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EFFECTIVE INTERVENTIONS FOR PREVENTION OF ADOLESCENT SUBSTANCE USE: WHAT ARE THEY COMPOSED OF?

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Introduction

Evaluation studies commonly assess the overall effectiveness of prevention interventions. What the **components responsible for effectiveness** are and how they singly or in combination excert their effect on outcomes is still unclear (Michie et al. 2009; Hansen et al. 2007; Collins et al. 2005). By contrast, in pharmacology the active ingredients are precisely described and each is known to impact on physiological and pathological outcomes in different ways.
This limits the possibility of:
• testing theories that can be applied to explaining how interventions intend to achieve effects,
• assessing in what context and circumstances interventions are likely to be effective,
• designing, implementing and replicating effective interventions.
Identifying the essential components of effective interventions for prevention of adolescent substance use and **undestanding how these interventions operate** by changing the characteristics of the individual or the environment (mediators) may:
• make prevention programs in the field of adolescent substance use more effective, efficient and practical,
• contribute to improve the current situation in prevention research and practice.

Goal

To **identify the components, mediators, and theories** of effective interventions for universal and selective prevention of adolescent alcohol abuse and illicit drug use. This study is part of a wider research project aimed at identifying the effective components (active ingredients) for prevention of adolescent substance use. It is included in the European Alice Rap Project (www.alicerap.eu).

Method

1. identification of **systematic reviews** of universal and selective prevention of adolescent alcohol and illicit drug use published in English from 1997 to 2012, and searched in electronic database
   - ➢ 18 systematic reviews

2. selection of **evaluation studies** according to specific inclusion criteria (RCT, intervention specifically designed to prevent alcohol and illicit drug use in adolescents aged 11-18, at least one statistically significant positive effect on alcohol and illicit drug use in the intervention arm, published since 1995)
   - ➢ 103 evaluation studies

3. selection of **effective prevention interventions** according to specific inclusion criteria (RCT, positive outcomes for full sample, no special population or minority groups, specific outcome measures on alcohol and illicit drug use)
   - ➢ 20 effective prevention interventions

4. description of **identified effective prevention interventions** by contacting authors and developers
   - ➢ 12 school-based interventions (11 universal, 1 selective)

References
Collins LM, Murphy SA, Nair VN, Strecher V. A strategy for optimizing and evaluating behavioral interventions. Annals of Behavioral Medicine. 2005;30:65–73.
Hansen W, Dusenbury L, Bishop D, Derzon J. Substance abuse prevention progrm content: systematizing the classification of what programs target for change. Health Education Research, 2007, 22 (3): 351-360.
Michie S, Fixsen D, Grimshaw J, Eccles M. Specifying and reporting complex behavior change interventions: the need for a scientific method. Implementation Science, 2009, 4: 40-46.

Results

1. What are the **type of components**? (N=12)
- in-class interactive activities led by trained teachers: 83%
- parent education and family involvement activities: 25%
- media campaign and community-level actions: 17%
- activities for high-risk adolescents: 8%

2. What are the **content areas of components**? (N=12)
- information dissemination and knowledge improvement: 75%
- interpersonal and social skills development: 83%
- personal skills development: 83%
- social (peer group and family) environment improvement: 33%

3. What are the **mediators** hypothesized to be causally related to outcomes? (N=12)
- social pressure and influence: 17%
- social norms: 25%
- attitudes: 42%
- knowledge of negative consequences: 58%
- personal emotional, cognitive and social competence: 100%
- quality of interpersonal relationship: 50%
- parenting skills: 25%

4. What are the **theories** that drive interventions? (N=12)
Explanatory Theories
- Social Learning Theories: 58%
- Theory of Planned Behavior: 33%
- Health Belief Model: 8%
- Social Norms Theory: 8%
- Problem Behavior Theory: 17%

Change Theories
- Cognitive Behavioral Therapy: 8%
- Motivational Enhancement Therapy: 8%

Other
- Models and approaches different from formal theories: 58%

Conclusions

• Although simple in concept, **decomposing complex interventions** and providing a precise description can be difficult
   - ➢ post-hoc versus ante-hoc description

• There is **lack of clear, consistent and agreed terminology** for describing elements of interventions
   - ➢ same name for different things or different names for same things
   - ➢ the variety of content areas and mediators has been grouped and categorized for ease of navigation

• Interventions address **multiple areas of content and mediators**

• Most of interventions are composed of **in-class activities** aimed at **developing and strenghtening personal and social skills**

• All interventions are described as **theory-based**
   - ➢ the same mediators and content areas are linked to different theories/approaches
   - ➢ no single theorethical approach per intervention
   - ➢ amalgam of multiple theories and approaches