



Substance use outcomes in the Healthy School and Drugs program: Results from a latent growth curve approach [☆]



Monique Malmberg ^{a,*}, Marloes Kleinjan ^c, Geertjan Overbeek ^b, Ad Vermulst ^a, Jeroen Lammers ^c, Karin Monshouwer ^{c,d}, Wilma A.M. Vollebergh ^d, Rutger C.M.E. Engels ^{a,c}

^a Behavioural Science Institute, Radboud University Nijmegen, The Netherlands

^b Research Institute of Child Development and Education, University of Amsterdam, The Netherlands

^c Trimbos Institute (Netherlands Institute of Mental Health and Addiction), Utrecht, The Netherlands

^d Department of Interdisciplinary Social Science, Utrecht University, The Netherlands

HIGHLIGHTS

- No effects of the HSD program on the development of substance use in adolescence.
- No beneficial effects were present for sex, education, and personality risk traits.
- The HSD program should not be delivered as it is currently implemented.

ARTICLE INFO

Available online 26 November 2014

Keywords:

Substance use
Randomized clustered trial
Early adolescents
Prevention
Latent growth curve modeling

ABSTRACT

Aim: To assess the effectiveness of the Healthy School and Drugs (HSD) program for secondary schools on the development of substance use among Dutch early adolescents and to explore whether boys, adolescents of lower educational backgrounds, or adolescents high on personality risk traits, would benefit more from the HSD program than others.

Design: Randomized clustered trial with two intervention conditions (i.e., lessons and integral) among a general population of adolescents in the Netherlands.

Participants: A total of 3784 students of 23 Dutch secondary schools.

Measurements: Structured digital questionnaires were administered pre-intervention and at 8, 20, and 32 months follow-ups. The outcome measure was the rate of change in substance use across follow-ups. Differential effectiveness of the HSD program was examined for sex, educational level, and personality traits.

Findings: Our results show no HSD intervention effects on the development of substance use. Sex, education level, and personality characteristics of the participants did not moderate the intervention effects.

Conclusion: The absence of effects of the Healthy School and Drugs program on the development of substance use indicates that the program should be renewed and redeveloped.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

The Healthy School and Drugs (HSD) program is a universal school-based prevention program aimed at preventing, postponing or reducing excessive substance use among early adolescents (Cuijpers, Jonkers, De Weerd, & De Jong, 2002; Malmberg, Overbeek, Kleinjan, et al., 2010). Approximately 75% of all secondary schools in the Netherlands implement (parts of) the HSD program. However, an earlier study on the effectiveness of HSD revealed no effects of HSD on the incidence of

substance use at 8, 20 and 32 months follow-ups (Malmberg et al., 2014). Although incidence-based approaches are commonly used when assessing the effectiveness in Randomized Controlled Trials (RCT's; Bodin & Strandberg, 2011; Foxcroft & Tsertsvadze, 2012; Koning, Van den Eijnden, Verdurmen, Engels, & Vollebergh, 2011; Koning et al., 2009; Skara & Sussman, 2003), it is important to note that when estimating the effect of a prevention program at each measurement wave separately, the dynamics in the development of the outcome variable over time are unknown (Duncan & Duncan, 1995; MacKinnon & Lockwood, 2003; Muthén & Curran, 1997; Taylor, Graham, Cumsille, & Hansen, 2000). With latent growth curve modeling it is possible to examine the HSD program effects while accounting for the developmental nature of substance use over time. In a latent growth curve model all information on the longitudinal course of the outcome variable is

[☆] Trial registration: NTR1516.

* Corresponding author at: Behavioural Science Institute, Radboud University, P.O. Box 9104, 6500 HE Nijmegen, The Netherlands. Tel.: +31 24 3612705.
E-mail address: m.malmberg@pwo.ru.nl (M. Malmberg).

included in a single analysis, which makes it possible to determine individual variation in the development of use and to examine if an effect of the HSD program might be found on such changes over time (Duncan & Duncan, 1995).

In the current post-hoc analyses of the HSD prevention program effects, two intervention conditions are compared to the regular curriculum of Dutch secondary schools, using latent growth curve modeling. We expected that the HSD program would lead to a slower increase of substance use development. The relevant outcomes for alcohol were lifetime prevalence, overall alcohol use, and binge drinking. For tobacco use, we examined lifetime prevalence and overall tobacco use, and for marijuana use we examined lifetime prevalence. We expected that the increase of substance use behaviors over time would be less steep among adolescents in the intervention conditions, relative to adolescents in the control condition. Also, in line with findings of Koning et al. (2011, 2009) we expected that these effects would be more pronounced in the integral (i.e., consisting of information lessons, a parental meeting, regulation, and monitoring and counseling) than in the e-learning condition (i.e., in which the adolescents only received the information lessons).

We further explored whether certain theory-based subgroups would benefit more from the HSD intervention than others. Specific characteristics of study participants may moderate the relationship between the HSD program and substance use behaviors (Conrod, Castellanos, & Mackie, 2008; Conrod, Castellanos-Ryan, & Strang, 2010; Koning, 2011; Koning, Verdurmen, Engels, Van den Eijnden, & Vollebergh, 2012; Kreamer, Wilson, Fairburn, & Agras, 2002; Skara & Sussman, 2003). This kind of information is relevant for future redevelopments of the HSD program, because it can direct future implementation and content building. The risk moderation hypothesis suggests that prevention programs should be more effective in high-risk groups compared to lower risk groups. On the basis of previously reported moderators in the literature (Amaro, Blake, Schwartz, & Flinchbaugh, 2001; Conrod et al., 2008; Koning, 2011; Kuntsche, Knibbe, Gmel, & Engels, 2006; Verdurmen, Monshouwer, van Dorsselaer, Lokman, Vermeulen-Smit, & Vollebergh, 2012), we specifically examined participants' sex, educational level, and personality traits as possible moderators of HSD intervention effects.

1.1. Gender

There are differences between boys and girls in substance use behaviors (Verdurmen et al., 2012). For instance, boys tend to drink earlier, and more frequently and intense compared to girls. Also, there are sex differences in expectations toward substance use and risk factors for substance use (Amaro et al., 2001; Kuntsche et al., 2006; Petraitis, Flay, & Miller, 1995). Perceived peer pressure and dominant social norms with respect to substance use are especially relevant for girls, whereas expression of rebelliousness and achievement of peer status seem more relevant factors for boys' substance use (Amaro et al., 2001). In general, girls' risk factors for substance use concern more internalizing factors, like low self-esteem, and are more relevant for escalating trajectories of use (Chassin, Pitts, & Prost, 2002; Colder, Campbell, Ruel, Richardson, & Flay, 2002). In contrast, externalizing risk factors as low self-regulatory capacities are more important for boys, which are especially relevant for early onset of substance use (Chassin et al., 2002; Hill, White, Chung, Hawkins, & Catalano, 2000). Furthermore, girls are more likely to use substances as a way to cope with stress, while boys are more likely to use out of enhancement motives (Kuntsche et al., 2006; Petraitis et al., 1995). Based on this literature review we expected boys to benefit more from the HSD program, since they seem at highest risk for substance use in early adolescence.

1.2. Education level

There are differences in substance use behaviors between adolescents from lower and higher educational backgrounds (Salonna et al.,

2008; Spijkerman, Van den Eijnden, & Huiberts, 2008; Verdurmen et al., 2012). Adolescents from lower educational levels use more alcohol, tobacco, and marijuana compared to adolescents from higher educational levels. Findings from a recently tested Dutch alcohol prevention program showed moderation effects of educational level on heavy weekly drinking, indicating that only lower educated adolescents profited from the intervention (Koning, 2011). Based on these findings, we expected higher program effectiveness on substance use outcomes for adolescents in lower educational tracks.

1.3. Personality traits

Among the many risk factors that can be identified, personality traits involving neurotic tendencies and deficits in behavioral inhibition are among the strongest predictors of substance use behaviors. Previous research showed that four specific traits are especially relevant for substance use development, namely anxiety sensitivity, hopelessness, sensation seeking, and impulsivity (Kotov, Gamez, Schmidt, & Watson, 2010; Krank et al., 2011; Malmberg, Overbeek, Monshouwer, et al., 2010; Malmberg et al., 2012; Sargent, Tanski, Stoolmiller, & Hanewinkel, 2010; Schmidt, Buckner, & Keough, 2007; Shin, Hong, & Jeon, 2012; Walther, Morgenstern, & Hanewinkel, 2012; Woicik, Stewart, Pihl, & Conrod, 2009). In general, higher levels of these personality traits are related to an increased risk for substance (mis)use behaviors. Also, prevention programs that are tailored to these personality traits show much promise in reducing substance use in adolescents (Conrod et al., 2008; Conrod et al., 2010). Therefore, we explored whether differential effects of the HSD program are present for the personality-based risk traits anxiety sensitivity, hopelessness, sensation seeking, and impulsivity.

2. Method

The design and procedure used in this study are in accordance with the study protocol (Malmberg, Overbeek, Kleinjan, et al., 2010). More detailed information on the procedure, randomization, power calculation, loss to follow-up, and the prevention program can be found in earlier reports (Malmberg, Overbeek, Kleinjan, et al., 2010; Malmberg et al., 2014).

2.1. Design and procedure

Of 123 eligible secondary schools that were invited, 23 schools including 3784 adolescents agreed to participate. An independent statistician randomly assigned these 23 schools to one of the three study conditions: (1) control condition, (2) e-learning condition, or (3) integral condition. The baseline data (T0) were collected among all first grade students between January and March 2009, before the intervention was carried out. The first follow-up (T1) was carried out after 8 months, the second (T2) after 20 months, and the third (T3) after 32 months. At all assessments, adolescents filled out a digital questionnaire during school hours in the presence of a teacher and a research assistant. Adolescents were informed that the data would be processed anonymously; respondent-specific codes were used to link the data from one time point to the next. Because adolescents did not know beforehand when the questionnaires would be administered, non-response can be ascribed to either illness or leaving school.

2.2. Participants

Twenty-three secondary schools, including 3784 first-grade students, were selected to participate (see Fig. 1). At T0, a total of 3542 first-grade students took part in the study; 229 adolescents (6.1%) were absent during data-collection and 13 participants (0.3%) were declined participation by their parents. The T0-sample (N = 3542) included 49.4% boys (n = 1750). Participants ranged in age from 11 to 15 years (M = 13.01, SD = .49). In total, 24.6% of these adolescents received pre-university education (n = 871), 18.9%

Download English Version:

<https://daneshyari.com/en/article/7261046>

Download Persian Version:

<https://daneshyari.com/article/7261046>

[Daneshyari.com](https://daneshyari.com)