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The mediating factors of a school-based intervention to prevent substance use in adolescence

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Introduction

- Adolescent substance use is still one of major concerns in Western countries.



Introduction

- During the last twenty years, advances in prevention field have been made and some program seems to be effective in preventing drug use in late adolescence and adulthood.



Introduction

- Particularly, the programs based on enhancement of individual competences and on social influence theory seem to be promising in the prevention of drug abuse (Tobler et al. 2000, Faggiano et al. 2008).



Introduction

- In spite of the advancement in knowledge, there are still many unanswered questions.



Introduction

- 1) There is a lack of knowledge about the mediation mechanisms through which interventions have an effect. The knowledge of the mediating mechanisms of an intervention is of extremely importance to confirm the theory behind the program (Faggiano, Giannotta, Allara, in press).



Introduction

2) To our knowledge, no randomised intervention study conducted in Europe aimed at testing mediating mechanisms exists.



Goals

- The present study attempts to overcome these limitations, by investigating the mediated factors of an European school-based intervention (Unplugged) that has shown to decrease alcohol and tobacco use in the short term.



Unplugged

- The program consisted in 12-hour class-based curriculum based on a comprehensive social-influence approach.
- Its aim is to modify attitudes, beliefs, normative prevalence of substance use, and to increase the knowledge about substances in order to prevent and decrease the consume. Moreover, it also aimed at making youth to develop social skills to face the offer of substance use.



Sample

- 170 schools randomly assigned to either intervention (102 schools) or control group (68 schools).
- 7 countries, 9 centers.
- 7079 students (3532 in control schools and 3547 in intervention schools)
- 52.2% boys and 47.8% girls
- Aged 12-14

Sample

	Study Arm					
	Controls		All interventions		Total population	
	(N=3297)		(N=3307)		(N=6604)	
	n	%	n	%	n	%
Centres						
Italy - Turin	859	27.1	634	19.8	1493	23.4
Spain - Bilbao	212	6.7	159	5.0	371	5.8
Germany - Kiel	203	6.4	358	11.2	561	8.8
Belgium - Gent	288	9.1	347	10.9	635	10.0
Sweden - Stockholm	426	13.4	501	15.7	927	14.5
Greece - Thessaloniki	322	10.1	368	11.5	690	10.8
Austria - Wien	433	13.6	283	8.8	716	11.2
Italy - Novara	209	6.6	270	8.4	479	7.5
Italy - Aquila	222	7.0	276	8.6	498	7.8



Measures

- Positive expectations about cigarettes and alcohol,
- Negative expectations about cigarettes and alcohol,
- Positive attitudes toward drugs,
- Negative attitudes toward drugs,
- Perception of having many friends that smoke or get drunk,
- Knowledge about tobacco or alcohol,
- Ability to refuse an invitation to smoke or drink from a peer,
- Positive climate in the class,
- Frequency of smoking in the last 30 day,
- Drunkenness life prevalence,

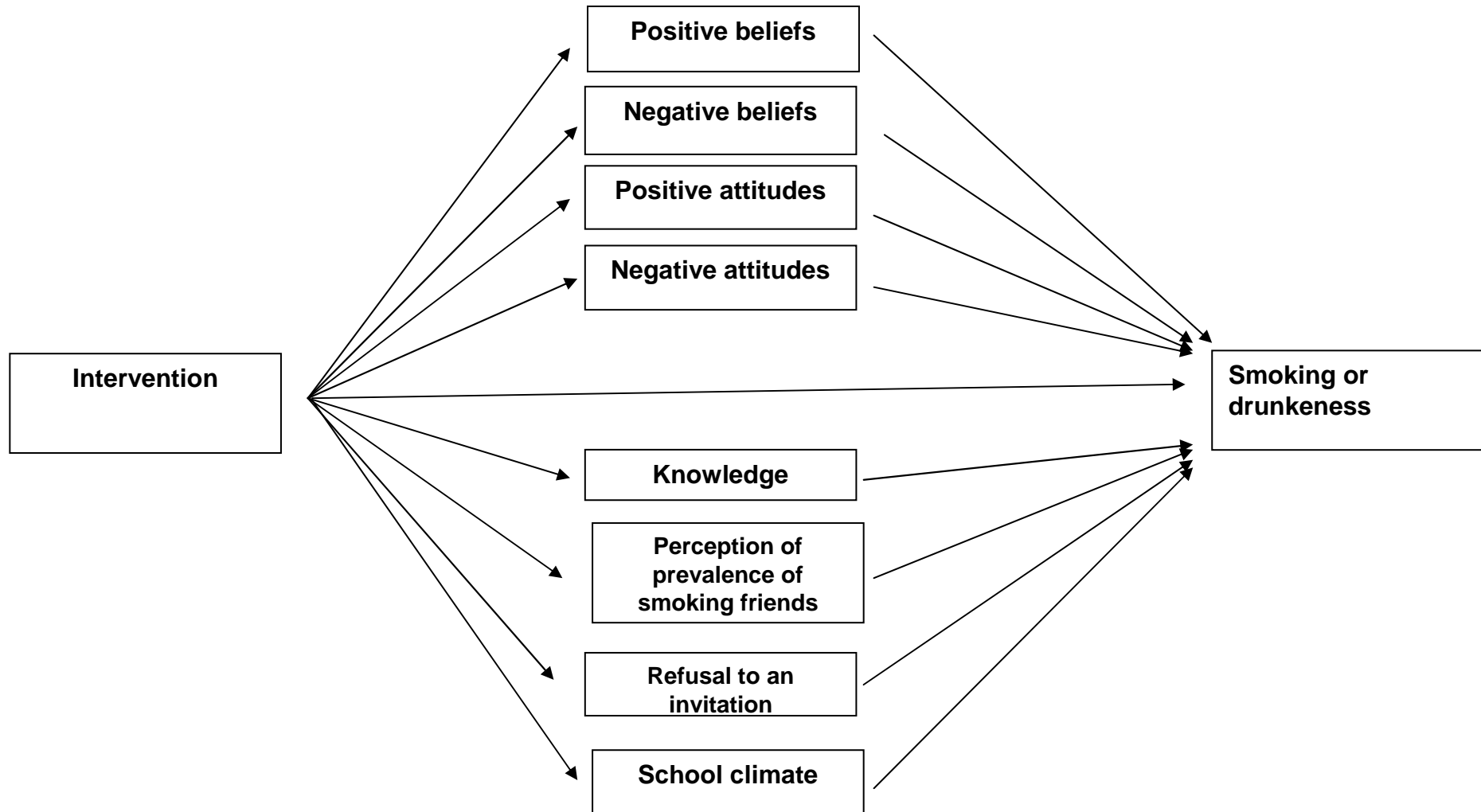
Alphas ranged from .70 to .90.



Analysis

- To test the mediation effects, we performed a Multilevel path analysis in MPlus 6 (Muthén, 1998-2010). As the randomization occurred at school level, we entered school as second level of the model, while individual was entered as first level. To control for variability across centers, we used the stratification option in Mplus. We computed the total indirect effects of the intervention and also the single indirect effect for each mediator, using the IND command on Mplus.

Mediation models



Note. We controlled for gender and age effects. We also allowed covariations among variables within time, and we controlled for the initial levels of the variables at baseline

Mediators (Tobacco)	Path a β (s.e.)	Path b β (s.e.)	Indirect effects Path a*b β (s.e.)	Intervention direct effect β (s.e.)
<i>Positive attitudes towards drugs</i>	-.041*(.020)	.070**(0.014)	-.003+(.002)	
<i>Negative attitudes towards drugs</i>	n.s.	.024* (.011)	n.s.	
<i>Positive beliefs tobacco</i>	-.044*(.021)	n.s.	n.s.	
<i>Negative beliefs tobacco</i>	-.029+(.017)	n.s.	n.s.	
<i>Knowledge about tobacco</i>	.049*(.021)	n.s.	n.s.	
<i>Refusal skills</i>	-.030*(.015)	.279**(0.016)	-.008*(.004)	
<i>Perception of number of smokers friends</i>	-.051*(.020)	.070**(0.009)	-.004*(.001)	
<i>School climate</i>	-.047*(.021)	n.s.	n.s.	
<i>Intervention</i>				n.s.

*p<.05, +p<.05 one tailed, **p<.001

Mediators (Alcohol)	Path a β (s.e.)	Path b β (s.e.)	Indirect effects Path a*b β (s.e.)	Intervention direct effect β (s.e.)
<i>Positive attitudes towards drugs</i>	-.041*(.020)	.126**(.017)	-.005*(.003)	
<i>Negative attitudes towards drugs</i>	n.s.	.024+ (.015)	n.s.	
<i>Positive beliefs alcohol</i>	-.038*(.018)	.036**(.012)	-.001*(.001)	
<i>Negative beliefs alcohol</i>	n.s.	.069**(.014)	n.s.	
<i>Knowledge about alcohol</i>	.153*(.017)	n.s.	n.s.	
<i>Refusal skills</i>	-.032+(.018)	.150**(.016)	-.005+(.003)	
<i>Perception of number of friends that get drunk</i>	n.s.	.066**(.010)	n.s.	
<i>School climate</i>	-.047*(.021)	n.s.	n.s.	
<i>Intervention</i>				-.014*(.007)

*p<.05, +p<.05 one tailed, **p<.001



Conclusion

- The goal of the study was to investigate the mediating factors of an European school based intervention.



Conclusion

- We found that the intervention affected many of the expected mediating mechanisms, namely, expectations, attitudes, normative prevalence of substance use, refusal skills, school climate, and knowledge.



Conclusion

- However, only few of them resulted to be real mediators of the intervention effects on tobacco use and alcohol abuse.
- Specifically, an increase in refusal skills and a decrease in positive attitudes toward drugs seem to be the mediators through which the program change both alcohol and tobacco use.

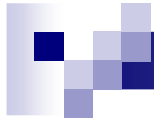


Limitations

- Short terms
- Small effects
- Moderators effects?



- This study highlights the importance of social influence model to prevent substance use even in European countries. However, it also raises some doubts about the role of some factors of this model in preventing drug use.



Thank you for the attention!