# Contextual Predictors of Perception of School Danger among Rural Youths: Baseline Results from the Rural Adaptation Project

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Students' perceptions of school danger have been associated with several negative academic, behavioral, and developmental outcomes. However, little research has focused on which contextual factors influence rural youths' perceptions of school danger. Through hierarchical regression analyses, the study presented in this article explored the relative importance of parent, peer, school experience, and neighborhood factors in predicting perception of school danger in a sample of low-income, ethnically diverse, rural youths. Of the included contextual predictor groups, results indicate that both peer and school experience predictors are the most influential contributors in explaining students' perceptions of school danger. The article concludes with a discussion of the implications for intervention programming and further research.

KEY WORDS: adolescence; rural schools; school safety; violence

erception of school danger has become an increasingly popular topic. Researchers suggest that assessing perceived school danger provides more information than rates of school crime and violence because students may be affected by the mere potential for harm regardless of actual incidents (Kitsantas, Ware, & Martinez-Arias, 2004). Witnessing violence at school is more common than being directly victimized at school; in 2004, approximately 79 percent of students reported having witnessed someone being threatened at school and approximately 71 percent reported having witnessed someone being "beaten up" at school (Flannery, Wester, & Singer, 2004). Witnessing or participating in school violence erodes students' sense of safety, increasing their perception of school as dangerous.

Perceptions of school danger have been linked to weapon carrying (DuRant, Kahn, Beckford, & Woods, 1997), poor academic achievement, problem behaviors, and school absence (N. K. Bowen & Bowen, 1999). The lack of research on perception of school danger among rural youths is disconcerting, given that rural youths are more likely to carry weapons and experience similar rates of school violence compared with their urban and suburban counterparts (Atav & Spencer, 2002; Mink, Moore, Johnson, Probst, & Martin, 2005).

Bronfenbrenner's (1979) ecological theory, the theoretical framework for the current study, highlights the importance of understanding human behavior in the context of multiple environments: microsystems as well as the mesosystem, exosystem, macrosystem, and chronosystem. Adolescent behavior is directly affected by the immediate environment (that is, the microsystems), which often includes family, peer group, and school. The mesosystem is the interaction of the microsystems. The exosystem can be understood as the settings that indirectly influence the individual through their impact on more proximal microsystems, such as the neighborhood context with respect to the school (Bronfenbrenner, 2005). The macrosystem is the overarching pattern of the micro-, meso-, and exosystems in a given culture, which is informed by belief systems, material resources, and life course options (Bronfenbrenner, 2005). In the context of the present study, the rural culture of the community affects the lower-order systems. Finally, the chronosystem considers the dimension of time.

## LITERATURE REVIEW

This section presents a review of the literature on the relationships between students' perceptions of school danger and salient microsystems (that is, school factors, peer relationships, and parent relationships),

and the exosystem (that is, neighborhood factors). Research on violence and school social work in rural settings is also reviewed.

Several school factors have been associated with students' perceptions of school danger, such as direct relational aggression (Goldstein, Young, & Boyd, 2008), bullying (Glew, Fan, Katon, & Rivara, 2008), and indirect exposure to victimization (Goldstein et al., 2008). Another study found that students' perceptions of violence at school were related to observed risk behaviors among peers, including theft, substance use, fights, and presence of weapons (Astor, Benbenishty, Zeira, & Vinokur, 2002). This research as a whole suggests that experiences at school, especially victimization experiences, are associated with perceived danger at school.

Peer relationships appear to affect students' perceptions of school. In fact, in one study, peers were the most influential factor in predicting school happiness (Booth & Sheehan, 2008). In terms of perceived safety, increased contact with delinquent peers was associated with decreased perceptions of school safety (Shumow & Lomax, 2001).

The quality of the parent–child relationship also affects adolescents' perceptions of school. Increased parental communication about school activities and events was associated with a decreased risk of children perceiving school as unsafe (Hong & Eamon, 2012). In addition, adolescents who reported poor parental attachment were more likely to report feeling unsafe at school, compared with adolescents who reported strong parental attachment (Wallace & May, 2005).

Mulvey and Cauffman (2001) argued that incidents in the community environment permeate school walls, influencing the school environment. The relationship between school violence and community factors suggests that students' perceptions of danger at school are also influenced by neighborhood factors. School safety relative to the community (that is, whether the school is more or less safe than the surrounding community) was significantly associated with perception of school safety, which suggests that adolescents may evaluate the school safety on the basis of their communities (Kitsantas et al., 2004).

# **Violence in Rural School Settings**

Acknowledging that school violence is not solely an "urban" issue, researchers have emphasized the

presence of violence in all schools—urban, suburban, and rural (Dwyer, Osher, & Hoffman, 2000). Although it is often assumed that rural adolescents are at a decreased risk of violence compared with their urban counterparts, in a national sample there were no significant differences on 15 measures of violent behavior among rural, suburban, and urban youths (Mink et al., 2005). In fact, rural adolescents were more likely than their suburban and urban counterparts to have carried a weapon in the last 30 days (Mink et al., 2005).

To date, few studies have examined rural school climates and rural students' perceptions of school climate. There are certain characteristics that set rural schools apart from urban schools, which may affect rural students' perceptions of school danger. One study found that rural schools were significantly smaller; had fewer teachers, teachers' aides, and administrators; had more limited curricular and extracurricular offerings; and spent less per student compared with urban schools (McCracken & Barcinas, 1991). Levels of violence and school responses to violence may also vary across school settings. Rural schools had fewer violence policies (for example, student education on violence prevention or prohibition of gang paraphernalia) and security practices (for example, use of security guards, uniformed or undercover police, or surveillance cameras) compared with urban schools (Mink et al., 2005). The lower prevalence of violence prevention strategies at rural schools coupled with the fact that rural schools had levels of violence equivalent to suburban and urban schools indicates that rural students may be more likely to perceive high levels of school danger.

# School Social Work Practice in Rural School Settings

Carlson (2006) cited the overall lack of school social workers as a major challenge for rural schools. In a qualitative study, several school social workers asserted that the largest difference between rural and urban school social work was the lack of available resources in rural settings (Dillon, 2012). In addition to the lack of resources, rural school social workers face additional challenges not present in urban environments. For example, a lack of providers and unreliable Internet service in rural areas have impeded the provision of supplemental educational services required by the No Child Left Behind Act (P.L. 107–110); school social workers have been

urged to advocate for changes that would improve access to these services (Kasmin & Farmer, 2006). Furthermore, substandard housing, scarce transportation, poverty, and a lack of community support to finance social programs create additional barriers for social workers in rural schools (Caudill, 1993; Openshaw, 2008).

## **PRESENT STUDY**

The two research questions guiding the current study were (1) What are the ecological factors associated with rural youths' perceptions of school danger? and (2) Of these factors, which are the most salient in predicting perceptions of school danger? Based on the results of the literature review, we hypothesized that (1) negative peer relationships will result in higher levels of perceived school danger; (2) supportive parent—child relationships will be associated with decreased perceptions of school danger; and (3) students' perceptions of danger at school will also be influenced by school and neighborhood factors.

## **METHOD**

The sample for the current study came from the Rural Adaptation Project, a longitudinal panel study of more than 5,000 middle school students in two rural counties within the southeastern United States. The baseline data used in the current study were collected in spring 2011. In County 1, the sample included all public middle school students (that is, a complete census of sixth, seventh, and eighth graders). County 2 was much larger than county 1 both in geography and in student population size; thus in county 2, a random sample of 40 percent of public middle school students in sixth through eighth grades was included. Participating students from 28 different schools filled out the assessment package in the spring of 2011 in school computer labs with close supervision by research staff. Every student had an identification number that was attached to his or her assessment to maintain confidentiality.

The entire sample consisted of 4,321 rural youths; however, listwise deletion resulted in a final analysis sample of 3,642 participants, 84.29 percent of the original sample. We performed a series of *t* tests and chi-square tests to identify differences between the analyzed and unanalyzed samples. There were no differences in perceptions of school danger between the analyzed and unanalyzed

samples. However, results showed that the analyzed sample had a higher proportion of female students (12.34 percent higher, p < .001), a lower proportion of African American students (12.85 percent lower, p < .001), a higher proportion of white students (4.23 percent higher, p < .05), a higher proportion of Native American students (10.28 percent higher, p < .001), and a higher proportion of students who received free or reduced-price lunch (8.19 percent higher, p < .001).

The sample was approximately 53 percent female and racially diverse: 27.99 percent Native American, 26.52 percent white, 22.26 percent African American, 12.00 percent Hispanic or Latino, and 11.23 percent multiracial or other. Approximately 66.7 percent of students received free or reduced-price lunch and 93.9 percent spoke English at home. The mean "perception of school danger" score for this sample was 1.80 (SD = 0.40), with a possible scale range from 1 to 3, signifying a moderate amount of school danger perceived by the average student.

#### Measures

The School Success Profile (SSP) (G. L. Bowen & Richman, 2008) is a 220-item youth self-report survey that measures attitudes and perceptions about school, friends, family, neighborhood, self, and health and well-being. The reliability and validity of this survey has been established after extensive empirical testing (G. L. Bowen, Rose, & Bowen, 2005). The current study used a modified version of the SSP, the SSP+, which includes the original SSP items that assess students' perceptions of school, friends, family, neighborhood, and self as well as additional subscales from the Conflict Behavior Questionnaire (Prinz, Foster, Kent, & O'Leary, 1979) and the Perceived Discrimination Scale (Vega, Khoury, Zimmerman, Gil, & Warheit, 1995). The mean rating for each scale was derived by adding items and dividing by the number of items answered.

**Dependent Variable.** The 11-item School Danger scale (G. L. Bowen & Richman, 2008) assessed the frequency of dangerous behaviors at school. Sample items included "Destruction of property by students," "Students verbally abusing teachers (yelling, name calling)," and "Fights among students." Each item was rated on a three-point Likert scale (1 = "does not happen," 2 = "happens sometimes," or 3 = "happens a lot"). The Cronbach's alpha for this scale was .85.

**Demographics**. Gender and language at home were coded as dichotomous variables. Receipt of free or reduced-price lunch was used as a proxy for socioeconomic status. Race (that is, white, Hispanic, African American, American Indian, and mixed race or other) was coded as four dichotomous variables, with white as the reference group.

Parent Predictors. The five-item Parent Support scale (Bowen & Richman, 2008) was measured on a three-point Likert scale and had a Cronbach's alpha of .89. Scale items included "During the past 30 days, how often did the adults in your home (a) Let you know you were loved?, and (b) Make you feel appreciated?" Parent—child conflict was measured using a modified version of the Conflict Behavior Questionnaire (Prinz et al., 1979), which included 10 true-or-false items, and had a Cronbach's alpha of .83. Examples of the scale items included "My parent(s) don't understand me" and "My parent(s) seem to be always complaining about me." The reliability and validity of this scale has been documented by Robin and Foster (1989).

Peer Predictors. The nine-item Negative Friend Behavior scale (G. L. Bowen & Richman, 2008) was measured on a three-point Likert scale and had a Cronbach's alpha of .89. Scale items included "I have friends who use drugs" and "I have friends who belong to gangs." The five-item Friend Support scale (G. L. Bowen & Richman, 2008) was measured on a three-point Likert scale and had a Cronbach's alpha of .89. Examples of the scale items included "I can trust my friends" and "I am able to tell my problems to my friends."

School Experiences and Characteristics. The eight-item Teacher Support scale (G. L. Bowen & Richman, 2008) was measured on a four-point Likert scale. Sample scale items included "My teachers give me a lot of encouragement" and "My teachers care about me." The three-item Perceived Discrimination scale (Vega et al., 1995) measured the frequency of unfair treatment due to race or ethnicity, and was rated on a four-point Likert scale, with a Cronbach's alpha of .70. Scale items included "How often do people dislike you because of your race or ethnicity?" and "How often are you treated unfairly because of your race or ethnicity?" Previous empirical testing of this scale has demonstrated its reliability and validity (Vega, Zimmerman, Gil, Warheit, & Apospori, 1993). The 13-item School Hassles scale (G. L. Bowen & Richman, 2008) measured the frequency with which students endured peer harassment over the past 30 days and had a Cronbach's alpha of .90. Sample items included "Someone treated you in a disrespectful way" and "Someone at school pushed, shoved, or hit you."

School characteristics were measured by school size (the number of students in the school), the percentage of students at or above grade level in reading, the teacher turnover rate (the percentage of teachers who leave in a year), the percentage of teachers with advanced degrees, and the percentage of students eligible for free lunch. All of these school characteristics measures were continuous variables and were obtained from administrative data sources.

Neighborhood Predictors. The five-item Neighbor Support scale (G. L. Bowen & Richman, 2008) measured the perception of the degree to which adults in the neighborhood are interested in and offer help to young people. This was measured on a four-point Likert scale, and had a Cronbach's alpha of .77. Items included "Adults in my neighborhood are interested in what young people in the neighborhood are doing" and "People in my neighborhood really help one another out." The three-item Neighborhood Criminality scale (G. L. Bowen & Richman, 2008) assessed the frequency with which illegal activities occur in the child's neighborhood, and was measured on a three-point Likert scale, with a Cronbach's alpha of .73. Sample items included "During the past 30 days, how often did someone try to sell you illegal drugs?" and "During the past 30 days, how often did someone try to get you to break the law?"

# **Data Analysis**

To assess clustering effects (as students from the same school may share common characteristics compared with students from another school), intraclass correlation coefficients (ICCs) (see Raudenbush & Bryk, 2002) were evaluated. School danger had an ICC of .088, suggesting that less than 9 percent of the variation in school danger exists between schools. Therefore, it was determined that clustering effects were not problematic, and independent observations of the sample data were assumed for a hierarchical multiple regression analysis.

Hierarchical multiple regression was used to explore the extent to which perception of school danger is explained by seven demographic predictors, two parent predictors, two peer predictors, eight school experience and characteristic predictors,

and two neighborhood predictors. Each set of variables was included in the model hierarchically, resulting in a total of five models. The neighborhood predictors were added last, given our conceptualization of these factors as part of the exosystem and therefore having a more distal impact than the proximal microsystems. The advantage of using hierarchical multiple regression is that, through differences in  $\mathbb{R}^2$  statistics, the relative influence of each set of predictors can be assessed. All assumptions for conducting hierarchical linear regression were met.

## **RESULTS**

Model-estimated coefficients are displayed in Table 1. Results indicate that 38 percent of the variance in perceived school danger was explained when all variables were included in the model. The greatest increases in variance occurred in Model 3 and Model 4, when peer and school experience predictors, respectively, were included. The inclusion of peer predictors was associated with an 11 percent increase in explained variance; the inclusion of school experience predictors was associated with a 16 percent increase in explained variance.

The final model indicated that, on average, male students had a perception of school danger that was .050 units lower than that of female students (p < .001). On average, a student who spoke a language other than English at home had a perception of school danger that was .058 units lower than a student who spoke English at home (p < .05).

Of the parent predictors, both parent support and parent–child conflict were significantly related to perceptions of school danger. Every unit increase in parent support was associated with a .040 unit increase in perception of school danger (p < .01). Every unit increase in parent–child conflict was associated with a .138 unit increase in perception of school danger (p < .001). Of the peer predictor variables, only negative friend behavior was significantly associated with perception of school danger. For every unit increase in negative friend behavior, perception of school danger increased by .215 units (p < .001).

Each of the three school experience predictors—teacher support, school hassles, and discrimination experiences—was significant. A unit increase in teacher support was associated with a .049 decrease in perception of school danger (p < .001). A unit increase in school hassles was associated with a

.241 unit increase in perception of school danger (p < .001). Finally, a unit increase in perceived discrimination was associated with a .105 unit increase in perception of school danger (p < .001).

School characteristics were also significantly related to perceptions of school danger. School size was a risk factor associated with perceptions of school danger (p < .05), whereas the percentage of students proficient in reading (p < .001), the teacher turnover rate (p < .05), and the percentage of teachers with advanced degrees (p < .05) were all related to lower perceptions of school danger. Despite being significantly related, the estimated effects for these variables were small. A unit increase in any of these school characteristics was associated with a change of less than .01 in perceptions of school danger.

Of the neighborhood predictors, neighborhood criminality was significant. A unit increase in neighborhood criminality was associated with a .101 unit increase in perception of school danger (p < .001).

# **DISCUSSION**

This study underscores the impact of multiple contexts on students' perceptions of school danger. Although each group of contextual predictors (parent, peer, school environment, and neighborhood) contributed to the variance of the perception of school danger, peer predictors and school environment predictors were the most robust.

Our analysis identified important demographic predictors associated with students' perceptions of school danger. Female students reported slightly higher perceptions of danger at school, which is in line with previous research (Wallace & May, 2005). Female students are generally characterized as suffering from higher rates of anxiety relative to male students, and it is possible that this anxiety translates into fear at school. Race was significantly associated with perceptions of school danger, with African American, American Indian, and mixed race children reporting higher perceptions of school danger than Latino and white students. Those students who spoke English at home had higher perceptions of danger at school. It is possible that this effect for language at home was driven by Latinos, especially new immigrants, who spoke Spanish at home and who perceived less danger at school. These students may be comparing their new schools in the United States to schools in their native countries and concluding that U.S. schools

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	1.81***	1.64***	1.31***	1.62***	1.54***
Demographics					
Gender (female)	044***	025*	047***	046***	053***
Free/reduced-price lunch (no)	.026	.012	.001	015	013
Language (English)	047	040	030	058*	058*
Hispanic/Latino	.049	.037	.007	.033	036
Black/African American	.079***	.081***	.051**	.013	036
American Indian	.083***	.062***	.049**	025	031
Mixed race/other	.121***	.088***	.067**	007	011
Parent predictors					
Parent support		.024	.037*	.040*	.040**
Parent-child conflict		.507***	.318***	.144***	.138***
Peer predictors					
Friend support			023*	.016	.012
Negative friend behavior			.323***	.238***	.215***
School experiences/characteristics					
Teacher support				046***	049***
School hassles				.242***	.241***
Perceived discrimination				.111***	.105***
School size				.000*	.000*
% students at or above grade level in reading				009***	009***
Teacher turnover rate (%)				002**	002*
Teachers with advanced degrees (%)				002*	002*
% eligible for free lunch				.000	.000
Neighborhood predictors					
Neighbor support					.014
Neighborhood criminality					.101***
$R^2$	.015***	.104***	.215***	.374***	.379***

Note: Reference groups for indicator variables are shown in parentheses. p < .05. p < .01. p < .01.

were less dangerous. In fact, one study conducted by Peguero (2008) revealed that Latino students who were nonnative English speakers were less likely to feel unsafe at school compared with Latino native English speakers. (The identification of demographic factors associated with perceptions of school danger allows school social workers to target at-risk students.)

Of particular interest was the identification of significant parent predictors related to perceptions of danger at school. In contrast to our hypothesis, based on past research that supportive parent-child relationships would be associated with decreased perceptions of school danger, both parent support and parent-child conflict were positively connected to perceptions of school danger. These two different pathways for parents to influence perceptions of school danger illuminate a complex pattern.

The first pathway is marked by protective parenting; strong attachment and security that comes with parent support may be positively associated with perceptions of school danger by providing children with a safe home environment. In comparison to the reliable and protected relationship with their parents, school environments may seem especially chaotic, dangerous, and intimidating. Supportive parents have high levels of communication with their children, allowing detailed discussion of school experiences. These discussions may help children to become sensitive to factors that increase their perception of danger at school. Prior research has documented how low-income, inner-city parents protect their children and build resilience with daily repeated "lectures" concerning dangerous risk-taking behavior (Smokowski, Reynolds, & Bezruczko, 1999). The positive effect for parent support indicates that this type of parenting may

be on display in rural settings as well, heightening perceptions of danger in school.

The second parenting pathway is marked by problematic conflict between parents and adolescents. Parent-child conflict is a critical risk factor connected with a number of poor developmental outcomes and risk-taking behaviors. The current study extends parent-child conflict literature by linking it with perceptions of school danger. One study found that high levels of parent-child conflicts were positively associated with deviant peer relationships (Fergusson & Horwood, 1999). During periods of conflict with parents, adolescents may turn away from family relationships in favor of these deviant peer influences, which may serve as a gateway to risk-taking behavior. Perceptions of school danger may increase because adolescents may be actively pursuing dangerous behaviors, such as affiliating with gangs or participating in antisocial activities.

In line with previous research, this study highlights the important roles that school experiences (for example, Kitsantas et al., 2004) and peer relations (for example, Glew et al., 2008) play in students' perceptions of school danger. The results provide a richer understanding of which specific student experiences are most influential in their perceptions of danger at school. In addition to being hassled at school, the association with friends who exhibit negative behavior was found to influence perception of school danger. This finding suggests that it is not only the direct victimization, but also the awareness of negative behavior in school that can foster fear among adolescents. This finding expands on previous research (for example, Goldstein et al., 2008) by emphasizing that the behavior of those identified as "friends" can also influence perception of school safety. This is an important distinction because often, exposure to school violence or victimization paints a picture of students witnessing the behavior of "the bad kids" or "the bullies," when in reality it could also be the violent or negative behavior of "friends."

It is noteworthy that friend support displayed a much weaker effect than negative friend behaviors. This is a particularly important finding with implications for intervention research. Results of the current study suggest that peer support, on its own, cannot mitigate the negative impact of negative friend behaviors. Therefore, an intervention focusing solely on peer support, without addressing

other issues in the school environment, may not effectively decrease students' perceptions of school danger. School social workers should consider comprehensive interventions that address school climate and student—teacher relationships in addition to peer relationships.

Our final hypothesis, that students' perceptions of danger at school would also be influenced by school and neighborhood factors, was supported. School characteristics displayed statistically significant, albeit modest, effects on perceptions of school danger. Building on past research on school environment effects (Kitsantas et al., 2004; Mulvey & Cauffman, 2001), the current study found a cluster of characteristics typical of schools with high levels of perceived danger. Specifically, larger schools with higher proportions of children who struggle in reading, where teachers have less education and higher rates of turnover, were perceived as more dangerous. Schools in which students felt hassled, bullied, and discriminated against had toxic climates leading to higher perceived danger. Within this atmosphere, teacher and friend support were not able to counter the strong perceptions of school danger. School social workers in these settings should be aware of heightened risk for perceived school danger among students and consider schoolwide violence prevention initiatives.

Although previous school danger literature has focused on neighborhood predictors, only one of the two neighborhood predictors used in the present study turned out to be significant. Neighborhood crime was significantly associated with perceptions of school danger, mirroring previous research using a national sample of adolescents (Kitsantas et al., 2004). Rural adolescents' perceptions of school danger appear to be influenced by neighborhood crime in a similar fashion to nonrural adolescents, but neighbor support was not significantly associated with perception of school danger for this population. A possible explanation for the lack of significance is the large spatial isolation from neighbors in rural communities.

## Limitations

The results of this study must be considered in light of its limitations. Although Bronfenbrenner's (1979) framework guided the current study, we were unable to consider the impact of all of the structures included in the ecological model (that is, the mesosystem and chronosystem). Future

research should consider the role of these structures with regard to perceptions of school danger. The participants in the current study resided in rural, low-income, ethnically diverse communities, limiting external validity. Although effects may apply to similar low-income, rural areas in the southern United States, caution is warranted in overgeneralizing these results. The cross-sectional nature of the study does not allow for the determination of causality. Future research should use longitudinal data to explore the ecological factors related to students' perceptions of danger at school over time. Last, data were collected from adolescents at their schools. Although the confidential nature of the surveys was emphasized, students may have felt uncomfortable answering honestly, especially regarding their feelings related to danger at school.

# **Implications for School-Based Practice**

The findings of the current study are particularly relevant for school social workers in rural settings. Multifaceted, school-based interventions are needed to address the perception of school danger among rural students. Interventions should focus on fostering positive peer relationships and a supportive school climate. For example, school social workers can implement schoolwide antibullying campaigns. These efforts might include rules and policies, bullying assemblies, classroom discussions, and teacher response protocols. The costs associated with such an intervention are relatively low, which is an important consideration for rural schools with limited resources. School social workers can also identify students with poor social skills for small group interventions. Through social skills training, at-risk adolescents can learn the skills such as problem solving, resisting peer pressure, and interacting, necessary to engage in supportive and nonviolent relationships. School social workers should also reach out to parents to offer family-focused interventions that help decrease parent-adolescent conflict. Parenting programs that are easily implemented and empirically validated are readily available (for example, Cotter, Bacallao, Smokowski, & Robertson, 2013).

#### Conclusion

In summary, this study identified contextual correlates of students' perceptions of school danger in a large sample of rural, ethnically diverse youths. Results suggest that students' perceptions of danger

at school are influenced by peer, parent, school environment, and neighborhood factors. This study augments the current literature by confirming the importance of school, peer, parent, and neighborhood contexts for rural adolescents' perceptions of school danger.

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