

Helping **Young** **Smokers** *Quit*

Identifying Best Practices for Tobacco Cessation

Multi-level Predictors of Successful Quitting Behavior Among Adolescents in Community-based Smoking Cessation Programs

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Multi-Year, Three-Phase Initiative

- Overall mission
 - Accelerate knowledge about effective interventions for youth tobacco cessation
- Activities
 - Phase I: National survey of programs
 - Phase II: Program Evaluations
 - Phase III: Sustainability survey
 - Evaluation tool-kit

Program Evaluation

- Evaluate a sample of 'real world' youth cessation programs
- Identify characteristics of programs that show promise for improving cessation outcomes
- Identify resources and barriers to successful youth cessation program implementation

Evaluation design

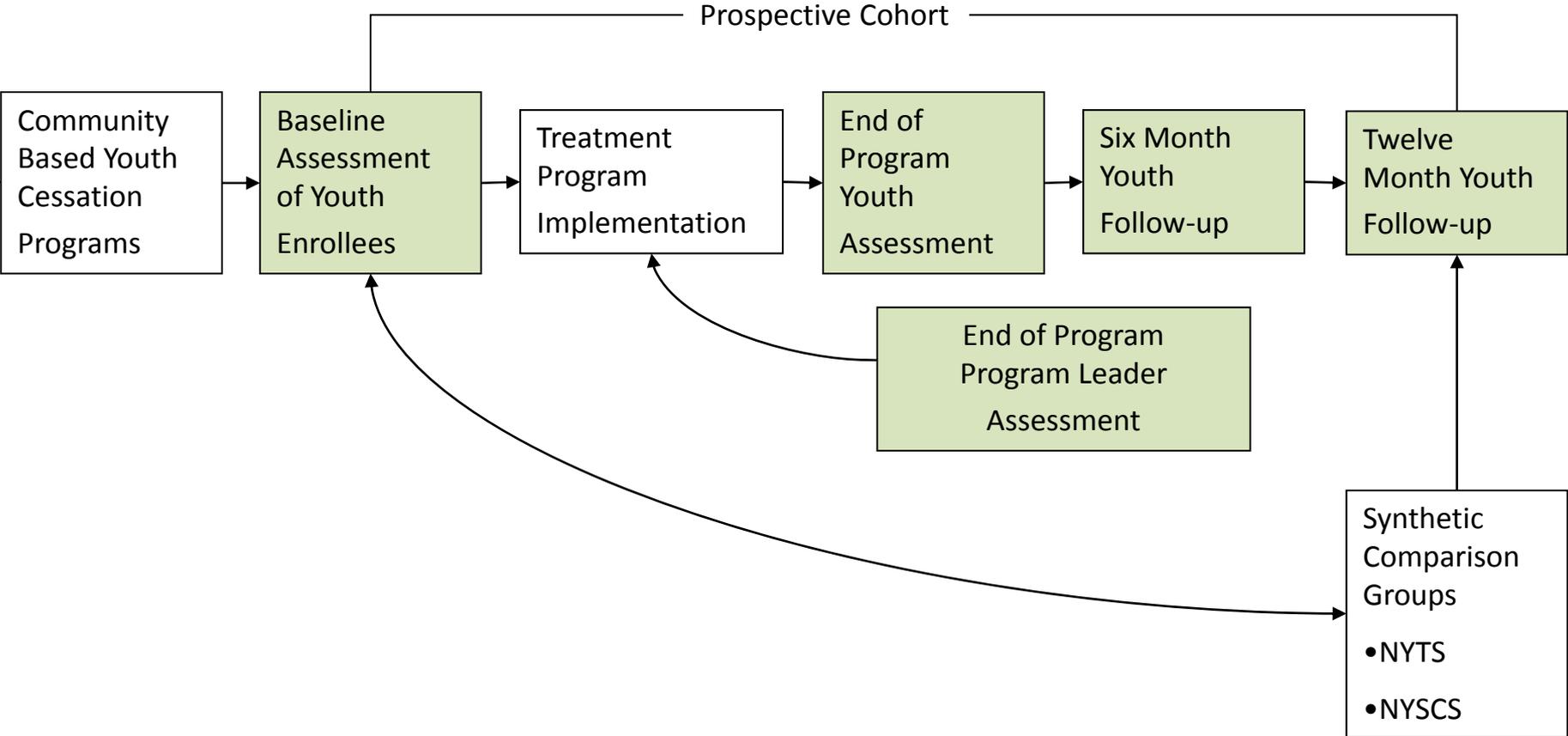
- Associative model
- Assess contextual, program & participant factors
- Mandatory vs. voluntary participation key comparison variable
- Targeted sample of 40 programs each enrolling at least 15 youth

Programs

- National web-based recruitment
- 135 applications from 33 states
- 73 phone interviews
- 45 selected & site visited
- 41 participating programs from 18 states

Program Context

- Archival abstraction of state and local tobacco control ordinances
- Key informant surveys in the education, public health, and juvenile justice sectors
- Program sponsoring organization administrative leader interview



Shaded boxes represent primary data collection

Lots of Constructs measured!

- Youth Surveys – 11 constructs
 - E.g., demographics, smoking-related, school performance, physical & psychological health
- Program Surveys – 10 constructs
 - E.g., recruitment strategies, program logistics & content, facilitator characteristics

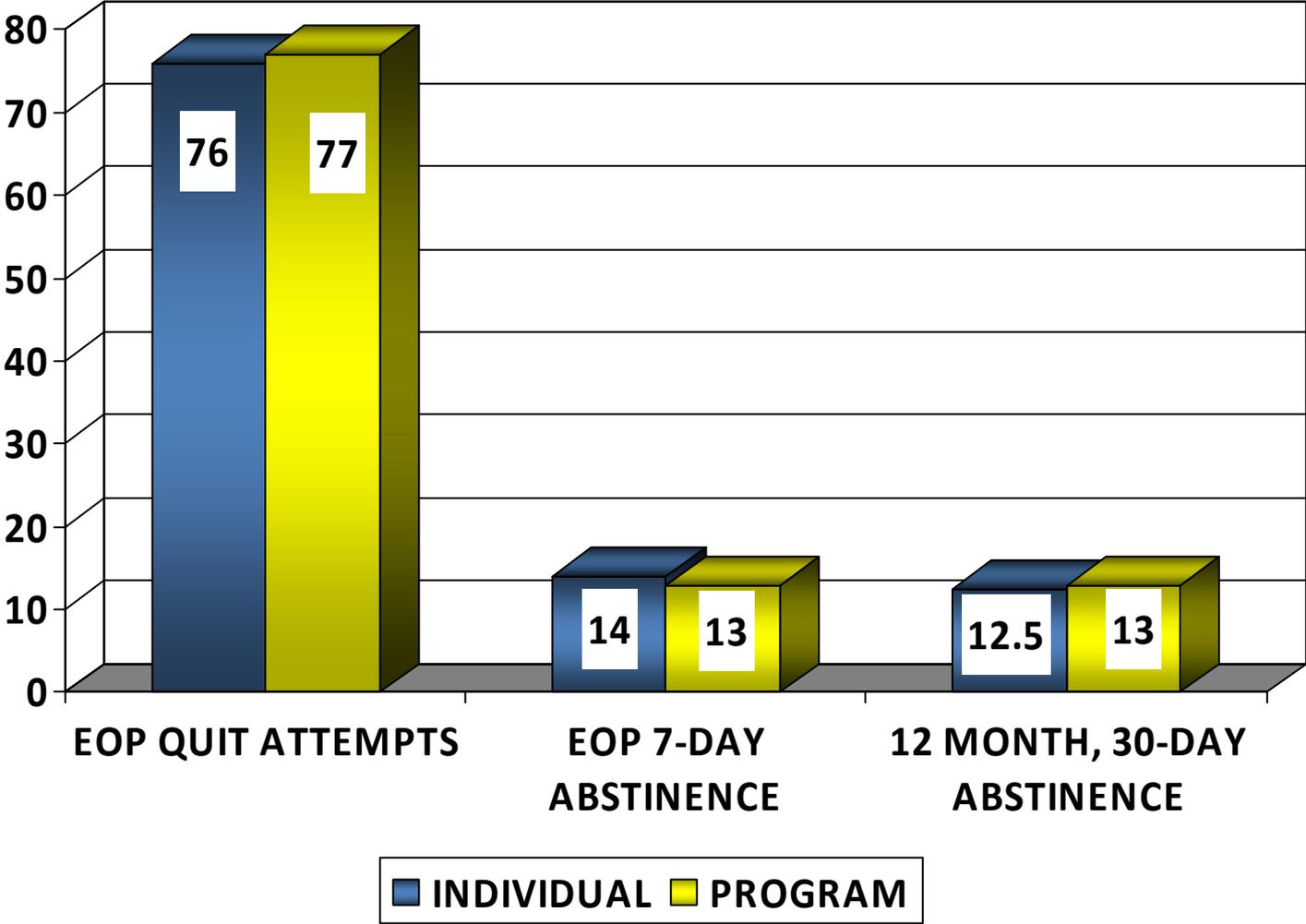
Lots of Constructs measured!

- Organizational surveys – 6 constructs
 - E.g., tobacco policies, resources, support, other youth programs
- Community surveys – 10 constructs
 - E.g., program/service availability, after-school activities, tobacco control policy enforcement, agency activities

Data Collection

- Individual-Level: Youth participant surveys
 - Baseline (n=878)
 - End of the program (n=801),
 - Follow-ups at 6-months (n= 672) and 12-months (n=601)
- Site-Level Data
 - Program leader interviews (n=79)
 - Organization leader (n=64)
- Community-Level
 - Leader interviews (n=94)
 - School Board
 - Health Department
 - Juvenile justice
 - Local ordinances from archival research

Outcomes



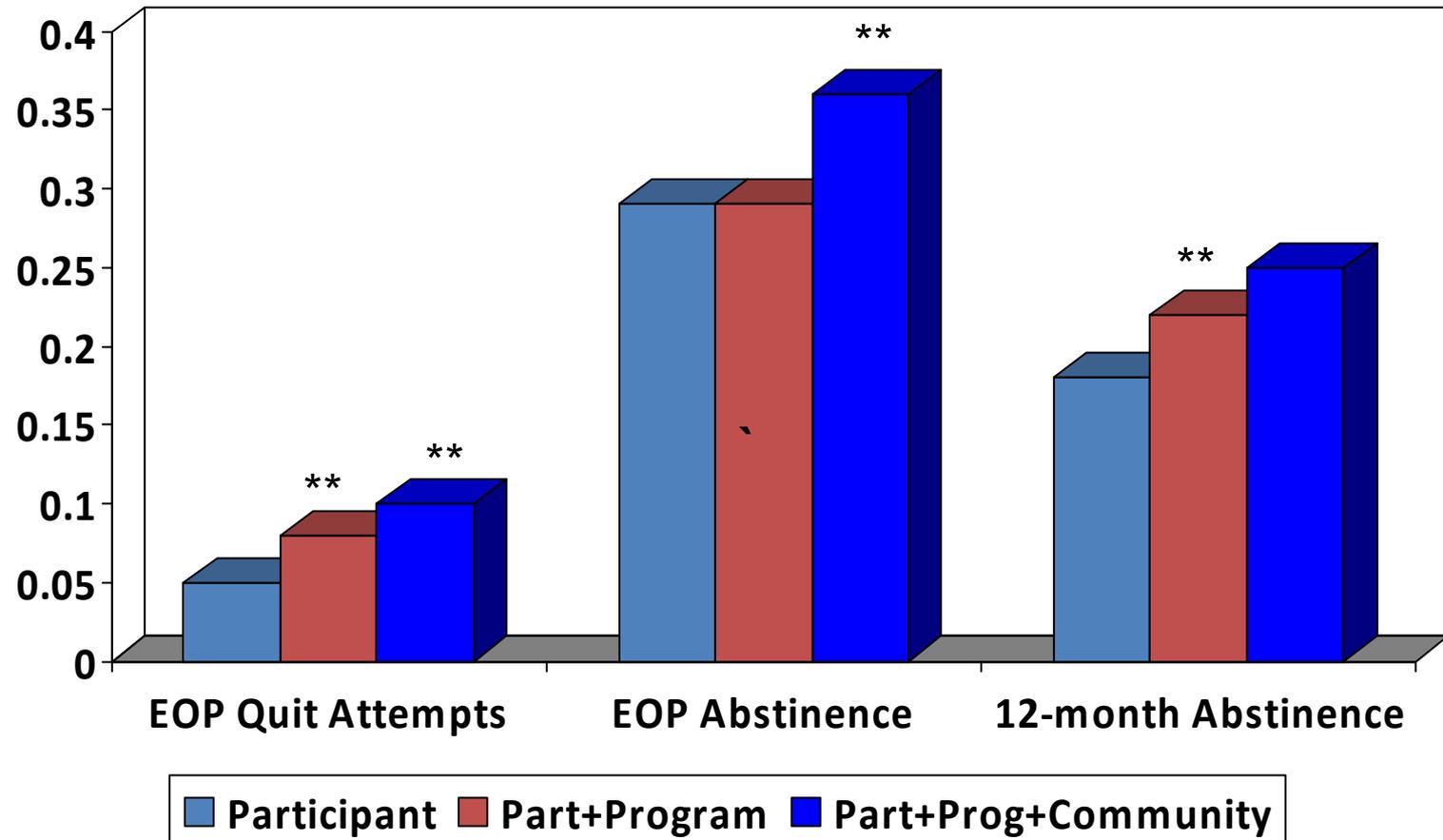
Model Development

- Variable Selection
 - Started with theoretically interesting variables:
 - 53 individual level
 - 23 program level
 - 41 community level
- Sequential multiple imputation to accommodate missing data

Model Development

- Single-level analyses
 - For each outcome, backward selection identified a reduced set of promising variables at each level
- Multi-level analyses
 - 3-level model using GEE
 - Also examined R-square increments with each level added using NLMIXED

Regression models' R²



Serious Quit Attempts at End of Program

- ❖ Younger age
- ❖ Higher quit confidence
- ❖ Higher motivation
- ❖ No prior pharmacotherapy use
- ❖ Prior serious quit attempt
- Supportive facilitator style
- Newer facilitator (1 year or less)
- Sessions < 50 minutes
- No medication use during program
- * Organizational leadership aware of program
- * Policy prohibiting tobacco use on school buses
- No community ordinance prohibiting tobacco advertising
- Community ordinance against youth possession

7-Day Abstinence at End of Program

- ❖ White race
- ❖ Better attendance
- ❖ Extra-curricular activity
- ❖ No alcohol use
- ❖ Lower smoking rate (1-5 cig/day)
- ❖ High confidence
- ❖ Does not live with a smoker
- ❖ Rules against smoking in the home
- ❖ Pro-smoke-free public places
- ❖ Post-high school plans
- * Ordinances against tobacco use on school property and school buses
 - Community ordinance against tobacco advertising that's not always enforced
 - Community ordinance against youth possession

30-Day Abstinence at 12-months

- ❖ Never smoked daily
- ❖ Later time to first cigarette (>15 min)
- ❖ Very supportive father
- ❖ Not supportive mother
- ❖ Heard about program from teacher
- ❖ Didn't use tobacco promotional item
- ❖ Believes will stick with program at baseline
- Better attendance at program
- Voluntary participation in program
- Fewer sessions
- No program incentives
- No use of medication in program
- Less likelihood of program operating in one year
- Younger provider age
- * Aware/supportive organizational leadership
- * Smoking prohibited on premises of sponsoring organization
 - No community ordinance regarding youth tobacco use
 - Less strict clean indoor air regulations in the community

Age, gender, race, attendance, mandatory/voluntary participation forced into model

General findings

- Individual-level factors related to positive outcomes at end of program and 12-months
 - Although variables differ, pattern is consistent with findings from treatment outcome studies
- Except for the use of pharmacotherapy during treatment, little association between program content and outcome
- Mandatory participation not associated with poorer short-term outcomes, but associated with lower likelihood of abstinence at 12 months

General findings

- Some indication that newer programs with younger facilitators had better outcomes
- Teacher referral to programs associated with better long-term outcomes
- Shorter session and program length associated with better outcomes
- Incentives not associated with end of program outcomes, but negatively associated with 12 month abstinence

General findings

- School anti-tobacco policies associated with better short- and long-term outcomes
- Community ordinance associations somewhat confusing/counter-intuitive

A few conclusions

- Demonstrated feasibility of conducting national evaluation of existing programs with a uniform and replicable protocol
- Program characteristics, such as facilitator style and organizational support for the program may reinforce early quitting activities
- Organizational support and voluntary enrollment may contribute to successful cessation.
- Community policies likely play a role in youth smoking cessation, but improved measures are needed for conclusive results

<http://www.helpingyoungsmokersquit.org/>

