A SYSTEMATIC REVIEW OF EFFECTIVE INTERVENTIONS FOR MULTIPLE RISK BEHAVIOUR.

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Introduction

Adolescence is associated with an increased prevalence of risk behaviours including substance use, sexual risk and aggressive behaviour[1]. Early initiation of these risk behaviours is associated with negative outcomes through adolescence and adulthood including addiction and substance abuse, poor sexual, mental and physical health, and lower attainment[2,3]. The social and economic costs associated with adolescent risk behaviours have made it a key focus of public health policy initiatives internationally.

A burgeoning body of research suggests that adolescent risk behaviours are inter-related[4]. There is evidence that co-occurrence of risk behaviours is attributable both to the existence of common risk factors for diverse risk behaviours[5] as well as the increased risk for some risk behaviours caused by participation in others (gateway effects)[6].

These mechanisms for co-occurring risk are suggestive of the potential effectiveness of interventions targeting co-occurring risk behaviours. If common risk factors explain co-occurrence of risk behaviours, then targeting those risk factors would prove effective across risk behaviours; if a given risk behaviour increases risk for another, effectively prevention strategies for the latter must also focus on the former.

Intervention programmes for adolescent multiple risk behaviour are relatively rare. A systematic attempt to identify effective programmes for multiple risks is valuable in informing the development of future interventions by indicating which combinations of risk behaviour can be targeted in coordinated approaches, what contexts and approaches are most successful and what other attributes, including duration, participant age and target, successful coordinated interventions share.

Method

We conducted a systematic literature review in nine social sciences databases using a standardised search protocol to identify effective interventions for multiple risk behaviours.

Effective for at least two of the following:

Tobacco use

Drug use

Alcohol Use

Unsafe sex

Aggression

Selection
Studies were selected for inclusion based on a two-stage process. All studies identified in the database search were screened for the inclusion criteria based on the abstract. Those not excluded were screened based on the full text.

Inclusion Criteria
1. Randomised controlled trial
2. Universal, non-clinical intervention
3. Targeted adolescents (age 10-19).
4. Significant effects for 2+ health risk behaviours
5. Published from 1980 onwards
6. Peer-reviewed
7. Published in English

Quality assessment and data extraction
Studies were quality assessed using the Effective Public Health Practice Project tool with ratings for selection bias, confounding, and analyses. A standardized data extraction form was used to collect data regarding the setting, population, intervention and outcomes. Effect sizes were extracted or calculated for all behavioural outcomes

Abstract

Aims: To identify interventions which significantly reduce two or more of the following health risk behaviours: tobacco use, alcohol use, illicit drug use, risky sexual behaviour and aggressive acts.

Methods: A systematic search strategy was employed in 9 social sciences databases. Studies were included if they employed an RCT design, focused on universal interventions for risk behaviour in adolescence and which were effective for multiple risk behaviours. Data were extracted from each article regarding study methods and quality, intervention characteristics, outcomes and results

Results: We identified 45 relevant interventions. Most were school-based, conducted in the USA, and were effective for multiple forms of substance use, though other patterns of effectiveness were also identified. Effects were small, in line with findings for other universal prevention programmes. Often, effects only fully emerged at long-term follow-up

Conclusion: Effective integrated prevention programmes are feasible and may be more efficient than discrete prevention strategies.

Results

The systematic search strategy identified 6,299 abstracts, of which 179 articles were judged to be relevant. Fifty-five randomised controlled studies met the inclusion criteria and were reviewed for quality appraisal and analysis. These studies described 45 interventions which were effective for two or more health risk behaviours.

44 of the 55 studies were conducted in the US. Almost all studies evaluated school-based interventions, 10 of which included a community or family component. The rest were either family, community or web-based. The ages of participants in the studies ranged from 10 to 21 years. The intervention intensity varied from 4 to 140 sessions, and the duration ranged from 10 weeks to 8 years. The majority of studies included a follow-up measurement of 6 months or more.

All studies relied on self-reported risk involvement. In the majority of cases, self-reported marijuana use was the drug-use outcome measure; although 10 studies measured other drug use (e.g. amphetamines, tranquilisers). Most studies indicated that substance use, sexual and aggressive behaviours were primary or secondary outcomes.

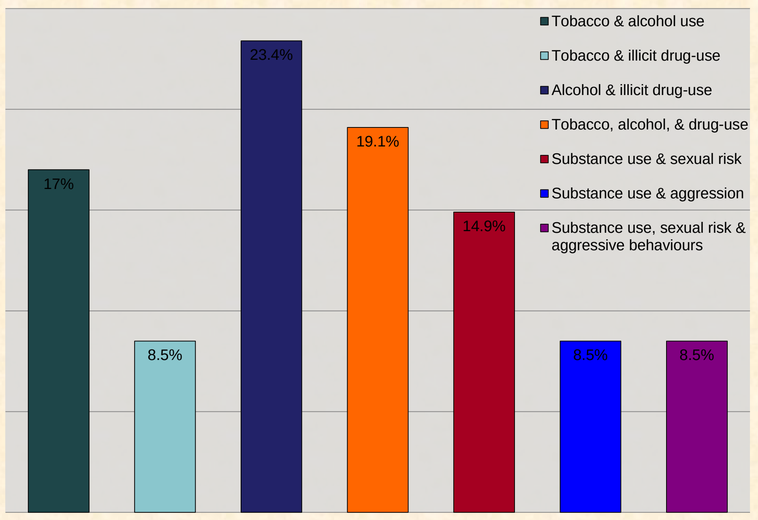

Figure 1. Significant intervention effects by domain..

Effectiveness
Overall, 24 intervention programmes showed a significant effect for at least two substances. 9 intervention programmes had a positive outcome for all three substances. The majority of studies reported significant reductions in alcohol and illicit drug-use. 7 interventions helped to reduce aggressive behaviours and substance use while 4 programmes had significant effects for substance use and sexual risk. Four interventions produced significant results for all five domains (tobacco, alcohol, illicit drug-use, sexual risk behaviour and aggression). 27 studies (49%) demonstrated strong methodological quality.

Six studies evaluated family based interventions, two of which were rated strong. They included parenting skills, training in groups, homework tasks requiring parental participation, mailed booklets, home visits and a mixture of these approaches. The interventions aimed to improve student-parent communication, reinforce refusal skills, teach effective parenting skills and develop problem-solving approaches.

We identified five community-based interventions. They consisted of a skills enhancement programme, youth programme with parental reinforcement, multi-component intervention, web-based intervention, and a counselling supportive listening approach. Effect sizes ranged from small to medium.

Discussion

Fifty-five studies which reported significant intervention effects for multiple health risk behaviours were identified. Effect sizes were generally small. However, these are comparable with effects found for “single risk” universal prevention programmes suggesting benefits in additional risk behaviours do not come at the cost of smaller effects. This is particularly relevant since length of intervention appeared unassociated with effectiveness both in the current study, and the intervention literature[7]. In short, our results suggest that multiple risk interventions are feasible and efficient.

The majority of included studies were effective for multiple substance use. This may be because different types of substance use are viewed as conceptually similar. In fact, correlations between types of substance use are similar to those between substance use and other types of risk[4], and common risk factors have been found for a variety of risk domains. Our results suggest that multi-risk interventions are effective for a number of risk combinations.

In many cases, significant intervention effects were detected at immediate post-test for only one or for no risk behaviours, but additional effects were detected at long-term follow-up. A typical pattern for many intervention programmes is the reverse: strongest effects at post, with effects “washing out” over time[8]. Successful multi-risk interventions may buck this trend by targeting distal variables such as common risk factors or preventing gateway effects to other risks. In either case, effects may emerge later and prove more pervasive.

Only including studies with significant intervention effects in two of more risk areas presents several limitations. Excluding non-effective multi-risk interventions means it is impossible to compare effective interventions with those that are not. Further, in cases where a single intervention’s effects are reported across papers, it is difficult to collate these results to identify effective multi-risk interventions, meaning some applicable interventions may have been overlooked. Limiting the review to behavioural outcomes necessitated an exclusive reliance on self-report, as well as a variety of definitions of risk behaviour.

Risk behaviours share a number of common risk factors and are strongly interrelated. This study affirms the potential of integrated risk prevention programmes, suggesting they are effective across a range of risk behaviours.

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