

Perceived Peer Delinquency and Externalizing Behavior Among Rural Youth: The Role of Descriptive Norms and Internalizing Symptoms

Katie L. Cotter¹ · Paul R. Smokowski²

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Abstract Little research has examined the way in which perceptions of peer behavior (i.e., descriptive norms) influence externalizing behavior among rural adolescents. Using a social norms framework, the current study examined gender differences in the relationship between perceived delinquency among friends and externalizing behavior in a sample of rural adolescents. Based on previous research, the authors proposed that adolescents experience negative emotional responses when they believe that their peers are engaging in delinquency, which subsequently influences externalizing behavior. Consequently, internalizing symptoms were explored as a mediator of the relationship between perceived friend delinquency and externalizing behavior. Data came from the NC-ACE Rural Adaptation Project, a longitudinal panel study of adolescents in two rural, economically disadvantaged counties with exceptional racial/ethnic diversity (29 % White, 25 % African American, 25 % American Indian, 12 % Mixed Race/Other, 9 % Hispanic/Latino). Using multiple group structural equation modeling ($N = 3489$; 51 % female), results indicated that perceived friend delinquency was significantly related to externalizing behavior and this relationship did not vary by gender. Internalizing symptoms fully mediated the relationship between perceived friend delinquency and externalizing behavior and the path between perceived friend delinquency and internalizing symptoms was stronger for males. Implications of these

relationships for prevention and intervention programming for externalizing behavior were highlighted.

Keywords Externalizing behavior · Gender · Rural youth · Social norms

Introduction

Externalizing behavior is generally described as a child or adolescent's negative outward behavior and is often conceptualized as consisting of delinquency and aggression (Achenbach and Rescorla 2001; Cicchetti and Toth 2014; Eisenberg et al. 2001; Liu 2004). Although it is difficult to gauge the exact prevalence of externalizing behavior among adolescents, rates of behavior disorder diagnoses provide a rough estimate. According to a nationally representative sample, behavior disorders constitute the second most common mental health disorder category for adolescents (lifetime prevalence of 19.1 %) and tend to occur more often in males (Merikangas et al. 2010). Further, despite similar rates of behavior disorders among rural and urban youth (Angold et al. 2002), rural youth may face additional barriers to positive development due to features of the rural environment, including limited public transportation, fewer service providers, and increased stigma (Bolin et al. 2015; Shoveller et al. 2007). In fact, according to the Rural Healthy People 2020 survey, mental health and mental disorders were identified as the fourth most often identified priority for rural health, due in large part to a lack of access to mental health and criminal justice services (Bolin et al. 2015). This body of literature suggests that unique aspects of the rural environment may differentially impact mental and behavior disorders, such as externalizing behavior, among rural adolescents.

✉ Katie L. Cotter
Katie.Cotter@asu.edu

¹ School of Social Work, Arizona State University, 340 N Commerce Park Loop, Suite 250 Tortolita Building, Tucson, AZ 85745, USA

² University of Kansas, Lawrence, KS, USA

In addition to unique barriers to services in rural environments, the impact of social norms related to externalizing behavior may operate differently for rural adolescents. For instance, in a qualitative study, Shoveller et al. (2007) reported that, for adolescents living in a rural community in Canada, the proximity of social relationships increased the consequences associated with failing to conform to social norms. In other words, rural youth have limited choices for friends in their social networks. If they do not follow social norms set up by the few peer groups available, they may face rejection and isolation as consequences. This phenomenon can be understood in light of social norms theory, which assumes that the influence of social norms on individual behavior is stronger when social distance is closer (Berkowitz 2005). Therefore, the proximity of social relationships in rural communities may translate into a stronger impact of social norms on individual behavior.

Despite potential increased salience of social norms in rural environments, few studies have utilized a social norms framework in the study of externalizing behavior among rural adolescents. Thus, the purpose of the current study was to address this gap in the literature by testing the influence of descriptive norms (perceived delinquent behavior among friends) on externalizing behavior in a sample of ethnically diverse youth from two rural counties in North Carolina. We further examined emotionally charged responses in the form of internalizing symptoms (i.e., anxiety and depression) as a mechanism through which descriptive norms influenced externalizing behavior.

Social Norms Theory

Social norms theory posits that problem or risk behavior (e.g., substance use, sexual assault, delinquency) can be explained in part by individuals' perceptions (and oftentimes misperceptions) of the attitudes and behavior of peers and other community members (Berkowitz 2005). Social norms theory distinguishes between injunctive and descriptive norms. Injunctive norms refer to the perceived approval of or attitude towards a given behavior within the peer group whereas descriptive norms refer to the perceived behavior of peers (Borsari and Carey 2003). These perceived norms, in turn, influence one's own behavior, especially when an adolescent is motivated to maintain relationships with members of the peer group.

Despite a growing body of literature on social norms theory, particularly as it relates to substance use (e.g., Buckner et al. 2011; Franca et al. 2010; Hanson et al. 2013; Litt and Stock 2011), fewer studies have focused on the mediating mechanisms that explain the relationship between perceived norms and behavior. Rimal and Real

(2003, 2005) acknowledged this gap in the literature and hypothesized that the link between perceived norms and individual behavior is due in part to a perceived threat of losing friendships or the inability to establish friendships. Providing some support for the notion that concern for friendships play a central role, researchers have found that social motives for drinking alcohol mediated the relationship between social norms and drinking behavior (Halim et al. 2012). Further, given that social relationships are central to identity development among adolescents (Kroger 2007), the threat of losing friends is of the utmost importance during this developmental stage and has the potential to lead to psychological distress, which is in line with a cognitive-behavioral perspective (i.e., that individual's thoughts/perceptions influence emotions as well as behavior; Beck 2011). This phenomenon, coupled with research that internalizing symptoms often precede externalizing (aggressive) behavior (Kofler et al. 2011), suggests that internalizing symptoms may mediate the relationship between perceived norms and externalizing behavior.

The current study explored internalizing symptoms as a mediator between descriptive norms (perceived delinquent behavior among friends) and externalizing behavior for male and female adolescents in a rural context. The conceptual model for the current study is displayed in Fig. 1. It was hypothesized that internalizing symptoms would play a mediating role in the relationship between perceived delinquent behavior and externalizing behavior. Given higher prevalence of externalizing behavior among male adolescents (Hoffmann et al. 2004; Merikangas et al. 2010) and that social norms for aggressive and delinquent behavior differ based on gender (Eagly 1987; Eagly et al. 2000), gender differences were also explored. The following sections summarize previous literature on descriptive norms, rural youth, and externalizing behavior.

Descriptive Norms and Rural Youth

The influence of descriptive norms (perceived peer behavior) on individual behavior may be particularly salient in rural areas. According to social norms theory, closer

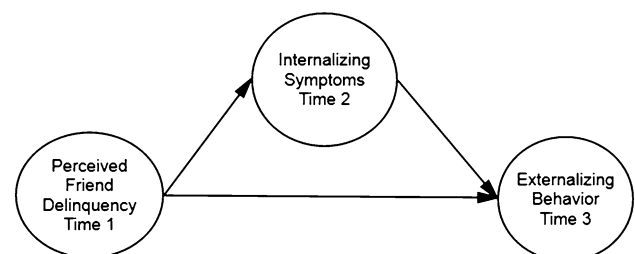


Fig. 1 Conceptual model

social distance has the potential to increase the impact of descriptive norms on individual behavior (Berkowitz 2005). Thus, descriptive norms may play a particularly important role for adolescents living in smaller, tight-knit rural communities. However, few studies have explored descriptive norms among adolescents in rural communities. One notable exception involves a study of injunctive and descriptive norms for rural adolescents' academic adjustment. In this study, Hamm, Schmid, Farmer, and Locke (2011) reported that rural adolescents' descriptive norms were significantly associated with school valuing, school belonging, homework completion, and academic competence. In addition, in a cross-sectional study, researchers compared college students who attended rural versus urban high schools and found that students from rural high schools reported heavier drinking and descriptive norms were positively related to drinking behavior (Schultz and Neighbors 2007). However, the relationship between perceived norms and drinking behavior did not differ based on whether the student attended a rural versus urban high school and the authors suggested that this could be due to college students adjusting to college drinking norms quickly. Given the potential importance of descriptive norms for rural adolescents and the dearth of research in this area, particularly related to externalizing behavior, additional research on descriptive norms for externalizing behavior among rural youth is warranted.

Descriptive Norms and Externalizing Behavior

Prior peer influence research has supported the notion that interactions with peers have the propensity to increase externalizing (problem) behavior (see Dishion and Tipsord 2011 for a review). Previous studies have conceptualized peer influence in several different ways, which is reflected in the multitude of different methods used to measure peer delinquency, including peer nomination procedures (e.g., Dijkstra et al. 2010), social network analyses (Haynie 2002), caregiver reports of the extent to which their child's peers engaged in delinquency (Vitulano et al. 2010), observational studies of exchanges between friends (Dishion et al. 1996, 1997), as well as self-reports of delinquent peer behavior (perceived peer delinquency; Brook et al. 2011; Ferguson et al. 2009). Together, this body of literature suggests that peers play a central role in adolescent behavior.

However, despite the rich literature on peer influence during adolescence, fewer studies have utilized a social norms framework to examine descriptive norms for externalizing behavior. One such study conducted by Perkins, Craig, and Perkins (2011) revealed that perceptions of peers' bullying behavior significantly predicted personal

bullying behavior and attitudes. A similar study reported that classroom-level aggressive descriptive norms were associated with increases in aggressive behavior whereas prosocial classroom descriptive norms did not significantly impact aggressive behavior (Mercer et al. 2009). It is important to note, however, that this study did not address the influence of individual descriptive norms (student's own perceptions of their peer's behavior), which is of central interest in the current study. Furthermore, although not directly exploring adolescent's perceptions of peer behavior (i.e., descriptive norms), Juvonen and Ho (2008) found that middle school students who associated aggressive behavior towards peers with high social status experienced increases in antisocial behavior the following year. An experimental study reported similar findings: adolescents who believed that high-status youth had endorsed aggressive behavior were more likely to report aggressive behavior (Cohen and Prinstein 2006). This previous work suggests that social norms influence externalizing behavior.

Although the application of the social norms framework to externalizing behavior is relatively rare, previous studies examining the relationship between perceived peer delinquency and externalizing behavior also inform the current study (see Brechwald and Prinstein 2011). In a longitudinal study that followed a group of ethnically diverse, urban adolescents through adulthood, perceived peer delinquency during adolescence was positively associated with subsequent externalizing behavior (Brook et al. 2011). An additional study of Hispanic adolescents from a small city revealed that perceived peer delinquency was significantly associated with both self- and parent-reports of aggression and rule-breaking subscales (Ferguson et al. 2009). Overall, these studies suggest that perceptions of peers' attitudes and behavior might be the foundation for social norms that influence one's own behavior.

Previous work on perceived peer delinquency also highlights the importance of considering gender differences. That is, in a metropolitan sample of high school students (Piquero et al. 2005) and in a sample that included 40 communities across 7 states (Fagan et al. 2007), although peer delinquency significantly predicted delinquent behavior for both genders, perceived peer delinquency was a stronger predictor of delinquent behavior for males than females. This can be considered in light of social role theory, which suggests that gender roles influence aggressive (or externalizing) behavior (Eagly 1987; Eagly et al. 2000). The female gender role values characteristics such as sensitivity, kindness, and concern for interpersonal relationships, which are largely incompatible with the interpersonal harm that often accompanies externalizing behavior. This suggests that it is possible that the impact of descriptive norms for externalizing behavior on individual behavior may differ for males and females.

Finally, little is known about descriptive norms and externalizing behavior in rural areas. The authors were unable to identify any previous studies assessing the influence of descriptive norms on externalizing behavior for rural youth. A related study, however, reported that self-reported exposure to delinquent peers was significantly associated with delinquent behavior for both male and female adolescents living in rural France (Hartjen and Priyadarsini 2003). The lack of research on rural adolescents is problematic as Bolin et al. (2015) have indicated that considering social norms is a priority in addressing violence in rural areas. Overall, the distinct social milieu in rural communities warrants additional research on the influence of descriptive norms on externalizing behavior among rural youth.

Internalizing Symptoms as a Mediator of Descriptive Norms

Identifying the mechanisms through which descriptive norms operate is also a research priority. As previously mentioned, researchers have posited that the influence of descriptive norms on individual behavior may be due in part to the emotional consequences of the perceived threat of losing friendships (Rimal and Real 2003, 2005; Halim et al. 2012), which is in line with a cognitive-behavioral perspective (Beck 2011). Previous empirical research provides support for the cognitive-behavioral notion that internalizing symptoms mediate the relationship between perceived delinquency among friends and externalizing behavior. Specifically, friendships characterized by delinquency have been linked to internalizing symptoms (Beyers and Loeber 2003; Brendgen et al. 2000; Fanti and Henrich 2010; Mrug et al. 2004; Roosa et al. 2010) and internalizing symptoms have been found to predict externalizing behavior (Kerr et al. 2013; Kofler et al. 2011). Previous research on gender differences suggests that these relationships may differ for male and female adolescents. For instance, one study reported that perceived peer delinquency was significantly associated with internalizing symptoms among males, but not females (Cotter et al., in press), which could be due to greater exposure to delinquent friends among males (Fagan et al. 2007). In addition, the strength of the association between internalizing symptoms and externalizing behavior may vary based on gender, but it is unclear whether the association is stronger for males or females. That is, some studies have found the association between internalizing and externalizing symptoms to be particularly strong among females (Cauffman 2004; Pepler et al. 2010; Wasserman et al. 2005) whereas another study found that the associations between externalizing disorders and anxiety disorders were generally stronger for males (Marmorstein 2007). In

sum, previous research provides support for the current hypothesis that internalizing symptoms mediate the relationship between perceived delinquency and externalizing behavior and underscores the importance of exploring gender differences.

Current Study

Overall, using social norms theory as a framework, the current study sought (a) to explore the influence of descriptive norms (i.e., perceived delinquency among friends) on externalizing behavior for male and female rural adolescents and (b) to examine internalizing symptoms as a mediator of this relationship. Although descriptive norms have been widely explored as they relate to substance use among adolescents and young adults (e.g., Buckner et al. 2011; Hanson et al. 2013; Litt and Stock 2011; Franca et al. 2010), much less is known about the role of descriptive norms for externalizing behavior. Moreover, given greater proximity in social relationships in rural communities (Shoveller et al. 2007), descriptive norms might be particularly strong predictors of behavior for rural adolescents. Therefore, the first hypothesis of the current study was that perceived delinquency among friends would be positively related to adolescent externalizing behavior, and based on previous research (Fagan et al. 2007; Piquero et al. 2005), it was hypothesized that this relationship would be stronger for male adolescents compared to female adolescents.

With regard to the second stated goal of the current study (i.e., part b), previous work on social norms theory has pointed to adolescents' perceived threat of losing friendships or the inability to establish friendships as potential mediators (Rimal and Real 2003, 2005; Halim et al. 2012). This conjecture, coupled with a cognitive-behavioral perspective underlining the role of emotions in the link between perceptions and behavior (Beck 2011), suggests that internalizing symptoms may play a mediating role. Previous research provides empirical support for the exploration of internalizing symptoms as a mediator by highlighting the link between peer delinquency and internalizing symptoms (Beyers and Loeber 2003; Brendgen et al. 2000; Fanti and Henrich 2010; Mrug et al. 2004; Roosa et al. 2010) and between internalizing symptoms and externalizing behavior (Kerr et al. 2013; Kofler et al. 2011). Thus, the second hypothesis of the current study was that the relationship between perceived delinquency among friends and externalizing behavior would be mediated by internalizing symptoms. Given discrepant findings in previous studies, no specific hypotheses were delineated for gender differences and this portion of the study was considered exploratory.

Method

Participants

Data for the current study came from the NC-ACE Rural Adaptation Project (RAP), a 5-year longitudinal panel study of more than 6000 students in two rural, economically disadvantaged counties in North Carolina. It is necessary to consider the unique context in which the current study took place. Each county had low population density, with an average of 101.7 persons per square mile, and were more than 100 miles from a large city (U.S. Census Bureau 2010). In addition to the rural context, the economic disadvantage is reflected in unemployment rates of 10.2 and 9.1 %, which are considerably higher than the national average of 5.1 % (Bureau of Labor Statistics 2015). The counties also have exceptional racial/ethnic diversity, which is reflected below in the reported racial/ethnic breakdown of the study participants. The unique characteristics of these counties contribute to the novelty of the NC-ACE RAP study.

In the first year of the study, data were collected from students in 28 middle schools and 12 high schools and in subsequent years, due to administrative changes within two schools, data were collected from 27 middle schools and 11 high schools. The project began in 2011 and data were collected annually each spring using an online assessment tool. Participants were told that their participation was voluntary and were given the opportunity to decline participation. Students assented to participate by reading and electronically signing an assent screen prior to beginning the online assessment. Assessments were completed in school computer labs, which were monitored by research staff. Each participant received an identification number to maintain confidentiality and received a gift card as compensation for their participation.

In the first year of the study, all Grade 6 through 8 students in County 1 were included in the sample. Due to the significantly larger student population in County 2, 40 % of middle school students were randomly selected to participate. Students were tracked annually throughout middle school and as they advanced into high school. For the purposes of the current study, analysis was limited to a cohort of Grade 6, 7, and 8 students who were tracked longitudinally over a 3-year period such that students were in Grades 8, 9, and 10 at Time 3. This yielded a final analysis sample of 3489 students. After limiting the sample to Grade 6, 7, and 8 students, a series of Chi square tests were used to compare the analyzed and unanalyzed samples on demographic characteristics. Results revealed no significant differences in gender, receipt of free or reduced price lunch, or proportion of African American, Latino,

White, or Multiracial students in the two samples. However, the unanalyzed sample was slightly less likely (i.e., 4.79 %) to be American Indian ($X^2 = 14.74, p < .001$) and slightly less likely (i.e., 5.00 %) to live in a 2-parent family ($X^2 = 11.05, p < .01$). In general, the racial/ethnic diversity of the sample was representative of the community in which the study took place: 29 % White, 25 % African American, 25 % American Indian, 12 % Mixed Race/Other, and 9 % Hispanic/Latino. Approximately 71 % of participants reported living with two parents and 71 % received free or reduced price lunch.

In terms of study attrition, at Time 1, there were 910 participants in Grade 6, 1335 in Grade 7, and 1244 in Grade 8. At Time 2, there were 727 participants in Grade 7, 1056 in Grade 8, and 984 in Grade 9. At Time 3, there were 680 participants in Grade 8, 1008 in Grade 9, and 851 in Grade 10. Overall, attrition between Time 1 and Time 3 by grade ranged from 24.5 to 31.2 % and 2276 students (65.2 %) provided information at all 3 waves.

Measures

Perceived Delinquent Behavior Among Friends

Perceived delinquent behavior among friends (Time 1) was assessed using a nine-item scale from the School Success Profile (Bowen and Richman 2008). Example items included: “I have friends who get in trouble with the police” and “I have friends who cut classes.” Each item was rated on a 3-point Likert scale (*Not Like Me, A Little Like Me, or A Lot Like Me*) and the Cronbach’s alpha reliability was .91 at Time 1 for the current sample. This scale has been used in several previous studies (e.g., Hopson et al. 2014; Powers et al. 2005; Smokowski et al. 2015) and additional details about the reliability and validity of the scale is available elsewhere (see Bowen et al. 2005).

Internalizing Symptoms

Internalizing symptoms (Time 2 and baseline) were measured with seven items from the internalizing scale from the Youth Self-Report [YSR], the adolescent version of the Child Behavior Checklist (Achenbach and Rescorla 2001). The YSR has gone through rigorous measurement testing and evaluation, including validity and reliability testing (see Achenbach and Rescorla 2001) and has been used extensively in previous studies (e.g., Schleider et al. 2014; Smokowski et al. 2014; Verhulp et al. 2014). Example items included: “I often feel sad” and “I often feel nervous or tense.” Each item was rated on a 3-point Likert scale (*Not Like Me, A Little Like Me, and A Lot Like Me*) and the

Cronbach's alpha reliability was .92 at Time 2 and .90 at baseline for the current sample.

Externalizing Behavior

Externalizing behavior (Time 3 and baseline) was assessed with 12 items from the externalizing scale from the Youth Self-Report (Achenbach and Rescorla 2001), which has been widely used in previous research (Ha et al. 2014; Liu et al. 2015; Schleider et al. 2014). Each item was rated on a 3-point Likert scale (*Not Like Me, A Little Like Me, and A Lot Like Me*); the Cronbach's alpha reliability was .88 at Time 3 and .81 at baseline for this sample.

Analytic Plan

Multiple group structural equation modeling (SEM) was used to compare model parameters for the hypothesized model for males and females. An advantage of SEM is its ability to model equations simultaneously, which is ideal for mediation analyses (Hoyle 2012). The SEM analysis followed recommendations by Cole and Maxwell (2003) and Byrne (2012) and was conducted using Mplus version 7.0 (Muthén and Muthén 2012). Given the ordinal nature of the data, weighted least squares means and variances adjusted (WLSMV) estimation was used.

Cole and Maxwell (2003) suggest that researchers test the measurement model (i.e., a model that includes the relationships (factor loadings) between the observed (indicator) variables and the latent variables) prior to testing the full structural model. Thus, the SEM analysis was conducted in two stages: first, invariance of the measurement model was tested and second, the equivalence of the structural model parameters (i.e., gammas and betas) across genders was tested. In order to test the measurement invariance of the model, an unconstrained measurement model (i.e., a model in which factor loadings were allowed to vary between the two groups) was compared to a constrained measurement model (a model in which factor loadings were constrained to be equal for the two groups). Invariance of the measurement model suggests that the latent variable constructs function equivalently across groups and is a necessary prerequisite to testing the structural components of the model.

In the second stage of the SEM analysis in which equivalence of the structural model parameters across genders was tested, gammas (i.e., parameter estimates of the paths between exogenous and endogenous variables) were constrained to be equivalent for the two groups. This model was compared to an unconstrained model (i.e., a model that allowed the gammas to be freely estimated for each group). Then, after constraining the betas (i.e., parameter estimates of paths between endogenous

variables), the model was compared to an unconstrained model. Changes in the Chi square statistic (calculated by the DIFFTEST procedure in Mplus) were used to determine if each constraint in the model resulted in significantly worse fit than the previous (less-constrained) model (Byrne 2012). For the final model, only those parameter constraints that did not yield a significantly worse fit were included. Full information maximum likelihood (FIML) was used to handle missing data; the proportion of missing data was .03 for perceived delinquent behavior among friends at Time 1, .06 for baseline internalizing symptoms, .24 for internalizing symptoms at Time 2, .23 for baseline externalizing behavior, and .34 for externalizing behavior at Time 3.

Results

Measurement Model

Prior to testing the structural model, invariance of the measurement model was tested. In terms of model fit, nonsignificant Chi square values are desirable; however these statistics are sensitive to large sample sizes (Hoyle 2012). For this reason, fit of the measurement model was assessed using several additional fit indices (i.e., Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI) and Tucker Lewis Index (TLI)). RMSEA values of .06 or lower and CFI and TLI values of .95 or higher are considered indicative of adequate model fit (Hu and Bentler 1999). The measurement model had excellent model fit: $X^2 = 5065.29$ (1005), $p < .001$, with an RMSEA value of 0.034 and a 90 % confidence interval of (0.033, 0.035); the CFI and TLI were .970 and .967, respectively.

Next, all factor loadings were constrained to be equal across genders and Chi square difference test statistics were used to gauge change in the Chi square value. Each latent variable was tested sequentially. A statistically significant Chi square difference test indicates that model fit got significantly worse when all of the factor loadings were constrained to be equal whereas a non-significant Chi square difference test indicates that model fit did not get significantly worse when factor loadings were constrained. The Chi square difference test results are displayed in Table 1. Each of the measures (delinquent friends, internalizing symptoms, externalizing behavior) yielded significant Chi square difference tests, indicating measurement non-invariance between males and females.

In order to assess the extent of measurement non-invariance, each factor loading was tested individually by comparing a model with the factor loading freely estimated to a model with the factor loading constrained to be equal

Table 1 Chi square difference test results

	χ^2_{diff}
Measurement model	
Delinquent friends	69.63 (8)***
Internalizing symptoms	43.42 (6)***
Externalizing behavior	115.32 (11)***
Structural model	
Friend delinquency → externalizing	0.312 (1)
Friend delinquency → internalizing	4.128 (1)*
Internalizing → externalizing	0.042 (1)

* $p < .05$; *** $p < .001$

across genders. Results indicated non-invariance in the following items: (a) for delinquent friends, “I have friends who get in trouble with the police,” “I have friends who belong to gangs,” “I have friends who drink alcoholic beverages (beer, wine, or liquor),” “I have friends who carry a weapon, such as a knife, gun, or club,” and “I have friends who get in trouble at school”; (b) for internalizing symptoms, “I often wonder whether anyone really cares about me,” “I often feel lost or confused,” “I often feel all alone in the world,” “I often worry about my future,” and “I often feel nervous or tense”; and (c) for externalizing behavior, “I break rules at home, school, or elsewhere,” “I get in many fights,” “I tease others a lot,” “I lie or cheat,” “I cut classes or skip school,” and “My moods or feelings change suddenly.” Given measurement invariance on these items, we followed the option presented by Byrne et al. (1989) to constrain the invariant items to be equal and allow non-invariant items to vary prior to estimating the full SEM model. A table displaying values of invariant and non-invariant factor loadings is available upon request.

Full Structural Equation Model

A full structural equation model (a model that includes both the measurement model and directional paths between latent variables) was run to test the study’s hypotheses. In order to address the first research questions (i.e., the influence of perceived delinquency among friends on externalizing behavior), a model that included the direct path between perceived delinquency among friends and externalizing behavior was estimated. In addition to the path between the latent variables perceived friend delinquency and externalizing behavior, externalizing behavior at baseline, race, and receipt of free/reduced priced lunch were controlled for in the model. This model had good fit: $X^2 = 3378.80$ (1323), $p < .001$, with an RMSEA value of 0.030 and a 90 % confidence interval of (0.029, 0.031); the CFI and TLI were .978 and .977, respectively. A Chi square difference test was used to test invariance in the

gamma parameter. The difference test was non-significant ($X^2_{\text{diff}} = 0.446$ (1), $p = .504$), indicating that the parameter was invariant across gender and could therefore be constrained to be equal. The gamma (γ) coefficient for this relationship was .093 ($p < .05$).

Next, in order to test the second research question (i.e., whether internalizing symptoms mediated the relationship between perceived friend delinquency and externalizing behavior), the full conceptual model depicted in Fig. 1 was estimated. In addition to the paths depicted in the figure, race and receipt of free/reduced priced lunch were included in the model as controls. Baseline measures of internalizing symptoms and externalizing behavior were also included. The model had good fit: $X^2 = 8808.47$ (2523), $p < .001$, with an RMSEA value of 0.038 and a 90 % confidence interval of (0.037, 0.039); the CFI and TLI were .955 and .954, respectively. Chi square difference tests were used to evaluate the invariance of gamma and beta parameters across gender. As displayed in Fig. 2, a single path parameter was found to be non-invariant ($X^2_{\text{diff}} = 4.618$ (1), $p < .05$) across gender (i.e., perceived friend delinquency → internalizing) and therefore required separate (unconstrained) parameter estimates for males and females. The other paths were found to be invariant across genders and thus were constrained to be equal (see Table 1 for difference test results).

Overall, the path between perceived delinquent behavior among friends and internalizing symptoms and the path between internalizing symptoms and externalizing behavior ($\beta = .204$, $p < .001$) were significant. As previously mentioned, the path between perceived friend delinquency and internalizing symptoms was non-invariant across gender and therefore parameters were estimated separately for males and females ($\gamma = .214$, $p < .001$ for males and $\gamma = .092$, $p < .01$ for females). Specifically, this path was stronger for male adolescents than female adolescents, although it was significant for both groups. In the full

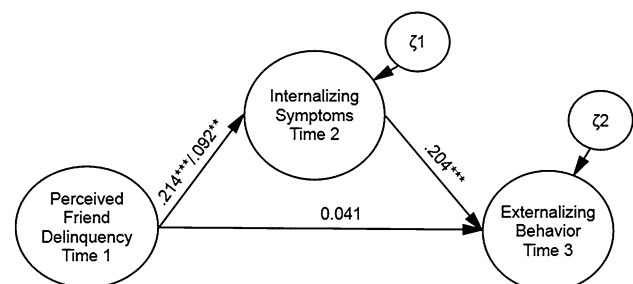


Fig. 2 Structural equation model. *Note:* Path coefficients are unstandardized. A single parameter denotes a constrained path. For the unconstrained path, the male parameter is listed first, followed by the female parameter. The effects of race, receipt of free/reduced priced lunch, and baseline measures of externalizing behavior and internalizing symptoms were controlled. ** $p < .01$; *** $p < .001$

model (after including internalizing symptoms as a mediator), the direct path between perceived friend delinquency and externalizing behavior was non-significant. Indirect effects were also examined using the model indirect (IND) command in MPlus, which provides an overall coefficient for the indirect effect. As would be expected based on the model results described above, the indirect effect was statistically significant ($\beta = .044, p < .001$). These results suggest that internalizing symptoms fully mediated the relationship between perceived friend delinquency and externalizing behavior. The structural portion of the SEM model is displayed in Fig. 2. The measurement portion of the model was not included in Fig. 2 due to space limitations.

Discussion

Little is known about how descriptive norms (perceived peer behavior) influence externalizing behavior for rural adolescents. This is problematic given that the closer social distance that is common in rural communities could translate into a stronger influence of descriptive norms on adolescent behavior (Berkowitz 2005). In addition, although previous research provides evidence that internalizing symptoms may mediate the relationship between perceived delinquent behavior among friends and externalizing behavior (e.g., Fanti and Henrich 2010; Klostermann et al. 2014; Pepler et al. 2010; Roosa et al. 2010), this relationship has not been empirically tested. Thus, based on social norms theory, the current study (a) investigated the influence of descriptive norms (i.e., perceived delinquency among friends) on externalizing behavior for male and female rural adolescents and (b) tested internalizing symptoms as a mediator of this relationship using multiple group structural equation modeling. Gender differences were also explored given that gender roles for externalizing behavior differ for males and females.

Our first hypothesis that perceived delinquent behavior among friends would be positively related to externalizing behavior and that this relationship would be stronger for male adolescents compared to female adolescents was partially supported. That is, although perceived friend delinquency was significantly and positively associated with externalizing behavior, this relationship did not differ for males and females. This finding extends previous work on social norms theory and the role of descriptive norms for externalizing behavior (Cohen and Prinstein 2006; Juvonen and Ho 2008; Mercer et al. 2009) to rural adolescents. In line with social norms theory and after controlling for baseline externalizing behavior, adolescents' perceptions of their friends' behavior played a significant role in their own externalizing behavior. However, contrary

to prior research (Fagan et al. 2007; Piquero et al. 2005) and expected gender roles, there were no gender differences for this relationship. This finding might be due to the unique context in which the current study took place. Indeed, rural communities in the South have been found to exhibit “culture-of-honor” qualities, which are associated with acceptance of aggression and violence in response to insults or threats to one's reputation (Hayes and Lee 2005; Brown et al. 2009). A previous qualitative study in one of the counties in which the current study took place suggested that these qualities may indeed exist in this context: during interviews focused on adolescent's experiences with bullying, several participants indicated that parents advised them to “fight back” in response to the bullying (Evans et al. 2015). It is possible that a certain degree of acceptance of aggressive or violent behavior operated as a community-level norm and was more salient than societal gender roles surrounding aggressive and delinquent behavior. Further research can shed additional light on potential variations in gender differences for rural versus urban communities. We found that the relationship between descriptive norms and externalizing behavior was salient for both genders in this rural context.

With regard to our second hypothesis, the results provide support for the hypothesized mediation of the path between perceived delinquent behavior among friends and externalizing behavior through internalizing symptoms. In fact, once internalizing symptoms were added to the model, the relationship between perceived delinquent behavior among friends and externalizing behavior was no longer statistically significant, suggesting full mediation. This novel finding provides additional empirical evidence for the proposition that the relationship between descriptive norms and individual behavior is mediated by the perceived threat of losing friendships or the inability to establish friendships (Rimal and Real 2003, 2005; Halim et al. 2012). In the current study, internalizing symptoms (i.e., heightened anxiety and depression) may be indicative of the perceived threat of negative implications for friendships. More broadly, the finding that internalizing symptoms was a significant mediator is in line with a cognitive-behavioral perspective, which highlights the role of emotions in the link between perceptions and behavior (Beck 2011). Perhaps the role of internalizing symptoms in the link between perceived friend delinquency and externalizing behavior is particularly salient among rural youth given closer social networks in rural areas. Proximal social networks and close ties among peers can translate into more severe consequences for failing to follow social norms (Shoveller et al. 2007). Thus, in the current study, the individual perception that one's friends were engaging in delinquent and aggressive behavior may have caused a severe emotional reaction due to the belief that if one did

not also behave this way, rejection or other negative social consequences may occur. These internalizing symptoms (possibly representing a concern for losing social relationships), in turn, led to conforming to the perceived norm and engaging in externalizing behavior. Additional research should test this conceptual model in other samples, including samples of urban and suburban youth.

Finally, gender differences in the pathways between perceived friend delinquency, internalizing symptoms, and externalizing behavior were tested. This analysis was considered exploratory given mixed findings of previous research, with some studies reporting the association between internalizing and externalizing symptoms to be particularly strong among females (e.g., Pepler et al. 2010; Wasserman et al. 2005) and another study reporting a stronger association for males (Marmorstein 2007). In the current study, the path between perceived friend delinquency and internalizing symptoms was stronger for males than females and the path between internalizing symptoms and externalizing behavior was equivalent across gender. Previous research on gender differences in the association between perceived friend delinquency and internalizing symptoms is limited and the current finding of a stronger association among males is relatively consistent with a previous study (Cotter et al., in press), which reported that the relationship was significant for males only. The current finding suggests that, although both male and female adolescents experienced emotional reactions when they perceived that their friends engaged in delinquent behavior, males may have experienced a stronger emotional reaction. Perhaps, compared to female adolescents, males believed that the potential consequences of failing to conform to the perceived norm were more severe and this, in turn, caused a stronger emotional reaction. In general, males experience more exposure to delinquency among friends (Fagan et al. 2007), which could influence their perceptions about the severity of the social consequences of behaving in a way that is inconsistent with this perceived norm. Qualitative research could confirm this potential explanation for the gender differences found in the current study.

Together, the results of the current study have implications for intervention and prevention programming. The analytic model suggests that in addition to perceived norms surrounding externalizing behavior, intervention and prevention programs can target the emotional reactions that adolescents experience as they grapple with the potential threat of disruptions in social relationships. Several researchers have evaluated social norms interventions for adolescent and young adult substance use, which involve providing information on substance use misperceptions (the difference between perceived substance use among peers and actual substance use among peers) as well as information on risk profiles and normative comparisons

(Moreira et al. 2009). In a systematic review of 22 studies comprised of 7275 college students, Moreira et al. (2009) concluded that the social norms approach appears to significantly reduce alcohol use in this population. The fact that the current study identified a significant relationship between descriptive norms and externalizing behavior suggests that a social norms intervention may also effectively decrease externalizing behavior among rural youth. Moreover, by identifying internalizing symptoms as a mechanism through which descriptive norms influence externalizing behavior, the current study suggests that a social norms intervention for aggressive/delinquent behavior might be enhanced by adding a component focused on ways to control and mitigate emotional reactions to perceived threats to friendship disruptions.

The results of the study should be considered in light of the study's limitations. First, generalizability of the findings is limited given the unique context in which the study was conducted. Given the rural, low-income, ethnically diverse community in which the current study took place, caution is warranted in applying the findings to other samples. Additional research is needed to confirm the applicability of the conceptual model to other contexts, including urban and suburban communities. This research also has the potential to uncover rural–urban differences in the role of descriptive norms on externalizing behavior, which is an understudied topic.

Second, there are limitations related to measurement that should be noted. The assessment tools used to measure perceived delinquent behavior among friends, internalizing symptoms, and externalizing behavior were only one of several tools available to measure these constructs. Although the measures used in the current study have been substantiated as reliable and valid and have been widely used, researchers should seek to replicate the analysis with other assessment instruments. It also would have been ideal to include a measure of adolescents' misperceptions of delinquent behavior among friends that assessed the extent to which adolescents' perceived friend delinquency differed from friends' actual delinquent behavior. The fact that all measures were based on adolescents' self-reports also introduces the threat of shared-method variance. Additional studies can address these measurement issues by testing the conceptual model using additional measurement tools and incorporating peer-reports in addition to adolescent self-reports.

Conclusion

Few studies have considered the role of descriptive norms on externalizing behavior, especially among rural adolescents, which is problematic given that norms may function

differently for adolescents who are embedded in close social networks with few alternative options (Shoveller et al. 2007). In addition, although researchers have hypothesized that the perceived threat of friendship disruptions may mediate the relationship between descriptive norms and behavior, empirical support for this hypothesis is quite limited (Rimal and Real 2003, 2005; Halim et al. 2012). Based on these gaps in the literature, the current study examined the relationship between descriptive norms (i.e., perceived delinquency among friends) and externalizing behavior for male and female rural adolescents and tested internalizing symptoms as a mediator of this relationship.

Study results indicated that, after controlling for externalizing behavior at baseline, perceived friend delinquency at Time 1 was significantly and positively related to externalizing behavior at Time 3 for both males and females. Contrary to our hypothesis and previous research (Fagan et al. 2007; Piquero et al. 2005), there were no gender differences in this relationship. In addition, internalizing symptoms at Time 2 fully mediated the relationship between perceived friend delinquency at Time 1 and externalizing behavior at Time 3, which represents a novel contribution to the literature. These results have implications for the development of social norms based intervention and prevention programming for externalizing behavior and suggest that an intervention component focused on adolescents' emotional reactions to perceived social norms may be warranted in aggression and delinquency prevention programs.

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Katie L. Cotter, Ph.D., is an assistant professor at Arizona State University School of Social Work. Her research interests include female aggression, youth violence prevention, adolescent development, and risk and resilience.

Paul R. Smokowski, Ph.D., is a professor and Dean at the University of Kansas School of Social Welfare. His research interests include risk, resilience, acculturation, adolescent mental health, and youth violence prevention.