# The theoretical model of the school-based prevention programme Unplugged.

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## **Abstract**

Unplugged is a school-based prevention programme designed and tested in the EU-Dap trial. The programme consists of 12 units delivered by class teachers to adolescents 12-14 years old. It is a strongly interactive programme including a training of personal and social skills with a specific focus on normative beliefs. The aim of this work is to define the theoretical model of the program, the contribution of the theories to the units, and the targeted mediators. The programme integrates several theories: Social Learning, Social Norms, Health Belief, theory of Reasoned Action-Attitude, and Problem Behaviour theory. Every theory contributes to the development of the units' contents, with specific weights. Knowledge, risk perception, attitudes towards drugs, normative beliefs, critical and creative thinking, relationship skills, communication skills, assertiveness, refusal skills, ability to manage emotions and to cope with stress, empathy, problem solving and decision making skills are the targeted mediators of the program.

## **INTRODUCTION**

School-based prevention programs are very common in the drug abuse prevention field, but their effectiveness is still a matter of debate in the scientific community (1-3). However, several systematic reviews and overviews recently concluded that some interventions have evidence of effectiveness (4-7).

Once the effectiveness of an intervention has been shown on behavioural and intermediate outcomes, it is possible to study its mechanisms of effect through mediation analysis (8). This helps researchers to accumulate evidence on mediators that can then be used to create new more effective interventions. For this purpose, the definition and the publication of theoretical model and targeted mediators of programs is essential. However, this is not very common (9).

*Unplugged* is a school-based prevention program designed by a group of European experts and tested in the EU-Dap (European Drug Addiction Prevention) trial (10). The program was effective in reducing drunkenness episodes, cigarette and cannabis use among adolescents (11,12).

This paper aims to describe the theoretical model of *Unplugged*, to explain how the theories are applied in the units, and to define the units' targeted mediators.

#### THE PROGRAM

*Unplugged* consists of 12 units, one-hour each, delivered by class teachers to adolescents 12-14 years old. It is a strongly interactive curriculum including training on personal and social skills and a specific focus on normative education (10).

The main theories at the base of *Unplugged* are Social Learning, Problem Behaviour, Health Belief, the theory of Reasoned Action-Attitude, and Social Norms theory. The theories are integrated and intertwined creating a complex model, which allows the inclusion of *Unplugged* among Comprehensive Social Influence programs according to the definition of Sussman (13).

According to Thomas' classification (7), *Unplugged* is a combined Social Competence and Social Influence curriculum. In Figure 1, the relationships between *Unplugged*, the targeted mediators and the outcomes are described. In the following paragraphs a description of the theories and their application in *Unplugged* is provided.

#### SOCIAL LEARNING THEORY

Social Learning theory was developed in the 1960s by Bandura (14). According to this theory, personality forms from interaction between environment, behaviours and psychological processes.

For years psychological research was focused on the behaviourist concept that a new behaviour can be learned in a trial-and-error process, through mechanisms of reward and punishment. Bandura revolutionised the existing behavioural theories stating that direct reinforcement could not account for all types of learning. To Bandura, observation and modelling of behaviours, attitudes and emotional reactions of others elicit behavioural responses through imitative learning. Behavioural change however is not necessarily immediate: learning leaves a cognitive change that can activate the behaviour even after long time.

# **Application in** *Unplugged*

The Social Learning theory is the base of the interactive method of small groups working, which is applied in all the *Unplugged* units.

It is also the base of the activities in which pupils train and observe behaviours in "situation plays": health and risk behaviours are modelled and discussed to reinforce pupils' health choices and reject risk behaviours.

For example, in unit 2, students are exposed to a double situation: an "open mind" group and a "closed" group. Pupils experience the feelings occurring when they must adopt certain group

norms if they want to be accepted. They observe and experiment emotions when they are chosen into or excluded from the group, opposed to those when they can personally decide to join or not the group. They reflect on social pressure, discussing its negative and positive effects, and exercise the abilities to resist and manage social pressure.

In unit 4, pupils work on perceived norms. They experiment and learn that risk behaviours are often carried out imitating those perceived as most common and accepted by the group and the society as a whole.

In unit 7, students work on the assertiveness concept. They observe and experiment how difficult it can be to express opinions in a group where people think differently. Pupils practice assertive answers, so learning examples of refusal statements. Indirectly these activities make pupils recognize the importance of social influence in everyday situations.

Social Learning theory is also applied in unit 8, 10, and 11 where pupils observe each others' behaviours to make and keep friendship, cope with difficult situations and solve problems.

## PROBLEM BEHAVIOUR THEORY

Problem behaviour is socially defined as source of concern, or as undesirable by the social and/or legal norms of the society (15). It elicits social control responses, minimal (such as statement of disapproval), or extreme (such as incarceration). Three systems of factors can favour the problem behaviour or protect against it: psychosocial, environmental and factors related to the structure of the behaviour itself. The balance between risk and protective factors within and between the systems determines the probability of engaging in the problem behaviour. The first system includes values, expectations, beliefs, and attitudes toward oneself and the society. The second includes friends' and parents' attitudes, their approval or disapproval, parental control, and the environmental availability of facilitators for the behaviour. The third includes use of tobacco, alcohol, marijuana and other illicit drugs, alcohol abuse, risky driving, precocious sexual

intercourses, and other deviant behaviours. Due to the strict link between the behaviours, their psychological meaning and their psychological function, engaging in any risk behaviour increases the likelihood of engaging in other problem behaviours.

By practising creative thinking, decision making, problem solving, coping strategies, empathy, and communication skills, young people can develop and reinforce positive behaviours and health choices. By practising critical thinking, assertiveness and resistance skills, they can better evaluate and react to environmental influences.

# Application in *Unplugged*

Problem Behaviour theory is applied in all the units, through role-plays or other skills-practicing activities.

In unit 1, students discuss and define rules for *Unplugged* classroom activities: they practise creative and critical thinking.

In unit 2, students establish and maintain relationships, manage difficult and uncomfortable emotions, and handle tension and stress for being excluded from the group.

In unit 3, they work on the graphical representation of risk and protective factors they might have read, seen or experienced, identifying the complex relations linking these factors.

In unit 6, students train their ability to communicate effectively and to deal with emotions. They experience the difficulties of communicating emotions, and the role that eyes, hands, body, and voice can play in it.

In unit 7, pupils identify everyday circumstances requiring assertiveness and refusal skills.

In unit 8, they exercise the ability to establish and maintain interpersonal relationships through a role-play in a protected, comfortable and safe setting. The pupils experience ways to approach people at a party, to start a conversation, and to overcome embarrassment when entering a new environment.

In unit 10, students send a letter to an imaginary boy who is moving to a new town and for this reason is worried about his future and the upcoming changes. The unit is highly focused on empathy, but students here can also practise creative thinking which is essential to decision making and problem solving.

Unit 11 proposes realistic situations to practise decision making and problem solving skills. Pupils realize that being confident in one's problem solving skills can significantly reduce anxiety and impulsivity.

In unit 12, students practise how to split long term goals in short term tasks, an activity which helps them to develop a mature ways of thinking.

Problem Behaviour theory is also applied in unit 4, 5, and 9 (described above).

#### **HEALTH BELIEF MODEL**

The Health Belief model was developed in the '50s by Rosenstock in an attempt to explain why individuals engage in health related actions (16).

Perceived susceptibility, seriousness, benefits and barriers are the main constructs of the model, and are key factors for the motivation to the action. Demographic, socio-psychological, and structural variables may affect the perception of risks and benefits. All these elements, individually or in association, directly or indirectly, are thought to determine the proneness towards one or another behaviour.

The perceived susceptibility refers to the perception of the subjective risk of developing a disease; the greater the perceived risk, the greater the likelihood of engaging in behaviours to decrease the risk. However, the opposite also occurs: the perception of a low risk of susceptibility can increase the likelihood for unhealthy behaviours.

The perceived seriousness depends on the perceived medical/clinical consequences of the disease, and of the social consequences of it (e.g., effects on work, family life, and social relations).

When the perceived susceptibility is combined with the perceived seriousness, the result is the perceived threat. If the perception is of a serious disease with a high risk, changes in the behaviour often occur. However, the consciousness of personal susceptibility to a serious condition does not define a course of action; this depends upon beliefs on effective and feasible options to reduce the threat (perceived benefits). Thus, even threatened individuals may not accept an action if this is perceived as unfeasible and inefficacious. On the other hand, the negative aspects of a particular health action may act as obstacles to undertake it (perceived barriers). A kind of cost benefit analysis occurs wherein the individual weighs the action's effectiveness against the perceptions that it may be expensive, dangerous, unpleasant, inconvenient, and time-consuming. The analysis of susceptibility and seriousness provides to the individual the energy to act.

Finally, there are events, people, or things that can trigger the decision-making process and push people to change their behaviour ("cues to action"): illness of a family member, media reports, mass media campaigns, friends' advices, reminding messages from health care providers, and health warning labels.

In 1988, self-efficacy, defined as the belief in one's own ability to do something, was added to the model. If one believes an action is useful (perceived benefit), but she/he does not think herself/himself capable of doing it (perceived barrier), it is unlikely that the action will be performed.

# Application in *Unplugged*

The Health Belief model inspires unit 1, where students start to reflect on their knowledge and attitudes about drugs.

It feeds also into unit 3, 5, and 9, where students are involved in activities on risk perception.

In unit 3 (see above), they discuss risk and protective factors related to alcohol abuse.

Unit 5 works on effects, damages and health risks of smoking cigarettes. Pupils fill in a short test about the effects of smoking and the liability of the tobacco industry, and discuss with the teacher the correct answers. The expectations of the smokers versus the known health risks are discussed. Then a court is simulated: the class is divided into three groups representing the non-smokers, the tobacco industry and the judge.

Unit 9 includes an interactive quiz on drug effects. The activity aims to reinforce pupils' perceptions of the seriousness of drug abuse and addiction, to reduce positive beliefs, and to have them reasoning about their own perceived susceptibility. Students learn and discuss expected and desired effects of drug use and compare them with real effects and health risks.

#### REASONED ACTION-ATTITUDE AND PLANNED BEHAVIOUR THEORY

The theory of Reasoned Action-Attitude was developed by Fishbein and Ajzen in the '70s (17), and later modified, renaming it Planned Behaviour theory (18).

The theory is based on the concept of "intention" as a trigger and predictor of human behaviour. The intention is the cognitive representation of a person's readiness to perform a behaviour, and is considered the immediate antecedent of the behaviour itself.

Attitudes and subjective norms contribute to model the intentions.

The attitude towards a behaviour, i.e. how positively or negatively it is valued, results from balancing perceived beneficial and dangerous outcomes of the behaviour.

The subjective norm forms from the beliefs on the expectations of the people important for everyone's life: friends and peers, family, community leaders and celebrities. So, the desire to comply with the persons around strongly influences the normative belief. Also laws and rules sanctioning the behaviour may have an impact on the subjective norm.

Later Ajzen modified the model including the concept of "perceived behavioural control" as an elaboration of Bandura's research on self-efficacy. The perceived behavioural control refers to the perception of one's own ability to manage the behaviour.

# Application in *Unplugged*

The theory of Planned Behaviour is addressed in several units working on attitudes, starting from unit 1, which focuses on students' knowledge and attitudes towards drugs.

In unit 3, 5, and 9, information on effects and risks of tobacco, alcohol and drugs use is provided to students, with the aim to change their attitudes.

In unit 4, pupils discuss their perception of peer substance use, and their estimates are compared with real data: the aim is the correction of erroneous norms.

Unit 12 works on the *Unplugged* closure: pupils reflect on what they learned and declare their attitudes and intentions for the future.

## **SOCIAL NORMS THEORY**

The study of the impact of norms on thought and behaviour is a well established area of research in the social sciences. Norms are essential to understand the social order and the variation of human behaviours (19). People tend to adopt the norms of the reference group and act according to affiliation needs, social comparison processes, and social pressure toward group conformity (20-26).

The Social Norms theory was elaborated by Perkins and Berkowitz in the '80s analysing patterns of alcohol use among students (27). They observed that college students regularly overestimate the permissive attitudes of peers on drinking behaviours, and that this overestimation predicts the individual drinking patterns.

The theory states that behaviour is rather influenced by the (often incorrect) perception of how other members of a social group think and behave (the "perceived norm") than by their real beliefs and behaviours (the "actual norm"). This gap between the "perceived" and the "actual" is referred to as a "misperception" or normative fallacy.

Problem or risk behaviours are usually overestimated, whilst healthy or protective behaviours are underestimated, and persons tend to model their own behaviour towards the misperceived norm. So, providing correct information about peer group norms and behaviours is expected to reduce normative misperceptions and to increase health promoting attitudes and beliefs. Hansen and Graham as first tested a normative education activity added to a preventive intervention, and showed its effectiveness (28).

# Application in *Unplugged*

Social Norms theory is applied in several *Unplugged* units.

In unit 2, students reflect on the effect of normative beliefs on their behaviours. They discuss their own motivation to comply with people around, and the perception of acceptance and use among peers and friends.

Social Norms theory directly inspires unit 4 whose main focus is to correct misperceptions of substance use among peers and adults. The activities include the provision and the discussion of actual data on tobacco, alcohol and drug use, and other risk behaviours. Starting from general examples from their lives, pupils compare their own beliefs with social myths and actual data finally achieving a realistic estimation of peer drug use and norms. If the information on the true norm is reliably presented, the cognitive discrepancy between perceived and actual data can catalyse a process of behavioural change without inducing a feeling that this change is imposed. Social Norms theory is also applied in unit 3, 5, 9, and 11 (described above).

# THE CONTRIBUTION OF THEORIES TO THE UNITS AND THE UNITS' TARGETED MEDIATORS

Figure 2 and 3 graphically represent the complex relationships between theories, units, and targeted mediators.

Social Learning contributes to 6 (50%) units, Social Norms to 6 (50%), Health Belief to 4 (33%), Reasoned-Action Attitude to 6 (50%), and Problem Behaviour to all (100%) units.

Within the unit, the contribution of the theories has been approximately estimated by analysing the activities. Problem Behaviour appears to be the most influential theory: on overall 50.8% of the contents can be referred to it. The other theories contribute to a lower extent (Health Belief 17.5%, Social Learning 10%, Social Norms and Reasoned-Action Attitude 10.8%). The contribution of Social Learning could actually be higher since it is a macro-theory influencing the others.

According to the theories and their contribution to the units, each unit addresses one or more targeted mediators.

Unit 1 addresses knowledge and attitudes, creative and critical thinking, and relationships skills.

Unit 4 addresses normative beliefs, and through these, attitudes towards drugs, creative and critical thinking.

Unit 3, 5, and 9 address knowledge, risk perception, attitudes and normative beliefs.

Unit 2, 6, 7, 8, 10, and 11 address skills: relationship and communication skills, creative thinking, assertiveness, empathy, refusal skills, and the abilities to manage emotions and to cope with stress. Unit 2 and 11 introduce a focus on normative beliefs.

Unit 12 targets creative thinking, decision making, norms and attitudes.

## **DISCUSSION**

In this paper we described the theoretical model of the *Unplugged* program, linking theories with activities in the units, and their targeted mediators. Most critical was especially the attempt to attribute a certain proportion of the units' activities to one or another theory: here is certainly a potential for debate and improvement. The theories indeed are sometimes overlapping, so the association of content to one or another can be questionable. However, this is a first step to understand the contribution of the theories to the program, to provide a picture of the possible targeted mediators, and to give ground for the study of effective mediators.

The importance of defining the theoretical background of prevention interventions is stressed by several European and U.S. drug prevention agencies. The Perk tool of EMCDDA recommends identifying "which mechanisms your prevention intervention will utilise". In the CDC document "Getting to outcomes 2004" the "degree to which the program is based on a well-defined theory or model" is even cited as a criterion for the definition of effective programs. Every prevention intervention should be created as guided by theories, and the definition of the theoretical model should inform evaluation studies, since every hypothesis tested should be based on theoretical postulates (29,9). In spite of this very seldom the theoretical model of the program is described or published, and very often there is even no reference to specific formal theories: "there is little to suggest that programs are theory driven" (9). When referenced, theories are sometimes used loosely and without a tight correspondence to theoretical postulates, or overlapped, diminishing thus their value.

A good theoretical model is based on observation, experimentation and development of a conceptual framework able to explain reality, to predict events, and to give researchers and practitioners the tools to intervene with good chances of modifying the occurrence of events. In the EU-Dap project, the need of formalizing the theoretical model and possible targeted mediators emerged when approaching mediation analysis.

Our effort however exceeded the definition of the theoretical model. We indeed linked theoretical postulates with contents of the units, and these in turn to the targeted mediators. As a result, it appears that Problem Behavior theory accounts for 51% of the *Unplugged* content, and other theories for about 10-17% of the contents. The units include different activities each referred to one or more theories, so that several theories are integrated in the unit, and each unit can be referred to several theories.

A similar observation emerges from the figure linking the units to the targeted mediators. According to the theories, the units work on several possible mediators. However, in order to make a definite statement about it, the actual effect of the program on the targeted mediators should be formally tested. At the end of the exercise, keeping in mind the graphical representations, we are reinforced in our original thought that the program works as a whole, integrating different approaches: it would be very difficult to attribute its effect to one or another theory, unit, or activity.

The integration of several theories in a program does not help to test the robustness of any theoretical approach (9). However, it acknowledges the complexity of the phenomenon to prevent, in a multidisciplinary and multi-professional approach. This reflects a vision of problematic substance use whose etiology includes several elements to which we strongly adhere. Prevention research since many years strives for the identification of the active *ingredients* of effective programs (30). Our attempt includes two steps of this very complex process: to define the underlying theoretical hypotheses of the program, and to identify the possible targeted mediators. The analysis of effects and mediators leads to *effective mediators*. The step from mediators to the active ingredients is however less straightforward. A change in a mediator can only be attributed to the exposure to the program as a whole. But it doesn't allow to identifying which specific activities or units within the programme were responsible for the change in the

mediator. So, an attempt to identify the more effective units won't justify shortening the program: the effectiveness of the shorter version will need to be formally tested.

Future research on prevention interventions should follow the above-mentioned steps, in order to develop new more effective programs and prevention strategies. Collaborative trials able to investigate all these steps are still rare in prevention research (3). The EU-Dap project is an example of a study focused on research and practice that can further investigate several aspects of program effectiveness, thereby adding European evidence to previous predominantly US-based findings.

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Figure 1: The theoretical model of *Unplugged* 

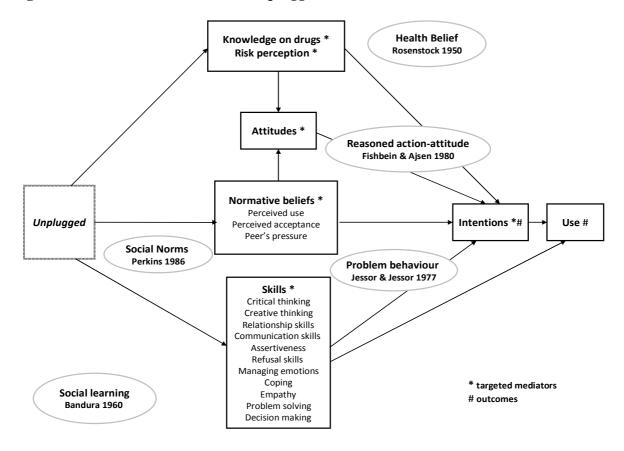


Figure 2: The application of the theories in the 12 Unplugged units

Social Learning **Social Norms Health Belief** Reasoned Action-Attitude and Planned Behaviour Problem Behaviour Unit 3: choices - alcohol, risk Unit 1: opening Unplugged Unit 2: to be or not to be in a group and protection Unit 4: your beliefs, norms Unit 5: smoking the cigarette Unit 6: express yourself and information - do they drug: inform yourself reflect reality? Unit 7: get up, stand up Unit 8: party tiger Unit 9: drugs - get informed Unit 10: coping competencies Unit 11: problem solving and Unit 12: goal setting decision making

Figure 3: The units and the targeted mediators

