HRB DRUG AND ALCOHOL EVIDENCE REVIEW

The efficacy and effectiveness of drug and alcohol abuse prevention programmes delivered outside of school settings

2

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HRB
Health Research Board

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The RTK Ltd (http://therighttoknow.co.uk) is a network of senior associates, based in London, delivering research, analysis and consultancy on social policy in the private and public sectors.

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HRB drug and alcohol evidence review

This series is part of a process of knowledge transfer and exchange between the HRB and those engaged in developing and implementing responses to problem drug and alcohol use in Ireland. The reviews support drug and alcohol taskforces, service providers and policy makers in using research-based knowledge in their decision making, particularly in regard to their assigned actions in the National Drugs Strategy. Topics for review are selected following consultation with stakeholders to identify particular information gaps and to establish how the review will contribute to evidence-based selection and implementation of effective responses. Each issue in this review series will examine a topic relevant to the work of responding to the situation in Ireland and will be used as a resource document by service providers, policy makers, practitioners, researchers and others working in this area.

National Documentation Centre on Drug Use

The National Documentation Centre on Drug Use (NDC) commissions the reviews in this series. The NDC website and online repository (www.drugsandalcohol.ie) and our library information services provide access to Irish and international research literature in the area of drug and alcohol use and misuse, policy, treatment, prevention, rehabilitation, crime and other drug and alcohol-related topics. It is a significant information resource for researchers, policy makers and people working in the areas of drug or alcohol use and addiction. The National Drugs Strategy assigns the HRB the task of promoting and enabling research-informed policy and practice for stakeholders through the dissemination of evidence. This review series is part of the NDC's work in this area.

Health Research Board

The Health Research Board (HRB) is the lead agency in Ireland supporting and funding health research. We provide funding, maintain health information systems and conduct research linked to national health priorities. Our aim is to improve people's health, build health research capacity and make a significant contribution to Ireland's knowledge economy. The HRB is Ireland's National Focal Point to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). The focal point monitors, reports on and disseminates information on the drugs situation in Ireland and responses to it and promotes best practice and an evidence-based approach to work in this area.

Acknowledgements

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HRB drug and alcohol evidence reviews to date

Munton AG, Wedlock E and Gomersall A (2014) The role of social and human capital in recovery from drug and alcohol addiction. HRB Drug and Alcohol Evidence Review 1. Dublin: Health Research Board

Munton AG, Wedlock E and Gomersall A (2014) The efficacy and effectiveness of drug and alcohol abuse prevention programmes delivered outside of school settings. HRB Drug and Alcohol Evidence Review 2. Dublin: Health Research Board

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01

THE EFFICACY AND EFFECTIVENESS OF DRUG AND ALCOHOL ABUSE PREVENTION PROGRAMMES DELIVERED OUTSIDE OF SCHOOL SETTINGS

KEY MESSAGES

KEY MESSAGES

This paper reports the results of an evidence review on the efficacy and effectiveness of drug and alcohol abuse prevention programmes delivered outside of school settings. It has been written for a practitioner audience, with the objective of providing stakeholders with key messages from recent research that can inform the decisions they need to make. The messages for the different practitioner groups appear below.

We limited our searches to papers published since 2008. From 1,430 papers and articles identified using our search terms we selected a total of 64 papers as being relevant, on the basis of having read the abstracts only. We were able to retrieve full copies of 55 of those papers. When we read the full texts, we excluded another 22 papers, leaving us with a total of 33 for our evidence review. Of those 33 papers, 12 described primary research studies, and 21 were reviews of research.

KEY MESSAGES FOR PRACTITIONER GROUPS

Community-based organisations

- While there has not been enough good quality evaluation research conducted to provide unequivocal evidence for the effectiveness of community prevention initiatives, the evidence looks promising.
- The most promising interventions address multiple domains: individual and peer, family, school and community.
- Multi-domain programmes targeted at early adolescents (aged 10–13 years) appear to achieve better results compared with other approaches.
- Community-based interventions that work with families to improve parenting can be effective in preventing substance misuse.
- Programmes that help parents to get involved with developing their children's skills in areas of social competence and self-regulation can be effective.
- Community groups are likely to be most effective when they have access to adequate training and financial resources, are well organised and sustainable, and provide interventions that are culturally appropriate.

Executives, senior managers, commissioners and budget holders

- Evidence-based community intervention policy to prevent drug and alcohol use among young people needs to be developed.
- Community organisations need support to develop the capacity to deliver effective interventions with young people.
- Effective evaluation of community-based interventions needs to be incentivised.
- Policies need to strengthen the community programmes that focus on how well young people will be prepared or how fully they will be engaged in positive activities outside the formal education system.
- Longer-term funding, contingent on evidence of effectiveness, would promote sustainability and improve impact.

Service providers

- Prevention interventions are likely to be more effective when they reflect the broad context of young people's lives (social skills, education, family, peer groups).
- Interventions tailored to take account of individual needs tend to be more successful.
- The most at-risk young people often come from families that are the most difficult to engage with.
- Providing families with a choice of programmes with distinct formats can help to facilitate engagement.
- The positive effects of interventions tend to be proportionate to the time and energy involved in the intervention.
- Active participation in training and professional development can make real improvements to the delivery of interventions.

Academics, planners and evaluators of drug/ alcohol prevention projects

- Community groups could benefit from support in developing theory-based drug and alcohol interventions.
- Measures such as the 'capacity assessment survey' would help to evaluate the capacity of community groups to deliver prevention programmes and show funders where additional support would be most effective. Developing standardised outcome measures would help to establish the relative merits of different programmes for different groups of young people.
- Cost-benefit analysis of prevention programmes is very limited. Community groups would benefit from support in this area.

02

THE EFFICACY AND EFFECTIVENESS OF DRUG AND ALCOHOL ABUSE PREVENTION PROGRAMMES DELIVERED OUTSIDE OF SCHOOL SETTINGS

INTRODUCTION

INTRODUCTION

This rapid evidence assessment (REA) report summarises evidence-based information on the efficacy and effectiveness of drug and alcohol abuse prevention programmes provided outside of school settings. It pulls together evidence from a range of published literature which includes reviews that seek to identify the key characteristics of successful prevention programmes, and primary research studies that test – to a high standard of evidence – the impact of out-of-school prevention programmes on drug and alcohol use among young people.

WHY FOCUS ON PREVENTION?

The Steering Group of the National Drugs Strategy[1] recommended developing a prevention strategy to tackle substance misuse, particularly in relation to under-18s. One of the key themes to emerge from its consultation process was the perception that drug and alcohol use were becoming more widespread and that the age profile of those involved was getting younger. Measures to prevent and/or delay drug and alcohol use – especially among young people – were, therefore, particularly important. This is the policy background to our selection of this topic for review.

The HRB is helping to build evidence to support stakeholders in implementing certain actions of the National Drugs Strategy 2009–16 (NDS) and to encourage the use of research in decisions around the selection, implementation and evaluation of interventions. The idea of examining the evidence on out of school prevention programmes emerged through discussions with stakeholders who have responsibility for implementing actions under the prevention pillar of the strategy. Stakeholders have read drafts of the report to help ensure that the messages we have drawn from the evidence add value to the current prevention landscape in Ireland.

1 Department of Health (2012) *Steering Group Report on a National Substance Misuse Strategy* [Electronic version]. Dublin. Available at: http://www.drugsandalcohol.ie/16908/2/Steering_Group_Report_on_a_National_Substance_Misuse_Strategy_-_7_Feb_11.pdf

03

THE EFFICACY AND EFFECTIVENESS OF DRUG AND ALCOHOL ABUSE PREVENTION PROGRAMMES DELIVERED OUTSIDE OF SCHOOL SETTINGS

THE REVIEW METHOD

THE REVIEW METHOD

We used an approach known as a rapid evidence assessment (REA). The strength of the method lies in following a clear set of procedures and recording precisely what was done at each stage to enable the process to be replicated if necessary. We have followed guidelines developed and written by Government Social Research (GSR) and the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre), part of the Social Science Research Unit at the Institute of Education, University of London.[2] The approach is similar to that used in a full systematic review but, because it employs single rather than multiple coders, it can be delivered within a comparably shorter timeframe with less resource commitments. Figure 1 summarises the stages of the REA process.

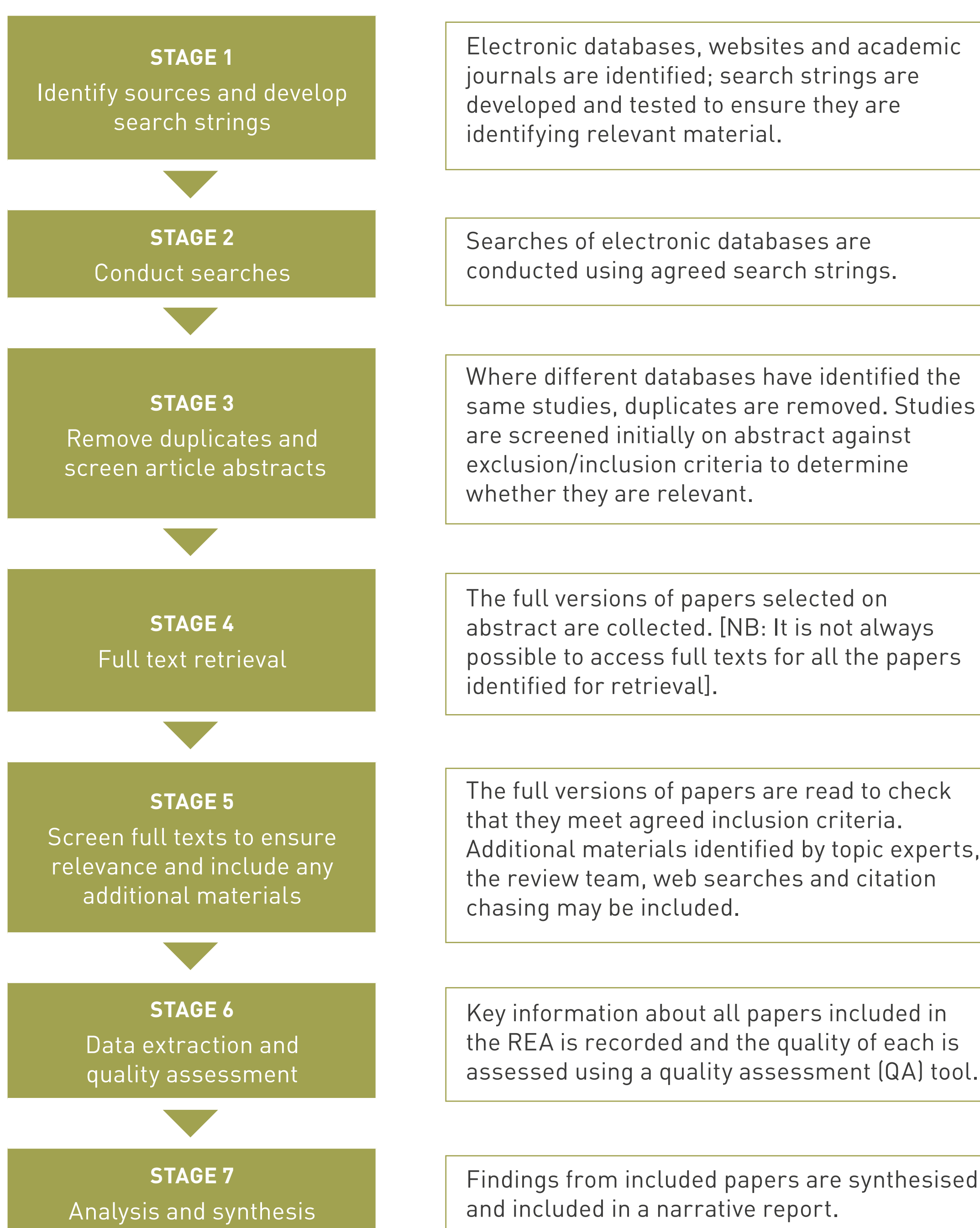

Figure 1: Summary of REA process

2 http://www.civilservice.gov.uk/networks/gsr/resources-and-guidance/rapid-evidence-assessment

ASSESSING THE STRENGTH OF A BODY OF EVIDENCE

Led by the medical profession, the last 20 years have seen a real growth in what has become known as evidence-based practice (EBP). Dr David Sackett, one of the founders of EBP, defined it as 'the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient'.[3] More recently, stakeholders have recognised the benefits of developing EBP in areas including public health and social policy.

Evidence reviews are a critical element in developing EBP; they are used to summarise the main characteristics of a body of evidence in relation to a specific issue. Guidance on how to assess the strength of a body of evidence typically highlights four important characteristics.[4,5] These are the:

- quality of individual articles or papers that make up the body of evidence
- quantity (number) of papers that make up the body of evidence
- consistency of the findings produced by the studies making up the body of evidence
- context in which the available evidence has been collected.

The US Agency for Healthcare Research and Quality (AHRQ) commissioned a review that evaluated 121 different grading systems for assessing the quality of individual studies.[6] Based on its findings, we used two different quality assessment systems – one for primary research studies and a second for evidence reviews – to assess studies included in the review.

One of the key strengths of the scientific approach to collecting evidence is the capacity to replicate or repeat investigations to see if the same results are found. Therefore, it is very important that research papers provide enough detail on how an investigation was conducted to enable someone else to repeat what was done. The more times a finding has been replicated, the more confident we can be that the effect is a real one rather than a product of the way in which a study was designed and implemented; the more studies done to test a particular theory or intervention, the stronger the body of evidence. However, there is no rule of thumb for how many studies are needed to constitute an adequate body of evidence. That often depends on the research question being investigated; the more complex the question, the more studies that are needed in order to be confident that the evidence is strong. Certainly, where only one or two studies have been done, even if they are well designed, it is reasonable to conclude that the body of evidence is small or weak. Based on recommendations, we take a case-by-case approach.[7]

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3 Sackett DL, Rosenberg WMC, Gray JAM, Haynes RB and Richardson WS (1996) Evidence based medicine: what it is and what it isn't. *British Medical Journal*, 312(7023): 71–2

4 Lohr KN (2004) Rating the strength of scientific evidence: relevance for quality improvement programs. *International Journal for Quality in Health Care*, 16(1): 9–18

5 Department for International Development (2013) Assessing the strength of evidence: DfID practice paper. Retrieved 10 March 2014 from www.gov.uk/government/publications/how-to-note-assessing-the-strength-of-evidence

6 Lohr KN (2004) Rating the strength of scientific evidence: relevance for quality improvement programs. *International Journal for Quality in Health Care*, 16(1): 9–18

7 Department for International Development (2013) Assessing the strength of evidence: DfID practice paper. Retrieved 10 March 2014 from www.gov.uk/government/publications/how-to-note-assessing-the-strength-of-evidence

QUALITY ASSESSMENTS OF STUDIES

We assessed the quality of primary research studies on seven criteria: rationale for overall research strategy, study design, sampling strategy, data collection procedures, data analysis, interpretation and reporting of results, and the credibility of the conclusions. Where primary studies tested the impact of specific interventions, we rated the design of the intervention study using the Maryland Scientific Methods Scale (SMS).[8] Not all primary studies test interventions, (e.g., some may report survey findings) therefore not all primary studies were rated on the SMS. Details of the quality assessment system for primary studies and quality scores for papers assessed can be found in Appendix B, along with a description of the SMS scoring system.

For reviews, we used eight criteria: review method, search strategy, data collection (sift), quality appraisal, data analysis (quantitative), qualitative synthesis, interpretation and reporting of results, and credibility of conclusions. Details of the quality assessment system we used for reviews can be found in Appendix C of this report, along with quality scores for all the reviews included.

QUANTITY OF RESEARCH AVAILABLE

For each review we undertake we categorise the size of the evidence as small, medium or large, and specify the number of studies associated with each category. Typically, we might assess the size of the evidence as 'small' where the review has identified five or fewer studies, 'medium' where we have found between six and ten studies, and 'large' if eleven or more studies were found.

The flow diagram in Figure 2 shows the numbers of studies identified at each stage of the REA.

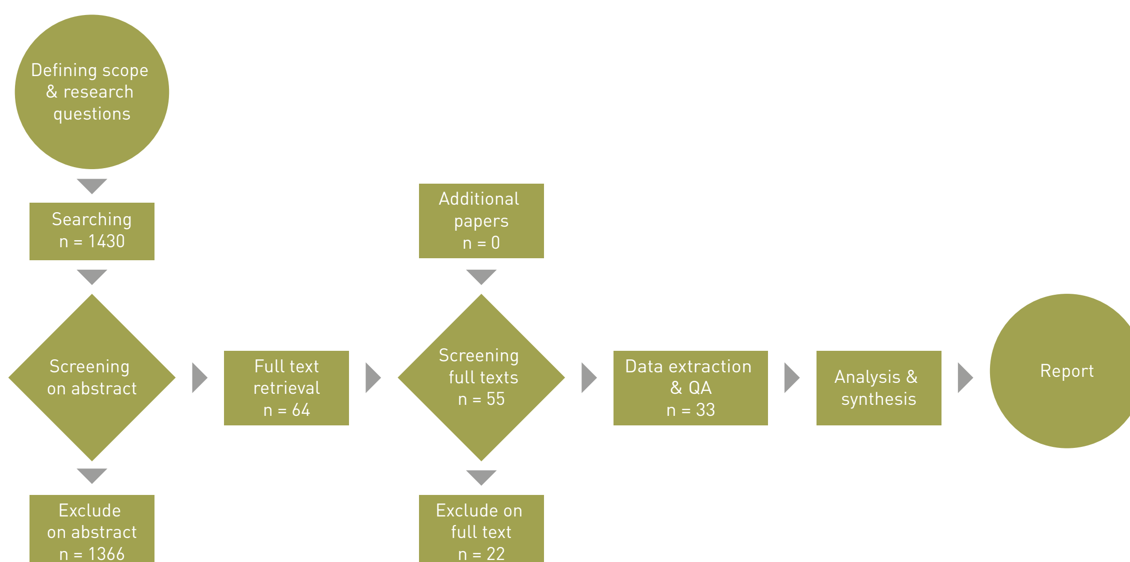

Figure 2: REA workflow: review of evidence concerning the efficacy and effectiveness of drug and alcohol abuse prevention programmes delivered outside of school settings

8 Sherman L, Gottfredson D, MacKenzie D, Eck J, Reuter P and Bushway S (1997) *Preventing Crime: What Works, What Doesn't, What's Promising*. Washington: US Department of Justice

Of the 64 references we selected for full text retrieval, we were able to gain access to 55. The texts of which we were unable to get copies were, for the most part, books that were not held by the British Library. When we read the full texts, we excluded another 22 papers, leaving us with a total of 33 for our evidence review. Of those 33 papers, 12 described primary research studies, and 21 were reviews of research.

THE CONSISTENCY OF THE FINDINGS PRODUCED BY THE STUDIES MAKING UP THE BODY OF EVIDENCE

A strong body of evidence is usually defined as one where a large number of studies all report the same or similar findings when a specific intervention is delivered to a particular group of end users. Examples from medical research might include the use of aspirin to prevent heart attacks in high-risk patients[9] or the health benefits of giving up smoking.[10] However, social interventions, such as drug prevention, are typically more complex. As a result, it is possible to have a large number of studies that, because they have tested slightly different interventions in different social contexts, do not provide entirely consistent findings. Using a review to synthesise or pull together the findings from multiple studies helps to establish the degree of consistency in a body of evidence by exploring the impact of these similarities and differences.

THE CONTEXT IN WHICH THE AVAILABLE EVIDENCE HAS BEEN COLLECTED

A review needs to acknowledge the context in which the evidence cited has been produced. It is important to have a good understanding of how well evidence collected in one particular context can be generalised to another. In social policy research, country of origin is often, although by no means always, relevant. Similarly, elements of social context such as a patient group, or the way in which an intervention was delivered, need to be acknowledged.

INTERNATIONAL COMPARISONS

Evidence reviews invariably have to address the issue of international comparisons – just how relevant is research conducted in one country to policy and practice in another? Research into substance abuse prevention strategies are no exception.

Most of the research in this area comes from the US and the UK. Within those bodies of evidence, some studies have looked at the impact of prevention programmes on specific groups, such as rural African Americans[11] and Asian Americans.[12] The evidence for efficacy and effectiveness shows quite clearly that, in order to succeed, prevention interventions need to be delivered in ways that make them both socially and culturally sensitive.[13] That is one of the reasons why community-based interventions tend to have evidence of positive

9 Hayden M, Pignone M, Philips C and Mulrow C (2002) Aspirin for the primary prevention of cardiovascular events: a summary of the evidence for the US Preventive Services Task Force. *Annals of International Medicine*, 136: 161–172

10 Surgeon General (1989) *Reducing the health consequences of smoking – 25 years of progress*. Retrieved 10 March 2014 from http://profiles.nlm.nih.gov/NN/B/B/X/S/

11 Brody G (2012) The Adults in the Making program: Long-term protective stabilizing effects on alcohol use and substance use problems for rural African American emerging adults. *Journal of Consulting and Clinical Psychology*, 80(1): 17–28

12 Fang L and Schinke S (2013) Two-year outcomes of a randomized, family-based substance use prevention trial for Asian American adolescent girls. *Psychology of Addictive Behaviors*, 27(3): 788–798

13 Winters KC, Fawkes T, Fahnhorst T, Botzet A and August G (2007) A synthesis review of exemplary drug abuse prevention programs in the United States. *Journal of Substance Abuse Treatment*, 32(4): 371–380

impact. As a consequence, care needs to be taken when generalising from the results of primary studies conducted in specific countries and contexts. Some reviewers have convincingly argued that effective interventions include common elements. However, the available evidence suggests that the delivery of programmes with those elements to specific populations also needs to take account of the social and cultural contexts in which the programmes are being delivered.

REA LIMITATIONS

The time and resources available to deliver the REA inevitably create limitations in relation to the methods used.

- Limits on the time and resources available for REAs means (a) they may miss some literature not catalogued on the key electronic databases, and (b) the majority of quality ratings are conducted by one assessor, with a second assessor only rating a small sub-sample.
- Some of the primary studies included were of limited methodological quality. As a consequence, results should be generalised with caution.
- Time did not allow for this REA to involve 'pearl growing', i.e. going through the reference lists of selected articles looking for other potentially important sources that our searches of electronic databases may have missed.
- All review methods, including REAs, risk generating inconclusive findings that provide a weak answer to the original question. For example, there may not be studies of sufficient methodological quality to address the question. The tight timescales in an REA mean that if findings are inconclusive, there is less time than in a systematic review to go back and reformulate the question or inclusion criteria.

04

THE EFFICACY AND EFFECTIVENESS OF DRUG AND ALCOHOL ABUSE PREVENTION PROGRAMMES DELIVERED OUTSIDE OF SCHOOL SETTINGS

THE WEB OF DETERMINANTS

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Epidemiological evidence suggests that substance abuse, be it drugs or alcohol, can be influenced by biological, social, environmental, psychological, and genetic factors that include gender, race and ethnicity, age, income level, educational attainment, and sexual orientation.[14]

Substance abuse is also strongly influenced by interpersonal, household, and community relationships. For young people, family, social networks and peer pressure all influence patterns of drug and alcohol use. Understanding these factors is key to reducing the number of people who abuse drugs and alcohol, and improving their health.

WHY DO PEOPLE USE ALCOHOL AND/OR DRUGS?

The World Health Organization categorises patterns of substance abuse into five broad types.[15]

- experimental use that may or may not be sustained over time
- functional use that serves a specific purpose such as recreation, but does not cause problems for the user
- dysfunctional use that leads to impaired psychological or social functioning
- harmful use that damages physical or mental health
- dependent use associated with the development of tolerance and/or withdrawal symptoms if use is stopped.

Evidence cited in a practitioner review from the UK National Institute for Health and Clinical Excellence (NICE)[16] suggests that the move from experimental substance use to more harmful use can be influenced by personal beliefs about effects. Young people who strongly believe that substance use significantly enhances their experiences are more likely to start using drugs or alcohol at a younger age, and to develop harmful habits in adult life.[17] Although there is a popular view that users of drugs such as cocaine and heroin begin their drug-taking using tobacco, alcohol or cannabis, the evidence suggests otherwise.[18]

The NICE review cites evidence of associations between certain personality characteristics, including attention deficit disorders and impulsiveness, and the increased likelihood that experimentation with drugs will lead to harmful use. However, it is important to note that the evidence is for associations; it would be wrong to assume, on the basis of the available evidence, that substance abuse is caused by personality disorders.

Similarly, harmful substance abuse is associated with several risk factors that include: social norms that favour substance abuse; economic deprivation, living in areas with high rates of unemployment and crime; family history of substance abuse; academic under-achievement, and early peer rejection. Groups that tend to be over-represented in substance-abusing cohorts include homeless

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14 Centers for Disease Control and Prevention (2011) CDC health disparities and inequalities report: United States, 2011 [Electronic version]. *MMWR*, 60(suppl). Available at: http://www.cdc.gov/mmwr/pdf/other/su6001.pdf

15 Sumnall H, McGrath Y, McVeigh J, Burrell K, Wilkinson L and Bellis M (2006) *Drug use prevention among young people: evidence into practice briefing*. London: National Institute for Health and Clinical Excellence

16 Ibid

17 Blume AW, Lostutter TW, Schmaling KB and Marlatt GA (2003) Beliefs about drinking behaviour predict drinking consequences. *Journal of Psychoactive Drugs*, 35: 395–99

18 Sanju G and Hamdy M (2005) Gateway hypothesis – a preliminary evaluation of variables predicting non-conformity. *Addictive Disorders & their Treatment*, 4(1): 39–40

young people, young people who have been excluded from school, and children of sex workers.[19]

With regard to functional or recreational use, the social characteristics of users do not differ significantly from the general population. Most young people stop using drugs as they get older – typically when they reach their mid-20s.

19 Canning U, Millward L, Raj T and Warm D (2004) *Drug use prevention among young people: a review of reviews*. London: Health Development Agency

05

THE EFFICACY AND EFFECTIVENESS OF DRUG AND ALCOHOL ABUSE PREVENTION PROGRAMMES DELIVERED OUTSIDE OF SCHOOL SETTINGS

KEY STAKEHOLDERS AND THE ROLE OF PROFESSIONALS

KEY STAKEHOLDERS AND THE ROLE OF PROFESSIONALS

The evidence on what influences the likelihood of young people indulging in harmful, dysfunctional and dependent substance use consistently highlights a potentially complex mix of social, personal and genetic factors. In terms of the delivery of public services, responsibility for addressing the often complex needs of young people at risk traditionally spans different administrative functions. Services delivered under the banners of health, education, criminal justice, housing, employment and children's services can all influence substance abuse outcomes. As a result, the successful delivery of initiatives designed to address substance abuse often depends on the extent to which professionals in those administrative functions have the capacity to coordinate their efforts effectively and are incentivised to do so.

The importance of coordinating different services to provide effective delivery of a comprehensive or holistic service for young people at risk means that messages from research evidence are relevant to all key stakeholders. That said, research in this field tends to focus on four broad areas in which substance abuse professionals work:

Community-based organisations – Typically local service providers and/or recruiters of young people, community organisations are often best placed to assess how interventions need to be delivered to meet local needs most effectively.

Executives, senior managers, commissioners and budget holders – Working in both national and local public bodies, senior decision-makers can have a substantive influence on services by ensuring that resources are allocated on the basis of local need and evidence of effectiveness.

Service providers – These people work in a range of administrative areas including public health, education and specialist drug services, in both treatment and prevention.

Academics, planners and evaluators – These groups need to work collaboratively with service providers, helping them to evaluate the impact of services through the use of appropriate research methods and practicable measures of outcomes.

06

THE EFFICACY AND EFFECTIVENESS OF DRUG AND ALCOHOL ABUSE PREVENTION PROGRAMMES DELIVERED OUTSIDE OF SCHOOL SETTINGS

THE EVIDENCE FOR THE EFFICACY AND EFFECTIVENESS OF DRUG AND ALCOHOL ABUSE PREVENTION PROGRAMMES DELIVERED OUTSIDE OF SCHOOL SETTINGS

THE EVIDENCE FOR THE EFFICACY AND EFFECTIVENESS OF DRUG AND ALCOHOL ABUSE PREVENTION PROGRAMMES DELIVERED OUTSIDE OF SCHOOL SETTINGS

This section sets out details of the evidence under five main headings:

1. Programme design and content
2. Common attributes of effective interventions
3. Programme delivery
4. Research
5. Gaps in the evidence

PROGRAMME DESIGN AND CONTENT

Most of the good quality reviews we found concluded that the evidence base in this area is not strong enough to allow definitive recommendations to be made about optimum programme design and content for substance use prevention interventions. Although several studies used randomised research designs, too many either failed to implement the research methods effectively, or did not report their data adequately. The variable quality of individual studies combined with a lack of consistent results and very few repeat studies of the same interventions mean that, overall, the evidence is inconclusive.

However, there are some promising trends. What evidence there is suggests that community-based interventions can be effective. One US primary study looked at the impact of a community-based programme known as 'Communities That Care' (CTC).[20] CTC is a preventative programme that is designed to reduce substance abuse by tailoring bespoke interventions to the needs of a community based on an assessment of their risk and protective factors. It claims to help communities to address multiple adolescent health and behaviour problems through a focus on empirically identified risk and protective factors. The CTC system comes with a detailed implementation manual, and includes training events and guides for community leaders and board members. The study reported initial findings from a randomised controlled trial. Young people in the control group were 27% more likely to initiate delinquent behaviour than those participating in the CTC programme. The authors concluded that these early findings were promising although, without further evaluative data, not conclusive.

More specifically, there is evidence to suggest that interventions that work with families have a small but positive impact on drug use that lasts into the medium to long term. Furthermore, the evidence generally supports the view that, in order to maximise effectiveness, drug prevention programmes need to be carefully planned and delivered,[21] with clearly specified structure and content. Important structural elements include the length of the programme, planned implementation, and robust management, monitoring and evaluation procedures. Content needs to be supported by good empirical evidence of efficacy, and be tailored to suit the needs of specific target groups.

A good quality systematic review published in the UK in 2006 synthesised results from 17 studies that had used randomised controlled research designs to investigate the effectiveness of non-school-based interventions in preventing or reducing drug use by young people.[22] The studies evaluated four types of intervention: (i) education and skills training; (ii) family

20 Hawkins J (2008) Early effects of Communities That Care on targeted risks and initiation of delinquent behavior and substance use. *Journal of Adolescent Health*, 43(1): 15–22

21 Sumnall H, McGrath Y, McVeigh J, Burrell K, Wilkinson L and Bellis M (2006) *Drug use prevention among young people: evidence into practice briefing*. London: National Institute for Health and Clinical Excellence

22 Gates S (2006) *Interventions for prevention of drug use by young people delivered in non-school settings (Review)*. The Cochrane Collaboration

interventions; (iii) motivational interviewing or brief intervention; (iv) multi-component community interventions. While the research designs were robust, the quality of study implementation and reporting was generally poor, leading the authors to conclude that there was '…insufficient evidence to establish whether any of the interventions considered in this review is effective in preventing or reducing drug use by young people' (p. 10). However, three family interventions, each evaluated in only one study, did show some promise in preventing cannabis use. The three interventions were Focus on Families; the Iowa Strengthening Families Program; and Preparing for the Drug Free Years.

A second UK systematic review published in 2011[23] looked at evidence from 12 randomised controlled trials that examined the effectiveness of family-based universal programmes for the prevention of alcohol misuse in young people. Universal, family-based interventions generally focus on helping the development of good parenting skills including parental support, nurturing behaviours, establishing clear boundaries or rules and monitoring child behaviour. Other elements may include helping parents to teach their children social and peer resistance skills, and developing behavioural norms and positive friendships. Again, while the randomised design of the studies was good, the reporting quality of the research was poor; only 20% of them reported adequate methods of randomisation, while 50% had problems with incomplete data. Because each trial was different in terms of the intervention tested, the population taking part and outcome measures used, it was impossible for reviewers to combine results across studies. The reviewers concluded that the effects of family-based interventions on preventing alcohol misuse are small but generally consistent, and tend to last in to the medium to long term. Without specifying which, they suggested that some family-based programmes can be effective, but that further evaluation needed to focus on programme content and delivery.

A second report from the same authors reviewed evidence from 20 randomised trials that examined the effectiveness of multi-component programmes for alcohol misuse in young people. The review defined multi-component prevention programmes as those delivered in multiple settings, for example, in both school and family settings, typically combining school curricula with a parenting intervention. The reporting quality of the trials was poor, with only 25% reporting adequate randomisation, and only 5% reporting adequate programme allocation concealment. Most of the studies reviewed reported positive effects persisting into the medium and longer term. However, consistency was variable, with a significant proportion of trials reporting no statistically significant effects. Only one out of seven studies provided clear benefits of components delivered in more than one setting. The authors concluded that there is some evidence that multi-component interventions for alcohol misuse prevention in young people can be effective, but little evidence that interventions with multiple components are consistently more effective than interventions with single components. Content and delivery generally need to be subjected to more rigorous evaluation. In particular, they made the point that sample sizes in evaluation studies need to be sufficiently large to detect the relatively small effect sizes commonly reported in intervention programmes. Where small effect sizes can be detected, the data can then potentially be used to inform cost-benefit analyses.[24]

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23 Foxcroft DR and Tsertsvadze A (2011) *Universal family-based prevention programs for alcohol misuse in young people. Cochrane Database of Systematic Reviews*

24 Foxcroft DR and Tsertsvadze A (2011) *Universal multi-component prevention programs for alcohol misuse in young people. Cochrane Database of Systematic Reviews*

Canadian reviewers[25] looked specifically at evidence for the impact that engaging meaningfully with young people generally has on intervention effectiveness. They defined 'engagement' as young people having a shared influence with adults in the design, implementation and assessment of the programme and having a say in decisions made within the programme, noting that the meaningful engagement of young people in harm-reduction interventions should be an ethical imperative. Due to the heterogeneity of the research reports in terms of design, focus, and method of evaluation, they concluded that it was not possible to draw definitive conclusions about whether the engagement of at-risk youth is possible or feasible, or contributes to the efficacy of a harm-reduction intervention.

Further support for the benefits of multi-modal interventions came from a US systematic review that looked specifically at the effectiveness of prevention interventions aimed at reducing cannabis use in youth and young adults.[26] The review aimed to develop a comprehensive understanding of prevention programming by assessing universal, targeted, uni-modal, and multi-modal approaches as well as individual programme characteristics. The overall quality of the studies they found was poor and the impact of interventions on drug use outcomes generally inconsistent. However, the most promising approaches were universal multi-modal programmes that targeted early adolescents (10-13-year-olds), utilised non-teacher or multiple facilitators, were short in duration (10 sessions or less), and implemented booster sessions.

The core components of the multi-modal interventions involved drug prevention programmes predominantly delivered through school curricula, with other programmes utilising a CD-Rom intervention, a child-skills workshop, a motivational interviewing session, and a one-on-one health consultation. Parent- and family-based intervention components were most commonly adopted in conjunction with these core components. The parent components would vary from intensive skills training workshops, to take-home handbooks and information pamphlets that could be used as a basis for discussion. Other additional components included peer involvement, community leadership/mentoring, mass media coverage, and school community development. The most common outcome measure across the reviewed studies was frequency of cannabis use.

A review conducted in The Netherlands looked at the evidence regarding the effectiveness of interventions aimed at the prevention of harmful alcohol and drug use in nightlife settings. The review included only experimental studies; it identified a total of 17 such studies, 15 of which were alcohol related and 2 of which were drug related. Search terms were used to identify four types of programmes: community interventions, alcohol server interventions, educational interventions, and policy interventions.[27] The authors defined a 'community intervention' as one that addressed a problem on multiple levels of the environment at the same time (e.g. availability, social norms, enforcement, etc.). The review found four studies that examined the effectiveness of community interventions. All the community

25 Paterson B and Panessa C (2008) Engagement as an ethical imperative in harm reduction involving at-risk youth. *International Journal of Drug Policy*, 19(1): 24–32

26 Norberg MM (2013) Primary prevention of cannabis use: a systematic review of randomized controlled trials [Electronic version]. PLoS ONE, 8(1):e53187. Retrieved 10 February 2014 from http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0053187

27 Bolier L et al. (2011) Alcohol and drug prevention in nightlife settings: a review of experimental studies. *Substance Use & Misuse*, 46(13): 1569–1591

interventions described included the involvement of a community, staff training, and law enforcement. The four studies looked at interventions designed to (a) prevent drug use in nightlife settings; (b) reduce alcohol service to under-age patrons; (c) prevent alcohol service to intoxicated patrons; and (d) reduce alcohol-related injuries, road traffic accidents, and violent behaviour. The review found that the studies provided some evidence of reductions in high-risk alcohol consumption, alcohol-related injury, violent crimes, access to alcohol by under-age young people, and alcohol being served to already intoxicated people. The authors concluded that community interventions can have preventative effects on alcohol use in nightclub settings. However, they also advised that the conclusions be treated with caution because study results were not always consistent, and 'more gold standard (cost-) effectiveness research is required' (p.1569)

A systematic review conducted in Scotland looked at empirical studies of the impact of interventions designed to reduce multiple risk behaviours in young people.[28] Studies reported mixed results, with programmes having an impact on some measures of risky behaviours, but not others, or having an inconsistent effect across different measures of a behaviour; differential effects by gender; or short-term effects only. In general, programmes that addressed only one domain, such as those seeking to modify individual characteristics only through school curriculum programmes, were less effective at reducing multiple risk behaviour. The authors concluded that interventions that addressed multiple domains (individual and peer, family, school and community) of risk and protective factors were more likely to be effective. The review also noted that interventions delivered to children aged 6-10 years may influence later substance misuse, but that evidence of impact is limited at best. Other evidence for the efficacy of working with whole families comes from a Finnish review which found that family-based and combined interventions had significant impact on adolescent substance use.[29] The most effective intervention was one that addressed family functioning, support, monitoring, normative beliefs, social skills, and self-efficacy. The review also looked at the issue of programme accessibility. It noted that computer- or internet-based interventions have demonstrable impact on reducing substance abuse among adolescents.

A US review of best practice in substance prevention programmes looked at 12 studies that had evaluated the impact of different community-based projects.[30] Eight of the 12 projects were delivered in school and/or community settings; they used skills development strategies that focused on increasing youth resilience. Four other projects were delivered as comprehensive community-wide projects; they were designed to encourage individuals to reduce their risk behaviours and change their social environments. Some of the programmes focused on risk behaviour reduction, whereas others focused more specifically on alcohol, tobacco, and other drug use prevention. The review found that 4 of the 12 interventions had good evidence of efficacy:

The Woodrock Project – Delivered in schools and communities, it included peer mentoring activities.

Project TND – This was classroom based, but with newsletters sent home to families.

Across Age – This was a community-based mentoring project focusing on drug abuse.

Project Northland – Delivered in community settings, it involved supporting parents through providing community taskforce activities.

28 Jackson C, Geddes R, Haw S and Frank J (2012) Interventions to prevent substance use and risky sexual behaviour in young people: a systematic review. *Addiction*, 107(4): 733–747

29 Karki S and Pietila A-M (2012) The effects of interventions to prevent substance use among adolescents: a systematic review. *Journal of Child & Adolescent Substance Abuse*, 21(5): 383–413

30 Cheon J (2008) Best practices in community-based prevention for youth substance reduction: towards strengths-based positive development policy. *Journal of Community Psychology*, 36(6): 761–779

Common elements of best practice from these projects were: clearly articulated goals, at-risk youth targeted, age- and developmental-level-appropriate intervention, community-wide or community-school incorporated settings, structured alternative activities, social behaviour education, peer leadership and mentoring, family involvement and community mobilisation, and media advocacy.

A review of reviews conducted by an Australian team looked at evidence for effective programmes designed to reduce tobacco use, harmful alcohol use and illicit drug use among young people.[31] The evidence suggested that the concerted application of a combination of regulation, early intervention and harm-reduction approaches can be effective. In terms of regulation, controls on price, usually through taxation, were found to be among the interventions with the highest evidence for effectiveness in reducing levels of harm in the population, especially for young people. Taxes on the alcohol or tobacco content of products (e.g., favouring drinks with a lower alcohol content) and indexed for consumer pricing movements are the most effective. Early intervention strategies aim to reduce pathways to drug-related harm by improving conditions for healthy development in the earliest years through to adolescence. Evidence of efficacy from small, well-controlled trials suggested that family home visits for disadvantaged families can reduce risk factors for early developmental deficits and improve childhood development outcomes. Harm-reduction strategies included restrictions on smoking in public places, random breath-testing of drivers, and the use of criminal penalties. The reviewers claimed that evidence supports harm-reduction approaches as an effective strategy, with effects measurable at a population level. However, the review is of limited quality and does not provide details of the research claimed to provide the evidence. The reviewers also made the point that, while certain harm-reduction strategies such as needle exchanges can be effective, they are not always an easy political choice.

A UK literature review looked at programmes designed to address alcohol abuse specifically.[32] Of the several programmes the review identified, evidence was strongest for those who sought to work with whole families, such as the Strengthening Family Program (SFP) developed in the US. Of the standardised family-centred intervention programmes commonly implemented, the SFP is one of the most widely evaluated. The review concluded that the challenge in this field is to integrate the family approach into local strategies and programmes that locate young people's alcohol consumption in the broader context of their overall well-being.

A study conducted on implementation of the SFP in Ireland reported very encouraging results.[33] All 21 study outcome measures provided statistically significant positive results. The effect sizes reported were larger for Irish families compared with results reported in US studies. The authors concluded that SFP is 'quite effective' in improving family relationships and reducing substance abuse among young people. In terms of implementation, the report also noted that the Irish inter-agency collaboration model that was used to deliver the programme was a viable solution to recruitment, retention and staffing in rural communities where finding skilled professionals to implement SFP can be

31 Toumbourou JW, Stockwell T, Neighbors C, Marlatt GA, Sturge J and Rehm J (2007) Interventions to reduce harm associated with adolescent substance use. *The Lancet*, 369: 1391–1401

32 Warwick I and Kwan I (2010) *Reducing alcohol consumption by young people and so improve their health, safety and wellbeing*. London: Centre for Excellence and Outcomes in Children and Young People's Services

33 Kumpfer K, O'Driscoll R and Xie J (2012) Effectiveness of a culturally adapted Strengthening Families Program 12-16 years for high-risk Irish families. *Child and Youth Care Forum*, 41(2): 173–195

difficult (p.173). The SFP is also being adopted in Wales, and subjected to evaluation via a randomised controlled trial; as yet, there does not seem to be any published data on its impact.[34]

Other family-based interventions have also reported effective delivery of outcomes as defined by reduced risk of substance abuse. A study in Chile evaluated the efficacy of a systemic family outreach programme (SFOI) for young drug users.[35] Results showed that young people who received the SFOI intervention showed a five-fold improvement in drug use compared with a control group who received traditional outreach work. A US study evaluated the impact of a programme called Adults in the Making (AIM).[36] AIM is a universal, family-centred preventative intervention designed to improve protective family and self-regulatory processes that promote resilience and deter the use of alcohol and the development of substance use problems among African American young people. The results showed the programme to be effective with high-risk young people through reducing their risk-taking behaviour and changing attitudes and beliefs that made them susceptible to substance abuse.

The efficacy of family-based interventions as a preventative approach is broadly supported by evidence concerning the impact of similar approaches to treatment. For example, a systematic review from the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) concluded that, while relatively costly to deliver, multi-dimensional family therapy delivers promising results in treating problematic drug use among adolescents.[37]

Two approaches to substance abuse prevention have been assessed as having little evidence of positive impact. A review of three randomised controlled trials (RCTs) looked at the evidence for the effectiveness of mentoring on preventing alcohol use.[38] The review found no evidence at low risk of bias to indicate that the efforts of organisations, mentors and the associated community activities resulted in significantly less alcohol or drug use in young people. However, the authors concluded that, rather than the available studies providing conclusive evidence that mentoring is ineffective, more evidence is required from well-designed RCTs as to the impact of mentoring programmes.

A UK study evaluated the effectiveness of youth development programmes in reducing teenage pregnancy, substance use and

34 Holliday J, Segrott J and Rothwell H (2011) Pragmatic trials of non-NHS interventions: experiences from a randomised controlled trial of the Strengthening Families 10-14 UK Programme (SFP10-14 UK) [Electronic version]. Trials 12(Suppl 1):A98. Available at: www.trialsjournal.com/content/12/S1/A98

35 Santis R, Hidalgo CG, Jaramillo A, Hayden V, Armijo I and Lasagna A (2013) A family outreach intervention for engaging young out-of-treatment drug users: pre- versus post-treatment comparison. *Journal of Substance Abuse Treatment*, 44(1): 61–70

36 Brody G (2012) The Adults in the Making program: long-term protective stabilizing effects on alcohol use and substance use problems for rural African American emerging adults. *Journal of Consulting and Clinical Psychology*, 80(1): 17–28

37 EMCDDA (2014) *Multidimensional family therapy for adolescent drug users: a systematic review*. Luxembourg: Publications Office of the European Union

38 Thomas R, Lorenzetti D and Spragins W (2011) Mentoring adolescents to prevent drug and alcohol use. *Cochrane Database of Systematic Reviews*, Issue 11

other outcomes.[39] The study involved 2,724 young people aged 13-15 years deemed by professionals as being at risk. The intervention evaluated was an intensive multi-component youth development programme, including sex and drugs education. The study found no evidence that the intervention was effective in delaying alcohol abuse or cannabis use among young people. The authors recommended that similar interventions should not be implemented in the UK unless subjected to rigorous evaluation using randomised controlled trials.

COMMON ATTRIBUTES OF EFFECTIVE INTERVENTIONS

As has already been noted, the evidence for effective prevention interventions delivered outside of school settings is limited. Variable quality of individual studies, limited quantity and inconsistent findings mean that the area generally lacks a robust evidence base.[40] However, the more promising studies do provide tentative suggestions as to basic elements common across the more effective substance abuse prevention programmes.

A literature review conducted for the Joseph Rowntree Foundation concluded that the available evidence on alcohol abuse prevention programme effectiveness supports the development of integrated, planned community-based systems.[41] These systems need to include effective parent training programmes to manage alcohol use in the home; classroom-based instructions on alcohol use, combined with social and emotional competence programmes; community mobilisation to influence young people's attitudes towards drink and drunken behaviour; and changes to local licensing enforcement that would focus on restricting the sale of alcohol to under-age customers and those already intoxicated. The review concluded that although the available evidence suggests that integrated, multi-component programmes of the types described can be very effective, 'there have been no research projects funded to allow for evaluations of sufficient power to test these ideas in a UK context'. (p.43)

Another review claimed that the available evidence suggests that effective intervention programmes share 10 common elements:[42]

Prevention curricula and activities aimed at altering psychosocial risk factors believed to initiate or maintain substance are as follows:

- Prevention curriculum and activities were aimed at altering psychosocial risk factors believed to initiate or maintain substance use
- a focus on prevention driven by belief in a 'gateway' model of abuse
- targeting of multiple influences and settings
- a programme curriculum delivered over time to span multiple developmental periods
- activities and curricula that are developmentally and socio-culturally sensitive
- significant resources expended on engaging the target population
- a youth component focused on social skills

39 Wiggins M, Bonell C, Sawtell M, Austerberry H, Burchett H, Allen E and Strange V (2009) Health outcomes of youth development programme in England: prospective matched comparison study. *British Medical Journal*, 339(7713): 148–151

40 Calabria B (2011) A systematic and methodological review of interventions for young people experiencing alcohol-related harm. *Addiction*, 106(8): 1406–18

41 Velleman R (2009) *Alcohol prevention programmes: a review of the literature for the Joseph Rowntree Foundation (part two)*. York: Joseph Rowntree Foundation

42 Winters KC, Fawkes T, Fahnhorst T, Botzet A and August G (2007) A synthesis review of exemplary drug abuse prevention programs in the United States. *Journal of Substance Abuse Treatment*, 32(4): 371–380

- a parent component focused on discipline and support
- a structure and philosophy that encourages broad-based stakeholder involvement in decision-making
- Several aspects of the programme have features that promote sustainability.

Other evidence from both reviews and primary research studies generally supports the notion of these 10 common elements of effective prevention programmes.

As noted in the section of the report that looked at programme design and content, the evidence that does exist suggests that community-based interventions that address multiple domains of young people's lives are likely to be the most effective.[43] The available evidence from reviews strongly suggests that programmes designed to address parenting issues can be effective in preventing, or at least reducing, the likelihood of substance abuse. A UK review concluded that the most effective prevention interventions were those that included parental involvement, and focused on developing skills in social competence, self-regulation and effective parenting strategies.[44]

PROGRAMME DELIVERY

Our evidence review has identified several issues with regard to the delivery of intervention programmes: the availability of training and financial resources for community-based organisations; links between effectiveness and inputs; issues of how to engage young people most at risk; and incentivising evaluation to provide evidence of effectiveness.

A US study looked in detail at the capacity of community provision in the state of Hawaii to deliver youth alcohol prevention programmes.[45] Using a self-report measure of capacity, stakeholders were asked how they rated their ability to deliver across six domains. The results showed that community organisations rated funding, sustainability and organisation and workforce skills as important determinants of capacity. A second review noted that one of the common elements of successful prevention interventions was sustainability, at least in part linked to secure funding.[46]

The Joseph Rowntree review of alcohol[47] and the UK Cochrane review[48] both alluded to the importance of having well-trained staff to deliver community programmes rigorously and consistently. Similarly, a US review noted that the most effective drug abuse

43 Foxcroft DR and Tsertsvadze A (2011) Universal multi-component prevention programs for alcohol misuse in young people. *Cochrane Database of Systematic Reviews*

44 Petrie J, Bunn F and Byrne G (2006) Parenting programmes for preventing tobacco, alcohol or drugs misuse in children <18: a systematic review. *Health Education Research*, 22(2): 177–191

45 Williams RJ, Kittinger DS, Ta VM, Nihoa WK, Payne C and Nigg CR (2012) An assessment of community capacity to prevent adolescent alcohol consumption. *Health Promotion Practice*, 13(5): 670–678

46 Winters KC, Fawkes T, Fahnhorst T, Botzet A and August G (2007) A synthesis review of exemplary drug abuse prevention programs in the United States. *Journal of Substance Abuse Treatment*, 32(4): 371–380

47 Velleman R (2009) *Alcohol prevention programmes: a review of the literature for the Joseph Rowntree Foundation (part two)*. York: Joseph Rowntree Foundation

48 Foxcroft DR and Tsertsvadze A (2011) Universal multi-component prevention programs for alcohol misuse in young people. *Cochrane Database of Systematic Reviews*

programmes are delivered by staff with demonstrably high levels of competence.[49]

Another US study evaluated the 'Prevention of adolescent reoccurring violence and alcohol abuse' programme.[50] This is a multi-component package targeted at young people aged 16-21, and their families, who have high levels of anger, or who are victims or perpetrators of violence. The programme is based on an approach known as social learning theory and, according to the author, has good empirical evidence of effectiveness. The study looked specifically at delivery processes and procedures, and concluded that successful outcomes were associated with the key programme inputs of the time and commitment that people were able to put into delivery.

While interventions that include work with families seem to be broadly effective, there remains the problem that those families most likely to benefit are often the most difficult to engage and then sustain involvement.[51] There is some evidence that providing families with a choice of distinct programme formats can contribute to better engagement of families in prevention programmes delivered in health settings.[52] This US study assessed the influence of programme choice versus assignment to programme on study recruitment, retention and adolescent substance use outcomes. Two programmes were used: the SFP and Family Matters (FM). Results showed that programme choice appeared to increase family engagement in programmes.

The other issue relevant to targeting prevention interventions concerns the issue of participation. The groups of young people described as disproportionately at risk of substance abuse are also those who may be less easy to engage with prevention programmes. A small US study looked at family decisions to participate in community-based universal substance abuse programmes.[53] Perhaps not surprisingly, the results showed that the least well-functioning families were the most likely to decline the opportunity to participate in programmes like the SFP. A Finnish review found that computer- or internet-based interventions have been demonstrated to be effective in reducing substance abuse among adolescents.[54]

In an effort to increase retention and engagement, some interventions have been designed to be delivered remotely, either via the internet or via telephone interviews. A US study reported on two-year outcomes for a family-based, internet-delivered

49 Winters KC, Fawkes T, Fahnhorst T, Botzet A and August G (2007) A synthesis review of exemplary drug abuse prevention programs in the United States. *Journal of Substance Abuse Treatment*, 32(4): 371–380

50 Wodarski JS (2010) Prevention of adolescent reoccurring violence and alcohol abuse: a multiple site evaluation. *Journal of Evidence-Based Social Work*, 7(4): 280–301

51 Rosenman R, Goates S and Hill L (2012) Participation in universal prevention programs. *Applied Economics*, 44(2): 219–228

52 Aalborg AA, Miller BA, Husson G, Byrnes HF, Bauman KE and Spoth RL (2012) Implementation of adolescent family-based substance use prevention programmes in health care settings: comparisons across conditions and programmes. *Health Education Journal*, 71(1): 53–6

53 Rosenman R, Goates S and Hill L (2012) Participation in universal prevention programs. *Applied Economics*, 44(2): 219–228

54 Karki S and Pietila A-M (2012) The effects of interventions to prevent substance use among adolescents: a systematic review. *Journal of Child & Adolescent Substance Abuse*, 21(5): 383–413

substance abuse prevention programme for early adolescent Asian American girls.[55] The results showed that relative to a control group, girls in the intervention group reported significantly fewer instances of using alcohol, marijuana, and prescriptive drugs for non-medical purposes. Another US study has reported the development of a randomised controlled trial of an intensive parenting intervention delivered via telephone counselling.[56] The study will involve a national population sample of 1,036 families; it has not yet reported any results.

Finally, a practitioner review posited a funding solution to the lack of empirical evidence of efficacy and effectiveness for prevention programmes. Its suggestion was that funders, in return for making long-term commitments to support successful programmes, should make incremental payments contingent on the provision of good quality empirical data on programme delivery and outcomes.[57]

RESEARCH

Prevention programmes or interventions are more effective when both process and content are driven by good quality empirical evidence. The consensus across most of the reviews we found is that the whole area suffers from a lack of good quality evaluations. This section of the report looks at evidence concerning how the position might be improved.

A good quality, systematic review from the UK specifically highlighted the lack of evidence showing that non-school-based interventions are effective in preventing or reducing drug use by young people.[58] The authors concluded that the reason for the shortfall is the insufficient volume of good quality intervention or outcome studies in the field. Another well-conducted systematic review concluded that many projects in the field are put together on the basis of intuition rather than evidence of effective practice.[59]

Even where evaluations have been conducted, the quality of the research may be questionable. An Australian review looked at the methodological quality of evaluations that have been conducted.[60] The review noted that not only is the quality of existing studies very variable, most evaluations have focused on individually-based interventions delivered almost exclusively in the US. Identifying the most effective interventions to be cognitive behavioural therapy (CBT), family therapy and community reinforcement, the review concluded that more community-based programme evaluations are required not only to improve outcomes for young people, but also to improve the evidence base.

Similar conclusions concerning the lack of robust evaluations were reached in a recent UK review of family-based interventions designed to prevent alcohol misuse in

55 Fang L and Schinke S (2013) Two-year outcomes of a randomized, family-based substance use prevention trial for Asian American adolescent girls. *Psychology of Addictive Behaviors*, 27(3): 788–798

56 Pierce JP, James LE, Messer K, Myers MG, Williams RE and Trinidad DR (2008) Telephone counseling to implement best parenting practices to prevent adolescent problem behaviors. *Contemporary Clinical Trials*, 29(3): 324–334

57 Sumnall H, McGrath Y, McVeigh J, Burrell K, Wilkinson L and Bellis M (2006) *Drug use prevention among young people: evidence into practice briefing*. London: National Institute for Health and Clinical Excellence

58 Gates S (2006) *Interventions for prevention of drug use by young people delivered in non-school settings (Review)*. The Cochrane Collaboration

59 McGrath Y (2006) *Review of grey literature on drug prevention among young people*. London: National Institute for Health and Clinical Excellence

60 Calabria B (2011) A systematic and methodological review of interventions for young people experiencing alcohol-related harm. *Addiction*, 106(8): 1406–18

young people.[61] Where studies have been conducted and published, they lack external validity, often not reporting enough good quality information to make it possible to generalise the findings to other services or settings. The authors of a systematic review[62] recommended that the quality of research in this area could be improved by encouraging researchers to adopt consensus statements published providing guidance on reporting of randomised controlled trials generally.[63]

One issue that has made it difficult to establish a solid evidence base in this area is the lack of consistent outcome measures.[64] When evaluations of prevention interventions use different and often poorly designed outcome measures, it is impossible to aggregate effects across studies, making it difficult to develop a comprehensive evidence as to what works. The Cochrane review cited in the previous paragraph[65] noted that outcomes measures often vary greatly across studies in terms of different tools, instruments, scales, and outcome definitions. For example, the outcomes in studies included in their review of alcohol prevention interventions varied with respect to their definition (e.g., lifetime alcohol use, frequency of drinking, heavy weekly drinking, mean number of drinks, proportion of alcohol users, weekly drinking, frequency of alcohol use, alcohol initiation, lifetime drunkenness, alcohol composite index), and the period to which they pertained (e.g., past month, past seven days, past year, ever).

A measure of community capacity to successfully deliver prevention interventions was investigated in a US study. The 'capacity assessment survey' was given to community groups working in youth alcohol prevention in the state of Hawaii.[66] It is a self-report measure that asks stakeholders to rate the importance of, and their own performance on, six capacity domains: (1) organisation; (2) effectiveness; (3) workforce knowledge and skills; (4) funding and other resources; (5) cultural competence; and (6) sustainability. Stakeholder scores on their own performance are subtracted from their scores on importance to produce a gap score (gap score = importance score - performance score). Assessment of where local community organisations see significant gaps is then used as a strategic planning tool in local capacity building. In the Hawaiian study, local community organisations rated effectiveness as a high priority, rated their sustainability and funding as poor, but believed their workforce skills, organisation, and cultural competence were strong. The authors of the study concluded that the survey provided a very useful insight into community

61 Fernandez-Hermida JR and Calafat A (2012) Assessment of generalizability, applicability and predictability (GAP) for evaluating external validity in studies of universal family-based prevention of alcohol misuse in young people: systematic methodological review of randomized controlled trials. *Addiction*, 107(9): 1570–1579

62 Foxcroft DR and Tsertsvadze A (2011) Universal family-based prevention programs for alcohol misuse in young people. *Cochrane Database of Systematic Reviews*

63 Moher D, Hopewell S, Schulz KF, Montori V, Gøtzsche PC, Devereaux PJ, Elbourne D, Egger M and Altman DG (2010) CONSORT 2010 Explanation and Elaboration: updated guidelines for reporting parallel group randomised trials. *Journal of Clinical Epidemiology*, 63(8): 1–37

64 Dusenbury L, Falco M and Lake A (1997. A review of the evaluation of 47 drug abuse prevention curricula available nationally. *Journal of School Health*, 67:127–32

65 Foxcroft DR and Tsertsvadze A (2011) Universal family-based prevention programs for alcohol misuse in young people. *Cochrane Database of Systematic Reviews*

66 Williams RJ, Kittinger DS, Ta VM, Nihoa WK, Payne C and Nigg CR (2012) An assessment of community capacity to prevent adolescent alcohol consumption. *Health Promotion Practice*, 13(5): 670–678

capacity that provides an effective tool for government planning of support for community organisations.

GAPS IN THE EVIDENCE

The theme that has run throughout the review is the lack of good quality evaluation in this field. A practice review noted, in particular, that the majority of British studies do not evaluate the outcomes of programmes adequately, but focus instead on process.[67] Allied to that are methodological weaknesses typical of many evaluations. These include the lack of adequate control groups, use of sample sizes too small to detect the magnitude of change typically achieved, and the use of poorly defined outcomes measures that rely on self-reported drug and alcohol use.[68,69]

A good quality UK review noted that while many multi-component psychosocial and developmental prevention interventions are effective, some are not.[70] Establishing why these differences are evident requires more robust investigation of the specific content of prevention programmes and the context of their delivery. Another review concluded that because the kind of multi-component programmes that have demonstrable efficacy and effectiveness are expensive to deliver, it is important that robust evaluation and outcome measurement are used. This will enable the development of cost-benefit analyses to demonstrate to funders that these programmes are worth the expenditure involved.[71] Further improvement in study design, data analysis and reporting, in line with accepted guidance, is required in order to address these substantive gaps.

As always, when considering the current state of the evidence and the accompanying evidence gaps, it is worth noting that the absence of evidence should not be taken as evidence of absence. The fact that there is currently not good evidence to support the efficacy and effectiveness of many prevention interventions does not mean they do not work. Rather, it reflects the fact that, in many cases, robust evaluations capable of providing the requisite evidence have not been conducted. To address these gaps, one review suggested that those responsible for making funding decisions, in collaboration with practitioners and researchers, should move the evidence agenda forward by providing guidance on how to standardise intervention evaluations.[72] That guidance needs to ensure that key elements of programme content and delivery, including descriptions of local contexts, are measured and recorded in ways that would allow for results to be aggregated across studies.

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67 Sumnall H, McGrath Y, McVeigh J, Burrell K, Wilkinson L and Bellis M (2006) *Drug use prevention among young people: evidence into practice briefing*. London: National Institute for Health and Clinical Excellence

68 Thomas R, Lorenzetti D and Spragins W (2011) Mentoring adolescents to prevent drug and alcohol use. *Cochrane Database of Systematic Reviews*, Issue 11

69 White D and Pitts M (1998) Educating young people about drugs: a systematic review. *Addiction*, 93: 1475–87

70 Foxcroft DR and Tsertsvadze A (2011) Universal multi-component prevention programs for alcohol misuse in young people. *Cochrane Database of Systematic Reviews*

71 Gates S (2006) *Interventions for prevention of drug use by young people delivered in non-school settings (Review)*. The Cochrane Collaboration

72 Salvo N, Bennett K, Cheung A, Chen Y, Rice M, Rush B, Bullock H and Bowlby A (2012) Prevention of substance use in children/adolescents with mental disorders: a systematic review. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 21(4): 245–252

07

THE EFFICACY AND EFFECTIVENESS OF DRUG AND ALCOHOL ABUSE PREVENTION PROGRAMMES DELIVERED OUTSIDE OF SCHOOL SETTINGS

CONCLUSIONS

CONCLUSIONS

Epidemiological evidence suggests that most young people stop using recreational drugs by the time they reach their mid- to late-20s. However, for significant minorities, drug and alcohol abuse continues to pose threats to both physical and mental health. Among these people, certain disadvantaged groups tend to be over-represented. They include the homeless, the poor, young offenders and children excluded from school.

Links between substance abuse, health, and criminal behaviour mean that those for whom drink and drugs are problematic can harm not just themselves, but their families and their communities.

In many cases, substance abuse co-exists with other social and psychological problems. As a consequence, the most successful prevention interventions tend to be those that work across several different domains of an individual's life. Effective substance abuse prevention programmes have the potential to address issues of health-related behaviours, health inequalities and social exclusion.

This evidence review has presented a range of key messages for different stakeholders. It has identified areas of weakness in the evidence , but has provided support for community-based prevention interventions that address the range of social and personal issues typically faced by young people who experience difficulties arising from substance abuse. The potential of this multi-dimensional or multi-model approach is reflected in drug prevention quality standards produced by the EMCDDA,[73] which state: '...the challenge of prevention lies in helping young people to adjust to their behaviour, capacities, and well-being in fields of multiple influences such as social norms, interaction with peers, living conditions and their own personality traits'. (p.19)

More specifically, the review has identified several interventions that include a focus on working with the families of young people. They typically include work to address family functioning, parental support, monitoring children's behaviour, their normative beliefs, social skills, and self-efficacy. Evidence for impact of these family interventions is limited but, nevertheless, promising. Table 1 provides details of these promising community- and family-based interventions.

The consensus in the research literature is that the efficacy and effectiveness of interventions, such as those listed in Table 1, need to be investigated by more good quality evaluations. Policymakers and service commissioners can make a real contribution to strengthening the evidence in the drug and alcohol abuse prevention field by incentivising providers to evaluate the impact of their work, and using the results to ensure that funding is spent on what works.

73 EMCDDA (2012) *European drug prevention quality standards*. Luxembourg: Publications Office of the European Union

TABLE 1: KEY FEATURES OF PROMISING COMMUNITY- AND FAMILY-BASED INTERVENTIONS

INTERVENTION	KEY FEATURES
Communities That Care (CTC)	CTC focuses on empirically identified risk and protective factors. The CTC system comes with a set of manuals, and includes training events and guides for community leaders and board members. A community prevention coalition (called 'cccc' in CTC) identifies elevated risk factors and depressed protective factors in the community, and selects and implements a set of tested preventive interventions to reduce elevated risk factors and promote protective factors.
Strengthening Families Program (SFP) [formerly the Iowa Strengthening Families Program]	SFP consists of parenting skills, children's life skills, and family skills training courses taught together in 14, 2-hour group sessions, preceded by a meal, that includes informal family practice time and group leader coaching. SFP was designed in 14 sessions to ensure sufficient dosage to promote behaviour change in high-risk families. A shorter 7-session SFP 10-14 version is available for general/universal population families.
Focus on Families	Focus on Families (FOF) is a programme that combines parent skills training and home-based case management services to reduce parents' risk for relapse and children's risk for substance use, while enhancing protection. It includes a parenting curriculum, taught by a professional team, where parents are taught different skills and provided with home practice activities during each session. Topics include relapse, communication, family management, and teaching your children skills.
Preparing for the Drug Free Years (PDFY)	PDFY is a programme for parents designed to reduce adolescent drug use and behaviour problems. Its skill-based curriculum helps parents to address risks that can contribute to drug abuse while strengthening family bonding by building protective factors. It emphasises the active involvement of young people in family, school, and community, focusing on strengthening family bonds and establishing clear standards for behaviour, helping parents to manage their child's behaviour while encouraging their development. Sessions focus on family relationships and communication, family management skills, and resolution of family conflict.
The Woodrock Youth Development Project (YDP)	The Woodrock YDP is a programme of intervention strategies and support systems that aims to improve problem-solving and coping skills, raise awareness about the dangers of substance abuse, and improve self-perception through increasing academic achievement and fostering cultural pride. The YDP aims to prevent substance abuse by combining three major substance-abuse prevention strategies: (1) psychosocial family and community supports, (2) human relations and skills-building workshops, and (3) drug-resistance training.

INTERVENTION	KEY FEATURES
Across Ages	Across Ages is aimed at young people aged 9-13. It pairs older adult mentors (55 years and older) with young adolescents. The overall goal of the programme is to increase protective factors to prevent, reduce, or delay the use of alcohol, tobacco, and other drugs and the problems associated with substance use. It comprises four intervention components: (1) a minimum of 2 hours per week of mentoring by older adults who are recruited from the community, matched with youth, and trained to serve as mentors; (2) 1-2 hours of weekly community service by youth, including regular visits to frail elderly people in nursing homes; (3) monthly weekend social and recreational activities for youth, their families, and mentors; and (4) 26 45-minute social competence training lessons taught weekly in the classroom.
Project Northland	This is a 3-year primary prevention programme designed to help young people to understand and resist social pressures to drink alcohol or use other drugs. The goal during the first year is to establish communication between parents and students about alcohol use. During the second year, students are introduced to ways to resist and counteract influences to use alcohol. The goal during the third year is to introduce students to groups within the community that play a role in alcohol use and availability, as well as to teach community-action skills to students and parents. Intervention activities include parent involvement/education programmes, behavioural curricula, peer participation, and community taskforce activities.
Systemic Family Outreach	Systemic Family Outreach Intervention (SFOI) aims to improve family functioning by providing (a) instruction in relationship, motivation, and family dynamics strategies; (b) restructuring techniques with the young drug user and his/her family, (c) building an emotional family environment with less negativity, restructuring the family organisation, and managing limits, roles, and rules; and (d) facing unresolved family grief and encouraging crisis intervention and connection with health networks in the community.
Adults in the Making (AIM)	Developed for African-American families, Adults in the Making (AIM) teaches parents how to provide developmentally appropriate emotional and instrumental support, to provide ongoing racial socialisation that includes strategies for dealing with discrimination, to provide occupational and educational mentoring, to promote autonomy and adult responsibility, and to encourage responsible decisions about risk behaviours. Young people are taught to develop a future orientation, to plan to meet goals, to identify people in their communities who could help them attain goals, to cope with barriers and racial discrimination, and to formulate self-care strategies.
Prevention of adolescent reoccurring violence and alcohol abuse programme	This is a multi-component alcohol abuse and violent behaviour prevention strategy, targeted to young people aged 16-21 who have high levels of anger, or who are victims/perpetrators of violence, and their families. A standardised treatment manual is available. The intervention provides a format for presenting anger management and substance abuse knowledge, using small group techniques, to demonstrate the knowledge gained. Work with parents focuses on their role in child behaviour maintenance, problem-solving skills, communication training and positive reinforcement techniques. The strategic objective is to support the adolescent change efforts and enhance parent-child relationships.

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THE EFFICACY AND EFFECTIVENESS OF DRUG AND ALCOHOL ABUSE PREVENTION PROGRAMMES DELIVERED OUTSIDE OF SCHOOL SETTINGS

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THE EFFICACY AND EFFECTIVENESS OF DRUG AND ALCOHOL ABUSE PREVENTION PROGRAMMES DELIVERED OUTSIDE OF SCHOOL SETTINGS

APPENDICES

APPENDIX A: RAPID EVIDENCE ASSESSMENT METHODOLOGY

Databases searched

Our search partners from the King's College Information Retrieval Unit searched the following databases:

MEDLINE

MEDLINE is the US National Library of Medicine's premier bibliographic database that contains over 19 million references to journal articles in life sciences with a concentration on biomedicine. It currently holds citations from approximately 5,600 worldwide journals in 39 languages; 60 languages for older journals. Since 2005, 2,000-4,000 completed references are added each day with 700,000 added each year. The subject scope of MEDLINE is biomedicine and health, broadly defined to encompass those areas of the life sciences, behavioural sciences, chemical sciences, and bioengineering needed by health professionals and others engaged in basic research and clinical care, public health, health policy development, or related educational activities.

SOCIAL POLICY & PRACTICE

The Social Policy & Practice database covers all aspects of economic and social development, social administration, social services and care management, including the subject areas of public and social policy, public health, social care, community development, mental and community health, homelessness, housing, crime, equalities, children and families, and older people. It comprises over 320,000 bibliographic records, with a significant number citing important "grey literature" sources such as semi-published reports, surveys and statistics.

APPLIED SOCIAL SCIENCES INDEX AND ABSTRACTS

Applied Social Sciences Index and Abstracts (ASSIA) is an indexing and abstracting tool covering health, social services, psychology, sociology, economics, politics, race relations and education. It provides a comprehensive source of social science and health information that is updated monthly. ASSIA currently contains over 375,000 records from over 500 journals published in 16 different countries, including the UK and US.

HMIC – HEALTH MANAGEMENT INFORMATION CONSORTIUM

The Health Management Information Consortium (HMIC) database brings together the bibliographic database of two UK health and social care management organisations: the Department of Health's Library and Information Services (DH-Data) and King's Fund Information and Library Service. DH Data is the database of the Department of Health's Library and Information Services and contains in excess of 174,000 records relating to health and social care management information. The King's Fund Information and Library Service database holds records of the material in the library of the King's Fund Information and Library Service, an independent health charity working to develop and improve the management of health and social care services. Its database contains over 70,000 records (1979 to date).

WEB OF KNOWLEDGE

Web of Knowledge is an academic citation indexing and search service, which is combined with web linking. It covers the sciences, social sciences, arts and humanities. The database includes 23,000 academic and scientific journals, 110,000 conference proceedings and 9,000 websites.

PSYCINFO

PsycINFO, formerly Psychological Abstracts, is an abstracting and indexing database run by the American Psychological Association (APA). It contains more than 3 million records devoted to research literature in the behavioural sciences and mental health including peer-reviewed journals, books, and dissertations. The database contains more than 57 million cited references, including almost 3 million from the period 1920 to 1999.

EMBASE

Embase is the most comprehensive international biomedical database for biomedical researchers. It enables tracking and retrieval of information on drugs and diseases from pre-clinical studies to searches on critical toxicological information. Its biomedical database has over 25 million indexed records from thousands of peer-reviewed journals. Embase indexes articles published in over 90 countries and 40 languages, with the database growing at a rate of over 1 million records a year.

SOCIOLOGICAL ABSTRACTS

Sociological Abstracts provides abstracts from the international literature in sociology and related disciplines in the social and behavioural sciences. It covers journal articles and citations to book reviews drawn from over 1,800 journals, as well as providing abstracts of books, book chapters, dissertations, and conference papers.

SOCIAL SERVICES ABSTRACTS

Social Services Abstracts provides bibliographic coverage of current research focused on social work, human services, and related areas, including social welfare, social policy, and community development. The database abstracts and indexes over 1,300+ serial publications and includes abstracts of journal articles and dissertations, and citations to book reviews. It currently contains over 155,505 records, adding new citations at the rate of 5,500 a year.

We conducted searches to include any publications produced in English. We limited the years of publication to 2008 onwards. We searched for papers across the full range of the Centre for Reviews and Dissemination (CRD) hierarchy of evidence[74] – from well-designed RCTs to opinions of respected authorities, descriptive studies and reports of expert committees.

74 Centre for Reviews and Dissemination (2008). Systematic Reviews: CRD's guidance for undertaking reviews in health care. York: University of York

Searching

We searched the databases in the following order, refining the search terms as we proceeded and also the periods searched.

DATABASE	SEARCH TERMS	NO. OF HITS
MEDLINE	((efficacy or effective*) and (prevent* or control* or rehabilit*) and ((drug or substance) and abuse) and systematic review*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier] (94) 2 limit 1 to (humans and yr="2008 -Current")	55
Social Policy & Practice	((efficacy or effective*) and (prevent* or control* or rehabilit*) and ((drug or alcohol or substance) and abuse)).mp. [mp=abstract, title, publication type, heading word, accession number] (319) 8 limit 7 to yr="2008 -Current"	122
Social Policy & Practice	((community or outreach or project develop*) and ((drug or alcohol or substance) and abuse) and (treatment or recovery or quality of life or rehab*)).mp. [mp=abstract, title, publication type, heading word, accession number] (299) 4 limit 3 to yr="2008 -Current"	129
Web of Knowledge	Papers citing Gates's seminal work of 2006	21
Social Policy & Practice	2006 – 2013 with NOT set 1. (schools or colleges or methadone or needle* or Opiate Substitution or OST or buprenorphine or detox* or residential treatment).mp. [mp=abstract, title, publication type, heading word, accession number] (31754) 2. limit 1 to yr="2006 -Current" (13098) 3 ((Adolescen* or teenage* or youth or young) and (efficacy or effective*) and (prevent* or control* or rehabilit* or wellbeing or reintegration) and ((drug or alcohol or substance) and (abuse or misuse))).mp. [mp=abstract, title, publication type, heading word, accession number] (368) 4. limit 3 to yr="2006 -Current" (186) 5. 4 not 2 (140)	140

DATABASE	SEARCH TERMS	NO. OF HITS
ASSIA	2006-2013 efficiency full strategy with NOT set S3((Adolescen* OR teenage* OR youth OR young) AND (efficacy OR effective*) AND (prevent* OR control* OR rehabilit* OR wellbeing OR reintegration) AND ((drug OR alcohol OR substance) AND (abuse OR misuse)) AND pd(2006-2013)) NOT (schools OR colleges OR methadone OR needle* OR Opiate Substitution OR OST OR buprenorphine OR detox* OR residential AND pd(2006-2013)) S2 schools OR colleges OR methadone OR needle* OR Opiate Substitution OR OST OR buprenorphine OR detox* OR residential AND pd(2006-2013) S1 (Adolescen* OR teenage* OR youth OR young) AND (efficacy OR effective*) AND (prevent* OR control* OR rehabilit* OR well being OR reintegration) AND ((drug OR alcohol OR substance) AND (abuse OR misuse)) AND pd(2006-2013)	123
Social Policy & Practice	Dropout rates 1. ((Adolescen* or teenage* or youth or young) and ((drug or alcohol or substance) and (abuse or misuse)) and (drop out or dropout)).mp. [mp=abstract, title, publication type, heading word, accession number] (21) 2. limit 1 to yr="2006-Current" (9) 3. ((drug or alcohol or substance) and (abuse or misuse) and (dropout or dropout)).mp. [mp=abstract, title, publication type, heading word, accession number] (45) 4. limit 3 to yr="2006-Current" (19)	19
ASSIA	Dropout rates 2006-2013 1. ((Adolescen* or teenage* or youth or young) and ((drug or alcohol or substance) and (abuse or misuse)) and (drop out or dropout)).mp. [mp=abstract, title, publication type, heading word, accession number] (21) 2. limit 1 to yr="2006-Current" (9) 3. ((drug or alcohol or substance) and (abuse or misuse) and (drop out or dropout)).mp. [mp=abstract, title, publication type, heading word, accession number] (45) 4. limit 3 to yr="2006-Current" (19)	24

DATABASE	SEARCH TERMS	NO. OF HITS
HMIC Health Management Information Consortium	1. ((efficacy or effective*) and (prevent* or control* or rehabilit* or wellbeing or harm reduction or reintegration) and ((drug or alcohol or substance) and (abuse or misuse or addict*))).mp. [mp=title, other title, abstract, heading words] (337) 2. limit 1 to (english language and yr="2010 -Current") [Limit not valid; records were retained] (73) 3. (schools or colleges or methadone or needle* or Opiate Substitution or OST or buprenorphine or detox* or residential treatment or older people or gambl* or betting or game*).mp. [mp=title, other title, abstract, heading words] (23312) 4. limit 3 to yr="2010-Current" (3135) 5. 2 not 4 (63) 6. (Adolescen* or teenage* or youth or young or child*).mp. [mp=title, other title, abstract, heading words] (41139) 7. limit 6 to yr="2010-Current" (4926) 8. 5 and 7 (15) 9. limit 8 to yr="2011-Current" (7) 10. (smoking or tobacco or mice or rats or brazil* or afric* or asia*).mp. [mp=title, other title, abstract, heading words] (12062) 11. limit 10 to yr="2011-Current" (1491) 12. 9 not 11 (6)	6
Web of Knowledge	2011 – 2013 Full strategy with NOT set (Adolescen* or teenage* or youth or young or child*) and (efficacy or effective*) and (prevent* or control* or rehabilit* or well being or harm reduction or reintegration) and ((drug or alcohol or substance) and (abuse or misuse or addict*)) Not (schools or colleges or methadone or needle* or Opiate Substitution or OST or buprenorphine or detox* or residential treatment or older people or gambl* or betting or game* or mice or rats or injection*)	117

DATABASE	SEARCH TERMS	NO. OF HITS
PsycINFO	1. ((efficacy or effective*) and (prevent* or control* or rehabilit* or well being or harm reduction or reintegration) and ((drug or alcohol or substance) and (abuse or misuse or addict*))). mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (6136) 2. limit 1 to (English language and yr="2010-Current") (2046) 3. (schools or colleges or methadone or needle* or Opiate Substitution or OST or buprenorphine or detox* or residential treatment or older people or gambl* or betting or game*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (106303) 4. limit 3 to yr="2010-Current" (45406) 5. 2 not 4 (1671) 6. (Adolescen* or teenage* or youth or young or child*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (343112) 7. limit 6 to yr="2010-Current" (134443) 8. 5 and 7 (473) 9. limit 8 to yr="2011-Current" (345) 10. (smoking or tobacco or mice or rats or brazil* or afric* or asia*).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] (160898) 11. limit 10 to yr="2011-Current" (51532) 12. 9 not 11 (289)	194
Embase	((efficacy or effective*) and (adolescen* or teenage* or youth or young or child*) and (prevent* or control* or rehabilit* or wellbeing or harm reduction or reintegration) and ((drug or alcohol or substance) and (abuse or misuse or addict*))) not (schools or colleges or methadone or needle* or Opiate Substitution or OST or buprenorphine or detox* or residential treatment or older people or elderly or gambl* or betting or game* or inject* or rats or mice or asia* or afric* or far east)).ti, ab.limit 1 to yr="2011-Current"	236

DATABASE	SEARCH TERMS	NO. OF HITS
MEDLINE	((efficacy or effective*) and (adolescen* or teenage* or youth or young or child*) and (prevent* or control* or rehabilit* or wellbeing or harm reduction or reintegration) and ((drug or alcohol or substance) and (abuse or misuse or addict*))) not (schools or colleges or methadone or needle* or Opiate Substitution or OST or buprenorphine or detox* or residential treatment or older people or elderly or gambl* or betting or game* or inject* or rats or mice or asia* or afric* or far east)).ti,ab. limit 1 to yr="2011-Current"	178
Social Services Abstracts	((Adolescen* OR teenage* OR youth OR young OR child*) AND (efficacy OR effective*) AND (prevent* OR control* OR rehabilit* OR wellbeing OR harm reduction OR reintegration) AND ((drug OR alcohol OR substance) AND (abuse OR misuse OR addict*)) AND pd(2011-2013)) NOT (schools OR colleges OR methadone OR needle* OR Opiate Substitution OR OST OR buprenorphine OR detox* OR residential treatment OR older people OR gambl* OR betting OR game* OR asia* OR chin* OR india* OR rats OR mice AND pd(2011-2013))	59
Soc Abs	Full strategy with NOT set ((Adolescen* OR teenage* OR youth OR young OR child*) AND (efficacy OR effective*) AND (prevent* OR control* OR rehabilit* OR well being OR harm reduction OR reintegration) AND ((drug OR alcohol OR substance) AND (abuse OR misuse OR addict*)) AND pd(2011-2013)) NOT (schools OR colleges OR methadone OR needle* OR Opiate Substitution OR OST OR buprenorphine OR detox* OR residential treatment OR older people OR gambl* OR betting OR game* OR asia* OR chin* OR india* OR rats OR mice AND pd(2011-2013))	13
	TOTAL	**1,430**

INCLUSION AND EXCLUSION CRITERIA

Inclusion criteria

CRITERIA	DESCRIPTION	EXAMPLE
Out-of-school prevention programmes	Primary studies and reviews of literature related to out-of-school drug and alcohol prevention programmes for young people	Gates, S (2009) Interventions for prevention of drug use by young people delivered in non-school settings *Interventions for prevention of drug use by young people delivered in non-school settings (Review)* The Cochrane Collaboration
Prevention programmes delivered by peers	Studies and reviews that relate to prevention programmes that are delivered by peers and how young people 'script' their own risk	
Direct outcomes of prevention programmes	Studies and reviews relating to the direct outcomes of prevention programmes: reduction in drug and alcohol use and abstention	
Secondary/indirect outcomes of prevention programmes	Studies and reviews related to the wider outcomes of prevention programmes, e.g., intention to use, knowledge and attitudes to use	
Cost-benefit evaluation of prevention programmes	Studies and reviews that provide an economic cost-benefit analysis of prevention programmes	
Dropout rates of prevention programmes	Studies and reviews that investigate dropout rates of drug and alcohol prevention programmes for young people, studies that present and/or evaluate alternative strategies for the delivery of prevention programmes that improve dropout rates for young people	
Prevention programmes in recreational/nightlife settings	Studies and/or reviews that evaluate interventions in nightlife/clubbing settings including prevention and harm reduction	

Exclusion criteria

CRITERIA	DESCRIPTION	EXAMPLE
Prevention programmes out of the school setting aimed at children below the age of 16	Studies and reviews that relate to out-of-school prevention programmes for children under the age of 16	Okulicz-Kozaryn K and Foxcroft D (2012) Effectiveness of the Strengthening Families Programme 10-14 in Poland for the prevention of alcohol and drug misuse: protocol for a randomized controlled trial. *BMC Public Health* Vol.12
Drug courts	The impact of drug courts on preventing reoffending and substance misuse	Wittouck C *et al*. (2013) The impact of drug treatment courts on recovery: a systematic review. *The Scientific World Journal*. 2013:493679
Hepatitis C-related interventions	Studies related to interventions to prevent the spread of hepatitis C, e.g., needle exchange programmes, rather than drug and alcohol misuse prevention	John-Baptiste A, Yeung MW *et al*. (2012) Cost effectiveness of hepatitis C-related interventions targeting substance users and other high-risk groups: a systematic review. *PharmacoEconomics*. 30(11):1015-34
Residential treatment communities	Studies and reviews that relate to prevention through residential treatment communities	Malivert M, Fatseas M *et al*. (2012) Effectiveness of therapeutic communities: a systematic review. *European Addiction Research*. 18(1):1-11
Harm reduction	Studies and reviews that relate to harm reduction of substance use rather than prevention	Toumbourou JW *et al*. (2007) Interventions to reduce harm associated with adolescent substance use. *The Lancet*, 369:1391–1401
Homelessness in youth	Studies and reviews that relate specifically to homelessness in youth rather than homelessness as a risk factor in youth substance misuse	Altena AM, Brilleslijper-Kater SN and Wolf JL (2010) Effective interventions for homeless youth: a systematic review. *American Journal of Preventive Medicine*. 38(6):637-45
Drug enforcement	Studies and reviews that relate to the enforcement of drug-related law and policy	Street-level drug enforcement: what works briefing College of Policing [UREPORT] AN: 395013-333019

CRITERIA	DESCRIPTION	EXAMPLE
Drug testing by police and alcohol arrest programmes by the police	Studies and reviews that relate to prevention programmes by the police rather than in the community, e.g., drug testing of ex-offenders and subsequent forced treatment programmes and alcohol arrest programmes by police	Wilson A and Hodgson P (2013) Elusive evidence: hard-to-reach drug users and the missing values in drug policy decision-making. *Howard Journal of Criminal Justice*, Vol 52 No 1 Feb 2013 McCracken K *et al*. (2012) Evaluation of Alcohol Arrest Referral pilot schemes (phase 2) (Occasional paper 102) Home Office
Prevention programmes for the wider adult population aged over 25	Literature related to prevention of drug and alcohol use for adults over the age of 25, prevention programmes set within prison, prevention programmes for older people	Scottish Government (2008) *The road to recovery: a new approach to tackling Scotland's drug problem*. Scottish Government Ritchie G (2011) Outcomes of a drug and alcohol relapse prevention programme in a population of mentally disordered offenders. *British Journal of Forensic Practice*. 13(1), February 2011, pp.32-43 Mortimor J (2011) Never too late: older people and alcohol misuse. Working with Older People. 15(2), 2011, pp.71-79

APPENDIX B: QUALITY SCORES FOR PRIMARY RESEARCH STUDIES

Quality appraisal criteria for primary research studies included in the REA.

	QUALITY APPRAISAL CRITERIA
Research rationale	Convincing rationale for overall research strategy and how it was designed to meet study aims/research questions, including comprehensive review of previous research and justification for collecting new primary data
Research design	Good discussion of main features of research design and strengths and weaknesses of data sources. Research design shows robustness (reliable and replicable) and validity Implications of limitations taken into consideration in the analysis and findings. Ethics, e.g., confidentiality, anonymity, data protection, instructions to participants, impartiality
Sampling	(a) Does the study describe locations and population(s) of interest and how and why chosen (e.g., typical or extreme case or diverse constituencies) to allow comparisons be made? (b) Was the sampling strategy appropriate to research question, e.g., purposive vs random; is large enough for generalisability if required? (c) Is the achieved sample representative of the population of interest? Is there information about the response rate?
Data collection	Detailed description of data and collection methods used, explaining any limitations and methods to maximise inclusion/limit bias Reliability – was there pilot testing of tools/methods; did more than one person collect data?
Data analysis	Explicit and appropriate analytic procedure for processing raw data into results/themes that could be repeated with a similar methodology Reliability – was there triangulation of data analysis (e.g., multiple scorers or coders)
Interpretation and reporting of results	Study reports findings on all variables or concepts investigated and includes discussion/mention of any negative cases and outliers and confounding/moderating variables Discussion of mechanisms through which effects happen, with examples from the data Limitations – discusses importance of study's context and biases/flaws in design
Credibility of conclusions	Conclusions presented are supported by study findings and previous research and theory (where appropriate) Evidence of openness to new/alternative ways of viewing subject/theories/assumptions An attempt is made to quantify/explain the strength or value of the findings, if appropriate

Criteria for each level of the Maryland Scientific Methods Scale (SMS)

1. Correlation between a prevention programme and a measure of crime at one point in time (e.g., areas with CCTV have lower crime rates than areas without CCTV);
2. Measures of crime before and after the programme, with no comparable control conditions (e.g., crime decreased after CCTV was installed);
3. Measures of crime before and after the programme in experimental and control conditions (e.g., crime decreased after CCTV was installed in an experimental area, but there was no decrease in crime in a comparable area);

Quality appraisal scores for primary research studies included in the REA. Each study is rated 0-2 for each quality appraisal criterion.

	REFERENCE	RESEARCH RATIONALE	RESEARCH DESIGN	SAMPLING	DATA COLLECTION
1.	Aalborg AE *et al*. (2012)	2	1	1	1
2.	Brody G *et al*. (2012)	2	2	2	2
3.	Fang L and Schinke S (2013)	2	2	2	2
4.	Hawkins J (2008)	2	2	2	2
5.	Holliday J, Segrott J and Rothwell H (2011)	0	0	0	0
6.	Kumpfer K, O'Driscoll R and Xie J (2012)	2	2	2	2
7.	Pierce J *et al*. (2008)	2	2	2	2
8.	Rosenman R, Goates S and Hill L (2012)	2	2	2	1
9.	Santis R, Hidalgo CG, Jaramillo A, Hayden V, Armijo I and Lasagna A (2013)	1	2	2	2
10.	Wiggins M, Bonell C, Sawtell M, Austerberry H, Burchett H, Allen E and Strange V (2009)	2	1	1	1
11.	Williams RJ, Kittinger DS, Ta VM, Nihoa WK, Payne C and Nigg CR (2012)	2	2	2	1
12.	Wodarski JS (2010)	1	1	1	1

4. Measures of crime before and after in multiple experimental and control units, controlling for the variables that influence crime (e.g., victimisation of premises under CCTV surveillance decreased compared with victimisation of control premises, after controlling for features of premises that influenced their victimisation)
5. Random assignment of programme and control conditions to units (e.g., victimisation of premises randomly assigned to have CCTV surveillance decreased compared with victimisation of control premises).

The authors of the SMS suggest that confidence in intervention results is highest at level 5 and level 3 should be the minimum level required to achieve reasonably accurate results.

DATA ANALYSIS	INTERPRETATION AND REPORTING OF RESULTS	CREDIBILITY OF CONCLUSIONS	OVERALL SCORE	COUNTRY OF STUDY	STUDY METHODS	MARYLAND SCORE* IF APPROPRIATE
1	1	1	8	US	Randomised control trial, allocating to prevention programmes, mixed methods face-to-face and telephone interviewing	5
2	2	2	14	US	Randomised control trial of allocation to prevention programme and longitudinal evaluation of outcomes	5
2	2	2	14	US	Randomised control trial and longitudinal outcome measures	5
2	2	2	14	US	Randomised control trial	5
0	0	0	0	Wales UK	Randomised control trial	Unable to classify
2	2	2	14	Ireland	Quasi-experimental: 2-group pre- and post-test methodology	4
2	2	2	14	US	Randomised control trial	5
2	2	2	2	US	Expected utility theory modelling of survey data	4
2	1	2	12	Chile	A prospective, quasi-experimental design	3
2	2	2	11	UK	Prospective matched comparison study.	3
2	2	2	13	US	Survey	n/a
2	2	1	9	US	Pre-test/post-test design with random assignment to conditions	3

APPENDIX C: QUALITY SCORES FOR REVIEWS

Quality appraisal criteria for reviews included in the REA.

GENERIC QUESTIONS	QUALITY APPRAISAL
Review method	Comprehensive review of previous research and justification for reviewing multiple sources of data rather than conducting new primary research (including reference to other reviews/metas)
	Clear identification of the research question and study aims, its context and objectives
	Was the review systematic, i.e. was there a clear process that is supported by other evidence?
	Were appraisal tools/methods piloted, including search?
	Reliability – triangulation of search, coding and analysis/appraisal – were multiple researchers used and agreement rates provided? How were differences in coding/ scores resolved?
	SUBSCORE:
Search strategy	Detailed explanation of search strategy and boundaries, including explanation of why key terms and synonyms were used (i.e. could the search be easily replicated to find similar results/update?)
	Sources – was a wide range of databases and websites searched covering multiple sources of data?
	If subsequent searches were performed on references within the initial search or contact with experts, are there details of the process and criteria used to propose inclusion?
	External validity (robustness of search) – are the databases used likely to ensure a comprehensive search with maximised inclusion and limited bias? If there are few negative findings (for effect studies) have unpublished articles been sourced?
	Non-English-language studies – if not included is there a detailed explanation (e.g., phenomenon specific to UK or cross-cultural studies would confound results)?
	Accounts for or acknowledges publishing bias towards significant results
	Was the search timeline explicitly stated and appropriate to the scope of the research question, considering the number of relevant studies published?

GENERIC QUESTIONS	QUALITY APPRAISAL
	SUBSCORE:
Data collection (SIFT)	Description of studies and how and why chosen – details of pre-determined sift criteria that could be replicated
	Description of population(s) of interest and how sample selection (s) relates to it and allows comparisons to be made
	If there are too many studies to reasonably include in a review or meta, was a random sample chosen through an explicit system?
	Description of methods to maximise inclusion/secure representative coverage and limit potential for sample bias
	Did the search criteria give sufficient attention to ethical issues – to the extent that it limits potential for bias and the possibility of skewing the type of studies included?
	SUBSCORE:
Quality appraisal	Validity of results – are opposing viewpoints included and discussed; are conclusions plausibly based on the data and not on researcher's preconceptions (e.g., has the researcher critically reflected on own biases and influence and research skills?)
	Explicit analytic procedure for processing raw data into results/themes that could be repeated with a similar methodology. Were the methods employed (e.g., statistical tests/models for quantitative research) appropriate?
	Reliability – was there triangulation of data analysis (e.g., multiple scorers or coders)?
	Quality appraisal tool – robust with detailed explanation (or copy as appendix)
	Marking criteria included considerations of ethics, researcher bias, comparability of any control groups, context and reliability of data collection (included representativeness of sample), quality of analyses, validity of results, and credibility of conclusions
	Open explanation of rules/tool for classification of variables (e.g., different types of treatments/interventions)
	Have the authors identified all important confounding factors and adequately taken them into account in the analysis (e.g., for quantitative research: restriction in design and techniques)?

GENERIC QUESTIONS	QUALITY APPRAISAL
	SUBSCORE:
Data analysis/ synthesis – quantitative	Explicit analytic procedure for processing raw data into results/themes that could be repeated with a similar methodology
	Have the authors identified all important confounding factors and adequately taken them into account in the analysis? For example, for quantitative research: restriction in design and techniques, e.g., modelling, stratified-, regression-, or sensitivity analysis
	Coding of variables – openly explains procedure and specifies categories and units for scales
	Codes quality of studies (and research designs)
	Has multiple regression analysis been performed on independent/moderator variables to separate out effects (when many variables)?
	Were the methods employed (e.g., statistical tests/models) appropriate? For example, using 'd' for effect sizes of categorical variables and 'r' for continuous variables
	Has sample size been taken into account, either by weighting studies based on sample size or giving equal sizes to all studies?
	Were details given of calculation of effect sizes (e.g., from means and standard deviations presented in the studies)?
	Describes procedure for examining the distribution of effect sizes and analysing the impact of moderating variables, including details of statistical tests
	SUBSCORE:
Qualitative synthesis	Meta-ethnography – detailed description of qualitative analyses
	Discussion of how error or bias may have arisen in design/data collection/analysis and how addressed, if at all
	Have the authors identified all important confounding factors and adequately taken them into account in the analysis?
	Search was exhaustive and analysis reached 'data saturation' (i.e. looking at new studies will not add to the knowledge base)
	Common themes are grouped together but individual nuances preserved

GENERIC QUESTIONS	QUALITY APPRAISAL
	SUBSCORE:
Interpretation and reporting of results	Are the main results presented clearly and with reference to, e.g., confidence intervals if appropriate?
	Findings/conclusions 'make sense' (have a coherent logic) and clear discussion of how they were derived and evidence to support them
	Discussion of the mechanism through which a causal relationship might occur
	Identification of patterns of association/linkages, with descriptions of divergent positions/multiple perspectives and any anomalous/negative cases
	Discussion of how error or bias may have arisen in design/data collection/analysis and how addressed, if at all – limitations that may affect generalisability
	Were effect sizes presented clearly as histograms, forest plots and so on, if appropriate?
	Discussion of implications of findings for policy or practice; identification of new avenues of research (e.g., potential new moderators)
	Discussion of how context may shape an intervention's effects (e.g., does it work on some groups and not on others; are significant effects found?)
	SUBSCORE:

Quality appraisal scores for reviews included in the REA. Each study is rated 0-2 for each quality appraisal criterion.

	REFERENCE	REVIEW METHOD	SEARCH STRATEGY	DATA COLLECTION	QUALITY APPRAISAL
1.	Bolier L *et al.* (2011)	2	1	1	2
2.	Boekeloo BO, Novik MG (2011)	0	0	0	1
3.	Petrie J, Bunn F and Byrne G (2006)	2	1	1	2
4.	Calabria B (2011)	2	2	1	2
5.	Cheon J (2008)	1	1	1	1
6.	Fernandez-Hermida JR and Calafat A (2012)	0	1	0	2
7.	Jackson C *et al.* (2012)	1	1	1	2
8.	Foxcroft DR and Tsertsvadze A (2011)	2	2	2	2
9.	Foxcroft DR and Tsertsvadze A (2012)	2	2	1	2
10.	Gates S (2006)	2	1	2	2
11.	Karki S and Pietila A-M (2012)	1	1	0	1
12.	McGrath Y (2006)	2	2	2	2
13.	Norberg MM (2013)	2	1	1	2

DATA ANALYSIS	QUALITATIVE SYNTHESIS	INTERPRETATION AND REPORTING OF RESULTS	CREDIBILITY OF CONCLUSIONS	OVERALL SCORE	COUNTRY OF ORIGIN	REVIEW METHOD
0	2	2	2	12	The Netherlands	Rapid evidence assessment (though self- identifies as literature review)
1	1	1	0	4	US	Literature review
1	2	2	2	13	UK	Systematic review
1	1	2	1	12	Australia	Systematic review and methodological review
0	2	1	1	8	US	Best practice analysis of systematic review
2	1	2	2	10	UK	Methodological review of papers from a systematic review
1	1	1	2	10	Scotland, UK	Systematic review (** only three reported studies are in out-of-school settings**)
2	2	2	2	16	UK	Systematic Review (** NB This review is about universal interventions and so they may contain some element of school-based intervention.**)
1	2	2	2	14	UK	Systematic review (containing a review of school-based interventions as well as reviews on family interventions and multi-component interventions)
1	2	2	2	14	UK	Systematic review
1	2	2	2	10	Finland	Systematic review
2	2	2	2	16	UK	Systematic review of grey literature
1	2	2	2	13	USA	Systematic review

	REFERENCE	REVIEW METHOD	SEARCH STRATEGY	DATA COLLECTION	QUALITY APPRAISAL
14.	Paterson B and Panessa C (2008)	2	2	2	1
15.	Salvo N, Bennett K, Cheung A, Chen Y, Rice M, Rush B, Bullock H and Bowlby A (2012)	2	2	1	1
16.	Sumnall H, McGrath Y, McVeigh J, Burrell K, Wilkinson L and Bellis M (2006)	0	1	0	0
17.	Thomas R, Lorenzetti D and Spragins W (2011)	2	2	2	2
18.	Toumbourou JW, Stockwell T, Neighbors C, Marlatt GA, Sturge, J and Rehm J (2007)	1	1	1	1
19.	Velleman R (2009)	1	1	0	1
20.	Warwick I and Kwan I (2010)	1	1	1	0
21.	Winters KC, Fawkes T, Fahnhorst T, Botzet A and August G (2007)	1	1	0	1

DATA ANALYSIS	QUALITATIVE SYNTHESIS	INTERPRETATION AND REPORTING OF RESULTS	CREDIBILITY OF CONCLUSIONS	OVERALL SCORE	COUNTRY OF ORIGIN	REVIEW METHOD
1	2	2	2	14	Canada	Authors categorise this as literature review, but it is systematic
0	1	1	1	9	Canada	Systematic review
0	0	2	2	5	UK	Practitioner review
2	2	2	2	16	Canada	Systematic review
0	1	2	2	9	Australia	Review of reviews
0	1	1	2	7	UK	Literature review
0	0	2	1	6	UK	Literature review
0	1	1	2	7	US	Literature review

NOTES

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