification and definition of action plans for risk situations—triggers and desire situations and use of rejection skills" (10 studies). In third place, "Motivational interviewing—exploring motivation for change and personal responsibility" stands out (nine studies). Other interventions, in descending order of frequency include: 'Relapse prevention' (seven studies); 'Psychoeducation (addiction and recovery, comorbidities and drug effects)', along with 'Goal setting' and 'Social support' (each with six

Table 1 Data extracted from the included studies

Nº of the study Country	Study type	Sample (If RCT, intervention/control group)	Type of substance use	Objectives	Intervention	Weeks/number of sessions/time of each session/ Total time
1 México (Tiburcio et al., 2018)	RCT (3 arms)	83 (27 + 27 + 29) Age 18–25	Cannabis; Cocaine; Inhalants	↓Substance use and depression	Group – 1st arm—Web-based CBT based on the transtheoretical model of change. Structure: Retrospective baseline; Decisional balance; Motivation to change; Definition of goals; Diary of drug use behavior; Functional analysis of drug use behavior; Action plans for risk situations; Psychoeducation; Emotional control techniques for anxiety; Positive self-reinforcement; Social skills; Social support; Drug use rejection skills; Relapse prevention; Cognitive restructuring techniques Group 2nd arm: ASSIST Self-Help Strategies guide. Daily register of substance use, establishment of goals, identification of high-risk situations, and techniques for resisting pressure to use drugs	8 weeks/8 sessions/1 h each session/Total of 8 h
Findings: ↓ average days of substance use; ↓depressive symptoms; → No more effective than Treatment as Usual (TAU)						
2 USA (McKowen et al., 2018)	Observational longitudinal study	30 participants mean age 36 years [22–64]	Alcohol and drugs	↓substance use ↑ neurocognitive functioning	Group—Psychoeducation about addiction and recovery; CBT for mood and emotions; Relapse prevention strategies; Motivational strategies	4 weeks/12 sessions/2 h each session/Total of 24 h
Findings: ↓average days of use; ↓depressive symptoms; No improvement on global neurocognitive functioning, except material organization						
3 Norway (Wüsthoff et al., 2014)	RCT	56 (39 + 17) Mean age: Intervention group 32; Control Group 42	Alcohol	↓substance use, anxiety and depression ↑ motivation to treatment	Individual – CBT + motivational interview + personal and social functionality support (housing, vocational function, ability to manage psychiatric illness and family and social relationships) + family approach	No available information
Findings: ↑ Motivation to treatment → No more effective in reducing substance use, anxiety and depression than TAU						
4 Belgium (Raes et al., 2011)	RCT	227 (116 + 111) Mean age: Intervention Group 27; Control Group 26	Cannabis, Cocaine, Opiates, Amphetamines	↑ Compliance with treatment	Individual—Feedback sessions on the stages of change, personal resources and focus on the areas of life that people identified as wanting to change	4 weeks/12 sessions/1 h each/Total of 12 h
Findings: ↑ Compliance with treatment at and beyond eight sessions compared to TAU						
5 USA (Wodarski & Green, 2015)	Quasi-experimental	Unknown number of participants Mean age 31 years [18–56]	Alcohol and/or drugs	↑ motivation to avoid or reduce levels of alcohol and or drugs use	Mixed individual and group approach—Face-to-face screening, brief assessment, and referral + Texting and/ or e-mailing users for appointment reminders/ Online facilitated recover support (E-therapy) + Online individual and group counseling—Brief interventions/ Virtual community and peer support + Computer-based interventions/ Supplemental face to face counseling, treatment, and recovery support	No available information

Table 1 (continued)

Nº of the study Country	Study type	Sample (If RCT, intervention/control group)	Type of substance use	Objectives	Intervention	Weeks/number of sessions/time of each session/ Total time
Findings: ↓ Alcohol and drug use; ↓injection use; ↓Depression; physical complaints; violent behaviors; ↑Overall Health						
6 Denmark (Wieben et al., 2018)	Coorte Quasi- experimental	1398 participants 2 groups: > 60 years and 40–59 years	Alcohol	↓alcohol use ↑ compliance with treatment	Individual—Initial detoxification if necessary—motivational interviewing + CBT + Family Therapy + supportive consultations + optional disulfiram	No available information about the number of weeks and sessions/1 h each session
Findings: ↓ Alcohol—elderly patients had better outcomes compared with middle age patients;↑compliance with treatment in elderly compared with middle-aged patients						
7 USA (Schuman et al., 2015)	RCT	263 participants (137 + 126) Mean age 27	Alcohol, Cannabis, cocaine	↑ therapy results and retention rates	Group approach. CBT + interpersonal process + psychodynamic + solution-focused approaches + feedback. Before each session, participants completed the computerized version of the Outcome Rating Scale (ORS), Psychological functioning and distress. The program automatically scored which allows clinicians to identify clients who were making progress as expected, as well as those at risk for premature termination or a negative outcome	5 week/5 sessions/1,5 h session/Total of 7,5 h
Findings: ↑ Clinical Outcome compared to TAU; ↑ retention scales compared to TAU						
8 USA (Campbell et al., 2015)	Mixed methods. Coorte Quasi experimental Pilot study	40 participants Mean age 37,5 years	Alcohol, methamphetamines, Opiates, Cannabis	↑ treatment outcomes	Individual—therapeutic education system (TES) with 32 interactive, multimedia modules (basic cognitive behavioral relapse prevention + skills to improve psychosocial functioning + psychoeducation content of prevention of HIV, Hepatitis and other sexually transmitted infections) (see on Appendix 2)	8 weeks/16 sessions/40 min/Total of 10,6 h
Findings: ↓ number of days of alcohol and drug use						
9 USA (Walitzer et al., 2015)	RCT	76 participants (36 + 40) Age [18–65]	Alcohol	↑ Alcohol outcomes	Group approch—Anger management therapy (relaxation, cognitive coping skills for anger regulation, identification of external situations that elicit anger)	No available information about the number of weeks/ 12 sessions/1 h each session/Total of 12 h
Findings: ↓ anger on all measures; ↓ maladaptive angry thoughts. ↑Increased self-confidence in managing alcohol use in the face of anger →No results about the efficacy of the program compared to Anonymous Alcoholics (AA)						

Table 1 (continued)

Nº of the study Country	Study type	Sample (If RCT, intervention/control group)	Type of substance use	Objectives	Intervention	Weeks/number of sessions/time of each session/ Total time
10 Sweden (Andersson et al., 2017)	RCT (3 arms)	248 participants (86+86+76)	Alcohol	↓alchool use	Individual approach # Telephone brief intervention—feedback about participant's hazardous alcohol use+establishment of an individual goal for alcohol use # Telephone extensive intervention—feedback on participant's hazardous alcohol use+definition of an individual goal either to reduce drinking or attain abstinence. Intervention: menu of spoken texts on the advantages and disadvantages of drinking and vignettes presenting different strategies; learning to refuse alcohol in social situations, and relaxation/mindfulness exercises. Unlimited access to the platform for 4 weeks, with weekly automated follow-up calls	4 weeks
Findings: ↓ alcohol use. No overall differences between groups						
11 Switzerland (Feldman et al., 2013)	RCT (2 arms)	112 participants (60+52) Mean age 35 [18–56]	Alcohol, opiates, cocaine	↑ self-observation related with alcohol use ↓ reduce alcohol use or abstinence	Individual approach - Brief Intervention (patients in methadone substitution (56.2%) and diacetyl morphine (12%))=Provide feedback after AUDIT assessment; Identify risks and discuss consequences; Display an emphatic and nonjudgmental attitude; Solicit the patient's commitment; Identify alcohol related goal; Choice of personal strategies; Emphasize personal responsibility for change; stimulate an attitude of change; Give advice and encouragement	4 weeks/ no information about number of sessions/ 16 min session
Findings: ↓ number of drinks per week and frequency were observed at T3, but results did not persist at T9; ↓ AUDIT scores: between T0 and T3 but not between T3 and T9; → No statistically significant difference on AUDIT between treatment groups was observed; Between T0 and T3 AUDIT score reduce for alcohol dependent patients and an increase for excessive drinkers. The difference between excessive drinkers and alcohol dependents for the number of alcoholic drinks consumed is statistically significant						

Table 1 (continued)

Nº of the study Country	Study type	Sample (If RCT, intervention/control group)	Type of substance use	Objectives	Intervention	Weeks/number of sessions/time of each session/ Total time
12 Iran (Imani et al., 2015)	Pilot RCT	30 participants (15+15) Age [18–40]	Opiates and alcohol	↑ Treatment outcomes	Group approach - Mindfulness based prevention group therapy for patients on medication assisted treatment: Predefined title and content for each session. Sessions were kept in sequence. Topics: relapse, its consequences and emotional disturbances; awareness of triggers and craving; mindfulness in daily life situations; mindfulness in high risk situation related do drug use; acceptance and skillful action (learning the role of acceptance in the change process); seeing thoughts as thoughts; self-care and lifestyle balance (warning signs for relapse and response); social support and continuing practice	8 weeks/ 8 sessions/2 h each session / Total of 16 h
Findings: ↓ opioid and alcohol use in both groups but more significantly on the intervention group; ↑observing, describing, acting with awareness, non-judgemental, nonreacting						
13 China (Tam et al., 2016)	Pre and post Experimental design with comparative approach for 2 groups	12 participants (6+6) Age [25–30]	Drug users	↓ Relapse	Group approach 1- Cognitive – behavioral relapse prevention: (1) understand the importance of thoughts and emotions in keeping abstinence, (2) anticipate possible high-risk situations associated with relapse, (3) modify maladaptive beliefs about drug-related behavior, (4) practice skills to cope with and handle drug urges and craving, and (5) identify supportive networks and develop a future recovery plan 2- Art-based relapse prevention. Art means (drawing, clay making, cartoon and finger puppets, collage, treasure box and group mural) to (1) express innermost feelings in using drugs, and the difficulties in facing the road to recovery ahead; (2) review internal strengths to manage the problem, the high-risk situations around, and the external supports that could help to remain abstinent. (3) re-think and re-construct life goals and future ways of living in a metaphorically expressed way	No available information about the number of weeks / 6 sessions
Findings: ↑ relapse perception. →the art-based relapse prevention group was found to be as effective as the cognitive-behavioral-based group, particularly for men						

Table 1 (continued)

Nº of the study Country	Study type	Sample (If RCT, intervention/control group)	Type of substance use	Objectives	Intervention	Weeks/number of sessions/time of each session/ Total time
14 Spain (Alfonso et al., 2011)	Pre and post experimental pilot study with 2 groups	34 participants (18+16)	Alcohol and multiple drugs	↓executive and decision-making deficits ↑ improved performance on neuropsychological measures—working memory and response inhibition	Group approach - Goal Management Training (to improve participants' organization and ability to achieve goals, to stop prepotent responses, inadequate forethought and poor planning or decision-making skills) + Mindfulness (meditation to improve attentional scanning and "reading" of emotional signals involved in adaptive decision-making + strategy to overcome attentional lapses)	7 weeks/14 sessions/1 h each session/ Total of14 hours
Findings: ↑ Performance on neuropsychological measures of working memory, selective attention/response inhibition and executive and decision-making → No significant improvement on planning and flexibility; Individuals enrolled in standard treatment alone failed to show significant changes						
15 Canada (Khara & Okoli, 2011)	Quasi Experimental Pilot study with one group	259 participants	Tobacco and other substance use	↑ Smoking cessation	Group approach No-cost pharmacotherapy and group counseling. Structured behavioral counseling: topics such as nicotine dependence, coping strategies for quitting, relapse prevention, and pharmacotherapy for quitting Optional 18 weeks of "after care" group support	8 weeks/ 8 sessions/1,5 h each session/Total of 12 h Optional 18 weeks/18 sessions/1 h each session/ Total of 18 h
Findings: 75% of participants completed the program with an abstinence rate of 43%. Not having a primary substance use history and a lower carbon monoxide (CO) level at intake, predicted abstinence						
16 Denmark (Tarp et al., 2017)	RCT (2 arms)	71 participants (32+39) Mean age 47	Alcohol	↑ compliance with treatment ↓Use of alcohol	Individual—TAU + I = Motivational interview + CBT + supportive consultation or family therapy or contract treatment (TAU) + offered optional videoconferencing	7 months/ 28–40 sessions/30-60 min each session
Findings: ↑compliance with treatment → No significant difference between the 2 groups concerning successful completion of treatment and treatment outcome						
17 Iran (Amiri et al., 2016)	RCT (2 arms)	24 participants (12+12) Mean age of 47 years vs 28 years	Methamphetamine	↓Lapses ↓ Methamphetamine use	Group—Regulated 12-Session Matrix Model: 1- Why I withdraw substance? (Justice balance); 2- Starters and their types; 3- Major problems in remission: Family mistrust/ Energy reduction/ Drug misuse; 4- Lapse and ways of coping with it; 5- Thoughts, feelings, and precedent behaviors; 6- Impatience and depression; 7/8- Preventive and susceptible activities to relapse/ sexual relations; 9- Occupation and remission/ getting involved; 10—Shame and guilt/ Honesty; 11—Motive to remission/ full abstinence; 12—Anticipation of relapse	12 weeks / 12 sessions
Findings: ↓ methamphetamine use, comparing to control group						

Table 1 (continued)

Nº of the study Country	Study type	Sample (If RCT, intervention/control group)	Type of substance use	Objectives	Intervention	Weeks/number of sessions/time of each session/ Total time
18 Iran (Ghasemi et al., 2014)	RCT (3 arms)	285 participants (95+95+95) Mean age 23 Mean age of family participants (2nd arm) 31	Methamphetamines and other drugs	↑ Social support ↑ Health (physical, mental and social perceived support) ↑ Quality of life	Group—Sessions: 1) introduction of group members, statement of treatment purpose, definition of drugs, and methods of prevention; 2) definition of QoL and its dimensions; 3) emphasis on identification of supportive resources and optimal usage of these resources in addiction treatment; 4) training on problem solving methods in order to encounter life in a sustain manner and identification of opportunities to express emotions to identified members of social support resources; 5) training relief techniques and positive visualization to reduce anxiety and enhance internal tranquility; 6) analysis of the sense of sin and alleviation of it and seize of chances to express emotions to group members; 7) training on methods of self-confidence and self-esteem reinforcement based on personal abilities and applying them to deal with daily activities; and 8) statement of summary of last sessions topics and giving feedback. 9) Free topics	9 sessions
Findings: ↑health-promoting lifestyle, health-related QoL, self-efficacy, perceived affect, perceived social support, and perceived barriers compared to control group						
19 USA (Carmody et al., 2012)	RCT (2 arms)	162 participants (82+80) Mean age 50	Tobacco; alcohol	↑ compliance with treatment ↑cessation outcome and not increase of alcohol use	Individual - 16 sessions of CBT, including motivational enhancement for smoking cessation, including mood management, nicotine patches. First 5 sessions focused on the health consequences of smoking and preparation for the quit date. The final 11 sessions included treatment modules addressing skills training in mood management, cognitive restructuring, behavioral activation, social support, and weight management. After the 16 sessions more 10 weeks with nicotine lozenges	16 weeks/16 sessions/ The first 12 sessions on a weekly basis—Sessions 13 and 14 conducted on alternate weeks / 15 and 16 four weeks apart
Findings: ↑ quit rates at 12 and 26 weeks on intensive program, but no difference at 38 or 52 weeks; ↑ Prevalence abstinence compared with TAU; ↓ number of cigarettes in the 7 days prior to each assessment in the intensive program compared with TAU except on 52 weeks follow up; ↓ CO levels; → 30-day alcohol abstinence rates were not significantly different for the two treatment groups at any of the follow-up assessments						

studies); 'Providing feedback' (five studies); 'Relaxation', (four studies); 'Decision balancing techniques' and 'Behavioural counselling' (three studies). Finally, a group of different less frequent interventions can be found in Table 1. Strategies to encourage participation in interventions and programmes, such as phone calls, text messages and e-mails, should also be mentioned.

Outcomes

All studies report positive outcomes on users' health and quality of life.

In 10 studies there was a significant improvement in the experimental group vs control group with usual treatment after the final evaluation of the intervention program (highlighted in Table 1). The most frequent outcomes are: less substance use (Amiri et al., 2016; Campbell et al., 2015; Imani et al., 2015; McKowen et al., 2018; Wieben et al., 2018; Wodarski & Green, 2015); improvement of general health (Alfonso et al., 2011; Ghasemi et al., 2014; Schuman et al., 2015; Wodarski & Green, 2015); more treatment adhering (Raes et al., 2011; Schuman et al., 2015; Wieben et al., 2018) and less depression (McKowen et al., 2018; Wodarski & Green, 2015).

In the remaining nine studies important positive outcomes were also achieved, including: less substance use (Andersson et al., 2017; Carmody et al., 2012; Tiburcio et al., 2018); more motivation to treatment (Wüsthoff et al., 2014); less depressive symptoms (Tiburcio et al., 2018); less anger and maladaptive behavior (Wüsthoff et al., 2014); more self-confidence related to substance use (Wüsthoff et al., 2014); more relapse perception (Tam et al., 2016) and more compliance with treatment (Amiri et al., 2016; Khara & Okoli, 2011).

Most interventions were focused on alcohol or one other substance or the use of multiple substances. Only in three studies, we find interventions directed exclusively to a single substance (Amiri et al., 2016; Imani et al., 2015; Wieben et al., 2018). Some studies do not identity the type of the substance who they are facing, telling only “drugs” and, some of them distinguishes between alcohol and drugs.

Discussion

The objective of this review was to map the available evidence about structured outpatient programs and interventions for training self-management of substance addiction consequences. We looked for structure, objectives, target population, type of intervention, time of execution, outcomes in different dimensions (physical, psychological, and social) and follow-up. We have found programmes, with a clearly defined structure, including 9 to 32 thematic sessions (Amiri et al., 2016; Campbell et al., 2015; Carmody et al., 2012; Ghasemi et al., 2014). The remaining studies reported different therapeutic strategies or interventions aiming at specific goals.

Overall, these programs and interventions showed positive outcomes on self-management, self-care and quality of life. The studies without comparison with a TAU group revealed positive effects, such as less substance use (Andersson et al., 2017; Carmody et al., 2012; Tiburcio et al., 2018), more motivation for treatment (Wüsthoff et al., 2014), fewer depressive symptoms (Tiburcio et al., 2018), less anger and maladaptive behaviour (Wüsthoff et al., 2014), more self-confidence (Wüsthoff et al., 2014), more perceived risk of relapse (Tam et al., 2016) and more treatment adherence (Khara & Okoli, 2011). On the other hand, interventions that were compared to TAU achieved important goals including improved health (Ghasemi et al., 2014; Wodarski & Green, 2015), less substance use (McKowen et al., 2018; Wieben et al., 2018), more treatment adherence (Raes et al., 2011; Schuman et al., 2015) and less depression (McKowen et al., 2018; Wodarski & Green, 2015). These results strongly support evidence-based practice and suggest the value of e-therapy interventions with synchronous or asynchronous remote support from a therapist (Kelly et al., 2020; Sousa et al., 2020).

Since some of the articles did not explicitly present their methodology, we have faced some difficulties identifying the context in which the intervention took place. Concerning the concepts of self-management and self-care, we were able to identify the objectives that were directedly related to self-determination, autonomy, self-monitoring, empowerment and decision support, not only in most of the programs but also in single interventions (Grady & Gough, 2014; Long et al., 2018; Velde et al., 2019). We found programmes with different structures, mostly lasting four or eight weeks, with 1 h or less per session. This structure is in accordance with the proposal by Sampaio et al. (2018) for psychotherapeutic programmes but is shorter than other interventions for different psychiatric conditions (Liu et al., 2021).

Since the available literature suggests that elderly patients are a growing problem in treatment units (Han & Moore, 2018), we expected to find a greater expressiveness of this age group. However, only two studies had participants whose mean-age was over 40 years (Amiri et al., 2016; Wieben et al., 2018). Labour issues, such as employment status and financial difficulties, were addressed in some studies (Campbell et al., 2015; Carmody et al., 2012; Khara & Okoli, 2011; Raes et al., 2011; Schuman et al., 2015; Tiburcio et al., 2018), although this information was absent in many of them. Employment is a key factor for quality of life and for self-management of substance addiction consequences, so it is surprising that only a few interventions took

this aspect into account (Campbell et al., 2015; Ghasemi et al., 2014).

These studies identified a reduction in substance use regardless of type of intervention, type of substance used and whether it was directed at a single substance (Amiri et al., 2016; Raes et al., 2011) or multiple substances (Ghasemi et al., 2014; McKowen et al., 2018). Multiple substance use is common and is a predictor of worse outcomes (Seabra et al., 2018), which justifies the need to develop interventions targeting it because their prevalence is quite common and their neuropsychological action and functioning are similar (Volkow et al., 2016). To face this need to help patients to deal step by step to multiple substances, is the reason why these studies highlight the applicability of CBT as one of the preferred theoretical references in substance use disorders (Mueller et al., 2012; NIDA, 2018). Others include interventions based on motivational strategies (McKowen et al., 2018; Wieben et al., 2018), relapse prevention (Campbell et al., 2015; Imani et al., 2015), psychoeducation (Campbell et al., 2015; McKowen et al., 2018), risk awareness, personal goals, decision-making skills, acceptance (Alfonso et al., 2011; Amiri et al., 2016; Imani et al., 2015), behavioural counselling, and feedback sessions (Schuman et al., 2015; Wodarski & Green, 2015), social support (Ghasemi et al., 2014; Imani et al., 2015) and relaxation and mindfulness (Alfonso et al., 2011; Imani et al., 2015; Walitzer et al., 2015), which have been highly recommended (NIDA, 2018).

Limitations

Some of the exclusion criteria may have limited the scope of this review, namely: the inclusion of publications only from the last 10 years, the exclusion of grey literature, and the exclusion of all studies in which participants received any direct or indirect monetary compensation.

Conclusions

This review identified 19 studies that answered our research question and met our inclusion criteria. Four of them were structured intervention programs; the other reported a variety of organized therapeutic interventions. All the articles support positive outcomes for the identified programs and interventions. This data was reinforced by 94.7% of the studies with pre and post evaluation. The outcomes were analysed considering different dimensions, such as the physical, psychological, and social one.

The main objective of the programs was to reduce substance use, improve health outcomes and increase compliance with treatment. There is growing evidence of the effectiveness of E-health interventions that complement, and sometimes even replace, face-to-face approaches. Computer-based therapy and hybrid approaches may allow patients to enroll the intervention at their own individual pace.

The most common interventions and strategies were cognitive-behavioural therapy, identification and definition of action plans for risky situations, motivational interview, relapse prevention, psychoeducation, definition of goals, social support, feedback sessions, relaxation, decision balance skills and behavior counseling.

The most frequent outcomes were less substance use, improved health, more motivation and/or compliance with treatment, more self-confidence, more relapse awareness, less depression and less anger and maladaptive behaviours.

This review synthesises a wide range of interventions with positive outcomes and can be a resource for evidence-based practice and the future development of systematic reviews. It presents evidence to support the development of a clinical intervention targeting the problem of substance use and self-management of its consequences and may contribute to stimulate a much needed social and political reflection about healthcare for people with problematic substance use.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s12144-023-04267-z.

Author contribution All authors have made substantial contributions to this research process. Paulo Seabra (PS) and Carlos Sequeira (CS) had the idea for the article. Paulo Seabra, Inês Nunes (IN), Gabriela Boska (GB), Rui Sequeira (RS), Ana Sequeira (AS) and Ana Simões (AS) performed the literature search and data analysis, and Paulo Seabra, Inês Nunes, Gabriela Boska and Carlos Sequeira drafted and critically revised the work. Finally, all authors were responsible for writing the article. All authors have approved the submitted version.

Funding Open access funding provided by FCT|FCCN (b-on). The authors did not receive financial support from any organization for the submitted work.

Data availability No additional data are available.

Code availability Not applicable.

Declarations

Ethical approval This article does not contain any studies with human participants performed by any of the authors.

Consent to participate Not applicable.

Consent for publication Not applicable.

Conflicts of interest None.

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