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# **WHAT DID THEY DO?**

## **A QUALITATIVE REVIEW OF THE CONTENT OF ALCOHOL AND DRUG PREVENTION PROGRAMMES TARGETING ADOLESCENTS**

**JAKOB DEMANT AND LAURA MARIE SCHIERFF**

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# What did they do? A qualitative review of the content of alcohol and drug prevention programmes targeting adolescents<sup>\*</sup>

Jakob Demant and Laura Marie Schierff

## Abstract

As a group, adolescents exhibit a high rate of use of alcohol and illicit drugs, and a very broad range of preventative interventions have been employed to target this problem. A correspondingly large number of studies have been carried out to test the effects of such interventions. However, the impact studies rarely describe the actual content of the interventions in detail. Consequently, less is known about what was actually done in the prevention programmes than about their effects. This study is designed as a review focused on grouping the qualitatively different content components of the various approaches into a number of categories.

This is achieved through a systematic review of literature from Western countries on the topic of school-based interventions and prevention initiatives targeting young people aged 12-20 and their consumption of alcohol and other drugs. We employ a modified version of the narrative synthesis approach described (Rodgers et al., 2009). The initial database used for the study consisted of 897 peer-reviewed academic articles published between January 2010 and December 2014 and retrieved from the databases Web of Science, PubMed, Sociological Abstracts and PsycINFO. This number was reduced to 33 studies through the elimination of irrelevant papers. Five categories of intervention were identified: 'Information-based or testing-based primary prevention approaches', 'Primary prevention approaches incorporating skill-training components', 'Universal or primary prevention approaches that include family components', 'Targeted approaches incorporating skill-training components', and 'Approaches incorporating digital features'. Only four studies were identified that employed any form of targeting or profiling of the subjects prior to the delivery of the prevention intervention or initiative. It is suggested that the skewness found in the categorisation towards primary prevention skill-training approaches should be addressed, given the very diverse consumption patterns found among adolescents in any given age group.

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Professor Kim Bloomfield, Aarhus BSS, Aarhus University and Dr. Martin Davoren, Department of  
Epidemiology & Public Health, University College Cork.

## Introduction

During the past decade, adolescent alcohol and other drug (AOD) consumption has been declining in most Western countries (Pennay, Livingston, & MacLean, 2015). Despite this decline, 47% of students aged 15 report alcohol use at the age of 13 or younger, and 50% or more of these students report having drunk alcohol at least once during their lifetime. The ESPAD consortium concludes that even though it is possible to identify positive changes in lifetime consumption and past month consumption, Western societies still have high alcohol consumption levels among adolescents (ESPAD, 2015). Illicit drug use reports paint a more complex picture. In Europe, the United Kingdom, Spain and Germany report declining rates of cannabis use among 15- to 24-year-olds since the start of the new millennium, while other European countries report increases in cannabis consumption rates. The same tendencies are found with regard to the use of amphetamines and new psychoactive substances (NPS). Consequently, prevention initiatives and interventions targeting AOD consumption among adolescents are still of the utmost relevance. Various approaches have been employed in school settings to eliminate or reduce the consumption of alcohol and other drugs among students in Western countries. The belief that prevention efforts must be directed at adolescents is reflected in sizeable welfare expenditures on prevention or intervention programmes aimed at this age group. Systematic reviews of these programmes present a variety of results. While some review studies claim to demonstrate significant effects from classroom-based approaches (Hale, Fitzgerald-Yau, & Viner, 2014; Midford, 2010) or the viability of incorporating computer-based components (Champion, Newton, Barrett, & Teesson, 2013; Dietl, 2011), other review studies present positive results from securing support from the family (Dietl, 2011; Foxcroft & Tsertsvadze, 2012; Jackson, Henderson, Frank, & Haw, 2012; Midford, 2010) or incorporating social skills training as a central component (Foxcroft & Tsertsvadze, 2011, 2012). Though presenting divergent findings, these review studies in combination outline what is currently considered best practice. However, one of the main challenges to understanding what constitutes such best practice is that impact studies often present limited information about the actual content of the intervention or prevention initiative evaluated, often leaving unanswered the question ‘What did they do?’. While the impact-focused review approach is of great value to policy-makers, the current study aims at providing a content-focused rather than an effect-focused synthesis that will be useful in increasing the clarity of future reviews of studies in the field of AOD consumption.

## Description of the present study

This study presents a systematic narrative review of the research literature from Western countries on the topic of school-based interventions and prevention initiatives targeting the consumption of alcohol and other drugs among young people aged 12-20. The study is focused on the content components of the interventions and prevention initiatives as they are described in peer-reviewed articles published during the period 2010-2014.

## Methodology

We employ a modified version of the narrative synthesis approach described by Rodgers et al. (Rodgers et al., 2009), as this model is commonly used to synthesise effectiveness data (Rodgers et al., 2009, p. 48), but we develop additional methodological components relevant to the aim of the current study. As such, we aim towards presenting a narrative synthesis illuminating the qualitative differences within and between the studies included in the review (Rodgers et al. 2009:56). We aim to identify the qualitative differences among the content components of the intervention and prevention initiatives. The methodology employed is based on the recommendations of Rodgers et al. regarding investigating relationships within and between studies and their ideas concerning the robustness of the synthesis product (Rodgers et al., 2009, p. 51), and on methodological prescriptions from qualitative research regarding the cross-coding of complex data (Saldana, 2009, p. 6). The coding practices employed in the current article are described in the subsequent sections. Our model aims to synthesise the components of the approaches studied and to identify the dimensions along which they can be categorised.

### Literature search and inclusion criteria

The initial database consisted of peer-reviewed academic articles published between January 2010 and December 2014 retrieved from the databases Web of Science, PubMed, Sociological Abstracts and PsycINFO. The search included articles concerning prevention initiatives and interventions that were targeted at AOD consumption taking place both within and outside school settings.

Subsequently, a number of additional inclusion criteria were set up to ensure clarity and robustness of the findings and their relevance to policy-makers. As noted previously, the review was limited to studies of school-based programmes. Thus, curriculum-based, classroom-based and teacher-

delivered approaches were included, whereas non-school-based approaches such as media campaigns and emergency-department-based approaches were excluded. Additionally, as the present review is narrowly focused on the content components of the various approaches, only studies concerned with specific programme(s) – as opposed to studies investigating the relationship between, for example, drug use and low school grades – were included. Only studies investigating effects directly related to AOD use, for example those presenting outcome measures such as consumption levels or attitudes towards AOD consumption, were included. Studies were considered eligible for inclusion only if they complied with our criterion of *transferability*, meaning that the content components described should be relevant to a broader target group. This means that, for example, studies or interventions focusing explicitly on ethnic minority young people are excluded from the present report, as these populations are subject to multiple factors that increase the vulnerability of their members to initiation into, as well as persistence of, high risk AOD consumption, which this review does not aim to discuss.

Table 1 shows how we arrived at our analytical database for the study. In combination, these criteria, decided upon prior to the synthesis process, create a consistent sample of articles sharing the same fundamental characteristics.

Table 1: Sample of studies

Original database (excl. duplicates)	897
Keep only studies with <i>prima facie</i> relevance to the research question	189
Keep only time frame 2010-2014	160
Keep only school-based	75
Keep only not review study	60
Keep only not ongoing study or feasibility study	48
Keep only interventions with transferable components	40
Keep only studies reporting direct AOD attitude or behaviour outcome measures	36
Keep only articles retrievable in English	34
Keep only interventions delivered to adolescents, not parents only	33
Sample size	33



## Coding and synthesising information on the qualitative component

The central components of prevention initiatives and interventions targeting AOD consumption among adolescents were translated into five foci: Anchorage(s)/Mooring(s), Form, Content, Aim, and Target Group. As our review is only concerned with school-based interventions, we had effectively established two of these foci prior to the review process, namely Anchorage and Target Group. The three remaining foci, Form, Content, and Aim, were used as the basis for the coding process.

The articles from the systematic database search were coded using the reference management software EndNote, and the coding process described below was carried out using this software. Initially, the studies were coded according to whether they were developed either as primary or universal prevention approaches or as secondary or targeted prevention approaches targeting an identified high-risk youth group, and consequently we coded the 'Form' focus with a binary coding reference. This first coding cycle thus enabled us to identify two overall groups of programmes, on the basis of which more finely tuned coding could be carried out (Saldana, 2009, p. 10). The second cycle of coding was then carried out as a coding of the 'Content' and 'Aim' foci. The product of this cycle was a number of content components that were identified as being present or absent in each study.

Figure 1: Extract from the second cycle coding scheme

Author	Classroom	Homework	Problem-solving skills	Trained facilitator	Peer resistance skills	Parent-only session	High-risk targeting
Caria et al. (2011)	√		√	√	√		
Giannotta et al. (2014)	√		√		√		
Toumbourou et al. (2013)				√		√	
Conrod et al (2013)				√			√
Hall et al. (2013)	√	√	√	√			
Spoth et al. (2014)				√	√	√	

The third cycle of coding consisted of identifying features among the content components, hence the coding work in this cycle was carried out as linking, not merely labelling (Saldana, 2009, p. 8). The work with the material was concerned with identifying patterns that would facilitate the development of the categories used in the study. In the present article, therefore, coding *is* analysis, as the continuously identified components and their interrelations enabled the emergence of patterns, thus laying the ground for the categorisation (Saldana, 2009, p. 8).

During this third coding process, three categories emerged initially: primary prevention approaches with information-based or testing-based components, primary prevention approaches with skill-training components, and targeted approaches with skill-training components. However, the need arose to treat the coding of the material as a heuristic process (Saldana, 2009, p. 8), as characteristics emerged that were not directly compatible with the initial division. This process of elucidating the defining characteristics demonstrated family inclusion to be a central component, and consequently another category emerged. Furthermore, on the basis of a desire to investigate the prevalence of digital technology in current school-based AOD prevention approaches, an additional category was set up based on a premise requiring that an intervention incorporating digital technology should be placed in this category regardless of any other characteristics it might have.

## Results

The qualitative synthesis of the content components of the prevention initiatives and interventions targeting adolescent AOD consumers resulted in five distinct categories; these are presented below. These categories were developed using cyclical coding processes, and are summarised below with descriptions of exemplary approaches producing positive results.

### Category 1: Information-based or check-based primary prevention approaches

The studies in this category are concerned with primary prevention approaches employing information-giving or testing components. The five studies share common ground regarding the scope of the interventions; these were either developed as primary prevention approaches aimed at preventing or delaying adolescents' initiation into the consumption of alcohol, cannabis, and illicit drugs, or developed as universal approaches aimed both at decreasing consumption levels among current users and at preventing initiation among adolescents who are not yet, but are potentially, consumers (Hardoff, Stoffman, & Ziv, 2013; James-Burdumy, Goesling, Deke, & Einspruch, 2012; Moore, 2013; Quek et al., 2012; Wolfson et al., 2012). The interventions grouped in this category thus do not target specific groups established prior to the intervention by use of baseline measures of AOD consumption, and must consequently be viewed as broad approaches not targeting specific groups or characteristics among adolescents.

The studies in this category are primarily information-based (Hardoff et al., 2013; Moore, 2013; Quek et al., 2012; Wolfson et al., 2012) or testing-based (James-Burdumy et al., 2012). They provide information on AOD-related risks (Hardoff et al., 2013; Quek et al., 2012; Wolfson et al., 2012) or on adjusting social norms regarding AOD consumption (Moore, 2013; Wolfson et al., 2012). Three studies evaluate interventions that provide the adolescent with information on alcohol-related harms (Hardoff et al., 2013; Quek et al., 2012; Wolfson et al., 2012), such as physical harms caused by drunk driving or by engaging in hazardous activities while under the influence of alcohol or other drugs. Two of the studies employ a harm-minimisation framework (Quek et al., 2012; Wolfson et al., 2012), defined as a framework that encourages safe consumption or reduction of consumption level rather than complete abstinence (Quek et al., 2012, p. 901). Two studies focus on interventions specifically designed to adjust social norms regarding AOD consumption (Moore,

2013; Wolfson et al., 2012) through highlighting discrepancies between adolescents' perceptions of peer drinking norms and actual peer consumption levels and norms (Moore, 2013, p. 3). The defining characteristic of these studies is thus that they include informational components rather than skill-training components in the sense that they present information on AOD-related harms, such as risk of injury when under the influence of AOD, rather than aiming to equip participants with practical skills. Thus, these studies concern symptom-targeted approaches as opposed to approaches targeting underlying patterns of behaviour or approaches developed around proactive components aimed at enhancing adolescents' social skills.

While the content of all these approaches is primarily concerned with providing information, they employ different means of delivering this information. Two interventions use media campaigning as a means of communication (Moore, 2013; Wolfson et al., 2012). Two approaches take the form of theatrical performances carried out by professional actors and revolving around situations that have 'gone wrong' (Hardoff et al., 2013; Quek et al., 2012). In addition to this theatrical component, one intervention facilitates adolescents meeting with people who have experienced AOD-related problems (Hardoff et al., 2013).

This last publication (Hardoff et al., 2013) is an Israeli study that reports significant changes in alcohol behaviour. It concerns a primary prevention approach delivered as a one-school-day programme aimed at 16- to 17-year-old students and given at a medical centre. In addition to enacted scenarios and a meeting with individuals who have been injured as a result of alcohol consumption, the intervention includes an information film component highlighting the consequences of alcohol consumption. This approach is valuable in demonstrating that an information-based approach need not necessarily be delivered as part of the school curriculum, and in showing how different means of communication such as acting or meetings with other people can be deployed.

## Category 2. Primary prevention approaches incorporating skill-training components

Sixteen of the primary prevention approaches include a skill component within the intervention and are delivered by trained facilitators (Bavarian, Duncan, Lewis, Miao, & Washburn, 2014; Caria, Faggiano, Bellocco, & Galanti, 2011; Caria, Faggiano, Bellocco, Galanti, & Group, 2011; Espada,

Griffin, Pereira, Orgiles, & Garcia-Fernandez, 2012; Faggiano et al., 2010; Gabrhelik et al., 2012; Giannotta, Vigna-Taglianti, Rosaria Galanti, Scatigna, & Faggiano, 2014; Hall, Bacon, & Ferron, 2013; Huang, 2012; Mckay, 2012; Midford et al., 2014; Pensuksan, Taneepanichskul, & Williams, 2010; Ringwalt, Clark, Hanley, Shamblen, & Flewelling, 2010; Vigna-Taglianti et al., 2014; Weichold, Brambosch, & Silbereisen, 2010).

As well as including information-based components, these primary prevention approaches seek to enhance adolescents' social skills such as problem solving skills (Caria, Faggiano, Bellocco, & Galanti, 2011; Caria, Faggiano, Bellocco, Galanti, et al., 2011; Espada et al., 2012; Faggiano et al., 2010; Gabrhelik et al., 2012; Giannotta et al., 2014; Hall et al., 2013; Huang, 2012; Midford et al., 2014; Vigna-Taglianti et al., 2014), refusal skills (Bavarian et al., 2014; Caria, Faggiano, Bellocco, & Galanti, 2011; Caria, Faggiano, Bellocco, Galanti, et al., 2011; Espada et al., 2012; Faggiano et al., 2010; Gabrhelik et al., 2012; Giannotta et al., 2014; Hall et al., 2013; Huang, 2012; Ringwalt et al., 2010; Vigna-Taglianti et al., 2014; Weichold et al., 2010), decision making skills (Caria, Faggiano, Bellocco, & Galanti, 2011; Caria, Faggiano, Bellocco, Galanti, et al., 2011; Espada et al., 2012; Faggiano et al., 2010; Gabrhelik et al., 2012; Giannotta et al., 2014; Hall et al., 2013; Huang, 2012; Mckay, 2012; Midford et al., 2014; Pensuksan et al., 2010; Ringwalt et al., 2010; Vigna-Taglianti et al., 2014; Weichold et al., 2010), or specific peer resistance skills (Bavarian et al., 2014; Caria, Faggiano, Bellocco, & Galanti, 2011; Caria, Faggiano, Bellocco, Galanti, et al., 2011; Espada et al., 2012; Faggiano et al., 2010; Gabrhelik et al., 2012; Giannotta et al., 2014; Hall et al., 2013). The majority of the approaches focus on social influence, in the sense that the intervention is carried out with the aim not only of changing participants' attitudes towards AOD use but also providing them with adequate social skills for either abstaining from AOD use or decreasing current consumption levels (Caria, Faggiano, Bellocco, & Galanti, 2011; Caria, Faggiano, Bellocco, Galanti, et al., 2011; Faggiano et al., 2010; Giannotta et al., 2014; Hall et al., 2013; Huang, 2012; Pensuksan et al., 2010; Ringwalt et al., 2010; Vigna-Taglianti et al., 2014; Weichold et al., 2010), and in some cases explicitly on changing social norms (Bavarian et al., 2014; Faggiano et al., 2010; Gabrhelik et al., 2012; Giannotta et al., 2014; Hall et al., 2013; Huang, 2012; Midford et al., 2014; Pensuksan et al., 2010; Ringwalt et al., 2010; Vigna-Taglianti et al., 2014; Weichold et al., 2010). Two of the approaches were developed using the Theory of Planned Behaviour, and aimed at enabling adolescents to connect attitudes and action and improve their control over their own behaviour (Bavarian et al., 2014, p. 361; Huang, 2012, p. 329). One intervention used motivational

interviewing as means of enhancing participants' control over their behaviour (Pensuksan et al., 2010).

Whereas one intervention was delivered to groups in a private room (Pensuksan et al., 2010), all the other approaches were classroom-based. Three interventions added a homework component to the classroom-based approach (Hall et al., 2013; Huang, 2012; Midford et al., 2014).

Six of the studies are concerned with the prevention programme 'Unplugged', which has been implemented in a number of European countries (Caria, Faggiano, Bellocco, & Galanti, 2011; Caria, Faggiano, Bellocco, Galanti, et al., 2011; Faggiano et al., 2010; Gabrhelik et al., 2012; Giannotta et al., 2014; Vigna-Taglianti et al., 2014). This programme aims at providing adolescents with social skills. This approach is described by, for example, (Caria, Faggiano, Bellocco, Galanti, et al., 2011), who evaluate a version of the 'Unplugged' curriculum that includes components such as refusal skills, problem-solving skills and decision-making skills. This study presents findings that suggest the efficacy of a primary prevention initiative employed to delay initiation into alcohol use by using a social skills model. A trial among European students showed that in the intervention group, both non-drinkers and occasional drinkers progressed into frequent drinking less often than those in the control group.

### Category 3. Universal or primary prevention approaches that include family components

Five studies are concerned with primary interventions aimed at enhancing adolescents' skills through the inclusion of a family component (Ariza et al., 2013; Skarstrand, Sundell, & Andreasson, 2014; Spoth, Trudeau, Redmond, & Shin, 2014; Stormshak et al., 2011; Toumbourou, Gregg, Shortt, Hutchinson, & Slaviero, 2013). While the primary anchorage is the school setting, these interventions seek to enhance the reach of the intervention through the bridging of two of the significant spheres for adolescents, namely school and the family.

Like the interventions described in the previous category, the interventions are delivered by trained staff and seek to enhance skills such as peer resistance skills (Ariza et al., 2013; Skarstrand et al., 2014; Spoth et al., 2014; Stormshak et al., 2011; Toumbourou et al., 2013). One intervention explicitly makes use of motivational interviewing with the participants (Stormshak et al., 2011),

while others contain components developed for parents, such as a parents' handbook on how to discuss AOD-related issues (Ariza et al., 2013; Toumbourou et al., 2013), the building of a 'parent community' with the intention of creating a forum for the exchange of AOD-issue experiences among parents (Toumbourou et al., 2013), the setting-up of an information centre (Stormshak et al., 2011), and the availability of a professional AOD-issue counsellor (Stormshak et al., 2011).

Four of the interventions are delivered directly to the adolescents (Ariza et al., 2013; Skarstrand et al., 2014; Spoth et al., 2014; Toumbourou et al., 2013), three of the interventions provide a parent-only education session along with the adolescent-only sessions (Skarstrand et al., 2014; Spoth et al., 2014; Toumbourou et al., 2013), and two interventions make use of a joint family session (Skarstrand et al., 2014; Spoth et al., 2014). Two of the interventions incorporate a joint family session with both the parent(s) and the adolescent present (Skarstrand et al., 2014; Spoth et al., 2014). The approach incorporating the largest number of these components is that described by (Toumbourou et al., 2013), which incorporates the building of a parent community, the provision of a parents' handbook, and both adolescents-only and parents-only sessions. It thus represents a valuable example of a multifaceted universal prevention approach that aims to mediate between the school and family spheres of the adolescent participants, and emphasises the importance of family commitment as a protective factor in relation to AOD consumption. This multidimensional approach incorporating support from the adolescents' families proves to be effective; the study reports that participants in the intervention condition reported reduction in both lifetime alcohol use and heavy use.

#### Category 4. Targeted approaches incorporating skill-training components

Four studies concern secondary prevention approaches targeting adolescents' AOD use and incorporating skill-training components (Conrod et al., 2013; Mallett et al., 2010; O'Leary-Barrett et al., 2013; Sussman, Sun, Rohrbach, & Spruijt-Metz, 2012) as opposed to interventions consisting of assessment-only or information-only elements. All four interventions were delivered by trained facilitators (Conrod et al., 2013; Mallett et al., 2010; O'Leary-Barrett et al., 2013; Sussman et al., 2012).



The common feature of these secondary prevention approaches is that they all aim to provide adolescents with new or improved social skills, and in two cases with specific peer-resistance skills (Conrod et al., 2013; O'Leary-Barrett et al., 2013). Two of the studies are concerned with interventions that include a motivational interviewing component (Mallett et al., 2010; Sussman et al., 2012), and one of these additionally employs peer delivery of brief motivational feedback and inclusion of the parents as well as a subsequent booster component (Mallett et al., 2010).

These approaches define the target groups through baseline measures identifying the participants as having (at baseline) 'risky' or 'high' consumption levels of alcohol, marijuana, or other illicit drugs. The approaches are either a secondary form of prevention (Sussman et al., 2012), or work through the identification of risk profiles based on personality traits (Conrod et al., 2013; O'Leary-Barrett et al., 2013) or social grouping (Mallett et al., 2010), thus making them primary but targeted interventions.

Two of the studies (Conrod et al., 2013; O'Leary-Barrett et al., 2013) are concerned with a personality-targeted intervention aimed at reducing alcohol consumption among high-risk year 9 students in secondary schools. Comprising two 90-minute group sessions, the intervention addresses one of four personality risk factors (anxiety sensitivity, hopelessness, impulsivity, and sensation seeking) and incorporates both goal-setting exercises and exercises aimed at enhancing the participants' skills in identifying risky behaviours and their ability to perceive alternative strategies. A notable feature of this intervention is that the sessions are carried out with the aim of addressing the topic of alcohol misuse within a framework relevant to the specific risk profile of the participating adolescents. The effectiveness of the intervention is demonstrated by the results found, which indicated long-term effects on the participants' alcohol consumption levels. Schools in the intervention condition reported a 29% reduction in the odds of drinking at all, a 43% reduction in the odds of binge drinking, and a 29% reduction in the odds of problem drinking, all values being relative to schools in the control condition receiving the usual health care education (Conrod et al., 2013).

#### Category 5. Approaches incorporating digital features

The knowledge available concerning the effectiveness of digital technology as a source of delivery in the field of prevention programmes targeting AOD consumption is fairly limited. However, three

studies are concerned with the effectiveness of including digital technology as a feature of intervention programmes targeting adolescent AOD consumption were identified. Two of these studies are concerned with the effectiveness of the partially-digital six-lesson class-based programme 'Climate Schools', which is aimed at enhancing the students' knowledge regarding cannabis and psychostimulants and reducing pro-drug attitudes (Newton, Andrews, Champion, & Teesson, 2014; Vogl, 2014). Taking the form of a primary prevention approach, this intervention incorporates information-based cartoon stories presented through the internet as part of the classroom sessions. The approach is not an internet-only approach, but uses computers as a means of delivery alongside classroom-based delivery. However, the study does present results indicative of the efficacy of incorporating digital components into prevention initiatives or interventions targeting AOD consumption among adolescents. The study reports increases in knowledge of cannabis and psychostimulants among the participants as well as reductions in positive attitudes towards drugs. Additionally, in a short-term perspective the intervention successfully reduced the frequency of ecstasy use among the participants. In spite of reporting decreases in the participants' intentions to use meth/amphetamine as well as ecstasy in the future, the effects did not persist over time. The findings presented in the study indicate the need for more research into the field of digital technology and drug prevention strategies.

## Discussion

The processual method used in this study of synthesising the content components of prevention initiatives or interventions targeting AOD consumption among adolescents can provide a dynamic analytical process that is effective in defining new categories and that is sensitive to nuances among different programmes. The current research presents categories identified among previously published studies describing AOD prevention approaches targeting adolescents aged 12-20 years. The research was carried out with the aim of presenting patterns in categories that could serve as analytical tools in future research as well as provide specific and tangible information on the components of the various approaches considered. The studies included all present information on the effectiveness of the trials. However, a methodological challenge faced in producing the current report has been to identify the actual components of the intervention, in the sense that the question ‘What did they do?’ (programme content) appears much harder to answer than ‘Did it work?’ (impact). While the latter question is of critical importance, we consider the lack of thorough descriptions of actual practice as making more difficult the assembly of information about what actually works. This raises the question of the reason for this preoccupation with effectiveness. The publication of protocol papers and/or qualitative or mixed-method studies of interventions could be a sensible way to address this challenge. The fact that we were able to synthesise the intervention components identified into no more than five categories by using the common denominators among the studies as the identifying factors raises the question of the degree of innovation in the field of AOD prevention initiatives targeting adolescents in the time period covered. It might be suggested that the relative ease with which the studies could be grouped into the categories reflects a certain degree of similarity and a tendency to replicate empirically-substantiated approaches rather than develop new ones.

The relative distribution of the approaches across the five categories suggests a preponderance of studies in the category of universal, skill-training approaches. We find more than twice as many studies in this category as in any other. While we fully acknowledge that the distribution of the approaches studied in the categories identified is directly related to the formulation of the inclusion criteria for the categories, we argue that the value of our analytic strategy lies in its ability to identify such skewness in the distribution. The preponderance of approaches in the category of universal, skill-training approaches is thus understood as reflecting what we call the ‘pragmatic

tendency'. Universal prevention initiatives not designed to target a specific type of adolescent AOD consumer appear to dominate, in spite of the existence of contributions to the field that would enable researchers to develop more targeted approaches ( Davoren et al., 2015). The skewness towards universal approaches is interesting and potentially problematic when we consider the vast literature presenting findings concerning the highly heterogeneous consumption patterns among adolescents. Consequently, it would appear to be important to focus on developing approaches similar to those described in the two last categories of those listed in this study. Targeted approaches make it possible to design interventions that identify specific patterns among subgroups of problematic consumers, and also to design approaches relevant to the growing number of adolescent abstainers. In spite of the growing evidence that digital technology is a viable means of getting messages through and ensuring high compliance rates in AOD prevention programmes (Kypri et al., 2009; Ridout & Campbell, 2014), only a few studies have been concerned with the incorporation of digital technologies into interventions.

## Conclusion

The present report contributes to the field of AOD prevention approaches by establishing five categories of school-based approaches that target adolescents. Through the identification of the various components that form elements of the approaches studied, the following categories were established: 'Information-based or testing-based primary prevention approaches', 'Primary prevention approaches incorporating skill-training components', 'Universal or primary prevention approaches that include family components', 'Targeted approaches incorporating skill-training components', and 'Approaches incorporating digital features'. Only four studies employed any form of targeting or profiling of the intervention subjects prior to the delivery of the prevention intervention or initiative, and while these approaches are undoubtedly costlier than universal, non-targeted interventions, this discovery raises questions concerning the trend in the field of AOD prevention initiatives that reflects a preoccupation with publishing studies that demonstrate strong intervention effects. A skewness is identified towards studies in the category of primary prevention skill-training approach. This has implications for the consideration of the literature on prevention initiatives and interventions in relation to consumption patterns among adolescents.

## References

- Ariza, C., Perez, A., Sanchez-Martinez, F., Dieguez, M., Espelt, A., Pasarin, M. I., . . . Nebot, M. (2013). Evaluation of the effectiveness of a school-based cannabis prevention program. *Drug Alcohol Depend*, *132*(1-2), 257-264. doi:10.1016/j.drugalcdep.2013.02.012
- Bavarian, N., Duncan, R., Lewis, K. M., Miao, A., & Washburn, I. J. (2014). Adolescent Substance Use Following Participation in a Universal Drug Prevention Program: Examining Relationships with Program Recall and Baseline Use Status. *Subst Abus*, *0*. doi:10.1080/08897077.2014.952364
- Caria, M. P., Faggiano, F., Bellocco, R., & Galanti, M. R. (2011). The influence of socioeconomic environment on the effectiveness of alcohol prevention among European students: a cluster randomized controlled trial. *BMC Public Health*, *11*, 312. doi:10.1186/1471-2458-11-312
- Caria, M. P., Faggiano, F., Bellocco, R., Galanti, M. R., & Group, E. U.-D. S. (2011). Effects of a school-based prevention program on European adolescents' patterns of alcohol use. *J Adolesc Health*, *48*(2), 182-188. doi:10.1016/j.jadohealth.2010.06.003
- Champion, K. E., Newton, N. C., Barrett, E. L., & Teesson, M. (2013). A systematic review of school-based alcohol and other drug prevention programs facilitated by computers or the internet. *Drug Alcohol Rev*, *32*(2), 115-123. doi:10.1111/j.1465-3362.2012.00517.x
- Conrod, P. J., O'Leary-Barrett, M., Newton, N., Topper, L., Castellanos-Ryan, N., Mackie, C., & Girard, A. (2013). Effectiveness of a selective, personality-targeted prevention program for adolescent alcohol use and misuse: a cluster randomized controlled trial. *JAMA Psychiatry*, *70*(3), 334-342. doi:10.1001/jamapsychiatry.2013.651
- Davoren, M. P., Cronin, M., Perry, I. V., Demant, J., Shiely, F., & O'Connor, K. (2015). A typology of alcohol consumption among young people – A narrative synthesis. *Addiction Research & Theory*. doi:DOI: 10.3109/16066359.2015.1121244
- Dietl, D. K. G. S. M. (2011). Prevention of alcohol misuse among children, youths and young adults. *GMS Health Technology Assessment*, *7*, 1-9.
- ESPAD. (2015). *ESPAD Report 2015. Results from the European School Survey Project on Alcohol and Other Drugs*. Retrieved from
- Espada, J. P., Griffin, K. W., Pereira, J. R., Orgiles, M., & Garcia-Fernandez, J. M. (2012). Component analysis of a school-based substance use prevention program in Spain: contributions of problem solving and social skills training content. *Prev Sci*, *13*(1), 86-95. doi:10.1007/s11121-011-0249-y
- Faggiano, F., Vigna-Taglianti, F., Burkhart, G., Bohrn, K., Cuomo, L., Gregori, D., . . . Group, E. U.-D. S. (2010). The effectiveness of a school-based substance abuse prevention program: 18-month follow-up of the EU-Dap cluster randomized controlled trial. *Drug Alcohol Depend*, *108*(1-2), 56-64. doi:10.1016/j.drugalcdep.2009.11.018
- Foxcroft, D. R., & Tsertsvadze, A. (2011). Universal multi-component prevention programs for alcohol misuse in young people. *Cochrane Database of Systematic Reviews*(9), CD009307. doi:10.1002/14651858.CD009307
- Foxcroft, D. R., & Tsertsvadze, A. (2012). Universal alcohol misuse prevention programmes for children and adolescents: Cochrane systematic reviews. *Perspect Public Health*, *132*(3), 128-134. doi:10.1177/1757913912443487
- Gabrhelik, R., Duncan, A., Miovsy, M., Furr-Holden, C. D., Stastna, L., & Jurystova, L. (2012). "Unplugged": a school-based randomized control trial to prevent and reduce adolescent substance use in the Czech Republic. *Drug Alcohol Depend*, *124*(1-2), 79-87. doi:10.1016/j.drugalcdep.2011.12.010

- Giannotta, F., Vigna-Taglianti, F., Rosaria Galanti, M., Scatigna, M., & Faggiano, F. (2014). Short-term mediating factors of a school-based intervention to prevent youth substance use in Europe. *J Adolesc Health, 54*(5), 565-573. doi:10.1016/j.jadohealth.2013.10.009
- Hale, D. R., Fitzgerald-Yau, N., & Viner, R. M. (2014). A systematic review of effective interventions for reducing multiple health risk behaviors in adolescence. *Am J Public Health, 104*(5), e19-41. doi:10.2105/AJPH.2014.301874
- Hall, B. W., Bacon, T. P., & Ferron, J. M. (2013). Randomized controlled evaluation of the too good for drugs prevention program: impact on adolescents at different risk levels for drug use. *J Drug Education, 43*(3), 277-300. doi:10.2190/DE.43.3.e
- Hardoff, D., Stoffman, N., & Ziv, A. (2013). Empowering adolescents to control alcohol-associated risky situations. *Arch Dis Child, 98*(9), 672-675. doi:10.1136/archdischild-2013-303994
- Huang, C.-M. C., Li-Yin; Cheng, Chin-Feng; Guo, Jong-Long. (2012). Integrating Life Skills Into a Theory-Based Drug-Use Prevention Program: Effectiveness Among Junior High Students in Taiwan. *Journal of School Health, 82*, 328-335.
- Jackson, C. A., Henderson, M., Frank, J. W., & Haw, S. J. (2012). An overview of prevention of multiple risk behaviour in adolescence and young adulthood. *J Public Health (Oxf), 34 Suppl 1*, i31-40. doi:10.1093/pubmed/fdr113
- James-Burdumy, S., Goesling, B., Deke, J., & Einspruch, E. (2012). The effectiveness of mandatory-random student drug testing: a cluster randomized trial. *J Adolesc Health, 50*(2), 172-178. doi:10.1016/j.jadohealth.2011.08.012
- Kypri, K., Hallett, J., Howat, P. M., A., Maycock, B., Bowe, S., & Horton, N. J. (2009). Randomized Controlled Trial of Proactive Web-Based Alcohol Screening and Brief Intervention for University Students. *Archives of Internal Medicine, 169*(16).
- Mallett, K. A., Ray, A. E., Turrisi, R., Belden, C., Bachrach, R. L., & Larimer, M. E. (2010). Age of drinking onset as a moderator of the efficacy of parent-based, brief motivational, and combined intervention approaches to reduce drinking and consequences among college students. *Alcohol Clin Exp Res, 34*(7), 1154-1161. doi:10.1111/j.1530-0277.2010.01192.x
- McKay, M. M., Michael T. ; McBride, NT (McBride, Nyanda T.) ; Sumnall, HR (Sumnall, Harry R.) ; Cole, JC (Cole, Jon C.). (2012). Reducing the harm from adolescent alcohol consumption: results from an adapted version of SHAHRP in Northern Ireland. *Journal of Substance Use, 17*(2), 98-121. doi:10.3109/14659891.2011.615884
- Midford, R. (2010). Drug prevention programmes for young people: where have we been and where should we be going? *Addiction, 105*(10), 1688-1695. doi:10.1111/j.1360-0443.2009.02790.x
- Midford, R., Mitchell, J., Lester, L., Cahill, H., Foxcroft, D., Ramsden, R., . . . Pose, M. (2014). Preventing alcohol harm: early results from a cluster randomised, controlled trial in Victoria, Australia of comprehensive harm minimisation school drug education. *Int J Drug Policy, 25*(1), 142-150. doi:10.1016/j.drugpo.2013.05.012
- Moore, G. F., Annie Williams, Laurence Moore, Simon Murphy (2013). An exploratory cluster randomised trial of a university halls of residence based social norms marketing campaign to reduce alcohol consumption among 1st year students. *Subst Abuse Treat Prev Policy, 8*, 15.
- Newton, N. C., Andrews, G., Champion, K. E., & Teesson, M. (2014). Universal Internet-based prevention for alcohol and cannabis use reduces truancy, psychological distress and moral disengagement: a cluster randomised controlled trial. *Prev Med, 65*, 109-115. doi:10.1016/j.yjmed.2014.05.003
- O'Leary-Barrett, M., Topper, L., Al-Khudhairi, N., Pihl, R. O., Castellanos-Ryan, N., Mackie, C. J., & Conrod, P. J. (2013). Two-year impact of personality-targeted, teacher-delivered interventions on youth internalizing and externalizing problems: a cluster-randomized trial. *J Am Acad Child Adolesc Psychiatry, 52*(9), 911-920. doi:10.1016/j.jaac.2013.05.020

- Pennay, A., Livingston, M., & MacLean, S. (2015). Young people are drinking less: It is time to find out why. *Drug and Alcohol Rev*, *34*, 115-118. doi:10.1111/dar.12255
- Pensuksan, W. C., Taneepanichskul, S., & Williams, M. A. (2010). A peer-drinking group motivational intervention among Thai male undergraduate students. *Int J Drug Policy*, *21*(5), 432-436. doi:10.1016/j.drugpo.2010.02.005
- Quek, L. H., White, A., Low, C., Brown, J., Dalton, N., Dow, D., & Connor, J. P. (2012). Good choices, great future: an applied theatre prevention program to reduce alcohol-related risky behaviours during Schoolies. *Drug Alcohol Rev*, *31*(7), 897-902. doi:10.1111/j.1465-3362.2012.00453.x
- Ridout, B., & Campbell, A. (2014). Using Facebook to deliver a social norm intervention to reduce problem drinking at university. *Drug and Alcohol Rev*, *33*, 667-673. doi:10.1111/dar.12141
- Ringwalt, C. L., Clark, H. K., Hanley, S., Shamblen, S. R., & Flewelling, R. L. (2010). The effects of Project ALERT one year past curriculum completion. *Prev Sci*, *11*(2), 172-184. doi:10.1007/s11121-009-0163-8
- Rodgers, M., Sowden, A., M., P., Arai, L., Roberts, H., Britten, N., & Popay, J. (2009). Testing Methodological Guidance on the Conduct of Narrative Synthesis in Systematic Reviews. Effectiveness of Interventions to Promote Smoke Alarm Ownership and Functions. *SAGE Publications*, *15* (1), 49-74. doi:10.1177/1356389008097871
- Saldana, J. (2009). *The coding manual for qualitative research* London: SAGE Publications Ltd.
- Skarstrand, E., Sundell, K., & Andreasson, S. (2014). Evaluation of a Swedish version of the Strengthening Families Programme. *Eur J Public Health*, *24*(4), 578-584. doi:10.1093/eurpub/ckt146
- Spoth, R., Trudeau, L., Redmond, C., & Shin, C. (2014). Replication RCT of early universal prevention effects on young adult substance misuse. *J Consult Clin Psychol*, *82*(6), 949-963. doi:10.1037/a0036840
- Stormshak, E. A., Connell, A. M., Veronneau, M. H., Myers, M. W., Dishion, T. J., Kavanagh, K., & Caruthers, A. S. (2011). An ecological approach to promoting early adolescent mental health and social adaptation: family-centered intervention in public middle schools. *Child Dev*, *82*(1), 209-225. doi:10.1111/j.1467-8624.2010.01551.x
- Sussman, S., Sun, P., Rohrbach, L. A., & Spruijt-Metz, D. (2012). One-year outcomes of a drug abuse prevention program for older teens and emerging adults: evaluating a motivational interviewing booster component. *Health Psychol*, *31*(4), 476-485. doi:10.1037/a0025756
- Toumbourou, J. W., Gregg, M. E., Shortt, A. L., Hutchinson, D. M., & Slaviero, T. M. (2013). Reduction of adolescent alcohol use through family-school intervention: a randomized trial. *J Adolesc Health*, *53*(6), 778-784. doi:10.1016/j.jadohealth.2013.07.005
- Vigna-Taglianti, F. D., Galanti, M. R., Burkhart, G., Caria, M. P., Vadrucchi, S., Faggiano, F., & Group, E. U.-D. S. (2014). "Unplugged," a European school-based program for substance use prevention among adolescents: overview of results from the EU-Dap trial. *New Dir Youth Dev*, *2014*(141), 67-82, 11-62. doi:10.1002/yd.20087
- Vogl, L. N., N. C.; Champion, K. E.; Teesson, M. (2014). A universal harm-minimisation approach to preventing psychostimulant and cannabis use in adolescents: a cluster randomised controlled trial. *Subst Abuse Treat Prev Policy*, *9*, 24.
- Weichold, K., Brambosch, A., & Silbereisen, R. K. (2010). Do Girls Profit More? Gender-Specific Effectiveness of a Life Skills Program Against Alcohol Consumption in Early Adolescence. *The Journal of Early Adolescence*, *32*(2), 200-225. doi:10.1177/0272431610384489
- Wolfson, M., Champion, H., McCoy, T. P., Rhodes, S. D., Ip, E. H., Blocker, J. N., . . . Durant, R. H. (2012). Impact of a randomized campus/community trial to prevent high-risk drinking among college students. *Alcohol Clin Exp Res*, *36*(10), 1767-1778. doi:10.1111/j.1530-0277.2012.01786.x

