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Agreement between parents and youth on measures of anti-smoking socialization

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Abstract

Background and Objectives—Despite the current literature on the importance of parental anti-smoking socialization messages, it is unclear if youth and parents agree on the content and frequency of such messages. This study's purpose was to explore the level of agreement between parents and youth on measures of anti-smoking socialization and to assess whether agreement is associated with parental smoking status and/or parental race/ethnicity.

Methods—Data were collected from parent and 9–16 year old youth dyads who presented to the emergency department with a non-urgent complaint. A self-administered questionnaire assessing demographics and five antismoking socialization measures was used.

Results—Items that showed statistically significant agreement between parents and youth were frequency of explicit messages about smoking. However, the absolute agreement between the items was poor at less than 50% for the complete sample. Items that did not show statistically significant agreement between parents and youth were: maternal negative reaction to smoking (for all youth); specific rules about smoking and maternal negative reaction to smoking (for youth with parental smokers); and paternal negative reaction to smoking (for youth with parental nonsmokers). When pairs that did not agree were analyzed, there were significant discrepancies in youth-parent agreement by parental smoking status, but not by race/ethnicity.

Conclusions—In this study, there was poor agreement between parents and youth on measures of anti-smoking socialization. Level of agreement was associated with parental smoking status, but not race/ethnicity. Since anti-smoking socialization is an important means to decrease youth tobacco initiation and use, future studies are needed to investigate the specific content, frequency, and format of parental anti-smoking messages that are best received and recalled by youth.

Keywords

adolescents; smoking; anti-tobacco socialization; parental communication; agreement

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Introduction

The influence of parenting practices and behavior on adolescent's susceptibility to tobacco use and tobacco behavior has been increasingly presented in the literature. Certain parenting practices have been found to be associated with current smoking in adolescents, including lack of parental concern and social support (Aquilino & Supple, 2001; O'Byrne, Haddock, & Poston, 2002; Tyas & Pederson 1998), lack of parent-child closeness, parent-child conflict, weak or excessive controls, inconsistent discipline, and ineffective or lack of parental monitoring (Biglan, Duncan, & Ary, 1995; Chilcoat, Dishion, & Anthony, 1995; Headen, Bauman, Deane, & Koch, 1991; Kandel & Wu, 1995; Simons-Morton et al., 1999).

Recently, studies have explored the importance of specific smoking related parenting practices, or anti-smoking socialization practices, which includes: 1) parental attitudes and knowledge about their children's smoking behavior, 2) how much parents talk to their children about not smoking, 3) content of anti-smoking messages that parents give to children, and 4) whether parents allow smoking inside the home (Jackson & Dickinson 2003 2006). In these studies, it has been shown that adolescents who perceive negative attitudes are less likely to smoke than adolescents who perceive neutral or permissive attitudes. In addition, several longitudinal studies have found that children whose parents engage in antismoking socialization have lower rates of smoking initiation or intentions to smoke, even when one or both parents currently smoke (Andersen et al., 2004; Bailey, Ennett, & Ringwalt, 1993; Castrucci, Gerlach, Kaufman, & Orleans, 2002; Chassin et al., 1998; Harakeh et al, 2004; Henricksen & Jackson, 1998; Jackson 1997; Jackson & Dickinson, 2006; Jackson & Henricksen, 1997; Mermelstein, 1999; Sargent & Dalton, 2001).

The content and frequency of anti-smoking socialization may vary by parental smoking status and by parental race/ethnicity. There is evidence that parents with a history of smoking have less established household rules about smoking (Farkas, Gilpin, White, & Pierce, 2000; Kodl & Mermelstein, 2004; Wakefield et al., 2000). In addition, when compared to Caucasian parents, African-American parents may feel more empowered and confident about their effectiveness in preventing childhood tobacco use by setting rules and consequences for tobacco use and this may contribute to the variance in the ages of smoking initiation in Caucasian and African-American children (Clark, Scarisbrick-Hauser, Gautam, & Wirk, 1999).

Despite the current literature on the importance of parental communication and rules around smoking in preventing youth tobacco initiation, it is unclear if youth and parents agree on the content and frequency of such anti-tobacco messages. Prior studies have indicated that in Dutch families, there may be discrepancies in this communication by parental smoking status, but it is not known if these differences are extant in a US sample. If parental anti-smoking socialization is to be further evaluated as an important means of preventing youth tobacco behavior, it is critical that: measurement of this communication is accurate; and youth actually "hear" the anti-tobacco messages that their parents think they are relaying (Engels & Willemsen, 2004; Harakeh, Scholte, de Vries, & Engels, 2005). If disagreement exists, then future interventions focusing on parents as a major source of influence on youth smoking may be ineffective.

This study's purpose was to explore the level of agreement between parents and non-smoking youth on measures of anti-smoking socialization, and to determine whether agreement is associated with parental smoking status and/or parental race/ethnicity. The specific objectives were to: 1) assess the extent to which youth and parents agreed on perceived tobacco attitudes, the presence of established rules regarding tobacco, and the frequency of specific topics related

to tobacco; and 2) determine if the level of agreement was significantly associated with parental smoking status or race/ethnicity.

METHODS

Study Design (Figure 1)

The results reported herein were obtained as part of a cross-sectional study to assess predictors of youth intention to smoke in a pediatric emergency department (ED) population of nonsmoking youth and their parents. The ED setting was chosen in order to target youth at high risk of future tobacco use given the low socioeconomic status and high prevalence of parental smokers in that setting (Baker, Stevens, & Brook, 1994; Lowenstein, Koziol-McLain, & Thompson, 1998; Mahabee-Gittens 2002; Mahabee-Gittens et al., 2008). Participants were recruited for four months beginning in August 2006 from the emergency department (ED) of Cincinnati Children's Hospital Medical Center, which has an annual patient census of over 85,000 visits. A convenience sample of youth 9–16 years of age, triaged to the non-urgent category, and their accompanying parents/legal guardians were eligible for participation in the study. Youth were excluded from the study if they were unable to complete the study because of illness, injury, mental retardation, or developmental delay.

A total of 299 parent/youth dyads were recruited for the study. Adult participants provided informed consent and youth provided assent. The study was approved by our hospital's Institutional Review Board. Only one parent or legal guardian per family was enrolled, regardless of the number of eligible children in the family.

Assessments

All dyads completed a questionnaire that included items on demographics, smoking history, and measures of anti-smoking socialization which were adapted from other studies parental anti-smoking socialization studies (Harakeh, Scholte, de Vries & Engels 2005; Sargent and Dalton, 2001). Five measures were analyzed for this paper: one question about type and frequency of smoking related messages given by parents, two questions related to specific rules and potential punishment for smoking, and two questions related to perceived paternal and maternal reaction to smoking behavior (Table 1). All questions were reversed for parents as the presumed initiator of anti-smoking socialization measures.

Statistical Analysis

Weighted Kappa statistics with quadratic Fleiss-Cohen weights were calculated to assess agreement between youth and parent responses to the measures for the whole sample, by race/ethnicity, and by parental smoking status. Since the majority of parental participants were female, we also looked at agreement between dyads by parental marital status. A test of Kappa=0 was applied to determine if the agreement was statistically significant. A Bowker's or McNemar's test was carried out to determine if the proportions in the contingency table satisfied symmetry. Results were interpreted in a two-tailed manner and were considered statistically significant if p was <0.05 .

Analyses were carried out on 272 of the 299 dyads from whom data was collected. Dyads were excluded from the analyses for one or more of the following reasons: the number of dyads of race/ethnicity other than Non-Hispanic Caucasian or African American ($n=10$) was too small; race was not specified ($n=7$); dyad was missing more than 80% of data items ($n=3$); the youth smoked some each day ($n=4$); or the youth smoked some in the past 30 days ($n=3$).

RESULTS

Participant Characteristics

Parental participants were: on average 40 years old (s.d. 7.77); 87% were female; 133 (44.5%) were African American; 149 (49.8%) Caucasian; and 17 (5.7%) were Asian, American Indian, Hispanic or unspecified; 162 (57.4%) had completed high school; 140 (51.5%) were unmarried; and 31% were current smokers.

Youth participants were: on average 13 years old (s.d. 2.11); 50% were female; parental and youth ethnicity was identical. Less than 4% of participants had smoked once in the past 12 months and all other participants were never smokers.

Agreement Analyses

Analyses for Complete Sample—Table 2 contains the agreement analyses associated with the five anti-smoking socialization items that were measured. All items in the explicit messages categories showed statistically significant youth-parent agreement. However, since the percentages of agreement ranged from approximately 35% to approximately 50%, we can conclude that youth and parents showed poor absolute agreement on the frequency of explicit smoking-related messages. There was statistically significant youth-parent agreement, with higher absolute rates, for items related to specific rules about smoking (62% agreed), likelihood of punishment for smoking (81% agreed), and perceived father's reaction to smoking (76% agreed). However, all items, including items with high agreement, showed low kappa values of <0.4.

Analyses by Parental Smoking Status—Agreement analyses for the five anti-smoking socialization measures by parental smoking status are displayed in Table 3. Items related to specific rules about smoking and maternal reaction to smoking for youth with parental smokers, and paternal reaction to smoking for youth with parental nonsmokers did not show statistically significant youth-parent agreement, even though there were high levels of absolute agreement (52%, 81%, and 77%, respectively). When pairs that did not agree were analyzed, there were statistically significant discrepancies by parental smoking status. Youth whose parents smoked were more likely to underestimate their parents on father's reaction to smoking. Those whose parents did not smoke were more likely to underestimate their parents on the presence of specific rules about smoking and overestimate their parents on perceived maternal and paternal reaction to smoking.

Analyses by Race/Ethnicity and Marital Status—In data not shown, there were no significant differences in parent-youth agreement in any of the measures by race/ethnicity or by parental marital status.

Discussion

The present study investigated the agreement between parents and youth on anti-smoking socialization measures. Our overall findings demonstrate that parents and their children lack good agreement on the frequency and types of anti-smoking communication that take place between them. These results are of concern since the literature suggests that it is important for parents to communicate anti-smoking norms with their children and establish rules about not smoking in order to reduce the prevalence of adolescent tobacco use (Clark, Scarisbrick-Hauser, Gautam, & Wirk, 1999; Engels & Willemsen, 2004; Ennett et al., 2001; Harakeh, Scholte, de Vries, & Engels, 2005; Henriksen & Jackson 1998; Jackson & Dickinson 2003; Jackson & Henriksen 1997; Otten et al., 2007; Sargent & Dalton 2001). The development of future parental tobacco prevention interventions depends on defining not only which anti-

smoking socialization practices prevent smoking intentions and behaviors, but also determining how these practices are heard and perceived by youth (Engels & Willemsen, 2004; Harakeh, Scholte, de Vries, & Engels, 2005; Otten et al., 2007).

Unlike prior studies in a Dutch population (Engels & Willemsen, 2004; Harakeh, Scholte, de Vries, & Engels, 2005), we found significant differences by parental smoking status of parent-youth agreement on smoking rules, and parental reaction to smoking. Our findings add to the literature by sampling a more racially diverse population. In our sample, youth whose parents did not smoke were less likely to report the presence of specific rules about smoking than were their parents, and more likely than their parents to endorse items related to negative maternal and paternal reaction to smoking. These findings suggest that non-smoking parents may believe it is “understood” that their child should not smoke, and do not feel that they need to make explicit rules (Andersen et al., 2002). Youth whose parents smoked were less likely than their parents to endorse negative paternal reaction to smoking. This is significant because research shows that even when a parent smokes, youth who expect negative consequences for smoking have a lower rate of smoking initiation than youth those who believe that their parents who not have a negative reaction to their smoking (Jackson & Dickinson 20032006; Jackson & Henriksen 1997; Sargent & Dalton 2001).

Our study has several potential limitations: 1) The data for the study were self-reported and potentially subject to the youth’s and parent’s need to provide socially acceptable answers. Because the questionnaire was completed in the presence of the youth’s parents, there may have been under-reporting of smoking behavior by youth and parents (Caraballo, Giovino & Pechacek, 2004; Harakeh et al, 2004). In addition, we were unable from our data to determine if measures of anti-smoking socialization were overestimated by parents, or underestimated by youth, or if the results represent a combination of the two (Aspy, et al., 2006). 2) We used a cross-sectional design, and did not examine current youth tobacco experimenters or regular smokers, so we could not draw inferences from this data about the causal directions of the relationships found in this study. 3) Our study population was a convenience sample collected in a Midwestern, tertiary care, pediatric ED, and the majority of participants had a low socioeconomic status, with a higher prevalence of smoking than the general population, which may limit the generalizability of our results. 4) Inclusion of youth between the ages of 9–16 years of age is broad, resulting in potential differences in developmental stages as well as changes in smoking susceptibility, parent-youth communication, and smoking behavior.

In conclusion, our findings should encourage further work on how to best help parents communicate to their children in ways that will be memorable, clear, and direct. Since anti-smoking socialization is an important means to decrease youth tobacco initiation and use, it is crucial that effective interventions be developed to teach parents not only *what* to communicate to children about smoking, but *how* to do so in an effective and memorable way (Harakeh, Scholte, de Vries, & Engels, 2005; Otten et al., 2007). In order to reduce adolescent tobacco initiation and use, future studies should investigate the specific content, frequency, and format of parental anti-smoking messages that are best received and recalled by youth.

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Figure 1.

Table 1

Youth Measures

Category	Description
Explicit Messages about Smoking	<p>During the past month, how often has your parent(s) talked to you about/told you that:</p> <ul style="list-style-type: none"> -How to say no to smoking -Physical effects of Smoking -How they would feel if you smoked -Why you should not smoke -Smoking in the Media -Smoking is “bad” for you -Smoking is addictive <p>Range: 0 (had not talked at all) to 5+ (talked about this item many times) α reliability: 0.94</p>
Specific Rules about Smoking	<p>What rules or expectations do your parent(s) have about your smoking cigarettes?</p> <ol style="list-style-type: none"> 1 Have set specific rules about not smoking. 2 Definitely expect that I should not smoke 3 Sort of expect that I should not smoke 4 Don't have a rule or expectation. <p>Responses were dichotomized into “have set specific rules” vs. all other responses.</p>
Likelihood of Punishment for Smoking	<p>If your parents knew that you smoked, how likely is it that they would discipline or punish you in some way?</p> <ol style="list-style-type: none"> 1 Very likely 2 Moderately likely 3 Somewhat likely 4 Not at all likely <p>Responses were dichotomized into “very likely to punish” vs. all other responses.</p>
Mother's Reaction to Smoking	<p>How do you think your mother would react if you were smoking cigarettes and she knew about it?</p> <ol style="list-style-type: none"> 1 She would tell me to stop and be very upset 2 She would tell me to stop, but not be upset 3 She would not tell me to stop, but would disapprove 4 I don't know how she would react. <p>Responses were dichotomized into either “she would tell me to stop and be very upset” vs. all other responses. Minimum kappa statistic of 0.7 (Sargent & Dalton, 2001)</p>
Father's Reaction to Smoking	<p>Same as Mother's Reaction above</p>

Table 2

Parent-Youth Agreement Analyses

	% Agree	Kappa	% Child rated higher than parents in disagreeing pairs
Explicit Messages about Smoking	40.10	0.3840	53.66
-How to say no to smoking	41.91	0.4374	54.43
-Physical effects of Smoking	37.92	0.3718	52.69
-How they would feel	37.88	0.3804	59.15
-Why they should not smoke	39.62	0.3460	51.59
-Smoking in the Media	35.98	0.3830	52.66
-Smoking is "bad" for you	49.53	0.3755	54.79
-Smoking is addictive	41.70	0.3980	50.00
Specific Rules about Smoking	62.25	0.2367	41.46
Likelihood of Punishment for Smoking	81.06	0.2821	48.84
Mother's Reaction to Smoking*	81.57	0.0760	61.70
Father's Reaction to Smoking	75.68	0.1603	51.85

* All items listed reached statistical significance ($p < 0.05$) for youth-parent agreement except for mother's reaction to smoking.

Table 3
Comparison of Youth-Parent Agreement on Anti-Smoking socialization measures by parental smoking status

	Parental Smoker			Parental Non-Smoker		
	% Agree	Kappa	% Youth rated higher than parents in disagreeing pairs [§]	% Agree	Kappa	% Youth rated higher than parents in disagreeing pairs [§]
Explicit Messages about Smoking						
-How to say no to smoking	39.0	0.3219		40.5	0.4010	
-Physical effects of Smoking	46.4	0.3855		39.9	0.4330	
-How they would feel	34.2	0.3067		39.4	0.4063	
-Why they should not smoke	34.2	0.3292		40.7	0.4144	
-Smoking in the Media	32.5	0.2549		42.9	0.3818	
-Smoking is "bad" for you	31.7	0.3455		38.3	0.4019	
-Smoking is addictive	48.8	0.3153		43.3	0.3697	
	45.1	0.3015		54.2	0.4113	
Specific Rules about Smoking	51.6	0.1444*		67.9	0.2763	31%
Likelihood of Punishment for Smoking	74.2	0.3261		82.8	0.1729	
Mother's Reaction to Smoking	80.8	0.0135*		83.3	0.1444	72%
Father's Reaction to Smoking	74.2	0.2791	25%	77.0	0.1313*	69%

*The following items did not show statistically significant parent-youth agreement.

[§]Only items that showed statistical significance using McNemar's or Bowker's test are indicated.