

Supplemental Information

SUPPLEMENTAL TABLE 3 Correlates of Parent or Guardian Suspicion of Youth Tobacco Use

| | Wave 1: 2013–2014 | Wave 2: 2014–2015 | Wave 3: 2015–2016 | Wave 4: 2016–2018 | aOR (95% CI) ^a |
|--|----------------------|----------------------|----------------------|----------------------|---------------------------|
| Youth tobacco use status, % suspicion ^b | | | | | |
| Never user | 3.1 | 2.9 | 2.9 | 2.2 | — |
| Former user | 30.8 | 27.3 | 25.5 | 30.1 | — |
| Cigarettes only | 72.8 | 69.5 | 62.5 | 69.0 | — |
| E-cigarettes only | 35.8 | 39.8 | 42.1 | 37.0 | — |
| Noncigarette combustible only | 29.6 | 35.3 | 32.9 | 42.4 | — |
| Smokeless tobacco only | 52.2 | 52.0 | 42.3 | 51.5 | — |
| Polytobacco user | 72.6 | 67.6 | 68.7 | 72.2 | — |
| Youth tobacco use status, aOR (95% CI) ^c | | | | | |
| Never user | 0.01 (0.01–0.02) | 0.02 (0.01–0.02) | 0.02 (0.02–0.03) | 0.01 (0.01–0.02) | — |
| Former user | 0.16 (0.12–0.22) | 0.17 (0.12–0.24) | 0.21 (0.14–0.31) | 0.20 (0.14–0.27) | — |
| Cigarettes only | Reference | Reference | Reference | Reference | — |
| E-cigarettes only | 0.22 (0.14–0.35) | 0.30 (0.19–0.47) | 0.51 (0.32–0.79) | 0.27 (0.19–0.40) | — |
| Noncigarette combustible only | 0.18 (0.12–0.28) | 0.28 (0.17–0.45) | 0.31 (0.16–0.58) | 0.33 (0.19–0.59) | — |
| Smokeless tobacco only | 0.34 (0.19–0.60) | 0.43 (0.23–0.80) | 0.37 (0.19–0.73) | 0.36 (0.19–0.65) | — |
| Polytobacco user | 0.94 (0.65–1.36) | 0.93 (0.62–1.40) | 1.42 (0.90–2.24) | 1.17 (0.79–1.75) | — |
| Other covariables | | | | | |
| Parent education (reference: less than high school) | | | | | |
| High school or equivalent | — | — | — | — | 0.80 (0.72–0.90) |
| Some college | — | — | — | — | 0.84 (0.75–0.94) |
| College graduate | — | — | — | — | 0.56 (0.49–0.63) |
| Parent respondent (reference: other parent or guardian) | | | | | |
| Child's mother | — | — | — | — | 1.22 (1.12–1.31) |
| Youth age (reference: 12–14 y) | | | | | |
| 15–17 y | — | — | — | — | 1.30 (1.20–1.40) |
| Youth sex (reference: male) | | | | | |
| Female | — | — | — | — | 0.71 (0.66–0.77) |
| Youth race and/or ethnicity (reference: non-Hispanic white) | | | | | |
| Non-Hispanic Black | — | — | — | — | 0.65 (0.58–0.74) |
| Non-Hispanic other | — | — | — | — | 0.79 (0.69–0.90) |
| Hispanic | — | — | — | — | 0.84 (0.77–0.93) |
| Youth lives with tobacco user (reference: no) | | | | | |
| Yes | — | — | — | — | 1.47 (1.37–1.59) |
| Home situation (reference: youth resides in respondent's home) | | | | | |
| Lives in other home part-time or more | — | — | — | — | 1.17 (1.07–1.27) |

Missing values were multiply imputed for covariables and tobacco use history in the multivariable model. The model was weighted with wave-specific replicant weights. $N = 52\,237$ observations from $N = 23\,170$ individuals. aOR, adjusted odds ratio; CI, confidence interval; —, not applicable.

^a There were no covariable \times survey wave interaction terms: covariable odds ratios are global, not wave specific.

^b Percentages by using wave-specific replicant weights; not adjusted for covariables; missing values not imputed.

^c aORs are from the covariable-adjusted model that included tobacco use \times survey wave interaction terms to calculate wave-specific aORs for tobacco use status.

SUPPLEMENTAL TABLE 4 Parent and Youth Responses Regarding Household Tobacco Use Rules

| | Row Total | Parent Response | | | | Youth Response | | | |
|-----------------------------------|-----------|-----------------|-----------------|---------------------|-----------------|-----------------|-----------------|---------------------|-----------------|
| | | Burned Products | | Not-Burned Products | | Burned Products | | Not-Burned Products | |
| | | Never Allowed | More Permissive | Never Allowed | More Permissive | Never Allowed | More Permissive | Never Allowed | More Permissive |
| Parent response | | | | | | | | | |
| Products that are burned | | | | | | | | | |
| Never allowed, % | 85.1 | 85.1 | 0 | — | — | — | — | — | — |
| More permissive, % | 14.9 | 0 | 14.9 | — | — | — | — | — | — |
| Products that are not burned | | | | | | | | | |
| Never allowed, % | 76.4 | 71.9 | 4.6 | 76.4 | 0 | — | — | — | — |
| More permissive, % | 23.6 | 13.2 | 10.3 | 0 | 23.6 | — | — | — | — |
| Youth response | | | | | | | | | |
| Products that are burned | | | | | | | | | |
| Never allowed, % | 83.6 | 78.0 | 5.7 | 68.7 | 15.0 | 83.6 | 0 | — | — |
| More permissive, % | 16.4 | 7.2 | 9.2 | 7.8 | 8.6 | 0 | 16.4 | — | — |
| Products that are not burned | | | | | | | | | |
| Never allowed, % | 82.5 | 74.1 | 8.5 | 69.6 | 12.9 | 76.4 | 6.1 | 82.5 | 0 |
| More permissive, % | 17.5 | 11.1 | 6.4 | 6.8 | 10.6 | 7.2 | 10.3 | 0 | 17.5 |
| Parent advised not to use tobacco | | | | | | | | | |
| Yes, % | 49.6 | 42.0 | 7.6 | 38.0 | 11.6 | 41.7 | 7.9 | 41.2 | 8.4 |
| No or does not know, % | 50.4 | 43.2 | 7.2 | 38.4 | 12.0 | 41.9 | 8.5 | 41.3 | 9.1 |

The table reveals cell percentages for parent or youth-perceived strict (never allowed anywhere or at any time) and more permissive household tobacco rules applying to tobacco products that are burned or tobacco products that are not burned. To calculate percentage agreement, add cell diagonals. To calculate percentage disagreement, add cell off-diagonals. Responses correspond to all wave 1 youth who reported never using tobacco. Percentages were weighted with wave 1 replicate weights. Cell percentages may not add to row totals because of rounding. —, not applicable.

SUPPLEMENTAL TABLE 5 Household Tobacco Use Rules and Youth Tobacco Initiation: Interaction Analyses

| Interaction by Age | Tobacco Initiation Follow-up Period, Adjusted Odds Ratio (95% Confidence Interval) | | |
|--|--|------------------|------------------|
| | Wave 1 to Wave 2 | Wave 1 to Wave 3 | Wave 1 to Wave 4 |
| | (1 y) | (2 y) | (3 y) |
| Household rules: initially age 12–14 y | | | |
| More permissive: both product types (reference) | — | — | — |
| Strict rules: burned tobacco | 0.78 (0.55–1.10) | 0.78 (0.57–1.07) | 0.83 (0.62–1.11) |
| Strict rules: not-burned tobacco | 0.75 (0.48–1.17) | 0.82 (0.56–1.22) | 0.84 (0.57–1.23) |
| Parent and child discordant on rules | 0.81 (0.53–1.25) | 0.94 (0.65–1.36) | 0.92 (0.64–1.31) |
| Strict rules: both product types, parent and child | 0.59 (0.44–0.79) | 0.64 (0.49–0.84) | 0.72 (0.56–0.92) |
| Household rules: initially age 15–17 y | | | |
| More permissive: both product types (reference) | — | — | — |
| Strict rules: burned tobacco | 0.99 (0.67–1.46) | 0.89 (0.62–1.29) | 0.90 (0.62–1.31) |
| Strict rules: not-burned tobacco | 0.77 (0.47–1.24) | 0.73 (0.46–1.16) | 0.89 (0.55–1.42) |
| Parent and child discordant on rules | 0.92 (0.58–1.46) | 1.09 (0.70–1.71) | 1.26 (0.78–2.04) |
| Strict rules: both product types, parent and child | 0.94 (0.67–1.32) | 0.91 (0.66–1.25) | 0.94 (0.68–1.31) |
| <i>P</i> for interaction ^a | .36 | .19 | .89 |

Interaction analyses were conducted to explore differences in the possible influence on youth tobacco initiation of household tobacco use rules according to child age. Separate models were fitted at each of the 3 time points of interest. Missing values were multiply imputed for covariables and tobacco initiation outcomes. All models were weighted with longitudinal survey weights and adjusted for covariables. —, not applicable.

^a Likelihood ratio test from unweighted complete-case models.

SUPPLEMENTAL TABLE 6 Household Tobacco Use Rules and Youth Tobacco Initiation: Multinomial Outcomes

| | Tobacco Initiation Outcome Categories, Adjusted Odds Ratio (95% Confidence Interval) | | | |
|--|--|-------------------------------|----------------------------------|------------------|
| | None ^a | Combustible ^b Only | Noncombustible ^c Only | Both Types |
| Initiation model: wave 1 to wave 2 (1 y) | | | | |
| Household rules | | | | |
| More permissive: both types (reference) | — | — | — | — |
| Strict rules: burned tobacco | — | 0.95 (0.53–1.70) | 0.90 (0.64–1.26) | 0.75 (0.49–1.13) |
| Strict rules: not-burned tobacco | — | 0.88 (0.46–1.71) | 0.59 (0.37–0.94) | 0.91 (0.55–1.53) |
| Parent and child discordant on rules | — | 1.17 (0.61–2.26) | 0.74 (0.49–1.14) | 0.85 (0.52–1.39) |
| Strict rules: both product types, parent and child | — | 0.89 (0.53–1.50) | 0.68 (0.50–0.91) | 0.77 (0.53–1.12) |
| Initiation model: wave 1 to wave 3 (2 y) | | | | |
| Household rules | | | | |
| More permissive: both types (reference) | — | — | — | — |
| Strict rules: burned tobacco | — | 0.96 (0.60–1.55) | 0.89 (0.65–1.23) | 0.69 (0.49–0.98) |
| Strict rules: not-burned tobacco | — | 1.38 (0.81–2.37) | 0.65 (0.42–1.00) | 0.66 (0.43–1.03) |
| Parent and child discordant on rules | — | 1.73 (1.02–2.93) | 0.83 (0.56–1.24) | 0.89 (0.59–1.34) |
| Strict rules: both product types, parent and child | — | 0.97 (0.64–1.47) | 0.66 (0.49–0.88) | 0.78 (0.58–1.06) |
| Initiation model: wave 1 to wave 4 (3 y) | | | | |
| Household rules | | | | |
| More permissive: both types (reference) | — | — | — | — |
| Strict rules: burned tobacco | — | 1.19 (0.77–1.82) | 0.87 (0.63–1.20) | 0.72 (0.52–0.98) |
| Strict rules: not-burned tobacco | — | 1.34 (0.81–2.21) | 0.73 (0.46–1.15) | 0.78 (0.53–1.15) |
| Parent and child discordant on rules | — | 1.97 (1.21–3.19) | 0.81 (0.53–1.23) | 0.92 (0.63–1.34) |
| Strict rules: both product types, parent and child | — | 1.16 (0.80–1.69) | 0.70 (0.52–0.94) | 0.77 (0.59–1.01) |

Multinomial logistic regression models were specified to explore whether household rules may differentially impact initiation of different types of tobacco. Separate models were fitted for each of the 3 time points of interest. Missing values were multiply imputed for covariables and tobacco initiation outcomes. All models were weighted with longitudinal survey weights and adjusted for covariables. —, not applicable.

^a Base outcome (no initiation of any tobacco).

^b Combustible tobacco: cigarettes, cigars, hookah, pipes, bidis, or kreteks (note: bidi and kretek use was only assessed in the youth survey, not the adult survey for aged-up youth).

^c Noncombustible tobacco: e-cigarettes, smokeless tobacco, snus, dissolvable tobacco.

SUPPLEMENTAL TABLE 7 Household Tobacco Use Rules and Youth Tobacco Initiation: Repeated Measures

| | Tobacco Initiation (1 y), Adjusted Odds Ratio (95% Confidence Interval) | |
|---|---|-----------------------|
| | Unweighted ^a | Weighted ^b |
| Household tobacco rules | | |
| More permissive: both product types (reference) | — | — |
| Strict rules: burned tobacco | 0.98 (0.81–1.17) | 0.91 (0.75–1.11) |
| Strict rules: not-burned tobacco | 0.90 (0.72–1.13) | 0.86 (0.68–1.10) |
| Parent and child discordant on rules | 0.97 (0.78–0.93) | 0.90 (0.71–1.15) |
| Strict rules: both product types, parent and child | 0.80 (0.68–0.93) | 0.76 (0.63–0.90) |
| Talked about tobacco | | |
| Parent did not talk about using tobacco (reference) | — | — |
| Parent talked to child about not using tobacco | 1.10 (1.00–1.20) | 1.11 (1.01–1.23) |

Repeated-measures analysis was conducted by using generalized estimating equations (exchangeable working correlation structure) for 1-y initiation outcomes. Included was any observation of a youth tobacco never user in wave 1, 2, or 3. Main time-variable predictors for the outcome, initiation of any tobacco product use within 1 y (at wave 2, 3, or 4), were household rules and having talked about tobacco in wave 1, 2, or 3, respectively. Models included 19 033 observations from 8833 unique individuals. Missing values were multiply imputed for covariables only. Models were adjusted for covariables. —, not applicable.

^a The model was estimated without survey weights.

^b Generalized estimating equation models do not allow survey weights to vary intraperson; person-specific longitudinal weights were calculated as the mean of longitudinal weights over observed waves.