



Why Don't Youth Quit Smoking?

Finding answers to design effective smoking cessation programs

SUMMARY

Gary A. Giovino, Ph.D., at the State University of New York at Buffalo, and Dianne C. Barker, M.H.S., at Barker Bi-Coastal Health Consultants, surveyed a nationally representative cohort of 2,582 smokers ages 16 to 24 for a period of two years.

Their study, *Assessing Youth Smoking Cessation Needs and Practices*, provides insights into whether these young smokers tried to quit, the methods they used in trying to quit and factors that would predict their quitting patterns and success rates.

Key Findings

- "These adolescents considered addiction to cigarettes real, powerful, stealthy, insidious, harmful, and avoidable. They considered quitting smoking achievable and desirable," according to a report of focus groups with youth conducted as part of the project.
- At baseline, more than 75 percent of smokers said they had tried to quit.
- Some 24 percent of youth who tried to quit said they used a form of nicotine replacement therapy such as a patch.
- Nearly 12 percent of smokers ages 17 to 26 said they smoked a flavored brand, compared with 6.7 percent of people in a survey (the national Assessing Hardcore Smoking Survey) of adult smokers age 25 and older. The youngest smokers were most likely to use the flavored brands: 22.8 percent of 17-year-olds and 21.7 percent of 18- and 19-year-olds.

Some 38 state attorneys general used this finding to pressure tobacco companies into stopping the sale of flavored brands, according to Gary Giovino, the project director. In October 2006, R.J. Reynolds Tobacco Company agreed to end the sale of candy-, fruit- and alcohol-flavored cigarettes.

Funding

The Robert Wood Johnson Foundation (RWJF) provided four grants totaling \$3,944,390 for the project from July 2000 through March 2010. Three supported the work of Giovino and Barker (under subcontracts), and one, to the Public Health Institute, supported only the work of Barker.

Context

In 2000, there were at least 4 million smokers under age 18, according to the *National Blueprint for Action: Youth and Adult Tobacco-Use Cessation*, a consensus document produced by the Youth Tobacco Cessation Collaborative. Another 3,000 adolescents became regular tobacco users each day. At this rate, 5 million young people alive in 2000 would die prematurely of diseases related to tobacco use.

Studies of students found that many who smoke want to quit. Data from the 2000 *National Youth Tobacco Survey* indicated that 55 percent of middle school and 61 percent of high school smokers wanted to stop smoking, according to Giovino and Barker, the principal investigators. Some 59 percent of high school smokers said they had seriously tried to quit at least once during the prior 12 months.

Although many young smokers have wanted to quit, little was known about what strategies would work best for them. No one had comprehensively measured youth quitting history, quitting patterns over time, the natural history of quitting, quitting methods, predictors of quitting and other factors.

RWJF's Interest in the Area

When Stephen Schroeder, M.D., became RWJF's president in 1990, he committed to reducing the health, social and economic harms caused by tobacco, alcohol and illicit drugs. RWJF established several significant programs during the 1990s to achieve that goal:

- The *Tobacco Policy Research and Evaluation Program* (1992–1996). Researchers analyzed strategies for reducing tobacco use—especially among children and youth—as evidence for policy-makers to use in designing interventions. The program evolved into the *Substance Abuse Policy Research Program* (1994–2010) and included alcohol and illicit drugs as well as tobacco.
- The *Tobacco Research Etiology Network* (1996–2006). Researchers formed transdisciplinary, collaborative networks—"research institutes without walls." The networks formulated new frameworks for the causes of tobacco use, developed methods to collect and analyze data and engaged a cadre of future tobacco researchers.

- *Bridging the Gap: Research Informing Practice for Healthy Youth Behavior* (1997–ongoing). During its first phase, *Bridging the Gap* explored school, community, state and national policies and environmental factors that affect youth decisions to smoke, drink or use drugs. In 2004, *Bridging the Gap* shifted its focus to factors affecting youth diet and physical activity.
- In 1995, RWJF established the *National Center for Tobacco-Free Kids*, renamed the Campaign for Tobacco-Free Kids in 1996. The campaign provides education, advocacy and leadership development services in the United States and around the world. See [Program Results](#) for more information.

According to C. Tracy Orleans, Ph.D., RWJF distinguished fellow and senior scientist, "a lot of our youth-oriented work at the time was prevention-oriented. We realized there were no effective interventions to help young smokers quit."

As a result, in 1998, RWJF joined other funders to form the [Youth Tobacco Cessation Collaborative](#). The collaborative, housed at the Academy for Educational Development, provides a forum for funders to eliminate duplication of effort, ensure that the full range of issues is addressed, develop strategies and monitor progress. See [Program Results](#) for more information about the collaborative.

From 2001 through 2009, RWJF funded *Helping Young Smokers Quit: Identifying Best Practices for Tobacco Cessation*, a national program to identify, describe and evaluate smoking-cessation programs tailored to youth.

RWJF's work to address tobacco cessation is synthesized in a report, [More Than a Decade of Helping Smokers Quit: The Robert Wood Johnson Foundation's Investment in Tobacco Cessation](#). One section is on cessation treatment for youth.

The Project

"Our surveillance of youth quitting attempts was very poor, so we decided we needed a survey that would tell us more about how youth quit, or didn't quit, over time," says RWJF's Orleans.

The objective of the project was to design, conduct and analyze findings from a survey of youth over time in order to:

- Establish national baseline estimates for indicators of smoking-cessation activity among people ages 16 to 24, for comparison with future surveys on the same topic
- Describe the natural history of quitting among adolescents and young adults in a nationally representative sample

- Develop statistical models to predict whether young people would make an attempt to quit smoking and would maintain abstinence—and to identify which quitting strategies they would select.

Achieving these objectives should lead to better programs and practices. According to Project Director Giovino, "I like to establish survey and monitoring systems, but I also want to do things that people can run with, things that have practical components to help people working in the field. This project dovetailed with the agenda for the Youth Tobacco Cessation Collaborative, which we viewed as a good vehicle for implementing strategies that would emerge from our work."

Giovino, professor and chair, department of health behavior, State University of New York at Buffalo, contracted with Barker, principal of Barker Bi-Coastal Health Consultants, a Calabasas, Calif.-based health consulting firm, to co-direct the project.

Designing the Survey

During the planning period, Giovino and Barker:

- Reviewed more than 100 journal articles related to youth smoking cessation
- Convened an expert advisory group to provide guidance on survey design, data collection and constructs to be measured (see [Appendix 1](#) for a list of members)
- Contracted with Balch Associates, a Chicago-based consulting group, to convene six computer-assisted telephone-based focus groups with youth ages 13 to 17, two each with:
 - Established smokers
 - Late experimenters
 - People who had quit smoking

Telephone-based focus groups allow people to participate from their home or office. These groups also draw in people from dispersed geographic locations and assure anonymity. Recent developments in computer technology have enhanced the usefulness of this strategy.

- Contracted with the [Research Triangle Institute](#), a Raleigh, N.C.-based research institute, to contribute to survey design.

By the end of the design period, Giovino and colleagues had developed 12 design options, including piggybacking on or linking to existing surveys and creating a new stand-alone survey. In January 2002, according to Giovino, "After lengthy review of the design options, RWJF asked us to propose a nationally representative, stand-alone longitudinal survey."

Conducting the Survey

The *Assessing Youth Smoking Cessation Needs and Practices* study was a two-year, nationally representative telephone survey of 2,582 youth. The survey was called the *National Youth Smoking Cessation Survey*.

To participate in the survey, respondents had to be ages 16 to 24 and be smokers at baseline. A smoker was someone who had smoked 20 or more cigarettes in his or her life and had smoked during the prior month.

[Westat](#), a Rockville, Md.-based research firm, conducted the survey under a subcontract.

- Westat staff surveyed participants at baseline and at six and 24 months.
- Staff also surveyed 75 percent of participants at 12 months.
- Respondents who indicated during their six-month interview that they had just quit or planned to quit within the next 30 days were interviewed again about one month later. These were called "event-triggered" interviews.

Westat surveyors began collecting baseline data in June 2003 and completed 24-month follow-up data collection in December 2005. See the [Bibliography](#) for dates of each survey.

Response rates at the different survey points ranged from 69.6 percent at baseline to 56.4 percent at 24 months.

Other Funding

Two organizations provided additional funds for the study:

- The National Cancer Institute provided two grants totaling \$318,783 for design and data coding.
- The Centers for Disease Control and Prevention (CDC) provided about \$150,000 from an existing contract with the Research Triangle Institute to support data analysis. The CDC also funded the project's "Methodological Workshop" held in May 2003 for research team staff, Westat project staff and CDC tobacco-research scientists.

See [Appendix 2](#) for details about these funds.

Related Work

During the grant period, RWJF's Substance Abuse Policy Research Program provided support to Barker for two projects that combined data from the National Youth Smoking Cessation Survey with other datasets to study specific aspects of young smokers' demand for and use of treatment:

- A \$282,810 grant from September 2006 through December 2008 (ID# 58009) to analyze the impact of smoke-free laws on youth smoking cessation. See "[Impact of Smokefree Air Policies on Young Smokers' Demand for and Use of Treatment](#)" for more information about this grant.
- A \$100,000 grant from January 2009 through June 2010 (ID# 65627): "[The Role of Televised Anti-Tobacco and Pharmaceutical Advertising on Young Smokers' Demand for and Use of Treatment.](#)" Barker combined data from the National Youth Smoking Cessation Survey with two datasets housed at the University of Illinois at Chicago: the Nielsen Ad Ratings Database and the ImpacTeen State Tobacco Control Policy Database. RWJF funds ImpacTeen as part of its *Bridging the Gap* national program.

FINDINGS

Findings From the Focus Groups

Project staff from Balch Associates reported findings from the focus groups conducted prior to the study in an article entitled "Opportunities for Youth Smoking Cessation: Findings From a National Focus Group Study," published in 2004 in *Nicotine & Tobacco Research*. (Abstract available [online](#).)

- "These adolescents considered addiction to cigarettes real, powerful, stealthy, insidious, harmful, and avoidable. They considered quitting smoking achievable and desirable."
- Some adolescents would not consider quitting until an indefinite future, when they expect adult responsibilities and maturity would help them quit.
- Adolescents who had quit smoking said they had received encouragement from friends, and they also associated with more nonsmokers.
- Adolescents were unaware of the availability of professional help and were not interested in it.

Findings Regarding Adolescents at Baseline

Researchers reported the following finding in an article entitled "Use of Cessation Methods Among Smokers Aged 16–24 Years—United States, 2003," published in 2006 in the CDC's *Morbidity and Mortality Weekly Report*, available [online](#):

- Most respondents who had tried to quit used unassisted methods such as decreasing the number of cigarettes smoked, not buying cigarettes and exercising more.

Researchers also noted baseline findings in reports to RWJF:

- More than 75 percent of respondents had tried to quit smoking.

- Less than 50 percent knew about quitlines, and only 2 percent had ever called one.
- Smokers under age 20 were more likely to smoke flavored cigarettes than smokers 20 or older.
- Self-identified smokers (ages 16–24) were less likely to quit smoking than were smokers who did not identify themselves as smokers.

Findings From Targeted Analyses

Giovino and Barker reported findings from several targeted analyses of survey data. Key findings (and where they were reported) are included below:

- **Nicotine replacement therapy and light/ultra-light cigarettes.** (Report to RWJF)
 - Some 24 percent of youth who tried to quit said they used nicotine replacement therapy.
 - Some 60 percent of respondents said they smoked light/ultra-light cigarettes compared with 40 percent who smoked regular/full-flavored cigarettes. Flavor preference was most often the reason (82%), but 28 percent perceived reduced harm, and 21 percent perceived these sub-brands as a means to quit.
- **Use of Flavored Cigarettes among older adolescent and adult smokers.** Based on combining 12-month follow-up data from this survey with data from an unrelated nationally representative survey of smokers age 25 or older (Assessing Hard Core Smoking Survey), Giovino and Barker found a sharp age gradient. (*Nicotine & Tobacco Research*, July 2008, abstract available [online](#)):
 - Some 11.9 percent of smokers ages 17 to 26 had used a flavored brand within the past 30 days compared with 6.7 percent of people in a survey of adult smokers 25 and older.
 - The youngest smokers were most likely to use the flavored brands: 22.8 percent of 17-year-olds and 21.7 percent of 18- and 19-year-olds.
- **Predictors of cessation and abstinence for 30 days.** Being dependent on nicotine, rather than experimenting with tobacco products, is the major predictor of cessation. Having parents who smoke, identifying as a smoker and using cigarettes to control anger and weight appear to undermine cessation efforts. (Report to RWJF)

Key predictors of 30-day abstinence at 12-month interview were (unpublished article):

- Longer time to first cigarette of the day
- Lower daily smoking rate
- Does not consider self a smoker

- Does not enjoy smoking
- Readiness to quit in next 30 days
- Higher self-efficacy
- Previous abstinence longer than seven days
- Does not binge drink
- At least one nonsmoking parent.
- **Quitlines (telephone services to help people quit smoking).** (Presented at the National Conference on Tobacco or Health, June 2009)
 - Less than half of respondents knew about quitlines in 2003.
 - Higher exposure to state-sponsored television advertisements providing quitline information was associated with increased awareness of quitlines but not with perceptions of their helpfulness.
 - Pharmaceutical company-sponsored advertisements were not significantly associated with either knowledge of or helpfulness of quitlines.
- **Factors influencing the use of a health professional during a quit attempt.** (Report to RWJF)
 - Youth who had ever used a health professional during a quit attempt were four times more likely to use a health professional again compared with youth who had never used a health professional.
 - Youth with a family member or friend with a smoking-related illness were more likely to use a health professional.
 - Blacks and youth ages 19–24 with moderate confidence in their ability to quit may be more likely to use a health professional than those with lower levels of confidence.

Limitations

Barker, Giovino and colleagues reported the following limitations to the study in an article entitled "Use of Cessation Methods Among Smokers Aged 16–24 Years—United States, 2003," published in 2006 in the CDC's *Morbidity and Mortality Weekly Review*, available [online](#).

- The survey covered only people ages 16 to 24 living in households with telephones.
- Survey staff asked responders to identify themselves as smokers or nonsmokers, but respondents did not submit to any form of biochemical validation. Some smokers

might not have identified themselves as such. During the initial questions, respondents were unaware that survey participation was limited to smokers.

Communications

Project staff and partners published articles in peer-reviewed journals, including *Nicotine & Tobacco Research* and the CDC's *Morbidity and Mortality Weekly Report*.

Barker and Giovino also presented findings from the study at annual meetings of national associations including the American Public Health Association, the National Society on Tobacco or Health and the Society for Research on Nicotine and Tobacco.

Products to Translate and Disseminate Survey Findings into Practice and Policy

With a final transitional supplement grant from RWJF (ID# 65132), Barker worked with staff from the CDC and the Academy for Educational Development to translate research findings into advertisements, issue briefs and posters targeted to policy-makers and to youth. These included:

- *Quitline Services for Youth Under Age 18*, a brief for policy-makers describing quitline resources available to young smokers
- *How to Improve Your Chances of Quitting Smoking: What You Need to Know About Nicotine Medications and How They Can Help You Quit Smoking*, an issue brief targeting smokers ages 18 to 24. The brief describes the effectiveness, myths and facts and proper usage of nicotine replacement products.
- Nine advertisements aimed at adolescents, encouraging them to quit and promoting quitline numbers. The advertisements can be modified for specific cessation programs or state quitlines.

Barker and colleagues also produced *The National Youth Smoking Cessation Survey Baseline, 6-Month, 12-Month and 24-Month Data Files Documentation and User Guide*. This guide helps researchers analyze the public use dataset from the surveys. It includes information about the survey design, data collection, measures and published abstracts.

See the [Bibliography](#) for information about products from the study.

Significance of the Project

Some 38 state attorneys general used the finding that the youngest smokers were most likely to use flavored cigarettes to pressure tobacco companies into ceasing production of these cigarettes, according to Giovino. In October 2006, R.J. Reynolds Tobacco Company agreed to end the sale of candy-, fruit- and alcohol-flavored cigarettes.

Challenges Faced and Lessons Learned

Giovino and Barker encountered some challenges in conducting the study. Some related to sustaining multidisciplinary collaborations when key people are based in different locations; others related to allowing adequate time to secure institutional review board approval and anticipating staffing needs.

They offer some lessons from these challenges:

1. **Consider cross-institutional collaborations even when key partners are based in separate geographic areas.** In this study, the project co-directors were based in New York and California and the subcontractors were based in Maryland, Illinois and North Carolina. Focus group participants and members of the expert advisory group were located in several other cities. This structure allowed for the combination of diverse skills, and it worked well throughout the project. (Project Director/Giovino).
2. **Consider conducting focus groups via computer-assisted telephone conversations.** This format allowed Balch to recruit a more representative sample of participants and provided participants with greater privacy and anonymity than with in-person focus groups. (Project Director/Giovino)
3. **Build in adequate funds to hire statistical and analytic staff.** Include funds for at least one full-time statistical programmer and one full-time research assistant and for a statistical consultant if the data are complex. (Project Director/Giovino, Co-Director Barker)
4. **When constructing work plans, allow ample time for Institutional Review Board (IRB) approval.** Delays in IRB approval held up the focus groups for several months. (Project Director/Giovino)
5. **Collaborate with diverse organizations in developing products from a study.** Researchers worked with staff at the Academy for Educational Development and other members of the Youth Tobacco Cessation Collaborative in creating products that would resonate with youth. These collaborations also extend dissemination beyond a single group's membership. (Project Co-Director/Barker)

AFTERWARD

Giovino and Barker collaborated with RWJFs *Helping Young Smokers Quit* national program in developing instruments and in preparing cross-project publications.

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APPENDIX 1

Expert Advisory Panel

(Information provided by the grantee organization; not verified by RWJF.)

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APPENDIX 2

Other Funders

(Information provided by the grantee organization; not verified by RWJF.)

The National Cancer Institute provided additional support for the study:

- \$303,783 to Westat to finalize the survey design and questions
- \$15,000 to code and analyze media data (collected by researchers at the University of Illinois at Chicago) relative to the analysis of quitline marketing

The CDC provided two kinds of support:

- Funded the project's Methodological Workshop held on May 15, 2003. Participants at the workshop discussed how the special "event-triggered" follow-up interviews might affect analysis of the data from the project.
- Allocated about \$150,000 from an existing contract with the Research Triangle Institute for some analyses.

BIBLIOGRAPHY

(Information provided by the grantee organization; not verified by RWJF.)

Articles

Balch GI, Tworek C, Barker DC, Sasso B, Mermelstein RJ and Giovino GA. "Opportunities for Youth Smoking Cessation: Findings from a National Focus Group Study." *Nicotine & Tobacco Research*, 61(1): 9–17, 2004. Abstract available [online](#). Full article requires journal subscription or fee.

Barker DC, Giovino GA, Gable J, Tworek C, Orleans CT and Malarcher A. "Use of Smoking Cessation Methods Among Smokers Aged 16–24 Years—United States, 2003." *Morbidity and Mortality Weekly Report*, 55(50): 1351–1354, December 22, 2006. Available [online](#).

Klein SM, Giovino GA, Barker DC, Tworek C, Cummings KM and O'Connor RJ. "Use of Flavored Cigarettes Among Older Adolescent and Adult Smokers: United States 2004–2005." *Nicotine & Tobacco Research*, 10(7): 1209–1214, 2008. Abstract available [online](#). Full text requires journal subscription or fee.

Reports

Prospective Study of Adolescent Cessation of Tobacco Use Survey Questionnaire: Report of Cognitive Testing Results. Research Triangle Park, NC: Research Triangle Institute, June 15, 2001.

Results From Two Rounds of Cognitive Testing of the Youth Smoking Cessation Needs and Practices Questionnaire. Research Triangle Park, NC: Research Triangle Institute, 2002.

Barker DC, Gordon S and Barry M. How to Improve Your Chances of Quitting Smoking: What You Need to Know About Nicotine Medications and How They Can Help You Quit Smoking. Washington: Youth Tobacco Cessation Collaborative, May 2010.

Barker DC, Gordon S, Davis S and Arthur A. *Quitline Services for Youth Under Age 18*. Washington: Youth Tobacco Cessation Collaborative, May 2010.

Mowery P, Barker DC and Giovino G. The National Youth Smoking Cessation Survey Baseline, 6-Month, 12-Month and 24-Month Data Files Documentation and User Guide, May 2010.

Datatapes

"Assessing Youth Smoking Cessation Needs and Practices Study: Baseline Survey Data." Westat, June 2003–November 2003.

"Assessing Youth Smoking Cessation Needs and Practices Study: 6-Month Survey Data." Westat, January 2004–July 2004.

"Assessing Youth Smoking Cessation Needs and Practices Study: Event-triggered Follow-up Survey Data." Westat, February 2004–August 2004.

"Assessing Youth Smoking Cessation Needs and Practices Study: 12-Month Survey Data." Westat, June 2004–November 2004.

"Assessing Youth Smoking Cessation Needs and Practices Study: 24-Month Survey Data." Westat, June 2005–December 2005.

Survey Instruments

"Assessing Youth Smoking Cessation Needs and Practices Study: Baseline Survey." Westat, Inc., fielded June 2003–November 2003.

"Assessing Youth Smoking Cessation Needs and Practices Study: 6-Month Follow-up Survey." Westat, Inc., fielded January 2004–July 2004.

"Assessing Youth Smoking Cessation Needs and Practices Study: Event-triggered Follow-up Survey." Westat, Inc., fielded February 2004–August 2004.

"Assessing Youth Smoking Cessation Needs and Practices Study: 12-Month Follow-up Survey." Westat, Inc., fielded June 2004–November 2004.

"Assessing Youth Smoking Needs and Practices Study: 24-Month Follow-up Survey." Westat, Inc., fielded June 2005–December 2005.