The Television School and Family Smoking Prevention and Cessation Project

I. Theoretical Basis and Program Development

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Program development processes for the Television, School, and Family Project, a school-based smoking prevention and cessation project, are presented in this article. We first review applications of social-psychological and communications theory to school-based and mass media program development. These include the three broad areas of (a) mediators of mass media effects on behavior change, (b) the social influences approach to smoking prevention, and (c) a self-management and social support approach to smoking cessation. A program development model for school-based mass media efficacy trials, with a summary of formative research and pilot study processes, is then presented. The importance of reciprocal support among school district administrators, project research staff, and television station personnel is emphasized with recommendations for future research and demonstration efforts.

INTRODUCTION

Mass media have been used effectively to disseminate smoking cessation strategies (10, 21, 22) and school-based curricula have been effective in delaying the onset of smoking in adolescents (17, 56). School-based personal and social resistance programs have reduced smoking in junior high school students by 50% up to 3 years post-treatment. Despite the success of such strategies, questions concerning optimal methods for widespread implementation remain unanswered (17, 26, 34, 46). Few attempts have been made to use mass media for implementation of effective smoking prevention programs and only one study has promoted prevention and cessation together (25). Most successful programs have been confined to the classroom and have been implemented by trained research staff.

The Television, School, and Family Project (TVSFP) is an experimental field

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trial of the relative efficacy of classroom vs mass media-delivered psychosocial smoking prevention for seventh grade students in conjunction with mass broadcast cessation strategies for parents. The project was designed as an efficacy trial (18), to test "social resistance" prevention and "social support" cessation under optimum conditions of target audience participation and curriculum implementation. Thus, the project represents a step beyond pilot applied research and prototype evaluation studies (17) in that state-of-the-art prevention and cessation curricula were delivered in standardized settings to a defined target audience with high participation rates.

TVSFP was designed to determine the relative efficacy of three approaches to delivery of a smoking and drug abuse prevention/cessation psychosocial curriculum: (a) a social resistance classroom curriculum plus mass broadcast TV segments (CR + TV), (b) classroom-only (CR-Only), and (c) mass broadcast TV segments with only classroom encouragement to view (TV-Only). In all conditions, we achieved family involvement using homework assignments that required parent participation and smoking cessation print materials provided to parents. In CR + TV and TV-Only conditions, a nightly TV series was aired during the evening news. KABC-TV Los Angeles contributed 17 segments of the Feeling Fine program to the TVSFP project. Feeling Fine is a health issues component of the local evening news; each segment is from 3 to 6 min long.

We included two types of controls. In measurement-only schools, we made no attempt to modify the planned curriculum. In an attention-control condition, we provided students with an information-based curriculum under conditions parallel to those under which we provided the experimental social resistance curriculum (54). We designed that condition to reduce the possibility that the Hawthorne effect could be a plausible explanation for observed effects of the experimental programs (17).

We assigned 47 public schools in six school districts in Los Angeles and San Diego counties (approximately 7,000 seventh grade students in 340 classrooms) to five experimental conditions using the Graham et al. (29) randomization procedure which maximizes the possibility of pretest comparability. We controlled for possible media contamination of the classroom-only and control conditions at the media site (Los Angeles county) by replicating these conditions in a second metropolitan area (San Diego). The total research design, then, subsumed two experimental studies within an overall quasi-experimental design (6, 9) (Fig. 1).

The purpose of this report is to present a program development model for similar field efficacy trials that involve multiple program components and require collaborative efforts of disparate gatekeeper groups, such as TV station personnel, research staff, and school district administrators. An overview of the theoretical rationale for (a) the use of mass media for health promotion and behavior change, (b) the social influences approach to smoking prevention, and (c) a self-management and social support approach to smoking cessation is provided. Applications of theory to TVSFP are followed by a description of the program development process and implementation schedules for classroom and media components.
### THEORETICAL FOUNDATIONS

**Mass Media**

Mass media are potentially cost-beneficial diffusion mechanisms for prevention and cessation interventions. Television can reach large audiences in the privacy of their home and can reach smokers and potential smokers not inclined to participate in group efforts (4). While written materials can provide only descriptions of behavioral skills, television can provide modeling of such skills by actors or by actual program participants. Mass media also can contribute to redefining social norms in support of prevention and cessation behavior change (1, 13, 57). Family and friends can provide direct social support in initial prevention and cessation skill development and in long-term maintenance, and television hosts can provide indirect social support. Behavioral change achieved by participation in mass broadcast programs is likely to be attributed to personal effort and, thus, is more likely to endure than change attributed to external causes (11, 39).

Recent reviews have identified six major mediators of mass media programming effectiveness (5, 16, 19, 21, 22, 24, 26, 47). To be effective, a mass media program must reach and hold the attention of the target audience. One determinant of reach is the media gatekeeper. Television station managers and program producers have decision-making power over programming selected for airing. Another determinant of program reach is technical quality. Programming of poor quality is unlikely to be aired, and, if broadcast, not likely to be attended to by the target audience.

A second mediator of media effectiveness is selectivity (36, 38). Individuals are

<table>
<thead>
<tr>
<th>TELEVISION</th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>SOcial ResiStance</td>
<td>CR + TV</td>
<td>CR-Only</td>
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<tr>
<td>CLASSROOM</td>
<td>TV-Only</td>
<td>Attention-Control</td>
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<td>Los Angeles</td>
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</table>
| San Diego | | | $^b$

$^a$Seven schools per condition

$^b$Six schools per condition

Fig. 1. Television, school, and family project research design.
more likely to attend to a program if program content meets a perceived need or is salient to the individual's developmental stage. Smoking prevention and cessation are especially salient issues for transition-prone junior high school students and their smoking parents. An entire program sequence is more likely to reach captive audiences, such as students in school, than audiences at home who are free to turn off the television at will.

The third and fourth mediators of mass media effects on behavior are closely related. Interpersonal communication, the third major mediator, contributes to a supportive environment conducive to behavioral change (7, 36, 37, 42); and discussion of program content increases the likelihood that related behavior change will follow (4, 31, 35, 44, 45, 50, 51). The fourth mediator is the extent to which programming convincingly models desired behavioral skills. Social learning research has demonstrated that observation of a skill executed with expertise helps inexpert observers to acquire the skill (2, 3).

A fifth strategy for improving the likelihood of media effects on behavior is supplementation (40). Written materials, school programs, small group discussion, face-to-face clinics, community organization, and environmental or regulatory changes can supplement mass media programming. Clinic and classroom programs can be supplemented with mass media, and both approaches can be combined to disseminate effective behavior change technology (19).

**Smoking Prevention**

Psychological theory and knowledge of the antecedents of smoking and drug use by adolescents suggest that social influences may be key determinants of adolescent behavior (14, 23, 32). Reviews of relevant social psychological theory, including a model integrating known antecedents of smoking onset and theories of attitude and behavior change, have been presented in detail elsewhere (16, 23, 49). Information, if attended to, comprehended, and accepted, can lead to changes in beliefs. Values and expectancies must be revised to ensure that changed beliefs lead to changes in attitudes. Modification of social expectations and social influences should ensure that changed attitudes lead to changes in intentions. Finally, the acquisition of behavioral skills, through modeling, practice, and reinforcement, should result in behavior change.

Evans (14) first suggested the social influences approach to smoking prevention, and it has been developed and tested extensively during the last decade. The approach has reduced by half the number of junior high school students who become smokers up to 3 years after exposure to the program (17). Current state-of-the-art programs typically consist of seven key elements: (a) correction of misperceptions of the prevalence of tobacco use among adolescents and in the general population; (b) awareness of peer influences to smoke; (c) development of peer resistance skills; (d) awareness of family influences on tobacco use; (e) development of media influence resistance skills; (f) social and physiological consequences of smoking; and (g) development of decision-making skills. In summary, prevention programs for adolescents should demonstrate social influences and the social consequences of smoking in an interactive educational context with resistance skill training. Peers should model appropriate behavioral skills, and
students should practice them until they achieve mastery. Finally, the family is identified as a potential source of passive and overt pressure to use substances as well as a potential change agent, and the change-agent function is developed.

**Smoking Cessation**

Self-help strategies that include self-monitoring (e.g., of smoking levels, smoking triggers, and high-risk situations), cognitive strategies (e.g., decision-making, self-reinforcement, cognitive coping strategies), and behavior strategies (e.g., contracting, behavioral coping strategies) enhance all phases of the cessation process (4, 14, 21, 22, 27, 28, 43). In combination with social support, self-management, cognitive, and behavioral strategies strengthen preparation to quit, facilitate quitting initially, and promote long-term maintenance. Social support may add an important dimension in reinforcing self-monitoring and self-regulation, enhancing self-efficacy, and encouraging quitters to recycle when relapse occurs.

Cognitive, behavioral, and behavior modification approaches can be implemented in non-clinical settings (41, 43). Mass media can be used to disseminate these strategies at relatively low cost (4, 21, 22). Self-management strategies are adaptable to a media format, as demonstrated in the Stanford Three-City and Five-City Projects (15, 52). In a review of the use of mass media for smoking cessation, Flay (21, 22) suggests that neither media alone nor print materials alone is as effective as combinations of the two. Media alone was about as effective as self-management manuals alone (12). The combined effects of a self-management workbook plus television surpassed either alone, and social support with media was the most effective combination. Combining written material with media programs almost doubled their effectiveness; and adding discussion and social support doubled the effectiveness again (22).

An objective of such programs is to attract motivated quitters in the general population and to provide skills to act on such motivation. Program activities should help potential quitters (a) prepare to quit, (b) quit, and (c) develop relapse avoidance skills and personalized recycling strategies. The availability of self-help materials can make it possible for relapsers to recycle through reviewing what they learned from the televised program and retracing the process. The self-efficacy approach (2, 8, 48) argues that such print materials reinforce self-management skills necessary for quitting. Additionally, support from family members, colleagues, and friends can be important in reinforcing the feelings of control necessary to quit and to remain smoke-free. These approaches, in conjunction with the prevention strategies described above, provide a comprehensive scheme for mass-mediated smoking control.

**Application of Theory to TVSFP**

We applied all of the above theoretical considerations in the development of the TVSFP project. First, media and school district gatekeepers became collaborators in the project. Second, we minimized potential selectivity problems by the use of classroom and homework activities. Third, we encouraged interpersonal discussion (a) among students in the classroom, (b) between students and parents for
both prevention and cessation in the home, and (c) among adults in the home and workplace for cessation. Fourth, we designed the TV segments to provide convincing resistance skill models for students and cessation strategies for adults. Finally, the project contrasted two approaches to the application of the supplementation principle. In one condition (TV-Only), we supplemented the TV series with print materials; in another condition (CR + TV), we supplemented the classroom curriculum with TV segments.

PROGRAM DEVELOPMENT

Prevention Curricula Development

Curriculum development. Table 1 presents the TVSFP curriculum design model. We first completed a review of the literature and examination of existing curricula within and outside the institute. These reviews were limited to the previous 3 years, because experimental prevention and cessation classroom and television curricula were derived from prior University of Southern California theory-based curricula [Television and School Project (TVSP—25) and Project SMART (30)].

Next, we conducted interviews with health educators who had delivered the

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<tr>
<td><strong>TVSFP CURRICULUM DEVELOPMENT MODEL</strong></td>
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</table>

1. Existing resources
   - Literature
   - Existing curriculum
2. Program deliverer perspective (health educator interviews)
   - Curriculum design
   - Implementation process
3. Target audience perspective (formative evaluation)
   - Student focus group
   - Parent focus group
4. Draft curricula development
   - Social resistance
   - Information-based
5. Content expert review
6. Revision
7. Final draft curricula

Classroom curricula
8. Pilot test target audience
   - Participation
   - Satisfaction
   - Outcome expectations
9. Revision
10. Implementation

TV program
8. Script development
   - Treatment
   - Draft
   - Review
9. Revision
10. Videotape production
    - Shot
    - Preliminary edit
    - Final edit
11. Broadcast
Project SMART curriculum. Results further contributed to the refinement of curriculum development and implementation processes.

Third, results of focus groups with the videotapes used in the TVSP program contributed to preplanning for the TVSFP television segments (53). Prevention and cessation segments were shown to groups of seventh grade students and parents. Adolescent subjects were 30 female and 25 male seventh grade students, of whom 56% were white, 23% were Hispanic, 17% were black, and 4% were Asian (representative of the target audience for the main study). Subjects completed a pretest, viewed the prevention segments, completed a post-test, viewed the cessation segments, and completed a second post-test. Results indicated that both students and parents favored shared involvement in prevention and cessation programming. Results also indicated that students underestimated the potential impact of social influences on smoking behavior. Therefore, we designed TVSFP prevention segments to include explicit, dramatic, and reiterative illustrations of social pressures to smoke.

Fourth, we circulated draft curricula among institute content experts and project staff. Fifth, project staff conducted individual interviews with principal and coprincipal investigators to ensure adherence to the theoretical basis. Sixth, project staff incorporated recommended changes in revised drafts that were again distributed for review and revision. We repeated this process until we reached consensus that the curriculum sequence rationale and session content accurately met objectives inherent in the specific aims of the research.

Internal format. Television segments and classroom sessions have separate internal activity sequences (Table 2). In classrooms, group discussion of homework activities provided a review of primary objectives for the previous session. Television station policy and time limits for each segment (from 3–6 min) did not permit daily review of material presented in previous segments. Thus, the reiteration of key resistance skill techniques without the appearance of repeating material previously covered was a major program development challenge.

The Objective Statement presented the behavioral and knowledge objectives for each session/segment. Classroom sessions followed with group discussion of the objectives and the conceptual link to other sessions in the sequence. Classroom roleplay of the key resistance skill for each session had its counterpart in two TV internal segment elements: demonstration and testimonials.

<table>
<thead>
<tr>
<th>Classroom</th>
<th>TV</th>
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<tbody>
<tr>
<td>Review previous session</td>
<td>Objective statement</td>
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<tr>
<td>Objective statement</td>
<td>Demonstration</td>
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<tr>
<td>Group discussion</td>
<td>Testimonials</td>
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<tr>
<td>Role play</td>
<td>Homework assignment</td>
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<tr>
<td>Homework assignment</td>
<td>Bridge to next session</td>
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<tr>
<td>Bridge to next session</td>
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</table>
We designed the Demonstration section to include televised documentation of correctly conducted classroom roleplay of each resistance skill. This was to be followed by testimonial vignettes of representative target audience members stating satisfaction at having used the skills successfully. Students were videotaped in the classroom to provide testimonials and demonstrations. We recruited an experienced older-peer improvisational troupe to demonstrate roleplays.

The last two elements, Homework Assignment and Bridge to Next Session/Segment, were common to both internal formats. We assigned the homework exercises in all conditions, to be conducted by students and parents together. We required parent signature to that effect for homework to be recorded as complete. Homework activities were coordinated with the TV segment and classroom session objectives. Homework assignments provided family-oriented social resistance skill-building exercises and assertive training in response to peer, adult, and media pressures to smoke. Additionally, we included student–parent contracts to support parent cessation efforts. The Bridge to Next Session/Segment included a recapitulation (in the classroom) of the session objectives and an introduction (in the classroom and on TV) to the content of the next session/segment.

**Sequence development.** We developed two social resistance curriculum sequences from which we selected the pilot version. The first sequence provided key concepts and demonstrated key behavioral skills first in the TV segment with reinforcement in the classroom on the following day. The second sequence presented a reversed pattern, with objectives and behavioral skills presented in the classroom first, and follow-up on the TV segment broadcast during the evening of the same day. In both sequences, we designed television and classroom components for implementation separately or in combination. Sequence I, with TV segments as primary, required students and parents to view the TV segment and complete homework activities on each topic prior to classroom activities the following day. Sequence II presented the social resistance classroom curriculum as primary with TV segment support and emphasis on family involvement in prevention and cessation efforts. We selected Sequence II, with the classroom component as primary, for pilot testing because the degree to which research guidelines would control TV segment content was not clear at the outset.

The pilot version presented key concepts in a sequential progression. Correction of inaccurate perceptions of adolescent and adult cigarette use prevalence (Normative Expectations) was followed by Peer Pressure and the illustration and practice of six resistance techniques. Next, the curriculum presented Adult Influences, including subtle unvoiced pressures to smoke and use drugs that are inherent in parental modeling or condoning of such behavior. Additionally, a student/parent contract discussed and formalized the potential for adolescent support of parental cessation efforts. The contract listed specified tasks that students agreed to complete in exchange for a parent commitment to quit smoking. Consequences of Use were discussed and included negative health and social consequences that cigarette and alcohol advertisers neglect. The first week closed with a discussion of nonsmokers’ rights and assertiveness training in response to the effects of passive smoke.

Week 2 began with Motivations for Adults choosing to smoke and recapitula-
tion of resistance techniques presented in Week 1, Session Two. Next, Entertainment Media Influences and cigarette and alcohol Advertising Techniques were presented, culminating in Non-Smokers’ Rights to a smoke-free environment and the Decision-Making and Commitment session.

The Prevention Pilot Study

We pilot tested the social resistance curriculum in all six Grade 7 classrooms (n = 145) in one middle school, and the attention-control knowledge-based curriculum concurrently in another school (54). Fifty-one percent of the students were white, 20% Hispanic, 24% black, and 12% Asian. Thirty-eight percent had tried cigarettes, and 7% were weekly smokers. Students were pretested, completed written evaluations of the sessions each day, and were post-tested after the program.

We examined target audience knowledge and program acceptance, including participation, satisfaction, perceived program efficacy, and family involvement in homework activities. Students demonstrated substantial pretest–post-test knowledge gains for estimates of adolescent smoking prevalence rates, definition of peer pressure, effective social resistance techniques, definition of assertiveness, and physiological effects of smoking. Students perceived the following topics to be most helpful: long-term consequences, refusal techniques, social influences, and decision-making. Forty-eight percent of the students anticipated that at least one family member would try to quit smoking with the program. The mean homework return was 92% for the first session and decreased linearly to 43% for the last homework assignment.

Revisions. Pilot test results and project staff discussion contributed to the modifications in sequencing depicted in Table 3. We retained Normative Expectations and Peer Pressure in the pilot positions. Adult Influences was moved to the end of Week 1 to provide an effective bridge to the following week of cessation segments and to provide training in assertive resistance to passive smoke prior to the Adult Influences session. Thus, before broadcast of the cessation program, the program taught students to provide social support for parents motivated to quit and to express concerns for their own exposure to passive smoke. The session including subtle adult influences, overt adult modeling, and the student/parent contract, provided the transition from the first prevention week to the cessation week, and reinforced the student support role for parent smoking cessation efforts.

The Week 2 prevention sequence remained essentially the same as that of the pilot version. We did revise the primary focus of Motivations for Smoking, however, from adults to adolescents, and added motivations for choosing not to smoke to the session. We used the topic of adult motivations to continue smoking to present the issues of physiological addiction and difficulties in quitting once the habit is formed, thus reinforcing the importance of effective prevention efforts. Media and advertising influences were analyzed and personal reactive as well as socially active responses were practiced. Also, students roleplayed anti-drug media opinion leader behavior. We subsumed the Nonsmoker’s Rights activity in the pilot version with the Assertive Resistance to Passive Smoke session in the final
TABLE 3
SOCIAL RESISTANCE CLASSROOM CURRICULUM, PILOT SEQUENCE, AND REVISIONS

<table>
<thead>
<tr>
<th>Session</th>
<th>Pilot</th>
<th>Implementation</th>
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<tr>
<td><strong>Week 1</strong></td>
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<tr>
<td>1.</td>
<td>Normative expectations</td>
<td>Normative expectations</td>
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<tr>
<td>2.</td>
<td>Peer pressure resistance techniques</td>
<td>Peer pressure resistance techniques</td>
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<td>3.</td>
<td>Adult influences</td>
<td>Physiological consequences short-/long-term (advertising)</td>
</tr>
<tr>
<td>4.</td>
<td>Physiological consequences short-/long-term (advertising)</td>
<td>Assertive resistance to passive smoke</td>
</tr>
<tr>
<td>5.</td>
<td>Assertive resistance to passive smoke</td>
<td>Adult influences</td>
</tr>
<tr>
<td><strong>Week 2</strong></td>
<td></td>
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</tr>
<tr>
<td>6.</td>
<td>Motivations for smoking (adults)</td>
<td>Motivations for smoking/not smoking (adolescents and adults)</td>
</tr>
<tr>
<td>7.</td>
<td>Entertainment media influences</td>
<td>Entertainment media influences</td>
</tr>
<tr>
<td>8.</td>
<td>Advertising techniques</td>
<td>Advertising techniques</td>
</tr>
<tr>
<td>9.</td>
<td>Assertiveness</td>
<td>Celebrity</td>
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<tr>
<td></td>
<td>Nonsmokers' rights</td>
<td>Opinion leader effects (smokeless and cloves)</td>
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<tr>
<td></td>
<td>Smokeless/clove cigarettes</td>
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<tr>
<td>10.</td>
<td>Decision-making</td>
<td>Decision-making</td>
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</table>

version. We retained the Decision-Making session in its pilot form with the signing of a formal commitment to neither smoke nor influence others to do so. To increase the homework completion rate, we provided stars on a homework board in each classroom for homework activities that were completed and returned with a parent signature. Table 4 presents the social resistance prevention curriculum final sequence and content with homework activities.

Cessation Program Development

Curriculum development. The cessation curriculum development process was similar to that of the prevention curriculum but included the contributions of external consultants. The curriculum was designed to reinforce self-management with social support and to emphasize maintenance and recycling in the event of relapse (Table 5). Although we did not provide class sessions provided for cessation topics, students were given workbooks to take home that covered both prevention and cessation objectives. Workbook content corresponded to treatment condition.

In the CR-plus-TV and TV-Only conditions, students took home a workbook identical to that sent from the TV station to requesters. The workbook for the CR-Only condition made no reference to the TV program, but in all other respects was the same as that of the TV condition. In the information-based condition, students took home a workbook that focused on self-management without the strong emphasis on social support found in the experimental curriculum.

Instructors urged seventh grade viewers and students in participating classrooms to encourage parents who smoked to quit with the program and to support
them during the cessation process. Students whose parents did not smoke were encouraged to offer social support to an older sibling, adult extended family member, or friend who smoked and wanted to quit.

The cessation pilot study. Because of TV station policy restrictions, it was not possible to pilot test the TV segments. Therefore, we piloted the segment sequence and workbook in a workplace clinic setting. We conducted sessions on the same days of the week as those on which the segments would later be broadcast. Volunteer smokers met with a health educator for one preprogram session and six treatment sessions and were provided with written materials that formed the basis of the workbook developed for the TV series.

Subjects were 28 males and 60 females at six worksites in the Los Angeles area. The worksites were evenly divided between those that employed primarily professionals and those that employed skilled laborers. Of the sample 61% was white, 19% was black, 12% was Hispanic, and 8% was Asian. The mean age was 34.4 years; 75% of the sample was married. The mean baseline smoking rate was 21 cigarettes/day, and the mean number of years having smoked was 16.7. Subjects were administered questionnaires at the preprogram session, on the day before quit day, on the day after quit day, and on the last day of the program.

A preprogram session took place on a Friday and the treatment sessions took place on the subsequent 6 work days. Sixty-six percent of the sample returned for the first treatment session 3 days later. Of those who attended the first treatment session, 39% quit smoking during the program and 40% were abstinent 4 months post-program (55). At post-test, subjects evaluated program components and coping techniques. On a rating scale of 1 (extremely useful) to 5 (of no use), participants rated all program components as extremely to fairly (3) useful. Subjects gave particularly favorable ratings to (a) self-monitoring of cigarette use; (b) personal identification of smoker type; (c) identification of personal trigger situations; (d) learning how to develop cessation social support; and (e) identification of personal coping strategies for withdrawal symptoms and trigger situations. Subjects rated self-monitoring procedures as most useful and exercise and diet tips as least useful. While quitters rated self-talk as a marginally more useful technique than nonquitters ($t = 1.9, P < 0.07$), quitters did not differ dramatically from nonquitters in their ratings of program components.

Revisions. Changes made in response to pilot test results included decreased emphasis on exercise, diet, and relaxation tips, and more emphasis on self-talk, recycling, social support processes, and trigger situations. The revised cessation sequence begins with an introduction to the interactive processes of self-management and social support by assigning the Smoker's Diary exercise and the solicitation of a family member or friendship support commitment. The segment is tagged to the last day of the first prevention week. The program urges seventh-grade viewers to volunteer to support parents who smoke and want to quit. Students whose parents are smoke-free are encouraged to support an older sibling, adult extended family member, or friend who is motivated to quit smoking.

The 11-session cessation sequence was evenly split between "preparation-to-quit" and "maintenance" objectives. The seven TV segments also provided equivalent emphasis on preparation and maintenance issues with three segments
<table>
<thead>
<tr>
<th>Session</th>
<th>1</th>
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<th>5</th>
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<tbody>
<tr>
<td><strong>Objectives</strong></td>
<td>Identify youth/adult smoking prevalence rates</td>
<td>Identify peer pressure. Practice assertive refusal techniques</td>
<td>Identify immediate/long-term health/social consequences of drug use</td>
<td>Identify effects of passive smoke. Practice assertive resistance skills</td>
<td>Identify adult influences. Offer to act as cessation social support for adult quitters</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
<td></td>
<td>Roleplay assertive peer pressure refusal techniques</td>
<td>Roleplay immediate health/social consequences</td>
<td>Roleplay assertive resistance to passive smoke</td>
<td>Roleplay parent cessation contract: Pos/Neg adult influences</td>
</tr>
<tr>
<td><strong>Homework</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td>Assertive refusal demonstration</td>
<td>Advertising influences: Health/social consequences</td>
<td>Roleplay assertive resistance to passive smoke</td>
<td>Smoker interview: Cessation contract</td>
</tr>
<tr>
<td><strong>Normative expectations</strong></td>
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<tr>
<td></td>
<td>Adult/youth smoking motivations</td>
<td>Entertainment media influences</td>
<td>Advertising techniques</td>
<td>Anti-drug media roleplay</td>
<td>Decision-making</td>
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</tr>
<tr>
<td>Objectives</td>
<td>Identify motivations to smoke/not to smoke.</td>
<td>Identify smoking/drug related media influences.</td>
<td>Identify cigarette/alcohol print promotion strategies. Identify unstated negative effects</td>
<td>Identify celebrity opinion leader effects. Practice positive role-modeling</td>
<td>Identify five-phase decision-making process. Commit to drug-free lifestyle</td>
</tr>
<tr>
<td>Activities</td>
<td>Practice assertive refusal</td>
<td>Develop critical viewing skills</td>
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<tr>
<td>Roleplay assertive refusal techniques.</td>
<td>Analyze media drug portrayal: Anti-drug social activism</td>
<td>Advertising techniques demonstration. Group content analysis</td>
<td>Roleplay positive celebrity opinion leader behavior</td>
<td>Decision-making exercise: Public commitment contract</td>
<td></td>
</tr>
<tr>
<td>Review types of addiction</td>
<td>Media portrayal: drug use frequency/intensity of drug use</td>
<td>Media portrayal: drug use prevalence</td>
<td>Cigarette/alcohol advertising techniques</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

a All homework exercises required parent-student interaction and parent signature. CR + TV and TV-Only conditions included viewing of TV segments as homework; remaining homework activities were identical for all social resistance conditions.
<table>
<thead>
<tr>
<th>Session</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectives</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Identify potential smoking-cessation support persons</td>
<td>Identify personal smoker type. Redefine self as nonsmoker</td>
<td>Develop smoking cessation reward list</td>
<td>Identify personal triggers. Develop coping techniques</td>
<td>Identify physiological withdrawal symptoms/coping methods</td>
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<tr>
<td><strong>Homework</strong></td>
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<tr>
<td>Smoker diary. List motivations to quit/to continue smoking. Sign smoke-free support contract</td>
<td>Smoker diary, smoker type quiz. Discuss quit commitment with support person</td>
<td>Smoker diary, verbally commit to quitting. Discuss quit commitment with support person</td>
<td>Match coping techniques with triggers. Discuss quit commitment with support person</td>
<td>Match coping strategies with physiological symptoms. Discuss quit commitment with support person</td>
<td></td>
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<td>6</td>
<td>7</td>
<td>8</td>
<td>9 and 10</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Quit smoking. Avoid high-risk situations</td>
<td>Identify relapse/recycle process</td>
<td>Identify weekend high-risk situations</td>
<td>Survive weekend smoke-free</td>
<td>Review relapse/recycle process</td>
<td></td>
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<tr>
<td><strong>Homework</strong></td>
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<tr>
<td>Match coping skills with high-risk situations. Discuss quit commitment with support person</td>
<td>Review reasons for decision to quit smoking</td>
<td>Develop high-risk coping strategies for weekend activities</td>
<td>Develop specific high-enjoyment low-smoking-risk activities for weekend</td>
<td>Retire personal relapse/recycle process. Continue social support</td>
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</table>

a Curriculum days which accompany broadcast television segments.
devoted to each plus one introductory segment. Activities were assigned each day whether or not a TV segment was broadcast. The cessation sequence began with a TV segment tagged to the last day of the first prevention week. The segment introduced the reciprocal processes of self-management and social support and showed the signing of a Smoke-Free Contract by a family where the mother and father committed to quit with the program and their seventh-grade child volunteered to provide social support throughout the process. The contract included a list of personal reasons for quitting and specific support behaviors to which the support person (in this case the student) had committed.

The homework assignment was twofold: (a) to discuss with the support person how they could provide encouragement most effectively and (b) to identify specific personal reasons for choosing to quit and for wanting to continue smoking. Preliminary preparation activities completed during the weekend following the introductory TV segment included (a) the recording of all cigarettes smoked; (b) identification of personal smoker type; and (c) recruitment of a friend to provide encouragement throughout the quitting process. Homework activities throughout the curriculum and support behavior modeled by TV cessation participants each emphasized social support. For example, the homework assignment, "discuss quit commitment with social support person," is common to all segments. Additionally, each segment presents illustrations of social support activities.

The second TV segment introduced the development of personalized coping strategies in response to specific trigger situations recorded in the Smoker's Diary. The third segment presented the development of coping strategies in response to physiological withdrawal symptoms. Segment four depicted examples of stressful situations related to the first 24 hr following Quit Day and emphasized the requirement for close collaboration with the social support system. Segment five related to relapse to recycling and stressed the need to develop personal recycling strategies prior to relapse. The sixth segment was broadcast on a Friday and stressed the necessity for advanced planning to survive the first weekend smoke-free. Segment seven recapitulated the requirement for personalized maintenance and recycling techniques and encouraged quitters to maintain the cessation support relationship on an open-ended long-term basis. Table 5 presents the content and homework activities by day for the experimental cessation curriculum.

MEDIA PRODUCTION AND IMPLEMENTATION

Agenda of Media and Research Collaborators

The KABC-TV Feeling Fine program is a health issues segment of the local evening news broadcast at 5:00 and 11:00 PM, Monday through Friday. The time of broadcast of the Feeling Fine portion of the news broadcast varies, but is usually between 5:30 and 5:45 PM. KABC contributed 17 segments to the TVSFP, each of which was 3-6 min long. Project research staff and staff from the KABC-TV affiliate collaborated in the development of the videotaped segments. Each brought unique perspectives to the program development process. While research staff and television station staff shared a commitment to the goals of smoking
prevention and cessation, perspectives differed concerning strategies to accomplish the goals.

From the perspective of the project research staff, primary objectives in collaborative efforts with the television station staff were to capitalize on the technical production and programming expertise of station staff and to adapt the existing news program format to meet project video curriculum needs. That is, research staff intended that TV segments would be produced to demonstrate effective substance-use resistance techniques independent of the classroom sessions. The research design included a TV-Only condition and key research staff objectives included producing videotapes that would meet corresponding classroom behavioral objectives (Tables 4 and 5). A related research staff objective was development of effective videotaped demonstrations of key social resistance behavioral skills derived from classroom curriculum content developed for each segment.

The primary objective of television station news staff is to present news in a way that maintains or increases the station's share of the viewing audience. The Feeling Fine program has an established documentary format with an introduction and voice-over narration by a physician host (Dr. Art Ulene). It is a nationally syndicated format to which the news director, program producer, and physician host are committed because it "works" in terms of ratings. Thus, while station and research staff shared the TVSFP goals of preventing smoking in adolescents and supporting smoking cessation efforts in parents and other adults, station staff emphasized TV format and print materials that had greatest public appeal. Research staff, on the other hand, were primarily concerned that the video content be theoretically sound and congruent with research findings.

Station and research staff also perceived the production process from different perspectives. Station staff expected that research staff would limit their involvement in videotape development and production to provision of prevention and cessation curriculum content and background information to station staff. Research staff thought it important to be involved throughout the production process to ensure program integrity. Both groups accommodated substantially to the other's needs and modus operandi. The physician host and program producer met on a weekly basis with research staff to discuss objectives, segment by segment. They were receptive to research staff recommendations regarding translation of objectives to scripts. However, research staff did not participate directly in script development, shooting, and editing. Local station policy and trade union restrictions precluded involvement in final production activities by any but station management staff and union members. Also, unlike televised dramatic presentations, news broadcasts convey events as they occur. Hence, they must be videotaped or filmed in natural settings without coaching of participants. Thus, the demonstration of progressive acquisition of behavioral skills through roleplay was difficult to accomplish on videotape because research staff were not permitted to be present during shooting or editing. Additional practical problems occurred because daily camera crews were assigned randomly, and the program director did not know who the crew would be until the day the shooting was to take place. Also, inclement weather caused cancellation of one key shoot that could not be resched-
uled in time for broadcast, thus requiring modification of the cessation curriculum at the last minute.

Television news crews do not complete most news segments until shortly before broadcast. This meant that pilot testing of the videotaped segments was not possible. Research staff saw the segments for the first time at the time of broadcast. Because the Feeling Fine format mandated use of the same documentary style as used in the 1982 project, we conducted formative research on the videotapes developed by that program (53). Results were presented to station staff during program development meetings.

Program development included an iterative series of compromises between research and station staff. From the perspective of both groups, airtime during the sweeps period was an enormous contribution to the project, permitting access to a potential audience of several million people. Television news program staff were concerned that ratings might fall if established viewers found smoking cessation programming personally irrelevant or considered attempts to modify their behavior psychologically invasive. This was a potentially serious problem because only 25% of the viewing population could be assumed to be smokers, and their motivation to quit was unknown. Hence, agreement by Feeling Fine Productions leadership to devote so much time to smoking cessation was a major concession. From the research staff perspective, the station “gatekeeper” policy of no access to raw or edited videotape footage prior to airtime, resulting in no piloting of segments, was a major compromise. Nevertheless, each collaborative effort (1982 and 1986) contributed to the development of a cooperative process for future efforts which can capitalize on the research expertise of the university and the technical expertise of the television station while meeting the professional objectives of each institution.

The Production Process

Steps one through eight of the development process were the same for classroom and media curricula (Table 1). From the point that we reached consensus on content, however, the media development process differed markedly from that of the classroom curricula. We pilot tested classroom experimental and attention control curricula, and used the results to refine the final draft in production of the implementation version.

In contrast, research staff discussed prevention and cessation media curricula sessions with television station and Feeling Fine staff during weekly working meetings. The program producer, with direction from the physician host and recommendations of project research staff, then developed script treatments from curriculum content. The treatments were overviews of content that was to be covered in the scripts. More detailed than outlines, the script treatments were narrative interpretations of classroom session content that loosely described how each session would be translated into the video format. Next, production staff developed the treatments into detailed draft scripts that were reviewed and discussed during working meetings.

Prevention videotapes were then shot in classrooms that had been used previously for pilot tests. Television crews spent 3 days in classrooms that had received
the experimental prevention curriculum. Prior to the shoot, research and production staff discussed details of roleplays and additional video content which research staff had identified as important to each television segment. However, no research staff actively participated in decision-making related to the last three steps of media curriculum development (i.e., videotape shoot, preliminary edit, and final edit). The program producer conducted all preliminary and final editing. The media physician host contributed to the final edit for those portions of the programs shot live immediately prior to airtime.

Cessation videotapes were shot in the homes and workplaces of cessation participants on 5 separate days, 1 day with each of the cessation participants. The producer and a camera crew followed each participant through a day’s activities highlighting one phase in the smoking cessation sequence and illustrating various social support strategies and personal coping techniques. Three of the segments showed seventh grade students supporting parent efforts to quit smoking, one segment focused on spousal support, and one segment emphasized support in the workplace.

Final TV Series Sequence and Content

**Prevention week 1.** The final sequence for the prevention TV series conformed to that of the classroom curriculum. Each segment capsulized and dramatized key points from the classroom curriculum. The final sequence began with presentation of inaccurate normative estimates. Social resistance to various degrees of direct pressure to use drugs was then presented. Resistance to direct pressure (Peer Influences) was followed by training in resistance to indirect pressure (Resistance to Effects of Passive Smoke). In the Adult Influences session, presented at the end of Week 1, students were taught to react assertively to direct and indirect pressure in the home to smoke cigarettes and to offer to support parent cessation efforts. Student cognitive and behavioral support of parents who were motivated to quit took place during the parent cessation week immediately following the first week of prevention.

**Cessation.** The sequence rationale for the televised cessation program combined self-management and social support with an emphasis on maintenance and the development of personalized recycling strategies in coping with relapse. The social support concept was illustrated in the introduction of five examples of typical support relationships: (a) support provided by a seventh-grade project participant to his parents, both of whom smoked, (b) support provided by a seventh-grade project participant to his father who smoked, (c) spousal support with additional support provided by an older adolescent, (d) social support in the workplace provided by supervisor and colleagues, and (e) a single parent with support provided by teenage children. The quitting process was documented, with each social unit illustrating a phase in the cessation process.

**Prevention Week 2.** The second prevention week began with a review of assertive resistance to peer pressure and analysis of adult and adolescent motives for smoking. Resistance to direct pressure was then contrasted with pressure from entertainment media, the advertising industry, and celebrity opinion leaders. Ad-
Advertising content analysis and critical viewing skills were taught as response techniques. Social activism was encouraged. The program concluded with decision-making and personal commitments to not smoke and to not influence others to do so directly or indirectly.

Thus, social resistance to direct peer and indirect adult pressure to smoke, presented in Week 1, prepared adolescents not only to resist personal pressure, but also to provide social support to parents and other adults during the following cessation week. While cessation participants used social support from children and other family members in the home, the support network was also extended to the workplace. In a fashion analogous to the student development of social resistance to pressure to smoke in the first prevention week, during the following cessation week parents develop self-management techniques to cope with pressures inherent in high-risk situations following initial cessation. The program emphasized self-efficacy and recycling in the event of relapse and viewing cessation as an iterative process. After a 3-week break, the program culminated in the third week which recapitulated motives for smoking by contrasting adult and adolescent perspectives, promoted social activism in coping with media pressures, and encouraged thoughtful decision-making leading to commitments to neither smoke nor influence others to do so.

**Implementation**

We implemented the TVSFP program in February/March, 1986. During the week of February 3–7, 1986, we delivered the first of two prevention weeks of programming in classrooms in Los Angeles and San Diego. Before implementation we collected pretest data and expired air samples. During the second week of February the cessation program was broadcast. We provided no classroom sessions for the cessation program; however, the program encouraged students to provide support for parents and other adults who were motivated to quit. A 3-week break after the cessation program was followed by the second prevention week. We collected post-test data from students, parents, and teachers within a month of the end of the program, and at 1- and 2-year follow-ups.

Twenty-seven schools (approximately 7,000 students and their parents) participated in the study. An unknown number of nonstudy schools may have encouraged their students to follow the program. About 60,000 people and 200 businesses and corporations requested the workbook. The average rating across the 3-weeks of programming was 10.2. This translates to an average of half a million households, or about 650,000 people, seeing each segment. Because the TV station stressed the family orientation of the series in its promotion, it is likely that adolescents and their parents comprised a higher than average proportion of viewers. The TV marketing industry estimates that the cumulative number of viewers of at least one segment of a five-segment series is approximately double the average daily number. Thus, approximately 1.3 million people are likely to have seen at least on segment each week.

**CONCLUSION**

We have presented the TVSFP program development model to illustrate how
pragmatic aspects of development and implementation processes can have an impact on large-scale, school-based, and media research efforts. We derived the theoretical foundation and curriculum content of the TVSFP social resistance curriculum from previous school-based social influences prevention research. TVSFP extended previous school-based research in the following ways: (a) we used mass broadcast television to reinforce the school-based program; (b) we made the family influences focus reciprocal, with parents supporting adolescent prevention skills acquisition and adolescents supporting parental smoking cessation efforts; and (c) we conducted a true experimental test of the relative effectiveness of the classroom and television components.

Unfortunately, the expectation on the part of research staff that the Feeling Fine TV segments could be used for accurate modeling of behavioral objectives was unrealistic. We would have preferred the opportunity to pilot test the TV segments, and to have research staff involved in shooting or at least editing. We had intended that the collaboration of research and production staff could have resulted in programming that demonstrated effective substance-use resistance techniques independent of the classroom sessions. Unfortunately, the realities of a commercial news organization and labor contracts did not allow it. The resulting television segments, while of superior quality, did not meet the research objectives fully. In particular, the resulting programming did not demonstrate social resistance skills in the progressive and detailed way that is necessary for adequate learning to take place (2, 3). If we had been more successful, this project could have provided a more rigorous comparative test of the minimal but potentially most cost-beneficial condition (TV-Only) and the maximum treatment condition (CR + TV) than was possible.

A major effect of mass media in general, and TV in particular, has been to establish and maintain normative expectations of substance-use prevalence and acceptability. Therefore, we might have more effectively used the established documentary format of the TV series to illustrate and reinforce accurate norms and to promote cultural norms of acceptance for healthful behaviors. However, such a use of mass media for prevention could only be supplementary to school-based programming, and we would not expect it to affect behavior substantially independent of a classroom curriculum. Effective mass media programming might still be possible with greater opportunities for involvement in research planning by media experts and greater involvement in media production by researchers. While we have reported here some limitations of this type of collaborative effort, we hope that our positive experiences will encourage others to pursue similar collaborative arrangements in the interest of producing and evaluating improved mass broadcast health promotion interventions.

ACKNOWLEDGMENTS

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