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Calverley, Petrass, L. A., & Blitvich, J. D. (2021). A systematic review of alcohol education programs for young people: do these programs change behavior? *Health Education Research*, 36(1), 87–99.

Available online: <https://doi.org/10.1093/her/cyaa049>

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A systematic review of alcohol education programs for young people: do these programs change behavior?

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Received on 5 October 2019; editorial decision on 31 November 2020; accepted on 5 November 2020

Abstract

Numerous education programs have addressed young peoples' alcohol use. To date, no peer-reviewed publication has evaluated the effectiveness of such programs delivered across a range of contexts to change alcohol-related behaviors, attitudes and/or knowledge. This systematic review aimed to identify alcohol education programs addressing young people, and determine whether they changed alcohol-related behavior, knowledge and attitudes; and, ascertain components of successful programs. Studies were identified, guided by the PRISMA review process, from the earliest records until June 2020. Included studies ($N=70$) comprised an alcohol education program which focused on young people (15–24 years). Forty programs reported behavior changes, and these programs were the highest quality. Others impacted attitudes and/or knowledge only ($n=12$); or reported no impacts ($n=17$). Recent programs were more likely than older programs to feature online delivery and report behavior changes. To enhance alcohol education, future programs should include the identified quality criteria, alongside process and long-term outcome evaluations, to better monitor effectiveness. Findings indicated some education programs have capacity to positively change alcohol-related behavior; however, outcome consistency varied even in high-quality programs. Alcohol education programs should be

designed alongside health education/promotion models and best-practice recommendations, to improve the likelihood of desirable behavior-related outcomes.

Introduction

The World Health Organization (WHO) identified adolescents (aged 15–19 years) as a high-risk group for alcohol-related harm, including, injuries, falls or violence [1]. Despite legal age limits for consumption, many young people have consumed alcohol before the authorized age [2, 3] and on occasion, drink to excess and participate in hazardous behavior [1]. High-income countries, such as those within Europe, North America and the Western Pacific, record heavier drinking among this age group than do low/middle-income countries, and also record more treatments and associated interventions and policies [1]. However, methods for prevention differ between and within high- and low/middle-income countries as they are often dependent on available resources, associated laws and legislation and government priorities [1]. As a result, efforts to reduce adolescents' alcohol use are inconsistent.

A large number of educational programs address alcohol use among early teenagers (aged 11–16 years) through to early adulthood (18–24 years) [4, 5] and a plethora of studies has investigated whether alcohol education programs positively change young peoples' alcohol practice [6, 7], which may subsequently reduce their risk of alcohol-related harm. Yet, questions remain within

the injury prevention and public health domain as to whether educational programs are scientifically rigorous, effective, practical and capable of widespread adoption [8]. Health promotion experts and community leaders have suggested that even when programs are research-based and efficacious, they may not always meet community requirements as they are too difficult, costly, or complex to integrate with pre-existing activities, or may be difficult to translate into practice [9, 10]. To address adoption barriers, Cohen and Swift [11] recommended aligning development and implementation of education programs with a multi-component, systems approach through their model—The Spectrum of Prevention. The six levels of this model interrelate and complement one another, facilitating the development of injury prevention programs, and encouraging developers to adopt a multifaceted approach to program delivery [11]. The Public Health Model upholds a similar approach, comprehensively addressing health and social issues and recognizing that multiple factors contribute to causing harm [8]. These models provide examples of frameworks for a continuum of research that could move beyond a primarily educational approach [8, 11]. Both models recognize the importance of early and ongoing engagement and the contribution of stakeholders, including researchers, practitioners, policy makers and the community, for success [8, 11].

For health education programs to be considered successful, they should be behaviorally focused and address factors that influence health behavior, including personal knowledge and attitudes [12]. It is of note however, that some programs focus solely on, and/or only report changes in knowledge and/or attitudes, remaining silent about behavior. In the context of alcohol education, limited evidence exists to determine whether education programs are effective in reducing alcohol-related behaviors, as behavior change results are often self-reported, not reported or not robustly measured. Systematic reviews of alcohol education for young people have typically considered a specific contextual area of focus, synthesized the type of prevention programs being conducted, and compared knowledge-only programs against comprehensive programs for

preventing alcohol use [13, 14]. The prevalence of young people experiencing alcohol-related harm [1] demonstrates the need for more detailed understanding of whether education programs are effective, and if so, which factors influence program success for this age group. Previous reviews have identified factors which are influential in changing young people's substance use behaviors, and recommended these factors/criteria be incorporated into prevention efforts to enhance the likelihood of success [15–17]. However, to the authors' knowledge, to date there is no published systematic review that has: included alcohol education programs covering a variety of contexts where young people (defined for this study as adolescents and young adults aged 15–24 years) consume alcohol (e.g. drink driving, binge drinking, university drinking); confirmed whether those programs have resulted in positive changes in alcohol-related behavior; and, identified the components most commonly associated with program success.

Accordingly, the primary aim of this systematic review was to determine whether participation in alcohol education programs resulted in significant, positive alcohol-related behavior change for young people (aged 15–24 years), which may reduce their risk of alcohol-related harm. Assuming the confirmation of this aim, a secondary aim was to rate the quality of the alcohol education programs reviewed and ascertain the key program components that were utilized within successful educational programs. The identification of components associated with successful alcohol education programs would benefit practitioners seeking to reduce this age group's alcohol consumption in novel contexts, such as aquatics [18], cycling [19] and rural locations [20].

Methods

This systematic review was guided by the PRISMA checklist [21].

Search strategy

Six bibliographic databases (Scopus, CINAHL complete, Drug Informit, PsychInfo, Web of Science

and PubMed) and Google Scholar were searched from the earliest records available to June 2020. Multiple databases ensured maximum recall of relevant articles [22]. Databases were chosen because of the relevance and scope of the journals they covered, as well as their focus on alcohol and the social, behavioral and life sciences.

Only English search terms were included, with numerous keywords and synonyms used to capture all potentially relevant articles. In addition, wildcards, related terms and truncation search features were implemented. The search included the terms: 'alcohol' or 'drinking behavior' in conjunction with 'education' or 'education program' or 'program evaluation' or 'intervention' or 'campaign'. These were combined with 'young people' or 'youth' or 'adolescent' or 'students' or 'young adults' or 'teenagers' or 'college students'. Due to the nature of the exclusion criteria it was necessary to add 'NOT' in some searches, these included the following: 'drug' or 'smoking' or 'cigarette' or 'HIV' or 'tobacco' or 'Fetal Alcohol Spectrum Disorder'. All potentially relevant references were downloaded into Endnote software and duplicates removed. One author reviewed titles and abstracts of identified articles for suitability, and potentially relevant articles were retrieved and assessed for inclusion (based on reading the full text). Reference lists of all inclusions were hand searched for further studies (see Supplementary Fig. SI for detailed description of search strategy). Hand searching identified newly published manuscripts that were unavailable when initial searching occurred. All articles were independently reviewed for inclusion by two researchers, with disagreements resolved through discussion.

Selection criteria

Studies were included if they met all of the following criteria: (i) the study comprised an alcohol education program that targeted young people aged 15–24 years. Where age range was not reported, mean age was used; if the age range covered part of the target age, the article was included; if no indication of age was given, the article was excluded; (ii)

the sole focus of the program was alcohol, not a combination program addressing drugs/tobacco etc. and not relating to rehabilitation; (iii) participants were: not mandated to take part; not alcohol dependent/criminals/violators of alcohol use regulations; and/or not selected based on specific drinking habits such as 'heavy' or 'risky'; (iv) the study reported at least two time points of observation (i.e. pre-program and/or during, and post-program) and (v) evidence of the program outcome was reported. Conference abstracts, dissertations, theses and articles published in non-peer-reviewed journals were not included for review and publication language was restricted to English.

Quality assessment

Several reviews and/or original research studies, published in Quartile 1 and 2 journals (Quartile 1 to Quartile 4 refer to journal ranking quartiles within a subsdiscipline using the scientific journal rankings citation index, which is an index of weighted citations per article over a period of three years), in the area of substance misuse among young people have identified evidence-based quality criteria for assessment of prevention programs [15–17]. As this review focused on synthesizing education programs, a compilation of these criteria led to the development of 10 quality criteria used in this review to determine program quality (Table I). The criteria selected aligned with best-practice approaches for harm-reduction, evidence-based programs targeting alcohol-related behavior in young people [15–17, 23–25]: the focus typical of health promotion and injury prevention models (e.g. Public Health Model; [8], Spectrum of Prevention; [11], Translating Research into Injury Prevention Practice Model; [26]). To determine the quality criteria covered in the included studies, two researchers independently coded all articles. Any disagreements were resolved through discussion.

As no evidence exists regarding which factors were most influential to the success of a program, each criterion was equally weighted and a score of 1 was allocated for each criterion addressed. Hence, the overall quality score became a score out of 10

Table I. *Quality criteria to assess alcohol education programs for young people aged 15–24 years old*

Stage of program	Number	Quality criteria	Description of criteria
Pre-program	1.	Based on theoretical framework/s	The program was underpinned by a theoretical framework or model in the development, implementation and evaluation phases.
Pre-program	2.	Culturally and context sensitive content	The program considered: (i) the influence of the content on different social groups; and (ii) the cultural relevance of the content to the target group. Where relevant, the program was adapted to suit target groups.
Pre-program	3.	Comprehensive interactive training for program providers	Suitable training was provided for those who conducted the program. Training was interactive with opportunities for: discussion of ideas; thoughts regarding the content; and, trainees to receive personal feedback.
Within-program	4.	Interactive approach to delivery	The program included interactive methods of delivery for participants and provided opportunities for: discussion of ideas; thoughts regarding content; and, receiving feedback.
Within-program	5.	Multi-component approach to delivery	Communities, parents, media and/or other familiar environments were incorporated for delivery of the prevention messages and to educate the target group.
Within-program	6.	Skills training to build resilience	The program included elements that allowed participants to develop and practice skills for certain situations, for example, alcohol refusal techniques under peer pressure and methods to monitor personal drinking on nights out.
Within-program	7.	Accurate content about peer behaviors and social norms	The program provided accurate and relevant details about peer alcohol use to offset incorrect beliefs and common misunderstandings.
Within-program	8.	Developmentally appropriate information for the target age group	Information provided was appropriate to the participants in their current circumstances and prepared them for likely situations they could encounter.
Within-program	9.	Used peer leaders	Peer leaders were involved with delivery of program content, as implementers or assistants. For this purpose, peer leaders refers to individuals of the same age or situation as the participants for example, fellow classmates or other university students.
Post-program	10.	Provided resources to reinforce content	Participants received materials that reinforced the educational messages.

(see Table I). A rating of ‘excellent’ was allocated to studies that covered 9–10 of the quality criteria; ‘very good’ for studies that covered 6–8 criteria; ‘adequate’ for studies that covered 4–5 of the criteria; and ‘poor’ for studies that measured up to 3 criteria.

Results

In total, 70 studies met the inclusion criteria. These included alcohol education programs delivered as interactive health communication [e.g., 27], within

the community [e.g., 28] and/or through media advertising [e.g., 29]. Most programs addressed college and university student drinking habits and behaviors. Others focused on high school students, drunk driving and alcohol use among young people in the military. Quality scores ranged from 1 to 10, with a mean score of 4.8 (± 1.72). Randomized control trial (RCT) was the most common study design, 58% of the included studies. This design was more commonly used in studies reporting program effects on behavior (60%); however 58.8% of studies reporting no changes also used an RCT design.

Other less frequently used designs were quasi-experimental studies (14.5%), cohort studies (11.6%) and cross-sectional studies (4.3%). Supplementary Table SI provides brief program details, including study design; publication date; sample size and age; quality score; group categorization; and a summary of results for each included study.

Aligned with the secondary aim of this review, to identify the components associated with successful alcohol education programs, only programs that reported positive changes, that is, improved alcohol-related behavior, knowledge and/or attitudes, were included in this component of the analysis. This resulted in the removal of one study [30] that reported significant increases in alcohol use amongst participants at the post-test. For reporting in this review, programs were categorized into one of three groups based on program outcome (i.e. Group 1: positively changed participants' alcohol-related behaviors; Group 2: improved attitudes towards alcohol use and/or enhanced alcohol-related knowledge; Group 3: reported no change) and the results are discussed accordingly (Fig. 1).

Programs categorized into Group 1 ($n = 40$) demonstrated changes to participants' behavior. For 50% of these programs, changes in behavior were observed among some participant subgroups (e.g. males only), whereas for the remaining 50%, behavior changes were recorded across all participant subgroups. For 17.5% of programs in Group 1,

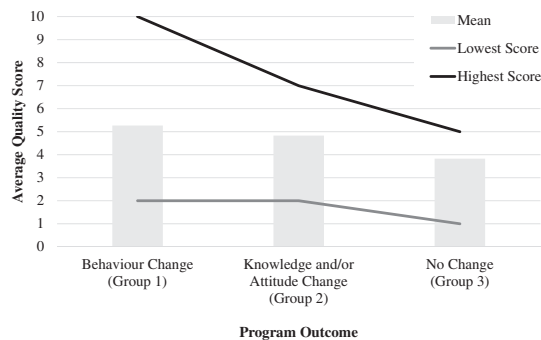


Fig. 1. The mean quality score and range presented according to program outcome.

behavior change occurred in conjunction with changes in knowledge and/or attitudes [31–37], indicating the ‘gold standard’ for alcohol education outcomes. The remaining programs in Group 1 did not impact participants’ knowledge and/or attitudes, or these aspects were not reported. Programs in Group 2 only reported knowledge and/or attitude changes, for example: increased awareness of harm-reduction techniques to minimize negative effects of alcohol, such as alternating alcoholic and non-alcoholic drinks [37]; further awareness of alcohol overdose [38]; and, reductions in perceptions of peer drinking, that is, estimations of how much alcohol their peers consumed [39]. Among programs only changing knowledge and/or attitudes (Group 2), 83% reported that they aimed to change behavior among participants, but failed to do so. Programs in Group 3 reported no significant effects on any of the measured criteria which they intended to change, be that attitude, knowledge and/or behavior.

Year of program delivery

Programs that met the inclusion criteria dated from 1983 to 2020: programs from 2010 to 2020 were more likely than earlier programs to report effects on behavior, and consequently were more prevalent in Group 1. A notable change over time has been the inclusion of an online component of programs. Approximately 23% of programs conducted before 2010 included an online delivery component, and all of these were conducted from 2000. In contrast, among programs from 2010 to 2020, just over 71% of programs were either entirely online, or involved an online component. From 2013, programs began to include text messaging as another way to communicate program details and feedback.

Program quality

Based on the quality scores determined within this systematic review, Group 1 programs received the highest quality rating (Mean = 5.3 ± 1.82) containing on average more quality criteria than the other

Table II. Percentage of studies in each group including the quality criteria and study design components

	Group 1 (Behavior changes)	Group 2 (Attitude and/or knowledge changes)	Group 3 (No changes)	Total
Studies	[28, 31–37, 42–44, 47, 60, 61, 63–65, 69–91]	[29, 58, 62, 92–100]	[27, 59, 66, 101–114]	69 studies
Program criteria				
1. Based on theoretical framework/s	49%	67%	33%	50%
2. Culturally and context sensitive content	95%	100%	94%	96%
3. Comprehensive interactive training for program providers	20%	20%	11%	17%
4. Interactive approach to delivery	54%	50%	56%	53%
5. Multi-component approach to delivery	29%	0%	17%	15%
6. Skills training to build resilience	49%	33%	17%	33%
7. Accurate content about peer behaviors and social norms	83%	50%	44%	59%
8. Developmentally appropriate informa- tion for the target age group	100%	100%	89%	96%
9. Used peer leaders	10%	8%	11%	10%
10. Provided resources to reinforce content	37%	33%	11%	27%
Study design components				
Used a control group	68%	80%	53%	67%
Follow up period longer than 1 year	18%	25%	18%	20%
Program lasted longer than 1 day	53%	42%	53%	49%

groups; followed by Group 2 (Mean = 4.8 ± 1.53); and lastly Group 3 (Mean = 3.8 ± 1.15). **Table II** lists the included quality criteria for each Group along with relevant design factors of the studies.

Table II shows the most commonly used criteria among all groups were criteria 2 (culturally and context sensitive content) and 8 (developmentally appropriate information for the target age group), and the least commonly used criteria were 3 (training for program providers), 5 (multi-component delivery) and 9 (used peer leaders). No evidence existed as to which of the quality criteria were more influential for program success across a range of contexts, therefore the criteria in this review were not weighted and hence, for some programs, quality may have been misrepresented. For example, some programs scoring high quality in this review found no program effects, despite aiming to improve alcohol-related behavior, knowledge and/or attitudes, and cannot be considered to be effective

programs. This suggests that some criteria are more influential to program success than others; however, this review does not provide sufficient clarity to detail which criteria should be more heavily weighted.

Discussion

The alcohol education programs reviewed for this paper varied in quality as measured by the tool described in **Table I**, although most programs that met the inclusion criteria achieved a score of at least ‘adequate’ (mean value 4.8 out of 10 quality criteria). Of the programs reviewed, 58% resulted in behavioral changes among the participants. This confirms that alcohol education programs aimed at young people can induce desired behavior changes, and practitioners can apply these results to address young peoples’ alcohol consumption in various mainstream (e.g. schools) and novel (e.g. aquatics) contexts—a finding which

could enhance programs in contexts with little research evidence.

Some programs demonstrated positive changes in knowledge and/or attitudes, but did not report changes in behavior. Only some of these indicated that they aimed to change behavior, despite behavioral change being considered a primary outcome for reducing risk [38]. While positive change in knowledge and attitudes is desirable, the overall success of such programs must be considered limited, as changes in knowledge and attitude are often shown not to align with actual behavior change [39]. Unless programs facilitate a behavior change, the applicability of these results to real-life practice is questionable [40], a critiqued aspect of education programs generally [8]. Thom [16] recommended that adolescent-focused alcohol education programs should aim to induce behavior changes, through realistic approaches to reduce use or frequency, rather than abstaining altogether [16]. Thom considered that this approach was more likely to result in effective education programs [16].

Some criteria were more frequently implemented than others across programs: criteria 2—providing culturally and contextually sensitive content, and criteria 8—developmentally appropriate information for the target age group were included in 96% of programs. Only 10% included criteria 9 (used peer leaders), perhaps related to the limited experience of this age group (15–24 years) to effectively deliver content to their peers. The most successful programs in this review, those effecting a behavior change, included more of the quality criteria than those not inducing behavior change. As the quality criteria corresponded to the focus typical of health promotion models, it could be speculated that programs with a higher quality score may be better aligned to such models than are lower scoring programs, but this requires investigation. Our findings lead us to recommend that researchers and practitioners consider all 10 criteria as part of program design and implementation, to ensure programs have the greatest likelihood of success in changing behavior.

Examination of programs in this review demonstrated that many programs (of high and low

quality) were delivered over a short period, such as a one-off program, and included only short-term follow up evaluations, of up to six months. With only short-term evaluations, it is not possible to provide evidence of ongoing impact and therefore the extent of influence remains unknown [25]. To enhance the applicability of the current criteria for program assessment, and to encourage high quality program delivery, it is suggested that long-term outcome evaluation, as well as process evaluation during implementation, be included as an 11th criterion in the quality criteria measure. To provide evidence of long-term retention, measurement of outcome evaluation is required at periods after program cessation, in addition to the typical immediate post-program evaluation. The inclusion of process evaluation during implementation [41], to identify any aspects of program delivery requiring improvement, can also enhance program success. With such extensive evaluation, the value of programs can be confirmed.

An important limitation of many of the programs reviewed was the omission of a control group and the absence of an intention-to-treat (ITT) approach, with only three studies referencing ITT in their analyses [42–44]. Several studies reported not retaining all original participants for the final analyses, and many made no mention of initial and final participant numbers. Without an ITT approach, program impact may be misrepresented, as those not retained at post-program evaluation are not considered in the results [45, 46].

Similarly, 33% of the programs reviewed [e.g., 33, 47] did not include control groups making it difficult to ascertain the influence of the program on behavior without a comparison group and limiting the capacity to effectively demonstrate significant behavior-related outcomes, thus misrepresenting the quality of the program. Foxcroft et al. [25] recognized that the lack of a suitable control group was one of the factors that contributed to poor quality programs identified in their review of primary prevention for alcohol misuse in young people. For some studies, the inclusion of a control group can be difficult, as problems can arise through: contamination from program participants; control

participants receiving program exposure; or, issues with appropriately matching the control to the program participants [48]. In addition, the use of a control group may not be feasible for those aiming to have an ecologically valid study instead of one with a strong research focus, as this enhanced control could limit the generalizability of the program outcomes [49]. Despite these difficulties, it is recommended that practitioners and researchers endeavor to include control groups in their program evaluations, to ensure outcomes accurately represent the program's capacity prior to more extensive program implementation.

The comparative cost of implementing programs of different lengths was not considered in this review; however subjective evaluation of programs based on details provided indicates that some methods would be more time-intensive and expensive to deliver than others [e.g., 28]. It is likely that high cost and time commitment could be inhibiting factors that would limit replicability or adoption in the context of busy school education systems, under-resourced health departments, or in community groups that depend on volunteers. Similarly, low-cost programs could also have disadvantages, as funding limitations could restrict the scope of program design, delivery, availability of appropriate resources and evaluation of program success.

The variability in outcomes among programs considered in this review is consistent with the findings of previous systematic reviews [50–53] and raises questions about which prevention approaches should be prioritized for young people. It is important to highlight that demonstrating the impact of education programs addressing young peoples' alcohol-related behavior could be curbed due to program delivery at a time when this age group has a tendency for extending personal boundaries, increased autonomy and the opportunity for new experiences, such as their first alcoholic drink [30, 54]. Calls have been made for continuing education prevention efforts throughout this “risky developmental time frame” [55, p. 306].

To enhance the quality of non-context specific alcohol education programs for young people, we recommend that, at least until criteria weighting

information becomes available, practitioners consider all the quality criteria used in this review. In accordance with prior literature, it is also recommended that future programs consult health promotion and education theories and models when designing, implementing and evaluating programs, to ensure programs are evidence-based and align with best practice [56]. Other relevant recommendations from prior literature include: draw on the combined expertise of researchers, policy makers and practitioners to generate scientifically rigorous, effective programs that are relevant to the target group and capable of widespread adoption; and, incorporate comprehensive program evaluation, including process, impact and outcome evaluation to maximize the likelihood of program success [57]. Adoption of these recommendations by researchers and practitioners should result in the development and implementation of evidence-based, high quality prevention programs.

A further improvement for program developers to consider is the importance of transparency and detailed guidance, for those wishing to replicate programs and/or adapt the programs to be applied in other contexts. For example, within this review, e-CHUG was utilized for 10 separate projects by five different lead authors between 2008 and 2020 [37, 58–66] and each produced different results and outcomes. Generally, the quality scores increased as time progressed (scores ranged from 3 to 5) but there was no obvious improvement in behavioral outcomes over this time. It appears practitioners modified program delivery but with little impact on the effectiveness of e-CHUG to encourage behavioral changes. With more transparency and sharing of methods and findings, program implementation could have been altered in light of prior attempts to improve the e-CHUG program and enhance outcomes.

Further, this review showed that web-based and online programs, such as e-CHUG and AlcoholEdu, have become increasingly common since 2010. Contradictory results have been reported in the literature as to the effectiveness of online/technology methods for prevention [e.g., 67, 68], and caution has been advised when implementing programs

with online components, due to variations in study design quality and applicability of the findings [67]. It is of note that one of the quality criteria implemented within this review referred to the interactive nature of program delivery. For many of the online programs reviewed, there was insufficient detail in publications to determine the extent of this interaction; however it is well known that interactions in an online environment are different to a face-to-face context. With expanding use of technology for educational purposes, the nature and effectiveness of online interactions may need further investigation to ensure suitability.

A limitation of the publications considered within this review is that no indication was provided as to whether participants' pre-program behavior was positive or negative and this may have affected the capacity for the programs to demonstrate improved alcohol behavior. If participant behavior was already positive in relation to alcohol, it may be difficult, or perhaps not even necessary, for programs to demonstrate significant change. This factor was not considered in the publications reviewed.

Limitations of the review

The purpose of this review was to determine whether alcohol education programs for young people could be effective in improving their alcohol-related behavior; and if so, to ascertain key program elements used in successful programs. To achieve these aims, we categorized programs based on program outcomes (Group 1: Behavior Change; Group 2: Knowledge and/or Attitude Change; and Group 3: No Change), without reference to study design. We acknowledge that study design limitations, such as the absence of a control group, or no long-term retention assessment, can limit the identification of program outcomes, potentially resulting in Type 1 or 2 errors. It was not considered appropriate, however, to add a 'study design' criterion to the quality criteria used in the review, as the selected criteria were justified based on evidence-based findings and were designed to 'measure' the content and delivery of intervention programs in a

practical, real-world environment. This approach is different to the more usual review of research designed in the 'experimental' environment.

A further limitation of this review is that it was limited to studies published in English within peer-reviewed literature; therefore, relevant programs that were not written up for publication, or were presented in a different language, were omitted.

Conclusion

While alcohol education programs aimed at helping young people to develop positive alcohol behaviors have been implemented widely, the outcomes of such programs have been mixed. This study sought to (i) assess whether alcohol education programs can change young peoples' alcohol-related behavior, and (ii) detail, using an evidence-based scoring system, the criteria associated with successful programs. This review confirmed that education programs can induce alcohol-related behavior changes in young people, but the recorded outcomes are dependent on program design and implementation—a finding which can be utilized by practitioners in various contexts and has not been considered in previous systematic reviews.

Despite the relationship between high quality scores and effects of programs on participant behavior, a high scoring program did not always predict behavior change or impact alcohol-related knowledge and/or attitudes, and in part this is likely due to an absence of quality criteria weighting. To enhance the success of future alcohol education programs in influencing behavior changes, it is recommended the quality criteria in this review are considered alongside suggestions from injury prevention, health promotion and health education literature when designing, implementing and evaluating education programs. These recommendations, combined with more evaluative research of alcohol education within various contexts for young people, and more transparent sharing of successful programs, will help to ensure alcohol programs are high quality and contribute to the reduction of alcohol-related harm in all contexts where young people are at risk.

Supplementary data

Supplementary data are available at *HEAL* online.

Funding

Australian Government Research Training Program (RTP) Stipend and RTP Fee-Offset Scholarship through Federation University Australia.

Conflict of interest statement

None declared.

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