The efficacy of an e-learning prevention program for substance use among adolescents with intellectual disabilities: A pilot study

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\begin{abstract}
Background and aims: Adolescents with Intellectual Disability (ID) are at risk for tobacco and alcohol use, yet little or no prevention programs are available for this group. ‘Prepared on time’ is an e-learning program based on the attitude–social influence–efficacy model originally developed for fifth and sixth grades of mainstream primary schools. The goals of this study were (1) to examine the lifetime use of tobacco and alcohol among this target group and (2) to gain a first impression of the efficacy of ‘Prepared on time’ among 12–16-year old students with moderate or mild ID (MMID).

Methods and procedures: Students from three secondary special-needs schools were assigned to the experimental (e-learning) group (n = 37) or the control group (n = 36). Pre-intervention and follow-up data (3 weeks after completion) were gathered using semi-structured interviews inquiring about substance use among students with MMID and the behavioral determinants of attitude, subjective norm, modelling, intention, and knowledge. Results: The lifetime tobacco use and alcohol consumption rates in our sample were 25% and 59%, respectively. The e-learning program had a positive effect on the influence of modelling of classmates and friends. No significant effects were found on other behavioral determinants and knowledge.

Conclusions and implications: A substantial proportion of adolescents with MMID in secondary special-needs schools use tobacco or alcohol. This study showed that an e-learning prevention program can be feasible for adolescents with MMID.

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\end{abstract}

What this paper adds?

This study is one of the first to aim to influence substance use knowledge, attitudes, and intention to use in a sample of students with mild to moderate intellectual disability (MMID). It demonstrates that students with MMID were well capable in working with an e-learning program about (the risks of) substance use and that this program positively influences the

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effect of modelling of direct environment and classmates. This study also demonstrates a clear need for such programs, since it indicates substance use rates in students with MMID are comparable to those in students without ID.

1. Introduction

Research on adolescents with ID has shown that this group is at risk for substance use, due to specific characteristics (e.g., inadequate coping skills, poor executive functioning including working memory) and social factors (e.g. vulnerable to peer pressure) (Slayter, 2008; Žunić-Pavlović, Pavlović, & Glumbić, 2013). Yet among persons with ID, knowledge of substance use risks is limited (Brown & Coldwell, 2006). Access to substances, combined with limited knowledge on negative consequences, may contribute to the risk of misusing these products and the likelihood of harm and addiction to alcohol, nicotine, and other drugs (Degenhardt, 2000; Taggart, Huxley, & Baker, 2008). Problems associated with substance abuse in individuals with ID include physical and/or sexual assault, robbery, theft, accidental injury and involvement in the criminal justice system (Lindsay et al., 2013; Snow, Wallace, & Munro, 2001), somatic and psychiatric co-morbidity, high prevalence of prescribed drug usage, higher levels of somatic complications and often co-occurring psychosocial problems (Carroll Chapman & Wu, 2012; McGilliguddy, 2006; VanDerNagel, Kiewik, Buitelaar, & Dejong, 2011).

Also, people with ID receive minimal support from mainstream alcohol and drug programs (Plant, McDermott, Chester, & Alexander, 2011) due to access related barriers, such as exclusion from managed care (Carroll Chapman & Wu, 2012). Unfortunately, even though special education students are a high-risk group for substance abuse, few prevention programs have been developed to target specifically this population (Carroll Chapman & Wu, 2012; Snow et al., 2001).

Some of the risk factors for substance (ab)use are found in theoretical models, such as the attitude – social influence – self-efficacy model (ASE). In the ASE-model, it is assumed that intention and behavior are determined primarily by substance related attitudes, social influences, and self-efficacy expectations. Moreover, the ASE-model assumes that intention predicts future behavior (Markham et al., 2004).

'Prepared on time' [Op tijd voorbereid] is a Dutch prevention program based on the ASE model that aims to prevent 11- and 12-years-old (5th and 6th grade) students in mainstream primary schools from starting smoking cigarettes and drinking alcohol (Ter Huurne, 2006). The program has three components: an e-learning program, group assignments, and an information evening for parents. Ter Huurne (2006) found in the original target group that although 'Prepared on time' improved the knowledge of smoking and drinking, the intention to start smoking was low in general and intention to start drinking before the age of 16 was higher. Further, the attitude of the respondents toward smoking and alcohol was influenced by their age (Ter Huurne, 2006). Older respondents rated both smoking and alcohol more positively.

'Prepared on time' has been successfully piloted among students with mild or borderline ID (MBID, IQ 50-85) (Kiewik, VanDerNagel, Kemna, Engels, & Dejong, 2015). Kiewik et al. (2015) found that the influence of negative modelling of the environment was low among students with MBID. Further, 'Prepared on time' improved the alcohol-related knowledge of these students. Although Kiewik et al. (2015) suggested that 'Prepared on time' is suitable for adolescents with MBID, it's unclear whether 'Prepared on time' can be useful for adolescents with Mild to Moderate Intellectual Disabilities (MMID, IQ between 35 and 70).

Therefore, the first aim of the present study was to examine the tobacco and alcohol consumption of a sample of students with MMID. Second, we examined the efficacy of 'Prepared on time' in this group using the ASE-model and the improvement of knowledge to identify modifiable risk factors for tobacco and alcohol use (Ausems, Mesters, van Breukelen, & de Vries, 2003).

2. Method

2.1. Design

This study was a pre-/post-intervention pilot study with a control group comprising 73 students with MMID from three secondary special-needs schools.

2.2. Participants and setting

Six special education schools for adolescents with MMID in a semi-rural area in the eastern part of The Netherlands were asked to participate in this study. Three schools were excluded: two schools were not interested to participate, and one school already used a program targeted to mainstream students. One school was assigned to the experimental group and one school to the control group. The students in the third school were assigned to either condition alphabetically in order to create equal size groups. Hence, 73 students (12–16 years) with MMID participated, resulting in 37 students in the experimental group and 36 students in the control group at baseline. Parents of two students did not provide permission to participate, one dropped out of school, and one was ill during the follow-up. In total, 69 students (35 students in the experimental group and 34 students in the control group) completed both baseline and follow-up questionnaires.

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