Published in final edited form as:
J Appl Soc Psychol. 2013 June ; 43(Suppl 1): E124–E131. doi:10.1111/jasp.12080.

Using Peer Injunctive Norms to Predict Early Adolescent Cigarette Smoking Intentions

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Abstract

The present study investigated the importance of the perceived injunctive norm to predict early adolescent cigarette smoking intentions. A total of 271 6th graders completed a survey that included perceived prevalence of friend smoking (descriptive norm), perceptions of friends' disapproval of smoking (injunctive norm), and future smoking intentions. Participants also listed their five best friends, in which the actual injunctive norm was calculated. Results showed that smoking intentions were significantly correlated with the perceived injunctive norm but not with the actual injunctive norm. Secondly, the perceived injunctive norm predicted an additional 3.4% of variance in smoking intentions above and beyond the perceived descriptive norm. These results demonstrate the importance of the perceived injunctive norm in predicting early adolescent smoking intentions.

Keywords

social norms; normative social influence; adolescent cigarette smoking

The beginning of the 21st century has been marked by a decrease in cancer death rates (Jemal et al., 2008) and a simultaneous decline in cigarette smoking to the lowest recorded levels in over 50 years (Centers for Disease Control and Prevention, 2010). Although there are a variety of possible reasons for reduced smoking prevalence, the decline been accompanied by growing complaints from smokers that cigarette smoking is being stigmatized (Bell, McCullough, Salmon, & Bell, 2010; McNair, 2006). That is, smokers perceive that there is widespread social disapproval of smoking and there is some evidence that this perception may be related to smoking cessation (Alamar & Glantz, 2006; Stuber, Galea, & Link, 2008). This relationship between stigmatization and cessation is not only noteworthy from a public health policy perspective (Bayer & Stuber, 2006), it also points to the potential importance of injunctive norms for understanding and preventing cigarette smoking.

Injunctive norms (what most people approve of) and descriptive norms (what most people do) are central to the Focus Theory of Normative Conduct (FTNC, Cialdini, Kallgren, & Reno, 1991). According to the FTNC, not only are both types of norms important, a behavior is most likely to occur when the descriptive norm and the injunctive norm for a behavior are aligned. Descriptive norms (also referred to as normative beliefs) have been extensively researched in the field of adolescent cigarette smoking. In fact, one of the most

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consistent findings in the adolescent cigarette smoking literature is that smoking is highly correlated with perceptions of peer smoking both cross-sectionally (e.g., Kelly, Masterman, & Marlatt, 2006) and longitudinally (e.g., Andrews, Hampson, Barckley, Gerrard, & Gibbons, 2008; Duan, Chou, Andreeva, & Pentz, 2009). In contrast, peer injunctive norms have received scant research attention. Perceived peer approval of smoking has sometimes been combined with descriptive norms to create a composite measure of *peer influence* (e.g., Swaim, Oetting, & Casas, 1996) thus obscuring the independent contributions of the two types of norms. Other studies have investigated the relation between peer approval/disapproval of smoking and adolescent smoking, but without labeling their measures as *injunctive norms*. For example, Robin and Johnson (1996) reported that perceived peer disapproval of cigarette use was significantly correlated with cigarette use ($r = -.38$) among a sample of 8^{th} –12^{th} graders. Another study that examined friends' approval of smoking (Barber, Bolitho, & Bertrand, 1999) found some support for the relation between a dichotomous measure of friends' approval and current smoking in 12- to 17-year-olds.

In a recent qualitative study involving 16- and 17-year-old nonsmokers, Kulbok, Rhee, Botchwey, Hinton, Bovbjerg, and Anderson (2008) found that both friends and parents were mentioned by adolescents as important sources of approval for not smoking. It is interesting to note that although peer injunctive norms for cigarette smoking have rarely been studied, parental approval/disapproval of smoking has been examined in a number of studies as a correlate of adolescent smoking (Berg, Choi, Kaur, Nollen, & Ahluwalia, 2009; Ellickson, Tucker, & Klein, 2008; Flay et al., 1994; McMaster & Wintre, 1996; Mewse, Eiser, Slater, & Lea, 2004; Tucker, Martinez, Ellickson, & Edelen, 2008). For example, Tucker et al. (2008) reported that perceived parental approval of cigarette use among 7^{th} graders was significantly correlated with smoking behavior for females but not males. Flay et al. (1994) reported a similar gender difference in that parental approval mediated the relationship between parental smoking and smoking intentions among a sample of 7^{th} grade females, but not males. Among a sample of 10 – 19 year olds, Berg et al. (2009) reported that parental disapproval of smoking significantly predicted smoking status (smoker or non-smoker) and Ellickson et al. (2008) reported that parental disapproval of smoking was a significant protective factor for being a regular smoker in 7^{th} and 10^{th} grade.

In addition to these studies of cigarette smoking, the role of parental and peer injunctive norms in substance use has also been studied in early adolescence. Sawyer and Stevenson (2008) reported that among a sample of 6^{th} graders, both parental disapproval and peer disapproval of substance use predicted intention to use substances in the next year. Elek, Miller-Day, & Hecht (2006) examined parental and friends' anti-ATOD injunctive norms in a sample of ethnically diverse 7^{th} graders. They found that these anti-ATOD injunctive norms and peer descriptive norms significantly predicted cigarette, alcohol, and marijuana use.

In the present study, we will examine the relation of peer descriptive norms and peer injunctive norms to early adolescents' intentions to smoke. Although very little research on adolescent cigarette smoking has included peer injunctive norms, there is extensive evidence from related research areas to suggest that peer injunctive norms are related to behavior and behavioral intentions. In addition to those already discussed, studies with college students have revealed a link between injunctive norms and cigarette smoking. Paek (2009) reported that perceived injunctive norms were a significant predictor of smoking intentions, while perceived descriptive norms were not. Etcheverry and Agnew (2008) reported that smoking within the last 30 days was significantly correlated with perceived injunctive norms of friends ($r = .33$) and romantic partners ($r = .35$). In addition, numerous studies have examined the relation of injunctive norms to alcohol use in samples ranging from elementary school aged children to college students. In a sample of 4^{th} graders, Loveland-

Cherry, Leech, Laetz, and Dielman (1996) found a positive correlation between alcohol use and perceived peer approval of alcohol use. Similarly, Chawla, Neighbors, Logan, and Lewis (2009) reported that college students' self-reported typical number of drinks per week was significantly correlated with perceived parental injunctive norms (r = .20) and perceived peer injunctive norms (r = .39). Lastly, Rimal (2008) reported that alcohol behavioral intentions were significantly correlated with peer injunctive norms (r = .43). Based on these studies, it is predicted that the peer injunctive norm will predict intention to smoke cigarettes.

As we have already mentioned, the relation between peer descriptive norms and cigarette smoking has been investigated in a variety of studies. For example, in a longitudinal study of 2nd to 5th graders tracked for 6 years, Andrews et al. (2008) reported that children who initially believed that more of their peers smoked had greater intentions to smoke in the future. Similarly, Duan et al. (2009) found that perceived friends' cigarette use in middle school influenced the growth rate of cigarette use in high school. Given the strong support in prior research, we predict that peer descriptive norms will also predict cigarette smoking intentions in the present study. Because of the well-documented relation between descriptive norms and cigarette smoking, however, one question we sought to answer was whether injunctive norms would explain additional variance, above and beyond the effect of the descriptive norm. This question has implications for the development and implementation of tobacco prevention programs that use normative education.

In addition to its focus on the injunctive norm for cigarette use, the present study is novel in that both adolescents and their friends were surveyed. This enabled us to measure both the adolescent's perceived injunctive norm and the actual injunctive norm as reported by his or her friends. To our knowledge, no study to date has included a measure of the actual injunctive norm. However, there have been studies that have compared actual descriptive norms with perceived descriptive norms and there is disagreement regarding which is preferable (Ennett, Bauman, & Koch, 1994). In practice, the descriptive norm for friends' use is typically operationalized as perceived prevalence of friend smoking. It has been argued that this approach is justified because perceptions of peer substance use (perceived descriptive norm) have been found to be a better predictor of adolescent substance use than peers' actual self-reported substance use (actual descriptive norm) (Fisher & Bauman, 1988; Iannotti & Bush, 1992; Iannotti, Bush, & Weinfurt, 1996; Sherman, Presson, Chassin, Corty, & Olshavsky, 1983). Thus, in the present study, we will examine the relative strength of the relationships of adolescent cigarette smoking intentions to the actual and perceived peer injunctive norms for cigarette smoking. We will also compare these two measures to ascertain how accurate adolescents are in estimating their friends' disapproval of cigarette use. It is predicted that, consistent with previous findings for descriptive norms (Sherman et al., 1983): (a) the perceived injunctive norm will be more strongly related to smoking intentions than will the actual injunctive norm as obtained from friends' reports of their approval of smoking and (b) adolescents will report that their peers disapprove of smoking less than they really do.

A final novel component of the present study is its focus on early adolescents' intentions to smoke. Fewer studies of cigarette smoking have focused on younger adolescence than on middle and late adolescence, despite the fact that this younger group is an important target for prevention efforts. Adolescence is a critical time period for onset of cigarette smoking. Approximately 60% of those who initiated smoking in 2009 were between the ages of 12 and 17 (Substance Abuse and Mental Health Services Administration, 2010), despite the fact that this age range makes up only 12% of the US population (U.S. Census Bureau, 2010). Moreover, the younger adolescents initiate smoking, the more likely they are to become addicted and the more likely they are to be afflicted with cancer during their lifetime

(National Cancer Institute, 2010). Finally, the period of late childhood and early adolescence is likely to be a period where injunctive norms play an important role in behavior. For example, according to Kohlberg's theory of moral development, children in late elementary school and middle school are typically in the third stage of moral development. In this stage, social approval (i.e., 'living up to what is expected by people close to you' p. 3) plays a central role in determining what is morally right (Colby, Kohlberg, Gibbs, & Lieberman, 1983).

Method

Participants

A total of 271 6th graders completed a tobacco survey and a friendship survey. There were a total of 131 males, 136 females and 4 students who did not respond to the gender question. The mean age of the participants was 11.63 years (*SD* = .52). The ethnic distribution of the participants was 64.9% White-not of Hispanic origin, 29.2% Mexican American, 4.8% Other, 3.3% American Indian, 3% South American, 2.2% Asian American, 1.8% Central American, and .7% African American. Note that the percentages do not add up to 100% because participants were allowed to indicate more than one ethnicity. Participants in the present study were part of a larger study in which 4th – 6th graders were recruited and surveyed for three consecutive years. Data for the present study came from three different cohorts of 6th graders tested in 2001, 2002 and 2003 who were recruited from two elementary schools in the Rocky Mountain Region of the United States. Other reports of research from this project can be found at Swaim, Perrine, and Aloise-Young (2007) and Tragesser, Aloise-Young, and Swaim (2006).

Procedure

Trained researchers who were unaffiliated with the elementary schools administered the surveys to the students in their regular classrooms. Although the students had to be identified by name to allow for the longitudinal component of the larger study, the students' names did not appear on the surveys. Moreover, students were assured of the confidentially of the responses before each survey administration. Due to time constraints, the tobacco use surveys and friendship surveys were administered in different sessions.

The tobacco use survey included questions on tobacco use and psychosocial risk factors taken from the Children's ADAS™. The Children's ADAS was a copyrighted survey owned by the Rocky Mountain Behavioral Science Institute (RMBSI). This privately run business was founded by researchers from the Tri-Ethnic Center of Prevention Research at Colorado State University. Through 2010, school districts across the country purchased surveys from RMBSI and administered them to their students in order to assess their students' alcohol, tobacco and drug use. For example, in the 1999 – 2000 school year, the Children's ADAS was administered to approximately 5,000 4th graders and 10,000 5th graders across the U.S. The results of these surveys indicate that children were able to comprehend and answer the questions. RMBSI data indicate that 4th graders' responses to the risk factor questions are consistent (for example, alphas were .76 for school bonding, and .69 for parent caring). In addition, when the survey responses were read into the computer, 18 checks were performed to identify children who had inconsistent patterns of substance use and only 2% of the students were classified as inconsistent responders. Finally, the Flesch-Kincaid reading grade level for this instrument is 3.1, making administration to students in 6th grade appropriate.

The measures included in the present study were cigarette smoking intentions, peer descriptive norm, perceived peer injunctive norm and participant's own disapproval of

smoking. Cigarette smoking intentions were measured by computing the mean of two questions. The first question read, "Do you think that you will ever become someone who smokes every day?" Response options were: (a) I definitely won't, (b) I don't think I will, (c) I probably will, and (d) I already am. The second question read, "Which of the following statements best describes you?" (a) I have never smoked a cigarette and I never will, (b) I have never smoked a cigarette, but I may in the future, (c) I have smoked before, but I don't plan to smoke again, or (d) I have smoked before and I probably will smoke again. These questions were standardized to z scores and averaged to form the intentions measure. Cronbach's alpha for smoking intentions was .61.

The perceived descriptive norm for peer cigarette smoking was measured by combining the following two questions: "How many of your friends smoke cigarettes?" [(a) none, (b) a few, (c) most of them, or (d) all of them] and "How many students in your grade do you think smoke cigarettes at least once a week?" [(a) almost none, (b) a few, (c) about half, (d) more than half, or (e) almost all of them]. Cronbach's alpha for the perceived descriptive norm was .47.

The perceived injunctive norm for peer cigarette smoking was measured with the question, "How much would your friends try to stop you from smoking cigarettes?" (a) not at all, (b) not much, (c) some, or (d) a lot. Similarly, the participant's personal disapproval of smoking was measured with the question, "How much would you try to stop your friends from smoking cigarettes?" (a) not at all, (b) not much, (c) some, or (d) a lot.

On the friendship survey, participants provided the names of their five best friends. When one or more nominated friends were also participants in the present study, their data were used to compute an actual injunctive norm. A composite score for the actual injunctive norm was created by calculating the mean of the friends' responses to the disapproval of smoking question. Some participants did not nominate any friends who were able to be identified in the data set. As a result, a composite score for the actual injunctive norm was available for 211 participants out of the total sample size of 270.

Results

Preliminary Analyses

Gender differences in smoking intentions were examined and were found to be nonsignificant, $t(264) = .011$, $p=.99$ (males $M = -.0080$; $SD=.79$; females $M = -.0092$; $SD = .89$). In addition, smoking intentions were not significantly different between non-Hispanic white adolescents ($M = .0289$; $SD= .88$) and those of other ethnicities ($M = -.0533$; $SD = .79$), $t(268) = -.76$, $p = .44$. Consequently, these demographic variables were not included in subsequent analyses.

Table 1 contains a matrix of the zero order correlations between the measures for the present study. In interpreting the correlations, it is important to note that larger values for the perceived injunctive norm and actual injunctive norm reflect greater *disapproval of smoking.*

Although positively correlated, the mean level of perceived injunctive norms (PIN) and actual injunctive norms (AIN) differed significantly $t(205) = -2.57$, $p = .011$. Specifically, perceived injunctive norms ($M = 3.68$; $SD = .69$) were significantly lower than actual injunctive norms ($M = 3.81$; $SD = .40$). Thus, adolescents underestimated how much their friends would disapprove of their smoking. This result has important implications for normative education prevention programs.

Tests of Hypotheses

Actual versus perceived injunctive norms—We hypothesized that smoking intentions would be more strongly related to perceived injunctive norms than to actual injunctive norms. As shown in Table 1, smoking intentions were significantly correlated with perceived injunctive norms (PIN), but were not significantly correlated with actual injunctive norms (AIN). To test the hypothesis that the two correlations were significantly different, the Williams Formula was calculated (Steiger, 1980). The two correlations were found to be significantly different ($p < .05$). This result is consistent with prior work on relative power of actual and perceived descriptive norms to predict adolescent cigarette smoking. Given this result, perceived injunctive norms were included in subsequent analyses.

Predicting intentions with injunctive and descriptive norms—A hierarchical linear regression was performed with perceived peer descriptive norm (step one) and perceived peer injunctive norm (step two) as the predictors and smoking intentions as the outcome variable (see Table 2). In step one, perceived descriptive norm significantly predicted smoking intentions ($r^2 = .134$). In step two, perceived injunctive norm also significantly predicted smoking intentions ($r^2 = .168$), showing that as perceived peer disapproval of smoking increased, intention to smoke decreased. The perceived injunctive norm explained an additional 3.4% of variance, which represents a 25% increase in the explanatory power of the model compared to the perceived descriptive norm alone.

FTNC—According to the Focus Theory of Normative Conduct, smoking intentions should be (a) lowest for adolescents who perceive that all of their friends disapprove of smoking (low injunctive, LI) and that none of their friends smoke (low descriptive norm, LD) and (b) highest for adolescents who perceive that some or all of their friends approve of smoking (high injunctive norm, HI) and smoke themselves (high descriptive norm, HD). Importantly, the FTNC also predicts that when the perceived injunctive norm and perceived descriptive norm are not aligned (i.e., when only one is high) that behavioral intentions should be significantly lower than when both norms are high.

To test the FTNC, a median split was performed on the injunctive norm and descriptive norm, resulting in four groups. An ANOVA was conducted with a follow-up contrast in which the *high injunctive norm + high descriptive norm* (HI/HD) group was compared to the remaining three groups on smoking intentions. The results showed the overall ANOVA was significant $F(3, 256) = 12.38$, $p < .001$. More specifically, smoking intentions were significantly higher for the HI/HD group than in the remaining three groups $t(256) = -4.90$, $p < .001$ The means (standard deviations and sample sizes) for the groups were as follows: HI/HD, X = .732 (1.04, 33), LI/HD, X = .089 (.99, 51), HI/LD, X = .039, (.72, 27), LI/LD = −.188, (.65, 149). These results suggest that the Focus Theory of Normative Conduct is a useful theoretical framework for predicting adolescent cigarette smoking.

Injunctive norms—Having established that the perceived peer injunctive norm predicts intention to smoke, we subsequently performed additional analyses on the perceived injunctive norm itself. If in fact the perceived injunctive norm were to be included in normative education, it would be useful to learn more about how these perceptions are related to other norms and attitudes. A multiple linear regression was performed with the perceived peer injunctive norm as the outcome and personal disapproval of smoking, perceptions of the peer descriptive norm and the actual peer injunctive norm as the predictors. The variance explained for the overall model with all three predictors was $r^2 = .68$.

Consistent with the correlation reported earlier, the actual injunctive norm reported by the participants' friends was significantly positively related to the perceived injunctive norm (B = .26; p < .001). Thus, adolescents' perceptions of the injunctive norm are, in part, based on reality. Self-reported intentions to stop a friend from smoking (i.e., personal disapproval of smoking) was also significantly positively related to the perceived injunctive norm (B = .83; p < .001). This shows the influence of the False Consensus Effect on injunctive norms and smoking intentions for peer smoking during adolescence. Finally, perceptions of the descriptive norm significantly predicted the perceived injunctive norm (B = −.18; p < .001). As adolescents' perceptions of the number of smoking friends and peers increased, their perception of their friends' disapproval of smoking decreased.

Discussion

The present study was the first to focus on peer injunctive norms for cigarette smoking during adolescence. The results revealed that perceived injunctive norms for cigarette smoking predicted cigarette smoking intentions above and beyond the predictive power of perceived descriptive norms. In addition, by measuring both perceived and actual injunctive norms for cigarette smoking, we were able to establish that early adolescents underestimate how much their friends would disapprove of their smoking and that the perceived injunctive norm was more strongly related to smoking intentions than the actual injunctive norm. Taken together, these findings suggest that normative education programs designed to prevent adolescent cigarette smoking benefit from addressing both the perceived descriptive and the perceived injunctive norm in order to achieve the largest possible reduction in smoking intentions and behavior (e.g., All Stars program).

Normative education interventions are based on the idea that correcting normative beliefs will decrease smoking intentions and behavior. However, one of the current limitations of these programs is that many focus on reducing the descriptive norm only. Anti-smoking messages that focus on social disapproval have been found to be successful in reducing adolescent smoking intentions (Pechmann, Zhao, Goldberg, & Reibling, 2003). Thus, the correction of misperceived injunctive norms should routinely be incorporated into normative education programs.

To further advance our understanding of injunctive norms, we examined the relation between the perceived injunctive norm and other norms and attitudes. We found that, in addition to the actual injunctive norm, the perceived descriptive norm and personal disapproval of smoking (or personal norm, Kallgren, Reno, & Cialdini, 2000) both predicted the perceived injunctive norm. Thus, the tendency that adolescents have to overestimate the descriptive norm for cigarette use (e.g., Sussman, Dent, Mestel-Rauch, & Johnson, 1988; Unger & Rohrbach, 2002) may also inflate their perceptions of peer approval of the behavior. Conversely, programs designed to reduce perceived descriptive norms may also have a limited effect on the perceived injunctive norm as well. However, the perceived injunctive norm was more strongly related to personal disapproval (r = .77) than to either the actual injunctive norm (r=.16) or the perceived descriptive norm (r = −.30). Thus, it appears that, consistent with the False Consensus Effect, adolescents may be using their own values to help estimate the injunctive norm of their peer group. It is important to note that there are two ways to determine whether your friends would try to stop you from smoking. One way is to smoke and see how your friends react. Given the low rates of smoking among this young sample, very few of the participants would have the benefit of that knowledge. A second way is to discuss with one's friends the possibility of smoking. However, public communication between friends does not guarantee that accurate perceptions will result.

According to the theory of pluralistic ignorance (Prentice & Miller, 1993) adolescents may form inaccurate perceptions because friends or other peers who privately disapprove of smoking publicly express approval. These peers express false opinions because they want to fit in with the group and they believe that the majority of the peer group approves of smoking. Other adolescents in the group observe their approval of smoking, thus perpetuating the cycle of misperception. Our results suggest that early adolescents use a combination of their own values, information their friends have communicated to them about their values, and their perception of how common the behavior is to construct their perception of the injunctive norm.

Although perceived injunctive norms and perceived descriptive norms are typically correlated, they are distinctly different and in some instances they may actually be at odds. For example, one might have several friends who do not approve of smoking, but who smoke because of addiction. Based on the Focus Theory of Normative Conduct, behavior will be most strongly evident when the descriptive norm and injunctive norm are aligned and both support the behavior. In the present study, we found this to be the case. Early adolescents were most likely to intend to smoke when they perceived some or all of their friends to smoke and few of their friends to disapprove of smoking. In contrast, having a high descriptive norm or injunctive norm alone did not substantially elevate smoking intentions. This provides further evidence in support of addressing inaccuracies in both injunctive and descriptive norms in normative education programs to be maximally effective.

Given the relevance of the FTNC for adolescent cigarette smoking demonstrated in the present study, other elements of the Focus Theory of Normative Conduct may also prove useful in designing prevention programs. For example, the FTNC suggests that antismoking messages should also incorporate high norm salience (Rhodes & Ewoldsen, 2009). An example of this could be a picture of one person smoking and a group of his/her non-smoking peers visually disapproving of the smoking behavior. This illustration would make the injunctive norm (most people do not approve of smoking) and descriptive norm (most people do not smoke) both salient.

A limitation to the present study was that our measure of behavioral intentions was not the same as measures used in previous research. We measured behavioral intentions by combining two separate questions, one asked whether the adolescents believed that they would ever become a daily smoker and the other asked more generically about whether they thought they would ever smoke. These measures are somewhat different from those used in other studies. For example, Andrews, Tildesley, Hops, Duncan, & Severson (2003) measured behavioral intentions with the question, “Do you think you would smoke when you are grown-up?” Pierce, Choi, Gilpin, Farkas, and Merritt (1996) asked adolescents, “Do you think that you will try a cigarette soon?” and “Do you think you will be smoking cigarettes 1 year from now?” Both Pierce et al. and Andrews et al. demonstrated that smoking intentions predicted smoking onset in adolescent samples (early adolescents in the case of Andrews et al.). In the present study, a portion of the sample was surveyed again when they were in the 7th grade. A cursory examination of these data reveals that our measure of smoking intentions in 6th grade did predict smoking behavior in 7th grade [$r(90) = .44$ for 7th grade ever smoked and $r(90) = .49$ for smoking in the last month, $ps < .05$]. Thus, although our measure of intentions was different from those used by other researchers, we do have reason to believe that it is a valid measure of early adolescents’ intentions to smoke and susceptibility to smoking initiation.

The second limitation of the present study was the use of self-reported smoking intentions rather than self-reported smoking behavior as the dependent variable. Because the sample

consisted of 6th graders there was not enough variability on cigarette use to examine behavior. However, given that the vast majority of research on this topic has been conducted with middle school and high school students, the fact that these data were collected with early adolescents who were still in elementary school and who still were (for the most part) not smoking can also be considered a possible strength of the present study. Moreover, based on the Theory of Planned Behavior (TPB) the best predictor of behavior is behavioral intentions (Ajzen, 1991).

Given our focus on intentions and norms, our results are relevant to the TPB as well as the Focus Theory of Normative Conduct. Within the TPB intentions mediate the relation between subjective norms and behavior. Subjective norms within the TPB are conceptually very similar to injunctive norms within the Focus Theory of Normative Conduct. Subjective norms are perceptions of others' opinions about the behavior and are weighted by the importance one attributes to their opinion. The present study included perceived injunctive norms of friends, who are important to adolescents, thus making our study similar to a test of part of the TPB. In practice, however, tests of the TPB often operationalize subjective norms by combining the perceived attitudes of one's parents and peers toward smoking (e.g., Murnaghan, et al., 2009; Van De Ven, Engels, Otten, & Van Den Eijnden, 2007) which makes their findings difficult to compare to studies of peer and parent injunctive norms, including the present study.

Another limitation to the present study is that the data are cross-sectional. Because the data are cross-sectional we cannot infer causal relationships between norms and intentions. It is possible that adolescents who intend to smoke justify that decision by changing their perceived norms. That is, in an effort to legitimize their decision to smoke, adolescents may adjust their perceptions so that smoking appears more normative that it really is among their peer group. Future research should investigate these variables in a longitudinal design in order to shed light on the temporal sequencing of norms and intentions.

Despite these limitations, the present study has advanced our knowledge of early adolescent cigarette smoking by demonstrating the importance of peer injunctive norms for smoking intentions in two ways. First, the perceived injunctive norm was a significant predictor of smoking intentions above and beyond the perceived descriptive norm. Second, the perceived injunctive norm was correlated with smoking intentions at a significantly higher level than the actual injunctive norm. Additionally, by including the perceived injunctive norm, we showed that the Focus Theory of Normative Conduct is an applicable theoretical framework that can be used to predict early adolescent cigarette smoking intentions which has implications for the development of normative education smoking prevention programs.

Acknowledgments

This research was supported by the Colorado Tobacco Research Program grant 1R-0033 to Drs. Swaim and Aloise-Young and by NIDA grant 1K01DA14271-01A1 to Dr. Aloise-Young.

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Table 1

Correlation matrix of smoking intentions (SI), personal disapproval (PD), actual injunctive norm (AIN), perceived injunctive norm (PIN) and perceived descriptive norm (PDN)

Variable	SI	PD	AIN	PIN	PDN
1. SI	-	−.19*	−.04	−.28*	.36*
2. PD		-	−.01	.77*	−.14*
3. AIN			-	.16*	−.14*
4. PIN				-	−.30*
5. PDN					-

Table 2

Hierarchical regression analysis predicting smoking intentions

	Beta	*P*	R^2
Step 1:			.134
Perceived Descriptive Norm	.366	.000	
Step 2:			.168
Perceived Descriptive Norm	.312	.000	
Perceived Injunctive Norm	−.192	.001	