Published in final edited form as:
Sucht. 2012 October 1; 58(5): 317–325. doi:10.1024/0939-5911.a000205.

International Translation of Project EX: A Teen Tobacco Use Cessation Program

Steve Sussman
Institute for Health Promotion and Disease Prevention Research, University of Southern California, Los Angeles, California, USA

Abstract

Aims—There are relatively few documented teen tobacco use cessation efforts outside the United States (U.S.). Project EX is an evidence-based program that consists of eight sessions, as a school-based clinic tobacco cessation-only version and a classroom-based prevention and cessation version. This paper provides a 'snapshot' of progress on international translation of ProjectEXpilot study work in eight countries that have been approached thus far. The program was implemented in Wuhan, China; Israel and partners; Bashkortostan, Russia; and Elche, Spain. Implementation is planned for Vienna, Austria; Mumbai, India; and Bangkok, Thailand. This work will lead eventually to a greater understanding regarding preference for 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.

Protocol and Interim Results of International Translation of Project EX—Convenience samples are being recruited based on previous contacts with each location. A protocol was sent to each location, proposing a controlled design, in which subjects enter cessation groups or become a wait-list control, with an immediate pretest, posttest, and 3-month follow-up. Language translation of program materials was completed in seven of the eight locations. Several variations in design and implementation were demanded though. For example, youth fear of reporting tobacco publicly mandated to researchers that the prevention/cessation classroom version be implemented in some locations (Israel and partners, and India). Program effects are suggested across countries.

Conclusions—Ongoing partnerships with parties actively involved in tobacco control facilitate pilot testing of teen tobacco use cessation programming. The Project EX curriculum appears quite translatable, though having flexibility in implementation modality eased being able to pilot test the program. Research on this cognitive-behavioral, motivation enhancement approach continues.

Keywords

youth; cessation; international

Tobacco use is the most prevalent and preventable lifestyle-related cause of death in the world (Fiore et al., 2000; Makomaski & Kaiserman, 2004). Considering that (a) tobacco use is most often initiated during adolescence (Kann et al., 1996), (b) youth may start to become dependent on nicotine within weeks of initial use (Di-Franza et al., 2002), and (c) a large percentage of young tobacco users (60 – 85 %) are likely to have made at least one quit attempt and failed (Centers for Disease Control and Prevention CDC, 2008; Sussman &

Steve Sussman, Ph.D., FAAHB, FAPA, Institute for Health Promotion and Disease Prevention Research, University of Southern California, Soto Street Building, 2001 North Soto Street, Room 302 A, Los Angeles, CA 90032, USA, Tel.:+1 (0)310 323– 442 – 8220, Fax:+1 (0)310 626 –442 – 8201, ssussma@usc.edu

Black, 2009), tobacco use cessation efforts among youth are sorely needed. Unfortunately, relatively few studies of teen smoking cessation have been conducted and evaluated compared to adult cessation programs (Sussman, Sun & Dent, 2006), and even fewer teen tobacco use cessation studies have been conducted outside the United States (U.S.). For example, in an exhaustive review of 64 smoking cessation controlled trials, only 17 studies were completed outside of the U.S. though program effect size failed to be found to vary systematically by whether or not data are from the U.S. (Sussman & Sun, 2009; U.S. Department of Health and Human Services, 2012).

The propagation of teen tobacco use cessation programs internationally is consistent with aims of the Framework Convention on Tobacco Control (FCTC; e.g., Bell, 1999; Sirichotiratana et al., 2005; Sussman & Black, 2009; Sussman, Gufranova & Demin, 2007; Sussman, Pokhrel et al., 2007; Warren et al., 2000). Along with other types of activities (e.g., mass media campaigns, policy regulations, see Tauras & Chaloupka, 1999), wider use of evidence-based teen tobacco use cessation programming might help decrease the prevalence of tobacco use among teens around the world. As the result, I began to pursue utilizing Project EX as a template for international translation. Project EX is considered an evidence-based program at numerous agencies (e.g., Centers for Substance Abuse Prevention, National Cancer Institute, and Health Canada). In this paper I present the contents and research history of Project EX and then discuss its ongoing translation in eight countries.

Contents and Research History of Project EX

Project EX was originally developed as an 8-sessions clinic-based tobacco use cessation program for adolescents. It provides motivation enhancement and cognitive-behavioral skills 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. In Project EX, information is instructed that motivates youth with multiple reasons to quit tobacco. Youth entertain social concerns, relations of tobacco use to stress, and environmental and physical dangers of tobacco use. Motivation to quit is instructed through use of a game (on the topic of passive smoking), four scripted “talk shows” and interactive discussion. The talk shows address topics including (a) social consequences of tobacco use, (b) increase in stress due to tobacco use, (c) quitting getting easier the longer one stays stopped during a quit attempt, and (d) quitting being easier as a function of having a relatively brief tobacco use history (being younger, with fewer consequences having accumulated).

Cognitive-behavioral skills are instructed to help youth plan a quit strategy and deal with withdrawal symptoms. In addition, alternative medicine-type strategies are instructed to help youth sustain a quit attempt including: relaxation, deep breathing, meditation, and yoga. Youth are motivated to maintain a quit attempt by learning that symptoms ease over time, self-forgiveness for decrements in performance, and by letting feelings pass while quitting. To maintain cessation, anger management and assertiveness training also are instructed.

Four research trials have been completed on Project EX. The first EX project began in 1997 followed by three subsequent tEX projects. The first three trials used a school-based clinic version of Project EX developed only for smokers, whereas the last trial used a classroom-based version developed for both smokers and nonsmokers. Intent-to-treat quit rates were reported in these studies, which calculates quit rates on the full baseline sample, assuming that dropouts are still smoking. Most of the details on the four Project EX research trials are

shown in Table 1. *EX-1* was a 3-group school-based clinic experimental trial in southern California continuation (alternative) high schools (Sussman, Dent & Lichtman, 2001). A total of 60 % of the program enrollees and control group smokers were reached at follow-up, which occurred an average of 3.7 months (SD=0.7 months) after the immediate posttest. Mediation work indicated that manipulation of motivation enhancement was a major determinant of quitting behavior in EX-1 (McCuller, Sussman, Wapner, Dent & Weiss, 2006). Thirty-eight percent of the treatment effect was accounted for by motivation-enhancement.

EX-2 explored the generalizability of EX-1 findings to teens residing in Wuhan, China using a single-group multiple baseline design (Zheng et al., 2004). There was an ongoing prevention trial conducted by the University of Southern California (USC) and Wuhan Public Health and Anti-epidemic Station in Chinese adolescents in Wuhan, China in 2000, which permitted this extension. The EX curriculum was translated to Chinese (Mandarin) by two certified translators, who were employed by USC. Back-translation was not conducted. The translated version was pilot-tested session by session in focus groups, at the Wuhan Public Health and Anti-epidemic Station in China before program implementation to verify that the version to be utilized was both clearly understood and culturally appropriate (Zheng et al., 2004).Aself-report questionnaire was completed by 622 10^{th} grade students (42 % boys) from two urban Wuhan schools: one regular high school (50.5 %)and one vocational school (49.5 %), in June, 2000. Two sessions were delivered for each of the first three weeks of the program followed by one session per week for the remaining two sessions. Sessions were delivered separately for attendees at each school. 45 of the 48 participants attended at least 6 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). Saliva samples were collected in the beginning of each session and at the follow-up, utilizing a pipeline protocol (Chen et al., 2002), and we validated self-report of cigarette smoking using NicoMeter strip. An over-reporting of quitting was observed in 4.5 % of the sample based on the results of biochemical validation.

EX-3 examined the incremental value of adding a pharmacologic adjunct to the EX clinic curriculum (Sussman et al., 2004). An open label, nicotine substitution gum randomized 2-group controlled design was used (individual-level assignment to groups). 75 % of subjects completed this program and 87 % were followed-up 6-months post-program.

Finally, *EX-4* examined the adaptation of the program to the regular classroom setting, as a prevention-cessation education curriculum. In EX-4, the curriculum was adapted to non-smokers as well as smokers (e.g., discussion was added on reasons why youth should remain tobacco free, and on tobacco industry marketing tactics that target youth; non-smokers could make personal commitments to remain tobacco free or serve as a “listening ear” to assist those who are trying to quit). The “alternative medicine”-type activities were applied to non-smokers as well. This 8-sessions program was compared to a standard care control condition (classroom assessments only) at 6 other CHSs, with an immediate pretest, immediate posttest, and 6 and 12-month follow-ups, in a two-group experimental design. Follow-up rate was 79 % at 6-month and 65 % at one-year follow-ups.

Considered across the four trials, our program minus control group absolute-difference intent-to-treat quit rates were approximately 9 % (Ex-1), 11 % (EX-2), 8 % (EX-3; using the control group estimate based on EX-1), and 6 % (EX-4). Across the 3 clinic trials, with an approximate 6-month follow-up, Project EX showed an average 15 % program group quit rate, which at least doubled that in the two studies that provided a control comparison (Sussman et al., 2001; Sussman et al., 2004; Zheng et al., 2004). This program generalized across regular and alternative high school youth in EX-3 (Sussman et al., 2004). It also

showed promise of generalizability among high school youth in China (Zheng et al., 2004) in a multiple baseline single group design. Both tobacco users and nonusers were impacted in the classroom setting in EX-4 (Sussman, Miyano, Rohrbach, Dent & Sun, 2007; Sussman, Miyano, Rohrbach, Dent & Sun, 2010).

Protocol and Outcomes of Current International Translation of EX: Interim Results

The program was implemented in Wuhan, China long before its use outside the U.S. was attempted again, as described previously. Next, it was implemented in Israel and partners; Bashkortostan, Russia; and Elche, Spain. Implementation is planned for Mumbai, India and Bangkok, Thailand in Fall, 2012. Implementation is planned for Vienna, Austria at some time in the near future. Each country was introduced to EX through (a) previous internet and in-person contact, (b) presentation and discussion of a written pilot study protocol, and (c) provision of the Wuhan study (Zheng et al., 2004) as an example protocol. If the party was interested, next they were provided with (a) EX curricular materials, and (b) pretest, immediate posttest, and three-month follow-up questionnaires. Sources of potential funding were explored. A tentative timeline was developed.

A template research design for the pilot study of Project EX was offered to each party, involving potential data collection from 100 youth total, who range in age from 15 to 18 years old. A human subjects committee would approve the research protocol. Each youth would be randomly assigned to one of two groups (e.g., through a flip of a coin). One group of 50 youth would receive a pretest questionnaire, then the 8-sessions program (2 sessions in Week 1, 2 sessions in Week 2, then 1 session per week over the next 4 weeks). After the last session these youth would receive an end-of-program posttest. They would then be administered one more 3 month follow-up questionnaire. The second group is a wait list control group that would receive the pretest questionnaire, then simply waits 6 weeks, then receive the first posttest and one more, follow-up questionnaire 3-months after that. At this point the control group could be invited to receive the 8-sessions program and further evaluation.

Decisions were made on needs for training. Training is needed to familiarize the facilitator with the program material and relatively complicated details of program delivery (e.g., yoga poses, how to conduct a “Tobacco Smokehouse” game), motivate the facilitator to deliver the material with fidelity (as written), and encourage continued practice of program delivery. Project EX is a relatively straight-forward program and, for those familiar with youth prevention or cessation programming, necessitates only an one day (7 hour) training. For those highly familiar with program materials including tobacco use cessation, a 4 hour training/workshop is sufficient. For persons familiar with program delivery but desiring additional research training on research design, implementation issues, and cessation measurement, an extended 2-day training/workshop can be provided. Anyone so trained would be able to train others on Project EX in their research unit on delivery of Project EX. Training by country is shown in Table 2. The team in India has engaged in a variety of youth tobacco prevention and cessation programs and the facilitators are familiar with the different facets of the material. Hence, training was not necessary there, though questions were addressed through Skype contact, in person (secondary to attendance at the 2012 World Conference on Tobacco OR Health), and e-mail contact. Thus, training suited to the needs of the country was completed in all locations.

Common Adaptations of the Curriculum for International Translation

The curriculum was translated to the language of the host country, by host country-certified bilingual translators. In addition to language adaptations, four other changes were made in the curriculum to adapt it to the host country culture. First, typically there was some shifting on which tobacco product or products were addressed. For example, only cigarette smoking was addressed in Spain because Spanish teens seldom use other tobacco products. In Israel and its partners, smokeless tobacco products were dropped and narghile smoking was mentioned.

Second, there were changes in the curriculum to tailor the contents to the host country. For example, characters in the talk shows were changed from American to host country names. Also, monetary amounts were changed from dollars to the currency of the host country in Session 1; also, tobacco consequences and policy facts in Session 3 were tailored to the host country.

Third, contrary to implementation in the U.S., no incentive such as extra class credits were provided in the other locations. Approaches to recruitment varied. In China, screened smokers were brought to a private room. The program facilitator provided a brief 5-minute presentation regarding the availability of a free tobacco use quit clinic over the next few weeks and explained the length of the cessation program and frequency of the clinic. In Spain, the participants were recruited by means of announcements at class, print advertisements, and handouts. Also, an email address was provided so that teen smokers could contact researchers for further information or join the program. When feasible, class release time was used in China and Spain to further motivate recruitment. That is, instead of attending a class, the smoker could attend the clinic which may have been perceived as being relatively novel or interesting. Class release time also will be utilized in Thailand and is planned in Austria.

Alternatively, the program was added as part of class course work for prevention/cessation implementation in Israel and partners, and will be part of class course work in India. In Israel and partners, and in India, the facilitator and classroom teachers announced, or will announce, the program to classes as being part of the course. The students could volunteer to participate in the course or work quietly on other topics.

Finally, in Russia, the availability of the clinic activity was announced by camp counselors. The program was considered an indoor activity in which smokers could participate in Russia. The activity was an alternative to unstructured time, and thus was preferred by tobacco users as a means to quit and as an interesting novel activity.

Current Status of Project EX by Country

The status of international translation of Project EX by country is shown in Table 2. Methods and results information is provided in the text.

Under an US AID Middle East Regional Cooperation program, at first the Middle East participating partners expressed an interest in the 8-sessions clinic-based program. However, when first piloting the program, it became clear that youth were afraid to admit smoking in the high school setting. In addition, due to rapid changeover in program staff and school climates, it appeared that a brief program was needed. Therefore, I provided a 3-sessions modified version of EX which applied to smokers and nonsmokers (with classroom version material). The 3-sessions version was subsequently modified slightly again by the Middle East project directors for cultural adaptation purposes. Session 1 involved thinking about quitting or not using tobacco in the future (including a smoking experiment, reasons to quit

or not use tobacco, smoking-related stresses such as withdrawal and lack of healthy coping strategies, recognition of social disapproval of smoking). Session 2 involved taking action to quit or not use tobacco in the future (including quit strategies, information on stages of addiction, personal commitment to quit or not smoke in the future, a quit narrative, being a support to potential quitters). Session 3 focused on staying stopped or maintaining commitment not to use tobacco in the future (including discussion on prevention of weight gain, exercise, assertiveness and anger management, and avoiding relapse).

I report outcomes achieved in Israel. (Implementation is ongoing among its partners.) In Israel, the design was changed to become a pretest-posttest single group design (age range=12–19 years; median age=15 years). A pretest was followed immediately with Session 1, and the other sessions were implemented one day per week, followed with an immediate posttest (2 weeks later). The overall study cohort included smokers and non-smokers from a convenience sample of 8 schools in the Negev (n= 922). However all but one school were administered an immediate posttest. A $2\frac{1}{2}$ month delayed posttest was assessed among 122 residential subjects (n=53 females), of who 26.4% had smoked a cigarette in the last month at pretest. Outcomes are examined with this subset. The program was rated moderately favorably by these residential subjects (as well as the full sample). As these were residential subjects, 93% attended all 3 sessions. The delayed posttest percentage of smokers was 12.3 %, suggesting a 14.1 % quit rate among this sample. Self-initiated quitting likely is very low at this age range in the Negev (e.g., Sperber, Peleg, Friger & Shvartzman, 2001).

In Spain, the research group contacted 32 schools as a convenience sample within the province of Alicante. A total of 13 schools were willing to maintain participation, 10 program and 3 control schools. Participants were 104 teen smokers in the province of Alicante, with 80 in the experimental condition and 34 in the control condition. The mean age of the study participants was 15.6, with a range age from 14 to 19 years, and 75 (48.4 %) were boys. The program was delivered in classrooms over a 5-week period. As had been implemented in the China pilot study, for the first 3 weeks of the clinic delivery, two clinic sessions were delivered each week and then one clinic session was delivered each week over the subsequent 2 weeks. The Spanish version was pilot-tested in focus groups at the University Miguel Hernndez in Spain before the program implementation to verify its comprehensibility and cultural appropriateness. A total of 72 % of the program participants attended at least 4 sessions, though average attendance calculated across all 8 sessions was only 54 %. Sessions were rated moderately favorably. Approximately, 36% of the total sample was reached and surveyed at the 4-month follow-up. Using an “average number of cigarettes smoked per day” item with “0” indicating quitting, the intent-to-treat quit rate in the program condition was 11 % at immediate posttest and 7 % at the 4-month follow-up (but only a 3% quit rate was reported on a 30-day smoking item at the 4-month follow-up), and 0 % was reported in the control condition at both follow-up timepoints.

In the Bashkortostan Republic, located in the Russian Federation, through the efforts of colleagues at Bashkir State Medical University, the clinic program was administered at summer recreational camps. There were five camps. Making use of two rotations of youth through each camp, researchers created within-camp program and control conditions in a quasi-experimental design. Camps were three to five weeks long each, and youth who were in the program condition received two to three Project EX classes per week, led by a camp counselor who had been trained by a Russian researcher (who I had trained). Smoking is not formally allowed at these camps though there was no obvious evidence that youth concealed their use. Only smokers attended the sessions. Attendance at the sessions was encouraged by the counselors during indoor activity periods, and was approximately 95 % across all

sessions. The program was moderately liked by youth, though they reported that it was more suitable for a school context. A total of 164 youth participants completed questionnaires at pretest (youth ranged in age from 13 to 19 years old; 75 % were male); 20 of them dropped out of the assessment (only 2 to 4 subjects within each group, by camp and condition). Of the youth measured at pretest, 76 were in the program condition (number of subjects within camps ranged from 10 to 16) and 88 were in the control condition (number of subjects within camps ranged from 11 to 19). Intent-to-treat quit rates at immediate posttest, examining the item "number of cigarettes smoked yesterday" with "0" indicating quitting, was 7% in the program condition and 1% in the control condition. The researcher telephoned all youth to obtain 6-month follow-up estimates, reaching a total of 63 program youth and 69 control youth (81 % total follow-up rate). Using a 30-day use item, the intent-to-treat quit rate in the program condition was 5 % at the 6-month follow-up, and 1 % in the control condition. Using the item "average number of cigarettes smoked per day" with "0" indicating quitting, the intent-to-treat quit rate in the program condition was 17 % at the 6-month follow-up, and 5 % in the control condition.

Implementation has not begun yet in Austria, India, or Thailand. In Austria, a one-day workshop was provided by the author to potential trainers in Vienna. However, a search for funding is ongoing. In India, there had been ongoing contacts with researchers from the Public Health Foundation of India (PHFI) with other researchers at USC, and the PHFI was interested in piloting Project EX. This research group has been involved in tobacco control work for at least 20 years. Articles were exchanged (e.g., Arora et al., 2010; Stigler et al., 2007). The costs of implementation were calculated. The interest is in piloting the classroom version of Project EX, not the clinic version, due to fears of teens in disclosing tobacco use and public exposure of being in clinics, and also due to relative ease of cooperation in doing a classroom-based version. Curriculum adaptation and language translation will be completed by August, 2012, along with school recruitment. Two schools (1 government and 1 private school) will serve as the intervention schools and two schools (1 government and 1 private school) will serve as the control schools. Currently, it is expected that 700 subjects from 4 schools will be included in the study (350 students in each condition), and 15 % of the sample will be 30-day tobacco users. A baseline survey may begin in September, 2012, involving a quasi-experimental program-standard care control group design, with a three-month follow-up in December of 2012.

Finally, in Thailand, a proposal had been approved for funding through multiple agencies. A 3-day workshop and training occurred in Bangkok at the Mahidol School of Public Health. All materials have been translated, and the anticipated research design is the school-based clinic prototype proposed (two-group program-standard care control quasi-experimental design with a 3-month follow-up) to be implemented to a total of 100 youth (50 program, 50 control) across four high schools in the Bangkok area. Unfortunately, flooding around Bangkok had affected the schools where implementation was to take place and anticipated implementation was delayed. It is expected now that implementation will begin in September, 2012.

Discussion

International translation of Project EX is ongoing. It has now been implemented in the U.S., China, Israel and partners, Russian Federation, and Spain, and it will be implemented soon in India and Thailand, and possibly in Austria in the near future. There were several lessons learned from involvement with this process. First, ongoing partnerships provide a backdrop from within which attempts to pilot programming can be made. Also, parties that strongly believe in tobacco control and in engaging youth in tobacco use cessation are relatively likely to donate time and resources to make such an attempt work. Second, flexibility

regarding modality of program to be implemented (clinic or classroom), implementation schedule, and research design needed to occur to permit implementation to proceed. Third, it appears that a cognitive-behavioral, motivation enhancement approach to teen smoking cessation is acceptable to participants in all countries, and may work (also see Milton et al., 2004). That is, preliminary results suggest cross-cultural generalizability of this type of programming. One needed future research direction is to learn more about reasons for attendance and dropout among teens. These reasons possibly may vary across countries and be of interest to global health. Certainly, such programming might be implemented through any number of modalities (e.g., one might consider internet or cell phone modalities as means of implementation). Research on Project EX continues.

Acknowledgments

Declaration of Conflicts of Interest

This paper was supported by a grant from the National Institute on Drug Abuse (DA020138).

References

Arora M, Stigler M, Gupta V, Bassi S, Dhavan P, Mathur N, et al. Tobacco control among disadvantaged youth living in low-income communities in India: Introducing Project ACTIVITY. Asian Pacific Journal of Cancer Prevention. 2010; 11:45–52. [PubMed: 20593929]

Bell, B. International Consultation on Tobacco and Youth [ICTY]. What in the world works? 28 – 30 September 1999, Singapore, Final conference report. Geneva: WHO; 1999.

Bühler, A., editor. ACCESS Report. Munich: IFT Institut für Therapieforschung; 2010.

Centers for Disease Control and Prevention (CDC). Global Youth Tobacco Surveillance, 2000–2007. Morbidity and Mortality Weekly Reports. 2008; 57(SS01):1–21. Retrieved 01. 01. 2009, from http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5701a1.htm.

Chen X, Zheng H, Sussman S, Gong J, Stacy A, Xia J, et al. Use of the Fagerstrom Tolerance Questionnaire for measuring nicotine dependence among adolescent smokers in China: a pilot test. Psychology of Addictive Behaviors. 2002; 16:260–263. [PubMed: 12236462]

DiFranza JR, Savageau JA, Fletcher K, Ockene JK, Rigotti NA, McNeill AD, et al. Measuring the loss of autonomy over nicotine use in adolescents: The DANDY(Development and Assessment of Nicotine Dependence in Youths) Study. Archives of Pediatrics & Adolescent Medicine. 2002; 156:397–403. [PubMed: 11929376]

Fiore MC, Bailey WC, Cohen SJ, Dorfman SF, Goldstein MG, Gritz ER, et al. Treating tobacco use and dependence. Clinical practice guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service. 2000; 23:73–77.

Kann L, Warren CW, Harris WA, Collins JL, Williams BI, Ross JG, et al. Youth risk behavior surveillance – United States, 1995. Morbidity and Mortality Weekly Reports CDC Surveillance Summary. 1996; 45(4):1–84.

Makomaski IEM, Kaiserman MJ. Mortality attributable to tobacco use in Canada and its regions, 1998. Canadian Journal of Public Health. 2004; 95:38–44. [PubMed: 14768740]

McCuller WJ, Sussman S, Wapner M, Dent CW, Weiss DJ. Motivation to quit as a mediator of tobacco cessation among at-risk youth. Addictive Behaviors. 2006; 31:880–888. [PubMed: 16139963]

Milton, MH.; Maule, CO.; Yee, SL.; Backinger, C.; Malarcher, AM.; Husten, CG. Youth tobacco cessation: A guide for making informed decisions. Atlanta, U.S.: Department of Health and Human Services, Centers for Disease Control and Prevention; 2004.

Sirichotiratana, N.; Techatraisakdi, C.; Sujirarat, D.; Rahman, K.; Warren, CW.; Jones, NR., et al. Linking Global Youth Tobacco Survey (GYTS) data to the WHO Framework Convention on Tobacco Control: The case for Thailand. Bangkok, Thailand: Report for WHO-Southeast Asia Regional Office; 2005.

Sperber AD, Peleg A, Friger M, Shvartzman P. Factors associated with daily smoking among Israeli adolescents: A prospective cohort study with a 3-year follow-up. Preventive Medicine. 2001; 33:73–81. [PubMed: 11493039]

Stigler MH, Perry CL, Arora M, Shrivastav R, Mathur C, Reddy KS. Intermediate outcomes from Project MYTRI: Mobilizing youth for tobacco-related initiatives in India. Cancer Epidemiology, Biomarkers & Prevention. 2007; 16:1050–1056.

Sussman S, Black DS. Advancing youth tobacco use cessation in developing countries: Practical considerations. International Public Health Journal. 2009; 1:119–128.

Sussman S, Dent CW, Lichtman KL. Project EX: Outcomes of a teen smoking cessation program. Addictive Behaviors. 2001; 26:425–438. [PubMed: 11436934]

Sussman S, Gufranova U, Demin A. Speculation about options for teen tobacco use cessation in the Russian Federation. Tobacco Induced Diseases. 2007; 3:1–15. [PubMed: 19570299]

Sussman S, McCuller WJ, Zheng H, Pfingston YM, Miyano J, Dent CW. Project EX: A program of empirical research on adolescent tobacco use cessation. Tobacco Induced Diseases. 2004; 2:119–132. [PubMed: 19570278]

Sussman S, Miyano J, Rohrbach LA, Dent CW, Sun P. Six-month and one-year effects of Project EX4: A classroom-based smoking prevention and cessation intervention program. Addictive Behaviors. 2007; 32:3005–3014. [PubMed: 17628346]

Sussman S, Miyano J, Rohrbach LA, Dent CW, Sun P. Corrigendum to “Six-month and one-year effects of Project EX4: A classroom-based smoking prevention and cessation intervention program”. Addictive Behaviors. 2010; 35:803.

Sussman S, Pokhrel P, Black D, Kohrman M, Hamann S, Vateesatokit P, et al. Tobacco control in developing countries: Tanzania, Nepal, China, and Thailand as examples. Nicotine & Tobacco Research. 2007; 9(S1):S447–S457. [PubMed: 17978974]

Sussman S, Sun P. Youth tobacco use cessation, 2008 update. Tobacco Induced Diseases. 2009; 5:3. [PubMed: 19183452]

Sussman S, Sun P, Dent CW. A meta-analysis of teen tobacco use cessation. Health Psychology. 2006; 25:549–557. [PubMed: 17014271]

Tauras, JA.; Chaloupka, FJ. Determinants of smoking cessation: An analysis of young adult men and women (Working paper 7262). Cambridge, MA: National Bureau of Economic Research; 1999.

U.S. Department of Health and Human Services. Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2012.

Warren CW, Riley L, Asma S, Eriksen MP, Green L, Blanton C, et al. Tobacco use by youth: a surveillance report from the Global Youth Tobacco Survey project. Bulletin of the World Health Organization. 2000; 78:868–876. [PubMed: 10994259]

Zheng H, Sussman S, Chen X, Wang Y, Xia J, Gong J, et al. Project EX – A teen smoking cessation initial study in Wuhan, China. Addictive Behaviors. 2004; 29:1725–1733. [PubMed: 15530717]

Biography

Steve Sussman

Steve Sussman, Ph.D., FAAHB, FAPA, received his doctorate in psychology from the University of Illinois (1984). He is a professor of preventive medicine and psychology at the University of Southern California. He studies the etiology, prevention, and cessation of various addictions, and has over 410 publications. His projects include Towards No Tobacco Use (tobacco use prevention for young teens), Towards No Drug Abuse (drug abuse prevention for older teens), and EX, considered model programs at numerous agencies.

Table 1

Research History of Project EX

EX Study	Year Study Began; Setting; Recruitment Methods; Sample Size and Level of Cigarette Smoking	Research Design	Implementation and Results
EX-1(Sussman, Dent & Lichtman, 2001)	1997; 18 continuation (alternative) high schools; recruitment-flyers, school public announcements, word of mouth, class release time; n=260 smokers in clinics and 70 smokers in control condition; average of 8.8 cigarettes per day	School-based clinic randomized controlled trial; 3-groups; 6 schools per condition: motivation-enhanced school-based clinic versus the clinic plus a school-as-community component versus a standard care control condition	6 week implementation; program rated very helpful; no difference between program conditions; end of clinic quit rate was 14 %; 3.7 % month 30-day follow-up intent-to-treat quit rate corrected for biochemical validation adjustment, 17 %; follow-up quit rate of control school baseline smokers, 8 % (OR=2.36, p<. 05)
EX-2 (Zheng et al., 2004)	2000; two urban Wuhan high schools, 1 regular school and 1 vocational school (6 classes randomly selected from each school); baseline questionnaire completed by 622 10th graders; 68 students (5 % girls) reported having smoked cigarettes in last 30 days; n=48 smokers agreed to participate; average of 5.7 cigarettes per day	School-based clinic single-group multiple baseline design; $2\frac{1}{2}$ weeks between initial assessment and announcement of clinic	5 week implementation; program rated very helpful; 3% naturally occurring quit rate in $2\frac{1}{2}$ week period (2 of 68 baseline smokers quit); 4.6 % month follow-up intent-to-treat quit rate corrected for biochemical validation adjustment, 10.5 % 30-day abstinence, 14.3 % past week abstinence; 3.5.– 4.8 times the quit rate achieved prior to beginning of clinic
EX-3 (Sussman et al., 2004)	2000; youth recruited from 16 regular and continuation high schools in northern California; recruitment-health promotion sessions provided by school health education staff, free nicotine gum and assistance; n=117 (59 % from regular high schools), 57 in the nicotine gum condition, 60 in the herbal gum condition; average of 10.2 cigarettes per day	Individual-level randomized, open label trial of adjunctive nicotine replacement (NRT) versus substitution therapy (i. e., nicotine versus non-nicotine gum-Nicorette versus CigArrest)	1st five sessions held in one week, followed by 3 sessions held once every 2 weeks. NRT began at Session 5; program rated very helpful; intent-to-treat quit rate comparing program to control condition corrected for biochemical validation adjustment was 11 % versus 13 %, and 16 % versus 15 %, at 2 and 6-month follow-ups, respectively (ns)
EX-4 (Sussman, Miyano, Rohrbach, Dent & Sun, 2007; Sussmann, Miyano, Rohrbach, Dent & Sun, 2010)	2004; 12 continuation high schools in southern California; recruitment-classroom announcements, part of class course; n=1097 at pretest (52 % program condition); average of 6.0 cigarettes per day	Clustered-RCT; 2-groups; 6 schools in each condition, EX-classroom versus standard care control; adaptation of clinic program to classroom setting as a prevention-cessation program	4 week implementation; program rated very helpful; 6 and 12 month follow-ups, overall decrease in tobacco use with a net change of between 5.1 % and 7.6 % favoring the program condition; among 457 subjects that smoked at pretest, the intent-to-treat quit rate contrasting the program to control condition was 25.3 % versus 12.8 %, 30.6% versus 24.8 %, and 30.7% versus 24.3 %, at immediate posttest, 6-and 12-month follow-ups, respectively

Table 2

Countries that Project EX is Currently Engaged

Country	Initial Agreement	Language Translation Completed; Program Version; Setting	Training	Stage of implementation
Austria (with Karl Bohrn and Sebastian Bohrn; Institute for Social and Health Psychology [ISG])	May, 2010 discussed doing pilot study	In process	One-day training/ workshop completed by developer in June, 2010 after ACCESS Europe conference; 5 trainees	Implementation dates not set yet, contingent on funding
China (with Hong Zheng, Xinguang Chen, C. Anderson Johnson and others; Centers for Disease Control and Prevention of Wuhan; see Zheng et al., 2004)	May, 2000	June, 2000; school-based clinic; 50-seat classroom at local Center for Disease Prevention and Control of Wuhan	Two-day training completed by EX staff in June, 2000; 1 trainee	Baseline assessment completed June, 2000; Immediate pretest completed July, 2000; Data collection with 4 month follow-up completed October, 2000
India (with Monika Arora, Abha Tiwari, and K. Srinath Reddy; Health Promotion and Tobacco Control, Public Health Foundation of India, and Health Related Information Dissemination Amongst Youth)	Discussed doing pilot study November, 2010	Translation began October, 2011 and will be completed August, 2012; prevention/ cessation; classroom	Formal training bypassed due to expertise of India team; Questions addressed through Skype contact, 1 in-person 2-hour meeting, and e-mail (feedback on material adaptation was provided)	Ethics committee clearance, November, 2011; Implementation planned to begin September, 2012
Israel and partners (with Richard Isralowitz; Ben Gurion University, Negev; and partners)	September, 2008 published a review together; USAID-MERC program	Translation of 3-session adapted version completed by December, 2010; prevention/ cessation; classroom	Two-day training completed by developer in December, 2009 (with longer version already translated); 13 trainees	Implementation began in May, 2010; January, 2012, completed at 8 schools in the Negev; one residential school permitted a $2\frac{1}{2}$ month delayed posttest ; Funding ends December 31, 2012
Russia-Bashkortostan Republic (with Leyla R. Akhmadeeva and Bulat T. Idrisov; Bashkir State Medical University; also Camp Counselor Training Center “Perspectiva”)	September, 2009 discussed doing pilot study	Translation completed October, 2009; school-based clinic; camp recreational room	One-day training completed by developer in October, 2009; 4 trainees	Implementation conducted from June, 2011 through August, 2011; 6-month follow-up was conducted from January through mid-February, 2012
Spain (with Jose P. Espada, Mireia Orgiles, Jose Luis Carballo, Jose A. Piqueras, Alexandra Morales, and Maria T. Gonzalvez; Miguel Hernandez University)	February, 2010 discussed doing pilot study	Translation completed in May, 2010; school-based clinic; classroom	Two-day training completed by developer and EX U.S. implementation staff in May, 2010; 8 trainees	Implementation began October, 2010 and 3- month follow-up completed September, 2011; Pilot study report completed in December, 2011; Funding of classroom version of EX received from Spanish Government, January, 2012 through September, 2013
Thailand (with Punyarat Lapvongwatana, Nipapun Kungskulniti, Natkamol Chansatitporn, Naowarut Charoenca, and Stephen Hamann; Mahidol University and Tobacco Control Research and Knowledge Management Center)	May, 2009 discussed doing pilot study; funding by Tobacco Control Research (TRC) of Thai Health, and National Cancer Institute	Translation completed in September, 2010; school-based clinic; classroom	Two-day workshop/ training completed by developer in September, 2010; 22 trainees	Implementation expected to begin in September, 2012