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Immediate and six-month effects of Project EX Russia: A smoking cessation intervention pilot program

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HIGHLIGHTS

- We evaluated a Project EX tobacco use cessation program in Russian summer camps.
- The experimental pilot trial among teens included 3 data collection points (n=164).
- At immediate posttest, Project EX increased motivation to quit smoking.
- At 6-months, higher quit rates were found in the intervention vs. control group.
- At 6-months, reduced nicotine dependence was found in intervention vs. control.

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ABSTRACT

This study evaluates the performance of the Project EX tobacco use cessation program in Russian summer recreational camps. An eight-session clinic-based tobacco use cessation program for adolescents was tested during the summer of 2011 in an experimental pilot trial that involved different youth that rotated through camps. Conditions were nested within camps. Two rotations of unique subject groups of smokers (program and standard care control) through each of five camps provided the means of controlling for campsite by condition. Assignment of condition by rotation was random (by a flip of a coin), achieving reasonable baseline comparability (total n = 164 smokers at baseline, 76 program group, 88 standard care control group). Evaluation involved an immediate pretest and posttest and a six-month telephone follow-up. At immediate posttest, Project EX was moderately well-received, significantly reduced future smoking expectation (46% reduction in EX program condition versus 8% in control, $p < .0001$), decreased intention to not quit smoking (−5.2% in EX versus +1.4% in control, $p < .05$), and increased motivation to quit smoking (0.72 versus −0.04, $p < .0001$). At the six-month follow-up, program subjects reported a higher intent-to-treat quit rate during the last 30 days (7.5% versus 0.1%, $p < .05$). For the subjects who remained monthly smokers at the six-month follow-up, Project EX reduced subjects' level of nicotine dependence (−0.53 versus +0.15, $p < .001$). The results were quite promising for this program, which included motivation enhancement, coping skill, and alternative medicine material. However, further research on teen tobacco use cessation programming in Russia with larger sample sizes, involving other locations of the country, and with stronger research designs is needed.

1. Introduction

Tobacco use is the most prevalent and preventable lifestyle-related cause of death in the world (Fiore et al., 2008; Makomaski & Kaiserman, 2004). Unfortunately, tobacco users become addicted to nicotine within only a couple of years after initiation of use (Sussman & Ames, 2008). A majority of young tobacco users (60–85%) have made at least one quit attempt and failed (CDC, 2008; Sussman & Black, 2009). Prevalence of smoking among Russian youth and adults

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is quite high. Up to one third of Russian youth have tried a cigarette by 10 years of age; 27% and 19% of 15 year old males and females, respectively, are current smokers; and up to 27% of high school youth are daily smokers depending on region sample and average age (Global Adult Tobacco Survey, GATS, 2009; Gunning, Sussman, Rohrbach, Kniazev, & Masagutov, 2009; Sussman, Gufranova, & Demin, 2007). Also, approximately 60% and 16% of adult males and females are current smokers (Global Adult Tobacco Survey, GATS, 2009; Sussman, Gufranova, & Demin, 2007).

Tobacco use cessation program development research for youth is needed. Yet, relatively few studies of teen smoking cessation have been conducted and evaluated compared to adult cessation programs (Sussman & Sun, 2009; Sussman, Sun, & Dent, 2006), and only 25% of these studies have been conducted outside the United States (Sussman, 2012). Of 64 controlled studies reviewed by Sussman and Sun (2009), 17 were completed outside of the U.S. Of these studies, four were from Australia, three were from Canada, one was from China, one was from Finland, two were from New Zealand, one was from Singapore, one was from Switzerland, and four were from the UK. Program minus control group effects were not found to differ as a function of being from within or outside the U.S. (Sussman & Sun, 2009). Among the non-U.S. studies, seven were experimental, and 10 were quasi-experimental. Ten of the trials took place in a school-based clinic or classroom type setting, whereas three were community-wide, and two each were computer-based or medical clinics. Program contents were fairly evenly split between cognitive–behavioral, motivation, and social influence-focused. There was an average of 5.47 sessions (range = 2 to 16). Four of the studies had fewer than 50 subjects, three had more than 50 but less than 200 subjects, and 10 had more than 200 subjects. These studies indicate a dire need for more well-controlled research trials of teen tobacco use cessation outside of the U.S. (particularly outside of English speaking countries), and suggest that such trials may be effective. However, at present there appear few treatment options outside of the U.S., particularly outside of the school setting.

The propagation of teen tobacco use cessation programs internationally is consistent with aims of the Framework Convention on Tobacco Control (FCTC; e.g., Sirichotiratana et al., 2005; Sussman & Black, 2009; Sussman, Gufranova, & Demin, 2007; Warren et al., 2000). Along with other types of activities (e.g., mass media campaigns, policy regulations), wider use of evidence-based teen tobacco use cessation programming might help decrease the prevalence of tobacco use among Russian teens. To our knowledge there is only one published study on a tobacco use cessation program among teens in Russia (Aleksandrov, Kotova, Rozanov, Klimovich, & Vaganov, 2006). This was a single group study of 93 14-to-16 year olds. Adolescents from low income families received a six month-long cognitive–behavioral program, which included private psychological consultations, group psychotherapy, and electro-puncture (i.e., Self-Controlled Energo Neuro Adaptive Regulation procedure or SCENAR, a biofeedback device developed originally for the Russian Space Program). Self-reported assessment of quitting was 19.4% at immediate posttest (also using a CO expired-air pipeline assessment to help validate reports). A total of 79 youth could be located at a 14 month follow-up, and 13.9% of them had quit smoking. Thus, the intent to treat quit rate at the follow-up was 11.8%.

Project EX was developed in California, in the U.S., and is considered an evidence-based program at numerous agencies (e.g., Centers for Substance Abuse Prevention, National Cancer Institute, and Health Canada). Project EX was originally developed as an 8-session clinic-based tobacco use cessation program for adolescents. It provides motivation enhancement and cognitive–behavioral skill information, in ways enjoyable to teens to elicit quit attempts which may double rates compared to standard care (Sussman et al., 2004). While motivation instruction places an emphasis on helping youth "see through" the course of cessation, cognitive–behavioral skills place an emphasis on helping youth cope with physiological reactions and situations that are encountered while quitting (also see Milton et al. (2004)).

Project EX recently has been used as a template for which to engage in international translation of teen tobacco use cessation (Sussman, 2012). Project EX pilot study work is ongoing in eight countries that have been approached thus far (Sussman, 2012). The program was implemented in Wuhan, China; Israel and partners; Bashkortostan, Russia; and Elche, Spain. Implementation is planned for Vienna, Austria; New Delhi, India; and was just completed in Bangkok, Thailand. This work will lead eventually to a greater understanding regarding preference for the type of programming (e.g., clinic versus classroom modality), challenges in recruitment and retention, program receptivity, and short-term (approximately 3-month post-program) quit rates.

The first international pilot study completed was in Wuhan, China using a single-group multiple baseline design (Zheng et al., 2004). A self-report questionnaire was completed by 622 10th grade students (42% boys) from two urban Wuhan schools in June, 2000. Smokers were identified. Approximately three weeks later the clinic program began and naturally occurring quitting could be observed in the interim. This quit rate was 3% (i.e., two of 68 baseline smokers quit). Forty-five smokers became clinic participants, attended at least six of the clinic sessions, and completed the immediate posttest questionnaire. All 45 of these participants also completed the follow-up questionnaire, a mean of 4.6 months after the posttest (SD = 0.9 months). The program was rated as very helpful; there was a 10.5% five-month follow-up intent-to-treat quit rate corrected for biochemical validation adjustment; 3.5–4.8 times the quit rate achieved prior to beginning of clinic. The Bashkortostan study is the second international pilot work of Project EX to reach completion.

The Bashkortostan Republic, in the Russian Federation, is one of the locations where Project EX recently has been piloted. Ongoing collaboration between University of Southern California and Bashkortostan State Medical University in Ufa, the Bashkortostan Republic, permitted the possibility of engaging in the translation of Project EX from the U.S. to the Russian Federation context. Bashkortostan is a republic in the Russian Federation spanning 143,600 km^2 (0.8% of the Russian territory) with a population of 4.1 million (2.7% of the Russian population), and representing dozens of ethnicities (Shakurov, 1996). The capital city of Bashkortostan is Ufa, located near the Ural Mountains, with a population of a little over one million, making it the 11th highest populated city in Russia.

To our knowledge this is the first controlled trial of teen tobacco use cessation with six-month follow-up data conducted in the Russian Federation. We chose a summer recreational camp setting for delivery of the smoking cessation programming. We chose this setting in part due to a matter of convenience for treatment delivery, where youth smokers may be easily reached and due to high receptivity of the camps to receiving such programming as a camp activity. Also, importantly, no previous teen tobacco use cessation program research study has been conducted at a summer camp setting. There were five public summer camps that serve children and adolescents from Bashkortostan and nearby regions. Four out of five camps were located in Bashkortostan itself but one was in Krasnodar Krai in Tuapse, which is a seaport town situated on the northeast shore of the Black Sea, south of Gelendzhik and north of Sochi (population = 63,292).

The present study describes the implementation and 6-month outcomes of Project EX at these camps. We hypothesized that Project EX would demonstrate a higher quit rate compared to standard care over a six-month follow-up period using an experimental design. Multiple groups of campers experience summer recreational camps over 21-to-30-day periods, depending on the camp. Two rotations of different youth through the same camps during the summer of 2011 permitted program and standard care control conditions nested within campsites.