



UNIVERSITÀ DEL PIEMONTE ORIENTALE

5th EUSPR conference, 16th -18th October , 2014

**EFFECTIVE INTERVENTIONS FOR PREVENTION
OF ALCOHOL ABUSE AND ILLICIT SUBSTANCE
USE IN ADOLESCENCE:
REVIEWING THEORIES AND MEDIATORS**

Roberta Molinar, Alessandro Coppo, Fabrizio Faggiano

Department of Translational Medicine

Università del Piemonte Orientale, Novara, Italy

Introduction

- Interventions for prevention of alcohol abuse and illicit substance use in adolescence
 - are **complex**
 - are **context dependent**
 - involve a **combination of different techniques, contents, procedures, forms of delivery**
 - are made up of **several interacting components**

- Evaluation studies show the **overall effectiveness of prevention interventions**
 - **do they work?**
 - but the challenge is to understand **how and why interventions work**



The study - Alice Rap project



- to understand the **functioning of effective prevention interventions** for adolescent alcohol abuse and illicit substance use by identifying
 - the **theories** upon which interventions are based on
 - the **mediators** targeted by the interventions and thought to be causally related to the outcomes
 - the **components** responsible for effectiveness

The **Alice Rap project** is a wide **research project** aimed to promote a science-based policy approach to addictions (see more at www.alicerap.eu). It has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under Grant Agreement n° 266813.

Goals

1. **to investigate the type of theory uses in effective interventions** for prevention of adolescent alcohol abuse and illicit substance use
 - theory used to develop and design the intervention and to select mediators of the intervention

2. **to examine the mediators targeted by effective interventions** for prevention of adolescent alcohol abuse and illicit substance use
 - single mediator or multiple mediators linked to each intervention component

Method – Identification of evaluation studies

- **Evaluation studies** included were based on the screening of **18 published systematic reviews** on prevention of alcohol abuse and substance use among young people
- **Inclusion criteria** were:
 - adolescents aged 11-18
 - universal and selective interventions specifically targeting alcohol abuse and/or illicit drug use
 - randomised controlled trials
 - interventions reporting at least one statistically significant effect favoring intervention arm by self-report measures at baseline and/or follow-up
 - English language
 - year of publication up to January 1995 inclusively

Method – Identification of effective interventions

- The dataset for identification of effective interventions included **103 studies**
 - 49 identified single effective prevention interventions
 - **20 selected separate effective prevention interventions**

- **Exclusion criteria** were:
 - gender-specific approach
 - racial/ethnic minority group or special population target
 - treatment or harm minimization or reduction goal
 - lack of randomization or experimental study design
 - lack of positive outcomes for the full sample
 - lack of specific outcome measures on alcohol and substance use

Method – Description of selected interventions

- **Information on theory and mediators was extracted from published articles and obtained from authors**
 - published articles do not usually supplement this information (i.e. full study, intervention protocols, etc.)
 - complete information have been collected for **12 interventions**

- Although simple and easy in concept, a detailed description of complex interventions can be difficult to achieve!

Results - List of examined effective interventions

	Intervention	Setting	Category	Target	Number of components	Mediation analysis
1	Keepin'it REAL (KIR)	school	universal	students 12-14	11	no
2	PreVenture	school	selective	students 13-17	3	no
3	Middle School-based Substance Abuse Prevention Program	school	universal	students 10-13	15	no
4	Unplugged	school	universal	students 12-14	12	yes
5	Skills for Adolescence (SFA)	school	universal	students 10-14	40	no
6	Towards No Drug Abuse (TND)	school	universal, selective, indicated	students 14-19	12	no
7	School-based alcohol education intervention	school	universal	students 12-15	6	no
8	Life Skills Training (LST)	school	universal	students 11-14	30	yes
9	Good Behavior Game (GBG)	school	universal	students 6-12	1	no
10	All Stars	school	universal	students 11-14	23	yes
11	Preventing heavy alcohol use in adolescence (PAS)	school, family	universal	students 12-14	6	yes
12	Project Northland	school, family, community	universal	students 11-17	35	yes

Results – Reported theory and mediators (1)

	Intervention	Theory upon which the intervention was reported to be based by the authors	Mediators as reported by the authors
1	Keepin'it (KIR) REAL	<ol style="list-style-type: none"> 1. Communication Competence Theory 2. Focus Theory of Norms 3. Social Learning/Cognitive Theory 4. Narrative Theory 5. Ecological risk and resilience approach 	<ol style="list-style-type: none"> 1. Risk assessment 2. Resistance skills 3. Decision-making 4. Antidrug norms and attitudes 5. Student engagement in the intervention
2	PreVenture	<ol style="list-style-type: none"> 1. Cognitive Behavioral Therapy 2. Motivational Interviewing 3. Psycho-educational approach 4. Coping and social skills approach 5. Personality-based theories of drug abuse and addiction 	<ol style="list-style-type: none"> 1. Motivation to use effective coping strategies 2. Coping strategies 3. Ability to identify automatic thoughts in a high-risk situation 4. Emotional and behavioral problems
3	Middle based Abuse Prevention Program School-Substance Prevention	<ol style="list-style-type: none"> 1. Social resistance skills training 2. Theory of Planned Behavior 	<ol style="list-style-type: none"> 1. Susceptibility to peer pressure 2. Knowledge of effects of substances 3. Knowledge of pressures to use substances 4. Knowledge of skills to resist pressures to use substances

Results – Reported theory and mediators (2)

	Intervention	Theory upon which the intervention was reported to be based by the authors	Mediators as reported by the authors
4	Unplugged	<ol style="list-style-type: none"> 1. Health Belief Model 2. Problem Behavior Theory 3. Social Learning Theory 4. Social Norms Theory 5. Theory of Planned Behavior 6. Comprehensive social influence model 	<ol style="list-style-type: none"> 1. Knowledge about substances 2. Risk perception 3. Critical thinking 4. Creative thinking 5. Relationship skills 6. Coping skills 7. Managing emotions skills 8. Refusal skills 9. Assertiveness 10. Communication skills 11. Empathy 12. Problem-solving 13. Decision-making
5	Skills for Adolescence (SFA)	<ol style="list-style-type: none"> 1. Life skills training approach 2. Social influence and social cognitive approaches 	<ol style="list-style-type: none"> 1. Self-confidence 2. Emotion management skills 3. Peer relationships skills 4. Communication skills 5. Perception of harm 6. Drug knowledge 7. Anti-drug attitudes 8. Self-efficacy regarding resistance skills 9. Drug-use norms 10. Resistance to peer pressures

Results – Reported theory and mediators (3)

	Intervention	Theory upon which the intervention was reported to be based by the authors	Mediators as reported by the authors
6	Towards No Drug Abuse (TND)	<ol style="list-style-type: none"> 1. Motivation skills and decision-making model 2. Cognitive Behavior Therapy 	<ol style="list-style-type: none"> 1. Communication skills 2. Awareness of negative stereotypes 3. Awareness of discrepancies between cognition and behavior 4. Prevalence overestimation reduction 5. Awareness of being at-risk for substance use 6. Drug-use myths 7. Coping skills 8. Value on health 9. Knowledge about substances and their effects and consequences 10. Self-control 11. Assertiveness 12. Awareness of one's own patterns of thinking 13. Attitudes towards substances 14. Decision-making 15. Commitment not to use drugs

Results – Reported theory and mediators (4)

	Intervention	Theory upon which the intervention was reported to be based by the authors	Mediators as reported by the authors
7	School-based alcohol education intervention	<ol style="list-style-type: none"> 1. Social influence approach 2. Social Learning Theory 3. Theory of Planned Behavior 	<ol style="list-style-type: none"> 1. Alcohol-related attitudes 2. Future use intentions 3. Refusal intentions 4. Knowledge about alcohol
8	Life Skills Training (LST)	<ol style="list-style-type: none"> 1. Problem Behavior Theory 2. Social Learning Theory 	<ol style="list-style-type: none"> 1. Decision-making 2. Goal-setting 3. Self-reinforcement 4. Self-control 5. Anxiety reduction 6. Self-efficacy 7. Locus of control 8. Reduced risk-taking 9. Assertiveness 10. Communication skills 11. Self-esteem 12. Social anxiety 13. Drug refusal skills 14. Media analysis skills 15. Anti-drug knowledge and attitudes 16. Normative expectations regarding prevalence and social acceptability

Results – Reported theory and mediators (5)

	Intervention	Theory upon which the intervention was reported to be based by the authors	Mediators as reported by the authors
9	Good Behavior Game (GBG)	<ol style="list-style-type: none"> 1. Life course/social field theory 	<ol style="list-style-type: none"> 1. Peer acceptance/peer rejection 2. Reinforcement of individual and peer group behavior 3. Adaptation to school social task demands 4. Self and group behavior monitoring
10	All Stars	<ol style="list-style-type: none"> 1. Normative education 2. Values Theory 3. Cognitive Dissonance Theory 4. Theory of Reasoned Action 5. Predictors of adolescent substance use (beliefs about social and psychological consequences, parental monitoring and communication, positive social bonds) 	<ol style="list-style-type: none"> 1. Normative beliefs about substances 2. Lifestyle incongruence 3. Commitment not to use substances 4. Beliefs about social and psychological consequences 5. Bonding to school 6. Parental attentiveness

Results – Reported theory and mediators (6)

	Intervention	Theory upon which the intervention was reported to be based by the authors	Mediators as reported by the authors
11	Preventing heavy alcohol use in adolescence (PAS)	<ol style="list-style-type: none"> 1. Theory of Planned Behavior 2. Social Cognitive Theory 3. Predictors of adolescent alcohol use (parental rule-setting) 	<ol style="list-style-type: none"> 1. Parental rule-setting 2. Parental attitudes towards alcohol 3. Attitudes towards alcohol 4. Self-control 5. Perceived rules about alcohol
12	Project Northland	<ol style="list-style-type: none"> 1. Problem Behavior Theory 2. Social Cognitive Theory 3. Social influence approach 4. Social skills training 5. Conceptual model for the prevention of adolescent alcohol use including environmental factors, individual factors and behavioral factors 	<ol style="list-style-type: none"> 1. Peer influence 2. Social norms about alcohol 3. Normative expectations concerning alcohol 4. Refusal self-efficacy of alcohol use 5. Communication with parents 6. Functional meaning of alcohol use 7. Parental norms concerning alcohol 8. Parental monitoring 9. Parental knowledge about alcohol 10. Access to alcohol/availability of alcohol 11. Resistance skills 12. Awareness of pressure to use alcohol 13. Knowledge about alcohol 14. Attendance at activities with/without alcohol

Results – Classification of theories by researchers (1)

	Intervention	Single theory/model	Multiple theories/models	Combination of theory/model and/or predictors/constructs
1	Keepin’it REAL (KIR)		X	
2	PreVenture			X
3	Middle School-based Substance Abuse Prevention Program		X	
4	Unplugged		X	
5	Skills for Adolescence (SFA)		X	
6	Towards No Drug Abuse (TND)	X		
7	School-based alcohol education intervention		X	
8	Life Skills Training (LST)		X	
9	Good Behavior Game (GBG)	X		
10	All Stars			X
11	Preventing heavy alcohol use in adolescence (PAS)			X
12	Project Northland		X	
		2	7	3

Results – Classification of theories by researchers

	Intervention	Social Learning /Cognitive Theory	Theory of Planned Behavior	Social Norms Theory	Social Control Theory	Problem Behavior Theory
1	Keepin'it REAL (KIR)	X		X		
2	PreVenture	Combination of constructs from personality-based theories and predictors of adolescent drug use				
3	Middle School-based Substance Abuse Prevention Program	X	X			
4	Unplugged	X	X	X		X
5	Skills for Adolescence (SFA)	X				X
6	Towards No Drug Abuse (TND)	Single theoretical model created by the authors				
7	School-based alcohol education intervention	X	X			
8	Life Skills Training (LST)	X		X		X
9	Good Behavior Game (GBG)	Single theoretical model created by the authors				
10	All Stars		X	X	X	
11	Preventing heavy alcohol use in adolescence (PAS)	X	X		X	
12	Project Northland	X				X
		8	5	4	2	4

Results – Classification of mediators by researchers

	Intervention	Drug specific skills	Generic skills	Knowledge	Beliefs	Perception of pressure
1	Keepin'it REAL (KIR)	X	X	X	X	
2	PreVenture		X			
3	Middle School-based Substance Abuse Prevention Program	X		X		X
4	Unplugged	X	X	X	X	
5	Skills for Adolescence (SFA)	X	X	X	X	X
6	Towards No Drug Abuse (TND)		X	X	X	
7	School-based alcohol education intervention	X		X	X	X
8	Life Skills Training (LST)	X	X	X	X	X
9	Good Behavior Game (GBG)					
10	All Stars				X	
11	Preventing heavy alcohol use in adolescence (PAS)	X	X	X	X	
12	Project Northland	X		X	X	X
		8	7	9	9	5

Results – Classification of mediators by researchers

	Intervention	Parental knowledge	Parental monitoring	Parental beliefs/attitudes	Parent-child communication
1	Keepin'it REAL (KIR)				
2	PreVenture				
3	Middle School-based Substance Abuse Prevention Program				
4	Unplugged				
5	Skills for Adolescence (SFA)				
6	Towards No Drug Abuse (TND)				
7	School-based alcohol education intervention	X	X	X	
8	Life Skills Training (LST)				
9	Good Behavior Game (GBG)				
10	All Stars		X		X
11	Preventing heavy alcohol use in adolescence (PAS)	X	X	X	
12	Project Northland	X	X	X	X
		3	4	3	2

Conclusion (1)

- **Same theory** is linked to **different number and type of mediators** and **different number of components**
- **Same mediators** are linked to **different theory**
- **Same label for different things** and **different labels for same things**
 - there is need for **common understanding of what theoretical base for interventions means** and for **common terminology in defining mediators** (i.e. modifiable risky or protective factors associated to alcohol abuse and illicit substance use)

Conclusion (2)

- Most of interventions are **based on multiple theories and/or constructs**
 - theories are largely complementary and they can overlap

- All interventions **target a variety of mediators** that are associated with more than one theoretical constructs
 - the link between theories and mediators is not clearly articulated
 - mediators that may help to achieve the goals seems to be selected regardless their complete coherence with the formal theories upon which the intervention is based on
 - but **interventions seem to target the same sets of mediators**

Conclusion (3)

- Effective interventions for prevention of adolescent alcohol abuse and illicit drug use are **based on the most common theories for understanding adolescent substance use**
 - a **set of same and few formal theories** is used for delineating the mechanisms of action and for selecting mediators
 - similarities in targeted mediators
 - but different theoretical approaches are probably used for selecting techniques and strategies for delivering and implementing the intervention and for involving the target population
 - differences in number and types of components