SOCIAL SUPPORT AND YOUTHS' RESILIENCE IN DISADVANTAGED
NEIGHBORHOOD CONTEXTS

Sindhia Colburn

A Dissertation

Submitted to the Graduate College of Bowling Green
State University in partial fulfillment of
the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2020

Committee:

Carolyn Tompsett, Advisor

Matthew Lavery
Graduate Faculty Representative

Eric Dubow

Dara Musher-Eizenman

ABSTRACT

Carolyn Tompsett, Advisor

Adolescents living in disadvantaged neighborhood contexts experience higher rates of emotional and behavioral problems. Although social support promotes resilience in youth exposed to neighborhood stressors, few studies have considered both perceived quality and time exposure to support sources when investigating social support effects within neighborhood contexts. Additionally, the literature primarily focuses on the effects of perceived friend and parental support, whereas no studies have examined the role of peer-age relatives, such as siblings or cousins, on youths' behavioral outcomes. This study investigated relationships between perceptions of social support quality, time exposure to sources of support, experiences of neighborhood social processes, and emotional and behavioral health for adolescents recruited from low-income, inner-city neighborhoods. The final sample included 54 adolescents aged 11 to 18 years (43% female) who completed interviews involving detailed time diaries of their routine activities. Time diaries were coded to calculate the percentage of out-of-school wake time that adolescents spent alone and with adult and peer-age relatives and nonfamilial peers. Adolescents also completed self-report questionnaires about their perceived family and friend support, aggressive behaviors, depressive symptoms, and psychological well-being. Bivariate correlations and hierarchical multiple regressions were used to explore relationships among the perceived social support, social exposure, and behavioral health variables. Hierarchical multiple regressions were also used to determine whether neighborhood collective efficacy moderated the effects of perceived social support and social exposure on youths' behavioral outcomes.

The overall pattern of findings supported that adolescents who spend more time around adult relatives report fewer depressive symptoms, regardless of their perceptions of the quality of their family support. Alternatively, adolescents' perceived friend support was related to less aggression when participants spent more time with peers outside of school, but perceived friend support was not related to behavior for adolescents who spent less time around their peers. Exposure to peer-age relatives was not significantly related to perceived family or friend support, suggesting that peer-age relatives may be a distinct source of support that should be assessed separately to understand their unique influence on adolescents' behavioral health. This paper discusses these findings in detail and addresses implications for research, intervention, and policy.

I dedicate this dissertation to: my grandmother, Bhavani, who dreamed of having a Ph.D. in the family; my parents, Natarajan and Shanthi, for paving the way to make that dream a reality; and to my spouse, Cody, whose unconditional love and support were paramount to my success.

I also dedicate this dissertation to every teacher who ever had me in class or extracurricular activities throughout my time in the Pickerington Local School District. I do not take for granted the pivotal role they played in my educational career, and I am forever grateful to them for nurturing my love of learning and providing me with the foundational skills to succeed in college, graduate school, and life.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

Adolescents who live in neighborhoods with higher poverty rates or indicators of disorder exhibit more emotional and behavioral health problems, regardless of their individual or family risk factors (De Coster, Heimer, & Wittrock, 2006; Dupéré, Leventhal, & Lacourse, 2009; Jocson & McLoyd, 2015). Neighborhood poverty is directly linked to youth behavioral outcomes such as delinquency, violence, suicidal behavior, and substance-related juvenile arrests, and has been shown to amplify the adverse effects of stressful life events on youths' aggressive and suicidal behavior (Attar, Guerra, & Tolan, 1994; Church, Jaggers, & Taylor, 2012; De Coster et al., 2006; Duncan, Duncan, & Strycker, 2002; Dupéré et al., 2009). In addition, parents and adult neighbors are more likely to perceive youth as exhibiting mental health or behavioral problems when they live in economically disadvantaged neighborhoods (Duncan et al., 2002; Xue, Leventhal, Brooks-Gunn, & Earls, 2005). Furthermore, changes in neighborhood poverty rates are related to changes in adolescents' behavior as they age; a 10-year longitudinal study found that youth who live in middle- or working-class neighborhoods where poverty rates increased over time displayed increasing levels of internalizing problems and delinquent behavior over time (Leventhal & Brooks-Gunn, 2011).

Despite the detrimental effects of neighborhood-level stress on behavioral development, many youth and families living in impoverished communities demonstrate resilience, or successful recovery and adaptation despite exposure to high risk factors or traumatic events (Fraser, Galinsky, & Richman, 1999; Orthner, Jones-Sanpei, & Williamson, 2004; Zolkoski & Bullock, 2012). Social support in particular has been theorized to protect individuals from stress. However, few studies have considered both the perceived quality of social support and youths' exposure to sources of support when investigating its effects for youth living in disadvantaged

neighborhoods, instead relying solely on perceived measures of support. In order to address limitations of the current literature, I explored relationships between youths' perceptions of social support quality, time exposure to potential sources of support, experiences of neighborhood social processes (i.e., collective efficacy), and emotional and behavioral health in a sample recruited from low-income, inner-city neighborhoods. I primarily focused on adolescence (youth aged 11 to 19 years) given that youth increase their mobility and exposure to their neighborhood environments during this time frame (Loebach & Gilliland, 2016).

Neighborhood Social Organization

The link between neighborhood socioeconomic disadvantage and adolescents' outcomes can be explained by neighborhood social organization (De Coster et al., 2006; Sampson & Groves, 1989; Shaw & McKay, 1942). First introduced by Shaw and McKay (1942, 1969), social disorganization theory posits that the high prevalence of juvenile delinquency in low-income neighborhoods is driven by poverty-related social factors that affect job opportunities, housing, social capital, and cultural norms. For instance, impoverished communities—often predominantly composed of racial or ethnic minority families—have fewer high-paying or professional jobs available, fewer educational or training resources, and lower property values, and these factors make it harder for families living in these neighborhoods to accrue wealth and to transmit wealth or resources to future generations (Peterson & Krivo, 2010; Wilson, 1997). As a result of these barriers to climbing out of poverty, residents in these communities sometimes adopt illegitimate methods to obtain wealth, housing, or other items necessary to survive or achieve status in society, such as theft, prostitution, or drug trades (Shaw & McKay, 1942, 1969; Wilson, 1987). The prevalence of crime and violence then contributes to youths' delinquent behavior through modeling and normalizing criminal or violent behavior (De Coster et al., 2006;

Elliott et al., 1996; Shaw & McKay, 1942, 1969). Over the years, the social disorganization

theory has accrued strong empirical support. For instance, Sampson and Groves (1989)

demonstrated in a large, nationally representative British sample that sparse local friendship

networks, unsupervised adolescent peer groups, and low participation in local organizations—all

of which are indicators of social disorganization—mediate the relations of community-level

factors such as SES, ethnic heterogeneity, residential instability, and urbanization with crime

rates. Beyond community-level crime rates, neighborhood organization has been linked to

individual-level youth outcomes such as prosocial behavior, deviant peer affiliation, and

delinquent or violent behavior, even after controlling for individual characteristics and

community disadvantage (De Coster et al., 2006; Elliott et al., 1996; Mrug & Windle, 2009).

While social disorganization could encompass a wide variety of community-level factors

(e.g., residential instability, anonymity among residents, lack of neighborhood organizations or

institutions), Sampson, Raudenbush, and Earls (1997) identified the key community-level social

resources necessary to uphold social organization: *Social cohesion* (i.e., closeness and trust

among residents) and *informal social control* (i.e., residents' willingness to act to protect their

neighbors or community), which together comprise the construct of neighborhood collective

efficacy. They investigated these constructs at the neighborhood level using data from the Project

on Human Development in Chicago Neighborhoods (PHDCN), an interdisciplinary study of

family, school, and neighborhood effects on adolescent development in the greater Chicago area

using community surveys and institutional data sources (e.g., national Census). They

demonstrated that collective efficacy mediated the relationship between neighborhood

disadvantage and crime and largely explained variation in crime rates among low-income

neighborhoods. Moreover, collective efficacy was a stronger predictor of violent crime rates than

other indicators of social organization, such as local friendship or kinship ties, organizational participation, or availability of local services. Other studies have replicated their findings (Morenoff, Sampson, & Raudenbush, 2001; Sampson, 2012), and found that collective efficacy and each of its components mediate the relations between community disadvantage and youths' mental health or substance use problems (Armstrong, Katz, & Schnebly, 2015; Duncan et al., 2002; Mrug & Windle, 2009; Xue et al., 2005). In fact, concentrated disadvantage (as measured by poverty rate, percentage of residents receiving public assistance, percentage of female-headed households, unemployment ratio, and percentage of Black residents) and neighborhood physical disorder (whether rated by residents or objective observers) are no longer related to youths' behavioral health after accounting for collective efficacy, suggesting that the social processes that make up collective efficacy may explain how social disorganization mediates the relation between concentrated disadvantage and youths' mental health and behavioral problems (O'Brien & Kauffman, 2013; Xue et al., 2005).

Social Networks and Collective Efficacy

Importantly, social ties within neighborhoods can help to facilitate residents' collective efficacy (Morenoff et al., 2001). When residents develop social bonds in the community, their reduced anonymity among residents enables adults to monitor neighborhood youth more effectively and communicate with parents regarding their children's behavior (Pattillo-McCoy, 1999). Neighborhood organizations and activities, which provide opportunities for residents to develop close or trusting bonds with their neighbors, are also related to collective efficacy. In fact, organizational participation is shown to mediate the effect of collective efficacy on children's mental health, and the presence of institutional programs or community organizations is indirectly related to neighborhood homicide rates through collective efficacy (Morenoff et al.,

2001; Xue et al., 2005). In addition to facilitating social ties, neighborhood organizations, both formal and informal, provide a context for residents to exert social control (Pattillo-McCoy, 1999; Xue et al., 2005). For instance, organizational meetings or informal gatherings offer a venue where residents can discuss local issues pertaining to crime or safety, and consequently can come together to act on shared concerns. Besides facilitating social control of delinquency, informal social ties and neighborhood opportunities that foster social cohesion also expose youth to prosocial interactions that model social support and reciprocity (Lenzi et al., 2012; Pattillo-McCoy, 1999). Altogether, neighborhood social networks appear to indirectly shape youths' behavior through collective efficacy.

However, if the existence of neighborhood social networks alone were sufficient to effectively carry out social control, then neighborhood social ties should be independently related to crime rates and youths' behavioral outcomes across neighborhood contexts. On the contrary, several studies have found no significant relation between close social ties within disadvantaged neighborhoods and violence or delinquency (Browning, 2009; Browning, Dietz, & Feinberg, 2004; De Coster et al., 2006; Elliott et al., 1996; Morenoff et al., 2001). In some cases, social networks appeared to be positively associated with crime or violence (Bellair & Browning, 2010; Browning, 2009; Pattillo-McCoy, 1999). Mary Pattillo-McCoy (1999) concluded that—even in middle-class segregated communities where networks are larger, stronger, or more economically diverse—social networks can increase risk for delinquency by exposing adolescents to deviant role models, opportunities to join criminal organizations, and social reinforcement for choosing fast avenues to wealth or engaging in criminogenic "street" culture. Further, Bellair and Browning (2010) empirically demonstrated that community organization is best represented as a multidimensional construct, where social network indicators

and informal control indicators tap into distinct dimensions. Even in neighborhoods with considerable social ties, certain characteristics of the social networks determine how effectively residents are able to exert social control.

One such characteristic may be the extent to which network members exhibit deviant behavior. Youth are more likely to exhibit violent behavior if they have gang-involved friends or family, or if their friends engage in any substance use (De Coster et al., 2006; Powell, 1997). One interpretation of this finding is that social networks characterized by greater deviant behavior or gang activity could signal underlying cultural attitudes that endorse antisocial norms, and residents embedded in neighborhood social networks characterized by tolerance for deviant behavior would be less likely to interfere to stop criminal behavior when there are *higher* levels of neighborhood cohesion. In fact, data from the PHDCN indicated that in neighborhoods with more frequent social network interactions or reciprocated exchanges—which included doing favors for neighbors, inviting neighbors to parties or social gatherings, asking neighbors for advice on personal issues, and visiting with neighbors in their homes or on the street—collective efficacy is no longer associated with reduced violent and property crime victimization (Browning, 2009; Browning et al., 2004). However, Browning and colleagues (2004) found that deviance tolerance was not related to collective efficacy, network exchanges, or concentrated disadvantage, implying that strong social networks are not necessarily related to violence through norms or values that tolerate antisocial behavior. Instead, their results suggest that more frequent social network exchanges weaken social control efforts in highly cohesive neighborhoods, despite perceptions that residents are willing to intervene to protect their community (Browning, 2009; Browning et al., 2004).

To explain this phenomenon, Browning and colleagues (2004) proposed a "negotiated coexistence" model, which posits that social networks are expected to involve reciprocated social exchanges that simultaneously foster mutual trust and mutual obligation. In other words, residents who receive support from their neighbors form stronger bonds with their neighbors and perceive a duty to return the favor. As a result, the regulatory effect of collective efficacy on crime is dampened. Mary Pattillo-McCoy (1999) illustrated this phenomenon in her ethnographic study of a middle-class Black community, finding that residents are less willing to report criminal activity if they have strong bonds with the perpetrator, regardless of their own attitudes toward criminal activity. Importantly, residents of disadvantaged neighborhoods are more likely to have frequent interactions with each other or rely on each other for support (Marcus, Echeverria, Holland, Abraido-Lanza, & Passannante, 2015). Given the greater frequency of contact, social networks among neighbors in disadvantaged neighborhoods are likely to involve stronger bonds and reciprocal exchanges characterized by trust and obligation, which can prevent intervening or crime reporting in instances where offenders are known residents who are integrated in the neighborhood networks.

Youths' Role in Neighborhood Networks and Collective Efficacy

It is critical to note that youth are not just passive recipients of the effects of their neighborhood's social context, but rather youth actively influence the social dynamics in the neighborhood ecosystem. For instance, youth, like adults, sometimes enact informal social control to protect their neighborhoods from crime. Conversely, neighborhood poverty is associated with youths' unwillingness to report crime, which suggests that youths' lack of engagement in social control contributes to higher crime rates in disadvantaged neighborhoods (Slocum, Taylor, Brick, & Esbensen, 2010). Several factors are shown to mediate the

relationship between neighborhood poverty and youths' willingness to report crime, such as their own criminal activity (Slocum et al., 2010). Youth who exhibit delinquent or violent behaviors are more reluctant to interfere when they witness crime or violence, and they may even aid others in criminal or violent behavior when they are familiar or close with those individuals (Slocum et al., 2010; Wilkinson, 2007).

Neighborhood norms and safety also affect youths' engagement in informal social control. For instance, youth are more willing to report crime to the police when they hold more favorable attitudes toward the police or when they perceive a greater likelihood of being victimized by crime (Hurst & Frank, 2000; Slocum et al., 2010). Paradoxically, youth simultaneously perceive a greater risk of victimization and hold more antagonistic views of the police when they live in disadvantaged neighborhoods (Slocum et al., 2010; Stewart, Baumer, Brunson, & Simons, 2009). Social injustice plays a critical role in these trends. Residents of disadvantaged and predominantly Black neighborhoods often experience longer wait times for police response, so youth may not be motivated to report crimes due to lack of confidence that police will intervene in an efficient manner (Brunson, 2007; Lee, Lee, & Hoover, 2017). Also, police in major urban cities tend to stop or arrest Black individuals more often than other groups, particularly young Black males (Hurst & Frank, 2000; Weitzer, Tuch, & Skogan, 2008). Black youth also report more experiences of racial discrimination or other police misconduct, including violence or unnecessary seizure of assets, and they often witness or learn about others in their social networks being mistreated by police (Brunson, 2007; Hurst & Frank, 2000; Weitzer et al., 2008). Both personally experienced and knowledge of others' negative interactions with police inform youths' attitudes toward police (Brunson, 2007; Hurst & Frank, 2000). Thus, adolescents'

prior contact with police or vicarious knowledge of police misconduct may inhibit their engagement in informal social control in disadvantaged neighborhoods.

In contrast to the previously cited studies which show relationships between adult-perceived collective efficacy and youths' behavioral problems, Aneshensel and Sucoff (1996) found that youth-perceived social cohesion was only related with youths' depressive symptoms, but not anxiety, oppositional behavior, or conduct problems. Also, youth-perceived neighborhood cohesion did not moderate the relationship between youths' perceptions of neighborhood danger and their mental health outcomes, implying that youth who feel unsafe in their neighborhoods are at greater risk of mental health and behavioral problems regardless of how cohesive they perceive their neighborhoods to be. However, Aneshensel and Sucoff (1996) also demonstrated that youth-perceived social cohesion correlated with residential stability even after controlling for youths' own length of residence in the neighborhood. Thus, youth appear to have a valid perspective on the neighborhood social context, and their perspective appears to be associated with their behavior in different ways than adult-perceived neighborhood context.

In large part, youths' relationships with adults in their neighborhood influence their perceptions of the neighborhood social climate or collective efficacy. Youth who believe adults in the neighborhood respect and care about them tend to view adults' attempts to give advice more positively than youth who view their relationships with adults as more contentious or distrustful (Wilkinson, 2007). Youths' behavior also influences adults' willingness to intervene or report crimes. In one qualitative study, for instance, youth reported that their violent or delinquent behaviors often lead adults to fear them, and they further speculated that adults seem less likely to interfere when there is a potential threat of retaliation, which is more likely with older adolescents and with drug-related activities or violent offenses (Wilkinson, 2007). In

addition, youth who feel valued in their community are more willing to report crimes they observe in the neighborhood (Slocum et al., 2010). However, multiple qualitative studies with youth from disadvantaged communities have found that they tend to perceive their relations with adults negatively, and that intergenerational relations are often hindered by negative stereotypes and mutual mistrust (Neary, Egan, Keenan, Lawson, & Bond, 2013; Wilkinson, 2007).

Neighborhoods with more intergenerational cohesion may be more able to carry out informal social control effectively, as adults are more comfortable intervening in youths' affairs, and youth are more receptive to feedback from adults, when adults have stronger personal ties with neighborhood youth (Pattillo-McCoy, 1999). Adult-reported neighborhood cohesion measures often neglect youths' roles in the neighborhood and thus may not capture intergenerational cohesion, whereas youths' perceptions of neighborhood cohesion are influenced by their relationships with individual adults. In fact, when measures of neighborhood cohesion include items about direct support youth receive from their neighbors rather than perceptions of residents' interactions with each other, youth-perceived neighborhood cohesion *is* significantly related to their psychological well-being and mediates the relation between neighborhood disadvantage and mental health (Bowen & Chapman, 1996; Hurd, Stoddard, & Zimmerman, 2013). This suggests that youths' perceptions of their relationships with adults in the neighborhood drive neighborhood effects on their well-being, and perceived social cohesion is more influential on youth outcomes when it encompasses intergenerational cohesion. This also implies that social support plays an important role for youth living in disadvantaged neighborhoods.

Social Support and Youth in Disadvantaged Neighborhoods

In the broadest sense, social support is conceptualized as the help, emotional support, and access to information and resources available through relationships and social transactions (S. Cohen & Wills, 1985; Sarason, Sarason, & Pierce, 1990; Warren, Jackson, & Sifers, 2009). In general, social support is distinct from neighborhood support or social cohesion in that social support implies strong personal ties or more intimate bonds, such as family and friends, rather than typical neighbor relations. Marcus and colleagues (2015) distinguished between personal social ties and neighborhood social relations, as they demonstrated that neighborhood disadvantage is associated with less social integration with friends, family, and religious or community organizations, but at the same time is associated with greater frequency of contact with neighbors. Additionally, research has found that youth-perceived family cohesion was significantly associated with less violent delinquency whereas community support variables were not related to violent delinquency (De Coster et al., 2006). Thus, individual-level social support represents a distinct individual-level social resource that has a unique effect on youth beyond community social variables.

Social support is theorized to contribute to positive developmental outcomes through two potential pathways. First, social support may have direct effects on well-being by providing interpersonal experiences and resources that provide increased positive affect, fulfillment of needs and aspirations, and affirmations of self-worth. Alternatively, social support may act as a stress-buffering intermediary between risk factors and negative outcomes by preventing appraisals of events as stressful, promoting cognitive reappraisal of stressful events or ability to cope, or by inhibiting maladaptive responses and facilitating adaptive counter-responses. These two theorized pathways are referred to as the "main effects" model and the "stress-buffering"

model, and are statistically distinguished by the presence or absence of a significant interaction between social support and an environmental stressor (S. Cohen & Wills, 1985). In the presence of a known risk factor, the main effects model is sometimes referred to as the "compensatory" model, in which social support's direct positive effects on an outcome are viewed as compensating for the direct negative effects of the risk factor on that outcome (Fergus & Zimmerman, 2005). Importantly, social support within this model exhibits similar effects across all populations, despite severity or frequency of exposure to stressors. The stress-buffering model, on the other hand, is represented by a moderating relationship where either high levels of social support diminish or cancel out the negative effects of a risk factor on an outcome, or low levels of social support amplify negative effects of a risk factor on an outcome.

It is important to note that social support can consist of a range of actions, including providing comfort or validation (i.e., emotional or esteem support), fulfilling financial and material needs (i.e., tangible or instrumental support), and imparting knowledge or advice (i.e., informational support; (S. Cohen & Wills, 1985; McMahon, Felix, & Nagarajan, 2011). However, across most of the studies reviewed, measures of youths' social support rarely distinguished between these different forms of support, instead focusing on the youths' perceptions of supportiveness, satisfaction with the support received, or comfort seeking support from people in their lives. Thus, youths' responses on the measures used across these studies may hold different meanings with regard to the actual impact others have on their lives. It is also likely that youth report feeling more supported by people who make them feel better about themselves or comfort them when they are distressed, so while these measures of perceived social support do not specify the type of support received, they may more accurately represent youths' perceptions of emotional support than other types of social support.

Research has also demonstrated that perceived social support measures are not strongly correlated with "structural" measures of social support, such as social exposure to various sources of support. Across two different samples of homeless adults, correlations between perceived social support availability and a structural measure which combined network size and frequency of contact with network members ranged between .19 and .33 (Toro, Tulloch, & Ouellette, 2008). Similarly, perceived social support and frequency of social contact demonstrated correlation coefficients between .22 and .38 in another study conducted with household residents (Peirce, Frone, Russell, Cooper, & Mudar, 2000). Although few researchers have studied perceived support and actual frequency of contact simultaneously with youth living in disadvantaged neighborhoods, one study found that neither youth-perceived maternal closeness nor perceived social support were significantly associated with actual time spent with family in a sample of Black sixth graders recruited from inner-city public schools in Chicago, with correlation coefficients ranging between .021 and .146 (Hammack, Richards, Luo, Edlynn, & Roy, 2004). Some researchers have asserted that these structural indicators of social support differ from perceived social support measures because they do not account for the function of interactions between various social network members or the quality of their relationships (S. Cohen & Wills, 1985; Siedlecki, Salthouse, Oishi, & Jeswani, 2014). Structural indicators also demonstrate weak effects on psychosocial outcomes, presumably because the number of supportive persons or frequency of network interactions do not outweigh the significance of quality support received from a caring individual in the right circumstances (S. Cohen & Wills, 1985; Pinquart & Sorensen, 2000; Toro et al., 2008). For example, in their study with homeless adults, Toro and colleagues (2008) found that only perceived support availability was associated with less health and substance problems and buffered the effects of stress on psychological

symptoms, whereas structural variables (combined network size and frequency of social contact) tended to be associated with more substance abuse, particularly in the context of high stress.

Across studies that have measured youth-perceived social support and youths' health and well-being, there is mixed evidence of the effect of overall or cumulative social support on youth outcomes in the context of neighborhood disadvantage, with some studies finding evidence of a stress-buffering effect for overall perceived social support in the presence of neighborhood poverty (Brody, Lei, Chen, & Miller, 2014; Hurd et al., 2013; Wight, Botticello, & Aneshensel, 2006), while others find no significant interactions or mediating effects with perceived social support on youth mental health outcomes (Dupéré et al., 2009; McMahon et al., 2011). Together, these studies suggest that the role of perceived social support for youth living in disadvantaged neighborhoods is not always straightforward. One possible explanation for the tenuous findings of perceived social support effects within disadvantaged neighborhoods is that the relations are not linear. Some studies concluded that perceived social support may only protect youth from neighborhood effects to a point, and significantly high levels of neighborhood disadvantage or violence exposure may override the protective effects of perceived social support (Hammack et al., 2004; Wight et al., 2006). In addition, analyses that use one-dimensional measures of youths' behavioral outcomes may not accurately summarize the complex ways in which social support affects youth in different neighborhood contexts. For instance, Wight and colleagues (2006) demonstrated that whereas low social support is more related to violent behavior in neighborhoods with high disadvantage, lack of social support is more strongly related to minor (non-violent) delinquency in neighborhoods with *low* disadvantage, implying that neighborhood disadvantage is not necessarily related to all problem behaviors in the same way. Similarly, aggregate or general measures of perceived social support may not accurately capture a youth's

social context; as previously noted, certain social network members, such as gang-involved or substance-using peers, can have negative influences on youths' behavioral outcomes. So, the finding that overall perceived social support is less protective in more disadvantaged neighborhoods may be due to varying levels of risk or protective effects across different sources of social support. Research supports that the most influential sources of support on youths' outcomes are family members and peers (McMahon, Coker, & Parnes, 2013; McMahon et al., 2011). Thus, the following sections review these distinct sources of social support to understand their roles within the context of neighborhood disadvantage.

        Parent and family support. Research has supported that family serves as the primary source of social support throughout adolescence, and particularly for youth living in disadvantaged neighborhoods (Eisman, Stoddard, Heinze, Caldwell, & Zimmerman, 2015; McMahon et al., 2011). Multiple studies have found that youth-reported family or parental support is related to youths' physical and psychological well-being over and above other sources of support, such as peers and teachers (Bowen & Chapman, 1996; Eisman et al., 2015; Howard, Budge, & McKay, 2010; McMahon et al., 2013, 2011). Perceived family support is also directly related to less substance use and antisocial behavior, whereas perceived friend support does not demonstrate these same relations (Dubow, Edwards, & Ippolito, 1997). Perceived parental support in particular is more strongly associated with physical health, psychological well-being, adjustment, less depression, less fear, and global self-worth than non-familial sources of support (Bowen & Chapman, 1996; McMahon et al., 2013, 2011). Several studies have also found that perceived parental support significantly moderates relations between neighborhood stressors (e.g., direct and indirect violence exposure and neighborhood disorder) and youths' emotional and behavioral outcomes, such that neighborhood stressors have less influence on youths'

outcomes when youth perceive high levels of parental support (Howard et al., 2010; McMahon et al., 2013; Schofield et al., 2012). On the other hand, Dubow and colleagues (1997) found that perceived family support did not moderate the relationship between neighborhood disadvantage and antisocial behavior, but did buffer the effect of stressful life events on youths' antisocial behavior. This suggests that supportive family relationships do not necessarily change the way neighborhood disadvantage affects youth, but rather help youth cope with stressful life events, which tend to occur more frequently for youth in disadvantaged neighborhoods.

However, none of these studies examined other indicators of family support—such as average time spent with parents or family—to place youths' ratings of family social support into context. Research shows that youth who perceive higher levels of parental support tend to rate their neighborhood environments more positively, even after controlling for objective measures of neighborhood disorder (Schofield et al., 2012). Studies have also found that youth who experienced more exposure to violence or stressful life events reported lower levels of family support (D'Imperio, Dubow, & Ippolito, 2000; Jain & Cohen, 2013). It is likely that youth with greater well-being exhibit more positive ratings in general on self-report measures, so perceived social support measures may not accurately quantify the amount of support youth receive from family. Alternatively, perceived family support may be an indicator of youths' bonding or closeness with their family and may not necessarily be influenced by their actual frequency of interactions with their family. For instance, one study found that, while adolescent girls' overall perceived social support was correlated with their ratings of maternal closeness, neither perceived social support nor youth-reported maternal closeness was related to the actual time youth spent with their family (Hammack et al., 2004). Youth who feel more attached to their caregivers or families, or who view their families as more cohesive, exhibit less depression,

anxiety, and suicidal or violent behaviors (De Coster et al., 2006; Hammack et al., 2004; Maimon, Browning, & Brooks-Gunn, 2010). Time spent with family, on the other hand, is not consistently related to positive outcomes. Using the experience sampling method with Black middle schoolers in inner-city Chicago, Hammack and colleagues (2004) found that spending time with family was only associated with lower depression when youth reported low levels of community violence exposure. For youth who reported witnessing high levels of community violence, spending time with family was associated with *more* depression, suggesting that time spent with family by itself may not be a reliable indicator of the quality of support youth receive from their families.

Yet, when youth do view their family relationships to be close or supportive, spending time with family might also protect youth from neighborhood stressors through improving parents' efforts to monitor their children's behavior. For instance, spending time with parents and receiving more parental support may lead to more parent-child communication and provide opportunities for parents to learn about their children's activities and peers. At the same time, youth who feel closer or more supported by their parents may be more willing to disclose information about their peer group activities. Parental knowledge of children's activities is associated with more positive outcomes for youth, such as greater social competence, more prosocial peers, and less problem behaviors (Kerr, Stattin, & Burk, 2010; Rankin & Quane, 2002). Some studies have also demonstrated that neighborhood collective efficacy can influence how family support affects youths' behavior. For instance, collective efficacy has been found to enhance the protective effect of family attachment on youths' suicidal behaviors (Maimon et al., 2010). In terms of problem behavior, parental support may compensate for poor social control norms in disorganized neighborhoods, where parents may need to exert more stringent

monitoring to protect their children (Furstenberg, 1999). In one study, parental monitoring was found to be more strongly associated with youths' low problem behavior in neighborhoods with low collective efficacy, but parental monitoring was less influential in neighborhoods with high collective efficacy (Rankin & Quane, 2002). Overall, these studies imply that family support compensates for risks associated with neighborhood disadvantage, and certain aspects of family functioning may function differently in certain neighborhood contexts.

Importantly, few studies have specifically investigated how support from other family members besides parents or caregivers affects youth, even though research conducted with Black youth from schools in disadvantaged areas found that, in addition to mothers, other female relatives such as grandmothers, aunts, and sisters are often named as primary sources for all types of social support, including informational, emotional, and tangible support (McMahon et al., 2011). While research is scant in this area, it is likely that adult relatives exert similar influences on youth as their parents, as adult relatives often provide caregiving support or share caregiving responsibilities with parents in disadvantaged communities, particularly for ethnic minority families (Hunter, Pearson, Ialongo, & Kellam, 1998; Jarrett, Jefferson, & Kelly, 2010; Schinke et al., 2010). On the other hand, the influence of similarly aged relatives, such as siblings or cousins, on youths' well-being is less clear. Although very few studies have specifically investigated the role of siblings and cousins in youths' lives, it appears that social support provided by these relatives may share some similarities with the support provided by adult family members and some similarities with the support provided by non-familial peers. Qualitative research with different marginalized populations suggests that siblings and cousins can act as role models for youth and often provide instructional support, advice, encouragement, and companionship (Schinke et al., 2010; Wallace, Hooper, & Persad, 2014). However,

quantitative data suggests that siblings and cousins can exert positive and negative influences on youths' behavior. For instance, some studies have found that warm and positive relationships with siblings are related to better psychosocial outcomes such as stronger ethnic identity, less depression, and fewer risky behaviors (McHale, Whiteman, Kim, & Crouter, 2007; Waite, Shanahan, Calkins, Keane, & O'Brien, 2011). On the other hand, other studies have shown that siblings' and cousins' behavior, or even their presence in the home, is associated with increased risk of substance use for ethnic minority or urban youth (Rowan, 2016; Wagner, Ritt-Olson, Soto, & Unger, 2008). For marginalized youth in particular, siblings may exert more influence on youths' behavioral outcomes than their peers, as Rowan (2016) found that, for Black adolescents, siblings' substance use was a better predictor of youths' cigarette and alcohol use compared to best friends' substance use. Additionally, Waite and colleagues (2011) found that sibling warmth had a stress-buffering effect in the presence of family-wide stressful events but not personal stressful events, suggesting that sibling support leads to more positive outcomes when siblings share experiences of stress. Thus, the social support that siblings provide may be more effective than support provided by non-familial peers due to more shared experiences of family and neighborhood stressors.

Friend support. While consensus in the literature holds that youth-perceived family support generally has a protective effect, the research is not as optimistic about perceived friend support. Some studies have found that perceived friend support is directly related to positive outcomes, as well as buffers against negative effects of violence exposure on psychological and academic outcomes (Howard et al., 2010; Jain & Cohen, 2013; McMahon et al., 2013, 2011). However, some studies failed to find protective effects of perceived friend support on later physical or psychological well-being (Bowen & Chapman, 1996; Eisman et al., 2015; McMahon

et al., 2011). For instance, one longitudinal study found that perceived close friend support

predicted youth-reported global self-worth concurrently but not over time. The researchers

suggested that friend support may have more of an impact concurrently but may not predict

youths' outcomes longitudinally due to the transient nature of youth friendships (McMahon et

al., 2011). Others have suggested that perceived parental support is generally more important

than perceived friend support because youth may only rely on peers for support when they lack

adequate parental support (Eisman et al., 2015).

Not only is the evidence tenuous for protective effects of friend support, but several

studies have found adverse effects of perceived friend support on youths' outcomes, particularly

when it comes to antisocial behavior (Dubow et al., 1997; Powell, 1997; Rosario, Salzinger,

Feldman, & Ng-Mak, 2003). Friend support has also been found to exacerbate the negative

effects of stressful life events, violence exposure, and neighborhood disadvantage on substance

use and antisocial behavior (Dubow et al., 1997; Rosario et al., 2003). In fact, for youth reporting

low friend support, neighborhood disadvantage is negatively related to substance use, whereas it

is positively related to substance use for youth reporting high friend support (Dubow et al.,

1997). These findings contradict Hirschi's (1969) social control theory, which posited that

attachment to peer groups represents the individual's bond to society, which protects the

individual from engaging in antisocial behavior. Instead, it is likely that the protective effects of

perceived friend support on delinquent behavior depend on friends' behaviors, as youth who

identify having more friends who engage in prosocial or responsible behaviors demonstrate

higher social competence and fewer problem behaviors (Jain & Cohen, 2013; Rankin & Quane,

2002). Accordingly, perceived friend support may exacerbate the effects of neighborhood

disadvantage when friends model or encourage participation in antisocial behaviors or substance

use. Friends can also influence the effectiveness of parents' efforts to monitor or exert control over their children's behaviors, as peers sometimes encourage youth to ignore parental boundaries or tease youth who adhere to parents' rules (Neary et al., 2013).

Besides the influence of peer socialization, the effects of perceived friend support may be explained by youths' tendency to select peers who exhibit similar behaviors and interests (Burk, van der Vorst, Kerr, & Stattin, 2012; Goodwin, Mrug, Borch, & Cillessen, 2012; Kandel, 1978). Youth who engage in more delinquency and substance use may select friends who also engage in these behaviors, and thus may spend more time in delinquent activities with their friends when they perceive their friends to be more supportive and encouraging. Several studies have noted that similarities between adolescents' and friends' behavior and emotional functioning can be attributed to a combination of selection and socialization (Burk et al., 2012; Goodwin et al., 2012; Kandel, 1978; Kiuru, Burk, Laursen, Salmela-Aro, & Nurmi, 2010; Van Zalk, Van Zalk, Kerr, & Stattin, 2011). In particular, youth tend to choose friends similar to themselves after school transitions, which provide opportunities to meet new peers and change existing peer associations (Goodwin et al., 2012). The role of selection in peer processes distinguishes the influence of friends from families, as adolescents cannot choose their relatives and thus family members tend to remain stable influences in their lives over time. Additionally, selection effects may explain the lack of consistency among the effects of perceived friend support in the literature, as youth may rate friends as more supportive when they exhibit similar behaviors or emotional traits; therefore, perceived friend support may not be related to youths' behaviors in stable ways when they have opportunities to dissolve friendships with peers who exhibit different levels of behavioral or emotional problems from themselves.

Importantly, neighborhood disadvantage can affect the contexts in which youth socialize with their friends and, consequently, their activities when they spend time together. As part of his social control theory, Hirschi (1969) hypothesized that spending more time in any conventional activities leaves less time available to engage in antisocial behavior, which suggests that an individual's time spent in any non-deviant activity with peers should be negatively related to the individual's delinquency. However, several researchers have demonstrated that time spent with peers is positively related to delinquent behaviors when the activity is unstructured and/or unsupervised (Osgood & Anderson, 2004; Osgood, Wilson, O'Malley, Bachman, & Johnston, 1996; Weerman, Bernasco, Bruinsma, & Pauwels, 2015; Wikström, Ceccato, Hardie, & Treiber, 2010). This could explain why perceived friend support strengthens the link between neighborhood disadvantage and delinquent behavior, as youth living in disadvantaged neighborhoods spend less time in structured educational activities and thus have more unstructured leisure time (Wikström & Treiber, 2016). Moreover, youth in disadvantaged neighborhoods have greater exposure to areas with poor collective efficacy, which translates to more opportunities to hang out with friends unsupervised and engage in deviant behavior together without interference from adults (Wikström & Treiber, 2016). In fact, Rankin and Quane (2002) found that the association between neighborhood disadvantage and positive peer affiliation was weak when controlling for collective efficacy—which remained a strong predictor of positive peers—supporting that cohesive neighborhoods where adults share responsibility for social control promote positive peer groups. Therefore, the neighborhood context plays a critical role in shaping how peers spend their time together and, consequently, the implications of perceived friend support on youths' behavioral health.

Moreover, parents affect youths' peer selection and interactions, and their influence on their children's peer networks also depends on the neighborhood context. For instance, Elliott and colleagues (1996) found that in disadvantaged neighborhoods in Denver, youth reported having more friends who exhibit prosocial behaviors when their parents had more social ties in their neighborhood, whereas in disadvantaged neighborhoods in Chicago, parents' social ties were not related to their children's prosocial peer affiliations. Further, parents' social integration in the neighborhood was related to youths' *deviant* peer affiliation in Chicago but not in Denver. These results could indicate that different availability of deviant or prosocial peer networks influence how parents' social integration affects youth, even in similarly disadvantaged neighborhoods. In addition to peer selection, youths' opportunities for receiving friend support are affected by a combination of parental and neighborhood restrictions on youths' access to leisure activities and local peer networks, and as noted previously, parents often compensate for weak informal control in the neighborhood through their own social control in the home (Persson, Kerr, & Stattin, 2007; Rankin & Quane, 2002). Also, neighborhood stressors that affect the entire family unit could interfere with the family's ability to provide adequate support to youth, causing youth to seek out support from peers more often.

Strength of Neighborhood and Social Support Effects

There is much variation across the literature in the effect sizes found for both neighborhood and social support variables on youths' outcomes. Across studies that included participants from a wide range of neighborhoods, bivariate correlations between neighborhood variables, such as concentrated poverty and neighborhood disorder, and youths' behavioral outcomes ranged from .01 to .25 (Dupéré et al., 2009; Hurd et al., 2013; Schofield et al., 2012). However, as noted previously, correlations are stronger when studies use perceived measures of

neighborhood characteristics. For example, one study found perceived neighborhood disorder correlated with youths' antisocial behavior between .36 and .50, whereas correlations with objective measures of neighborhood disorder ranged from .12 to .25 (Schofield et al., 2012). Correlations with neighborhood variables also appear to be stronger when study samples are limited to participants in disadvantaged or high-crime areas, with bivariate correlations between neighborhood disadvantage or violence exposure and youths' outcomes ranging from .16 to .53 (McMahon et al., 2013, 2011; Rosario et al., 2003). In contrast, correlation coefficients between perceived social support variables and youths' behavioral outcomes range from .01 to .55, and there are no apparent patterns associated with study characteristics (Dupéré et al., 2009; Hammack et al., 2004; Hurd et al., 2013; McMahon et al., 2013, 2011; Rosario et al., 2003; Schofield et al., 2012). However, the wide range can be attributed to the wide variety of perceived social support indicators used, including overall or cumulative measures that combine friends and family, who exert different influences on youths' behavior. As expected, correlations tend to be stronger for measures of perceived parent or family support (coefficients ranging from .09 to .50) compared to perceived friend support (coefficients ranging from .02 to .33; Dubow et al., 1997; McMahon et al., 2013, 2011; Rosario et al., 2003; Schofield et al., 2012).

When controlling for individual- and family-level covariates, the effect sizes of neighborhood poverty on youths' physiological and behavioral outcomes—reported here as Cohen's *d* coefficients converted from odds ratios (Borenstein, Hedges, Higgins, & Rothstein, 2009)—tend to be around .11 (Brody et al., 2014; Maimon et al., 2010), although one study found effect sizes as high as .39 when predicting suicidal ideation and .92 when predicting suicide attempts (Dupéré et al., 2009). Exposure to community violence has demonstrated moderate effect sizes on youths' behaviors, ranging from .18 to .38 (Jain & Cohen, 2013; Powell,

1997). After controlling for individual, family, and neighborhood covariates, the effects of

perceived social support on youths' physiological and behavioral outcomes vary widely across

the literature, ranging from .04 to 1.21, with stronger effects found for low-frequency behaviors

such as suicide attempts or acts of violence (Brody et al., 2014; Dupéré et al., 2009; Jain &

Cohen, 2013; Maimon et al., 2010; Powell, 1997). However, in general, perceived social support

measures account for significantly more variance in youths' psychosocial and behavioral

outcomes than measures of neighborhood characteristics, even after controlling for individual

and family covariates (Bowen & Chapman, 1996). This supports that more proximal social

influences (e.g., friends and family) may exert stronger influences on youths' behavior than

ecological variables.

Purpose of the Current Study

In summary, there are some important limitations in the current state of the literature on

social support within the neighborhood context. First, most of the research relies heavily on self-

report measures of perceived social support quality without taking into consideration youths'

actual exposure to their sources of support. It may be that social support's effect on youths'

outcomes is determined not only by the intensity or quality of support, but also the amount of

time and interaction that youths have with supportive individuals. Also, it should be noted that

the majority of studies on youths' social support within disadvantaged neighborhood contexts

focus exclusively on perceived friend and parental or family support, but no studies have

examined the role of non-parental family members specifically. In particular, little is known

about the role of similarly aged relatives, such as siblings or cousins, and these relationships may

share characteristics with both adult family members and friends.

Through this study, I address these limitations in the literature by incorporating measures of both perceived quality of and actual time exposure to social support and investigating the effects of social support on youths' concurrent and short-term longitudinal behavioral outcomes. Specifically, I aim to examine how friend and family support interacts with exposure to support sources and perceived neighborhood collective efficacy to influence youths' emotional and behavioral well-being. Given the dearth of studies examining the effects of support from peer-aged relatives, I will also conduct exploratory analyses on the effects of teenage relatives on youths' outcomes and the relation between time exposure to teenage relatives and youth-perceived friend and family support.

Statement of Hypotheses

Social exposure hypotheses.

H1. Exposure to adult relatives will be negatively related to youth's age.

H2. Peer exposure will be positively related to youth's age.

H3. Exposure to adult relatives will be positively related to supervised exposure to peers, and negatively related to unsupervised exposure to peers.

Family support hypotheses.

H4. Perceived family support will be correlated with exposure to parents and total exposure to adult relatives.

H5. Perceived family support and exposure to adult relatives will be negatively related to depression, and perceived family support will be positively related to psychological well-being.

H6. Both perceived family support and exposure to adult relatives will be negatively related to self-reported aggression.

H7. Both perceived family support and exposure to adult relatives will be positively related to perceived collective efficacy.

H8. There will be a significant interaction between perceived family support and exposure to adult relatives, such that the relationship between perceived family support and youths' outcomes will be stronger at high levels of exposure to adult family members.

H9. The interaction between collective efficacy and family support (either perceived, exposure, or an adjusted family support variable that combines the two) will be significant, such that collective efficacy will enhance the positive effects of family support on youths' outcomes, particularly aggression.

Friend support hypotheses.

H10. Perceived friend support will be correlated with exposure to nonfamilial peers.

H11. Both perceived friend support and total peer exposure will be positively related to psychological well-being and negatively related to depression.

H12. Unsupervised peer exposure will be positively related to self-reported aggression, whereas supervised peer exposure will be negatively related to aggression.

H13. Unsupervised peer exposure will be negatively related to perceived collective efficacy, whereas supervised exposure will not be related to perceived collective efficacy.

H14. There will be a significant interaction between perceived friend support and peer exposure, such that the relationship between perceived friend support and outcomes will be stronger at high levels of total exposure to peers.

H15. Collective efficacy will moderate the effect of friend support (either perceived, exposure, or an adjusted friend support variable that combines the two) on youths' aggression,

such that friend support is positively related to aggression when collective efficacy is low and negatively related to aggression when collective efficacy is high.

Exploratory hypotheses.

H16. Proportionate out-of-school wake time spent alone will be positively correlated with age and depression, negatively related to psychological well-being, and not related to aggression.

H17. Exposure to peer-age relatives (i.e., siblings and cousins) will demonstrate relationships with youths' outcomes that are similar to those demonstrated by exposure to nonfamilial peers.

METHOD

Participants

For this study, I used data from the Mapping Adolescents' Places and Spaces (MAPS) project, a mixed-methods study that explored youths' neighborhoods, routine activities, behavioral functioning, and perceptions of the spaces where they spend time. The MAPS project recruited 57 adolescents aged 11 to 19 years from a low-income, urban area with the highest crime rate per capita in a small Midwestern city. Adolescents were recruited using snowball sampling methods, Facebook announcements, and targeted ads or referrals from a variety of settings within a 2-mile radius, including community centers, school or neighborhood youth programs, and the local library. Participants completed approximately 1.5-hour semi-structured interviews that utilized time diaries, sketch maps, and self-report questionnaires. Of the 57 adolescents recruited, one was unable to provide sufficient information about activities to complete the interview and thus was excluded from this study. In addition, 26 of these participants were interviewed a second time using the same procedure between three to twelve months after their initial interview. The study was approved by Bowling Green State University's Institutional Review Board (see Appendix A for original approval letter).

Measures

Demographics. Participants completed a demographics questionnaire at the outset of the interview, which asked them to provide their age, gender, race/ethnicity, relations and ages of individuals with whom they reside, school, grade level, and frequency of school attendance. Regarding their racial/ethnic identity, participants chose from the following options: White, African American, Asian or Pacific Islander, Arab American, Latino/a or Hispanic (not White), Native American, Multiracial, and Other. Based on participants' responses about their

household, interviewers noted whether participants lived with one or both biological parents, step-parents or parents' romantic partners, grandparents, other adult relatives, non-related legal guardian, siblings, or other individuals under age 18 (See Appendix B for full questionnaire).

Social exposure. Information about the location and duration of youths' routine activities was gathered using space-time methodology, which involved both geographic and time diaries logging a recent typical weekday and weekend day for each participant. This methodology has been used in other studies investigating the effects of the neighborhood context and social exposure on youths' behavior (e.g., Wikström et al., 2010). Youth provided information about the places they visited each day, their activities at each place, the number of adults and peers who were present at each location, the presence of a supervising adult, and the amount of time they spent at each location. Participants' time diaries were divided between me and a fellow trained colleague familiar with the MAPS project to be coded for exposure to various social contacts. Each block of time at a particular location, or in transit between locations, was estimated in minutes and assigned to one or more of the following categories for social contacts present at the location based on participants' responses: parents, non-parental adult relatives, adult relatives' partners, nonfamilial adults, peer-age relatives (i.e., siblings and cousins), and nonfamilial peers. The coded time blocks represented time when participants had access or opportunities to interact with individuals due to their presence at the same location, regardless of their actual time spent interacting with social contacts. Participants' total time spent around social contacts was calculated for each category by adding up respective time blocks within cases. Participants' total wake time across both days, time spent in school, and time spent alone were also calculated. Given that school imposes structure on youths' activities and time spent socializing with peers, and is likely to be invariant across participants, in-school time was

removed from participants' total wake time, and the total time of social exposure in each

category was divided by total out-of-school wake time across both days to calculate

proportionate social exposure variables.

The *exposure to parents* variable included any individual identified by the participant as a

parent or stepparent, regardless of whether the individual was the participant's current custodial

guardian. All other adult relatives—including uncles/aunts, grandparents, adult siblings/cousins

(i.e., older than 21 years), and spouses of biological relatives—were coded as *exposure to non-*

parental adult relatives. Time blocks coded as either exposure to parents, non-parental adult

relatives*,* or both were assigned an overarching category for *total exposure to adult relatives.* The

exposure to adult relatives' partners consisted of exposure to unmarried adult partners (e.g.,

boyfriend/girlfriend or fiancé) of any relative, including parents, uncles, aunts, or siblings. This

variable was also collapsed into the *exposure to nonfamilial adults* so that this variable consisted

of any adults outside of the family who were within participants' social networks, such as

relatives' friends or partners, teachers, coaches, religious leaders, friends' relatives, or other

adults in the community who were known or familiar to the participant. Adults encountered in

public settings, such as bus drivers or store clerks, were not included in this category unless

participants indicated that these adults were part of their personal social networks (e.g., one

participant reported knowing the owner of the local corner store and described holding personal

conversations with the owner when visiting the store). A *total exposure to adults* variable was

also calculated based on combined exposure to adult relatives and nonfamilial adults.

Exposure to peer-age relatives included exposure to siblings, cousins, or other extended

family members (e.g., nieces/nephews, stepsiblings) between the ages of 8 and 21 years.

Similarly, contact with known peers outside of the family that were between the ages of 8 and 21

years were coded as *total exposure to nonfamilial peers*. This variable also included exposure to peers in structured activities or settings (e.g., youth programs, sports practice, church), as well as unstructured time spent waiting for or riding buses to and from school, even if participants did not specify whether these peers were part of their personal networks, as it was expected that peers encountered in these settings were more likely to be familiar to participants or share social contexts. However, any peers identified as present in public spaces (e.g., stores, movies, park) were not coded as exposure to peers unless participants indicated knowing or interacting with these individuals. When information about the ages of social contacts was unavailable, social contacts were determined to be "peer-age" based on youths' broad classification of their age group as "teens," rather than "adults" or "little kids."

Both exposure to peer-age relatives and nonfamilial peers were further classified as either *supervised* or *unsupervised* exposure based on whether participants indicated an adult was present who was supervising or "in charge" of their activities. In cases where participants' perceptions of their supervision were unclear or missing, time blocks were coded as supervised when any adults present were identified as supervising during other time blocks, or if any adult was present who would be expected to assume a supervisory role (e.g., parents and caregivers). Importantly, youth-identified supervising adults were not always adults within youths' personal networks, particularly in public places such as stores where employees were often identified as supervising the area, so it was possible for time blocks to be coded as supervised exposure to peers without also being coded as exposure to any adults. Time spent traveling between routine activity locations was coded as supervised when participants reported traveling by car with an adult, and unsupervised when participants reported walking or traveling by car without adults or using public transit without a known adult.

Given that the time diary data were gathered through qualitative interviews, coding often involved interpreting ambiguous descriptions or making inferences based on interview transcripts to ascertain participants' relationships with their social contacts and the duration of their exposure to various types of contacts. To ensure validity of the derived exposure variables, the two coders flagged cases and documented coding decisions that required making inferences about the data, and these cases were reviewed together to verify coding decisions. Nineteen of the 56 cases (34%) were double-coded for reliability, which included cases that required a relatively high number of inferences due to insufficient or ambiguous data, as well as randomly selected cases from those that were not flagged for review by either coder. Bootstrapped Krippendorff's alphas for ratio data were calculated using an SPSS macro (Hayes & Krippendorff, 2007) for the following proportionate exposure variables: adult relative exposure, nonfamilial adult exposure, total adult exposure, peer-age relative exposure (supervised, unsupervised, and total), and nonfamilial peer exposure (supervised, unsupervised, and total). In general, Krippendorff's alpha values closer to 1.0 indicate greater agreement between raters (Krippendorff, 2004). Initial mean Krippendorff's alpha across all variables was .80, with the most discrepancy occurring in the nonfamilial adult exposure variable (Krippendorff's alpha = .63). After reviewing discrepant cases and discussing coding decisions, consensus was reached on all but one case, and all variables resulted in bootstrapped Krippendorff's alphas above .99.

Perceived social support. Participants completed the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988), a 12-item scale comprising three subscales that capture perceived quality of support received from family, friends, and a "special person." The current study used the Family and Friends subscales to

represent perceived family and friend support, respectively. Each subscale consists of four items

that tap into youths' perceptions of the quality of emotional support and advice they receive from

family members (e.g., "I get the emotional help & support I need from my family") and friends

(e.g., "I have friends with whom I can share my joys and sorrows"; see Appendix C for full

scale). Items are rated on a 7-point scale from "very strongly disagree" to "very strongly agree,"

with higher scores representing higher levels of perceived support. Subscales were computed by

averaging item scores when at least 75% of items on the scale were completed. The scale was

found to require a fourth-grade reading level to complete independently (Canty-Mitchell &

Zimet, 2000). The Family and Friends subscales each demonstrated high internal reliability

(Cronbach's alpha above .80) in the current sample. Table 1 displays descriptive statistics on the

scales used in this study.

Table 1

Descriptive Statistics for Study Measures

Measure	N	Min.	Max.	Mean	SD	Skewness (Std. Error)	Cronbach's alpha
Perceived Family Support	54	2.75	7.00	6.00	1.10	-1.39 (.33)	.83
Perceived Friend Support	54	1.00	7.00	5.33	1.49	-1.12 (.33)	.92
Home Neighborhood Collective Efficacy	54	0.80	3.50	2.40	0.60	-0.71 (.33)	.72
Aggression	53	0	1.15	0.33	0.28	1.28 (.33)	.91
Depression	54	0	2.60	0.78	0.55	0.90 (.33)	.70
Flourishing	53	5.00	7.00	6.12	0.53	-0.28 (.33)	.54
Age	54	11.00	18.00	14.44	2.19	0.21 (.33)	n/a

Collective efficacy. Home neighborhood context was measured using a scale of

collective efficacy (Sampson et al., 1997), which comprises five items about neighborhood

cohesion (e.g., "I live in a close-knit neighborhood") and five items about informal social control

(e.g., "If some children were spray-painting graffiti on a local building, how likely is it that your

neighbors would do something about it?"; see Appendix D for full scale). Participants rated each

item on a Likert-style five-point scale from "strongly agree" or "very likely" to "strongly

disagree" or "very unlikely." Scale scores were calculated when at least 75% of items were

completed by averaging item scores, including two reverse-coded items in the neighborhood

cohesion subscale, with higher scores representing higher perceived collective efficacy. The

scale demonstrated adequate internal reliability (Cronbach's alpha above .70) within the current

sample (Table 1).

Aggression. Participants' aggressive behaviors were assessed using the Peer Conflict

Scale (Marsee et al., 2011), which assesses four dimensions of aggression across 40 items:

proactive overt aggression, reactive overt aggression, proactive relational aggression, and

reactive relational aggression. Participants rated the extent to which they use aggressive

behaviors toward others on a 5-point scale from "not at all true" to "definitely true," with higher

scores representing more aggression (see Appendix E for full scale). The scale demonstrated

strong internal reliability in the current sample (Table 1).

Depression. Participants were also asked to complete the Center for Epidemiologic

Studies Depression Scale-Revised 10-item version for Adolescents (CESDR-10; Haroz, Ybarra,

& Eaton, 2014). The CESDR-10 was adapted from a 20-item measure that was developed to

assess depressive symptoms in community-based samples, and the purpose of the revision was to

develop a briefer version that was based on diagnostic criteria for adolescent depression.

Participants rated how much they experienced each depressive symptom (e.g., "I felt sad") in the

past week on a 5-point scale from "not at all or less than 1 day" to "nearly every day for 2

weeks" (see Appendix F for full scale). Because the items were designed to correspond with

diagnostic criteria for a major depressive episode, adolescents are identified as meeting the

clinical threshold for depression if they endorse the presence of anhedonia, dysphoria, or

irritability nearly every day in the past two weeks, and three additional symptoms occurring at least five days in the past week (Haroz et al., 2014). In the current study, total scale scores were calculated when at least 75% of the scale was completed by averaging item responses, with higher numbers representing more depressive symptoms. The scale demonstrated adequate internal reliability in the current sample (Table 1).

Psychological well-being. Positive aspects of youths' psychological well-being were measured using the Flourishing Scale (Diener et al., 2010), which comprises eight items that measure perceived success and satisfaction in areas such as relationships, self-concept, and life purpose (e.g., "I lead a purposeful and meaningful life"; see Appendix G for full scale). Items are rated on a seven-point scale from "strongly agree" to "strongly disagree," with higher scores representing positive views about oneself and areas of functioning. Total scale scores were calculated when at least 75% of items were completed by averaging item scores. In the current study, one item ("My social relationships are supportive and rewarding") was excluded from the scale score calculation to avoid construct overlap with the perceived social support measures. Given that the Flourishing Scale demonstrated poor internal reliability (Cronbach's alpha below .60; see Table 1) after removing the social support item from the scale, the scale was excluded from subsequent analyses, and related hypotheses regarding positive well-being were dropped from the study.

Procedures

Power analyses. In view of the limited sample size used for analyses, I used GPower 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007) to calculate the effect size necessary to achieve statistical significance given the available sample size and a power level of .80, which is the recommended power level for an alpha of .05 (J. Cohen, 1988).

These analyses revealed that, for the cross-sectional analyses, bivariate correlations (Pearson r) need to be greater than .37 to reach statistical significance. For regressions in the cross-sectional sample, effect sizes (Cohen's f^2) need to be greater than .15 for the regression model, which is equivalent to an R^2 value of approximately .13. Equations (1) and (2) illustrate the mathematical relation between Cohen's f^2 and R^2 (J. Cohen, 1988). In addition, critical t values need to be at least 2.01 to find a significant regression coefficient.

$$f^2 = \frac{R^2}{1-R^2} \tag{1}$$

$$R^2 = \frac{f^2}{1+f^2} \tag{2}$$

At the same time, the large number of hypotheses tested in this study increases the probability of rejecting a null hypothesis due to random chance. The probability (P) of finding at least one significant result by chance can be calculated using Equation (3), where k is the number of null hypotheses tested (Goldman, 2008). At least 32 correlation or regression coefficients need to be interpreted to test the 17 study hypotheses, excluding those dropped from the study that involved the Flourishing Scale. With alpha (α) set at .05, the probability of finding at least one significant result by chance among the 32 null hypotheses tested is almost 81%. Further, there is a 34% probability of finding at least one significant interaction due to chance.

$$P = 1 - (1 - \alpha)^k \tag{3}$$

When limited to the subset who completed both Time 1 and Time 2 measures, regression models predicting depression at Time 2 required an effect size above .38 (R^2 above .28) to reach statistical significance, and individual regression coefficients within the model require a critical t value above 2.09 to reach statistical significance. Regression models predicting aggression at Time 2 required an effect size above .44 (R^2 above .31), with individual regression coefficients requiring a critical t value above 2.11, to reach statistical significance. Given the number of

variables tested, there is a 34% probability of finding at least one significant main effect of Time 1 social variables on Time 2 outcomes by chance. These methodological limitations were considered when interpreting patterns in the results.

Data analysis plan. To investigate relationships between social support and other variables, I first examined bivariate correlations between each of the perceived social support and social exposure variables, perceived collective efficacy, age, and psychosocial outcomes (Hypotheses H1-H7, H10-H13, and H16). I then conducted a series of hierarchical multiple regressions to examine whether an interaction between perceived social support (family or friend) and social exposure (to adult relatives or peers) is significantly related to youths' behavioral outcomes (Hypotheses H8 and H14). Age was entered as a covariate in the first step when relevant (i.e., when significantly correlated with any independent or dependent variables), independent variables (perceived support and social exposure) were entered into the second step, and interactive effects were entered into the third step.

I similarly used hierarchical multiple regressions to examine whether neighborhood collective efficacy moderates social support effects on youths' outcomes (Hypotheses H9 and H15) by entering perceived collective efficacy and social support or social exposure variables in one step, followed by interactive effects between collective efficacy and the social support or social exposure variable. If the perceived social support subscales significantly interacted with exposure variables to predict youths' outcomes, then it was expected that both perceived quality of support and quantity of exposure to the support source would be needed to quantify social support. Therefore, in these cases, an adjusted social support variable was calculated by multiplying raw (uncentered) perceived support subscale (family or friend) by the corresponding social exposure variable (adult relatives or peers) to account for both quantity and quality of

social support when determining whether social support effects are influenced by the perceived neighborhood context. In instances where perceived social support quality did not interact with time exposure to support sources to influence outcomes, moderated regression analyses were repeated separately for perceived support and social exposure variables to assess whether collective efficacy moderates the effect of perceived social support, exposure to support sources, or both. Correlational and regression analyses were conducted in SPSS Version 21, and significant interactions were probed using the PROCESS macro.

To address exploratory hypotheses regarding the effects of peer-age relatives on youths' outcomes (Hypothesis H17), I first compared correlation coefficients using Fisher's r-to-z transformation to assess whether exposure to teenage relatives is more strongly related to perceived friend or family support. I conducted this analysis using DeCoster & Iselin's (2005) Microsoft Excel tool for comparing correlation coefficients, which applies Steiger's (1980) formula for comparing correlations derived from the same sample and controls for covariance between the perceived social support measures. Following this, I conducted multiple regressions in SPSS to assess whether exposure to peer-age relatives significantly interacts with either perceived friend or family support on youth outcomes, to explore the potential role of siblings and cousins in youths' perceptions of friend and family support.

Finally, I conducted regression analyses on Time 2 dependent measures, while controlling for Time 1 variables, for the subsample of participants who completed second interviews to determine whether the perceived social support and social exposure variables are related to changes in youths' behavioral functioning over time. I also used bivariate correlations to examine the stability of the perceived social support and behavioral outcome measures over time.

Data preparation. Prior to conducting analyses, I identified four outliers (z-scores above 3.29) in the variables of interest. Two outliers, involving the proportionate time spent unsupervised with peers, belonged to the two eldest participants in the sample. In reviewing their data, I determined that these two participants exhibited stages of development inconsistent with the overall developmental level of the sample (i.e., parenthood, high school graduation), and therefore dropped these cases from the sample. The remaining two outliers—one aggression score and one proportionate time spent unsupervised with siblings—were trimmed by reducing them to the value of the next highest score in the dataset. Notably, one participant did not complete the aggression scale and thus was excluded from analyses utilizing this scale. It is important to note that regression models assume that the dependent variable is normally distributed at any fixed values of the predictors. Therefore, due to significant positive skewness of both dependent measures (depression and aggression), I used square root transformations to eliminate positive skewness before running regression analyses. Both variables were normally distributed following square root transformations.

RESULTS

Table 2

Sample Demographics

Variables	n	%
Gender		
Male	31	57
Female	23	43
Racial/Ethnic Identity		
African American	44	81
White	3	6
Latino/a or Hispanic (not White)	3	6
Multiracial or other racial/ethnic identity	4	7
Grade		
6th	7	13
7th	5	9
8th	10	19
9th	12	22
10th	4	7
11th	9	17
12th	6	11
High school graduate	1	2
Household[a]		
Living with both biological parents	11	20
Living with single parent and other adults	16	30
Living with single parent (no other adult relatives)	19	35
Living with other adult relative	4	7
Living with non-related legal guardian	3	6
Multigenerational household (at least one parent and grandparent)	8	15

Note. This table displays the demographic composition of the total analysis sample ($N = 54$).
[a] One participant did not report living with any legal guardians or adult relatives.

Descriptive Analyses

The final sample demographics are displayed in Table 2. Independent samples t-tests were conducted to identify any gender differences among the time exposure variables or self-report scales. Results indicated that male participants tended to spend a higher proportion of their out-of-school wake time alone ($M = 4.11\%$, SD = 5.42%) than female participants ($M = .67\%$, SD = 2.86%), $t(47.61) = 2.14$, $p = .04$. Males also tended to spend more time with non-parental adult relatives ($M = 36.94\%$, SD = 38.03%) than females ($M = 19.76\%$, SD = 23.01%),

$t(50.24) = 2.06, p = .05$. No significant gender differences emerged on any other time exposure

variables, nor on any perceived social support, collective efficacy, or behavioral health measures.

Tables 3 and 4 display descriptive statistics and correlation coefficients, respectively, for

the social exposure variables. Adolescents tended to spend most of their out-of-school time with

relatives rather than nonfamilial adults or peers. Participants' total exposure to adult relatives,

particularly parents, and overall exposure to adults were significantly negatively skewed,

whereas participants' exposure to non-parental adult relatives, adult relatives' partners, or

nonfamilial adults were significantly positively skewed. This suggests that most adolescents

spent relatively little time with non-parental adults in general compared to their parents.

Regarding exposure to other young people, participants' total exposure to peer-age relatives was

significantly negatively skewed, whereas their unsupervised exposure to peer-age relatives and

all nonfamilial peer exposure variables were significantly positively skewed.

Table 3

Descriptive Statistics on Out-of-School Wake Time and Social Exposure Variables Derived from Combined Weekday and Weekend Day Time Diaries

Variable	Min.	Max.	Mean	SD	Skewness (Std. Error)
Total Out-of-School Wake Time (hrs:min)	8:00 [a]	36:30	26:17	5:17	-0.48 (.33)
Proportion of Time Spent Alone	0%	18%	3%	5%	1.80 (.33)
Exposure to Parents	0%	100%	60%	29%	-0.66 (.33)
Exposure to Non-Parental Adult Relatives	0%	100%	30%	33%	0.75 (.33)
Total Exposure to Adult Relatives	0%	100%	74%	24%	-1.17 (.33)
Exposure to Adult Relatives' Partners	0%	97%	7%	19%	3.13 (.33)
Exposure to Nonfamilial Adults	0%	97%	26%	23%	0.98 (.33)
Total Exposure to Adults	35%	100%	87%	15%	-1.67 (.33)
Unsupervised Exposure to Peer-Age Relatives	0%	80%	11%	21%	2.20 (.33)
Supervised Exposure to Peer-Age Relatives	0%	100%	56%	35%	-0.45 (.33)
Total Exposure to Peer-Age Relatives	0% [b]	100%	68%	34%	-0.93 (.33)
Unsupervised Exposure to Nonfamilial Peers	0%	60%	7%	14%	2.52 (.33)
Supervised Exposure to Nonfamilial Peers	0%	77%	16%	19%	1.32 (.33)
Total Exposure to Nonfamilial Peers	0% [b]	88%	24%	22%	0.88 (.33)

Note. This table displays descriptive statistics for the total analysis sample ($N = 54$).

[a] Two participants only provided time diary and activity information for one day.

[b] One participant did not spend any out-of-school wake time with other adolescents or children.

Table 4

Bivariate Correlations among Social Exposure Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Alone Time	1.00	--	--	--	--	--	--	--	--	--	--	--	--
2. Exposure to Parents	-.30*	1.00	--	--	--	--	--	--	--	--	--	--	--
3. Exposure to Non-Parental Adult Relatives	-.13	-.31*	1.00	--	--	--	--	--	--	--	--	--	--
4. Total Exposure to Adult Relatives	-.47**	.62**	.35*	1.00	--	--	--	--	--	--	--	--	--
5. Exposure to Adult Relatives' Partners	-.08	.15	.15	.21	1.00	--	--	--	--	--	--	--	--
6. Exposure to Nonfamilial Adults	.04	-.03	-.10	-.30*	.63**	1.00	--	--	--	--	--	--	--
7. Total Exposure to Adults	-.44**	.57**	.17	.74**	.14	.07	1.00	--	--	--	--	--	--
8. Unsupervised Exposure to Peer-Age Relatives	-.13	.02	.08	.05	-.11	-.14	-.17	1.00	--	--	--	--	--
9. Supervised Exposure to Peer-Age Relatives	-.49**	.38**	.20	.51**	.18	.05	.55**	-.35*	1.00	--	--	--	--
10. Total Exposure to Peer-Age Relatives	-.59**	.40**	.26	.56**	.12	-.04	.47**	.29*	.79**	1.00	--	--	--
11. Unsupervised Exposure to Nonfamilial Peers	.30*	-.45**	-.23	-.67**	-.13	.02	-.77**	.09	-.56**	-.52**	1.00	--	--
12. Supervised Exposure to Nonfamilial Peers	.11	-.12	-.25	-.39**	-.06	.37**	.07	-.12	-.14	-.22	-.08	1.00	--
13. Total Exposure to Nonfamilial Peers	.28*	-.38**	-.35**	-.74**	-.13	.32*	-.42**	-.04	-.47**	-.51**	.56**	.78**	1.00
14. Age	.38**	-.30*	-.04	-.17	-.07	-.16	-.39**	.02	-.38**	-.38**	.29*	-.32*	-.08

* $p < .05$ ** $p < .01$

Exposure to parents was strongly correlated with total exposure to adult relatives ($r = .62$). Although exposure to non-parental adult relatives was also positively correlated with total exposure to adult relatives, parental exposure was negatively correlated with exposure to non-parental relatives. Exposure to nonfamilial adults was strongly correlated with adult relatives' partners ($r = .63$). However, nonfamilial adult exposure was negatively correlated with total exposure to adult relatives and positively correlated with supervised and total peer exposure. The data also support that adolescents who spent less time alone tended to spend more time with family and in supervised contexts—time spent alone was negatively correlated with parental exposure, supervised exposure to peer-age relatives, and overall exposure to adults and peer-age relatives. On the other hand, adolescents who spent more time alone tended to spend more overall time with nonfamilial peers, particularly in unsupervised contexts. Although more unsupervised exposure to peer-age relatives was related to less supervised exposure to peer-age relatives, this relationship was not found between supervised and unsupervised nonfamilial peer exposure.

Social Exposure Hypotheses (H1-H3)

Overall, hypothesized relationships among social exposure variables and age were not supported by the data. While parental exposure was negatively associated with age, the negative correlation between age and total exposure to adult relatives was not statistically significant (H1). Age was also not significantly associated with total peer exposure (H2). There was a strong negative relationship ($r = -.74$) between adolescents' total peer exposure and adult relative exposure; exposure to adult relatives was negatively related to both supervised and unsupervised peer exposure, partially supporting hypothesis H3.

Table 5

Bivariate Correlations between Family Support Variables and Youth Outcomes

Variable	1	2	3	4	5	6	7
1. Exposure to Parents	1.00	--	--	--	--	--	--
2. Exposure to Non-Parental Adult Relatives	-.31*	1.00	--	--	--	--	--
3. Total Exposure to Adult Relatives	.62**	.35*	1.00	--	--	--	--
4. Perceived Family Support	.39**	-.01	.31*	1.00	--	--	--
5. Perceived Collective Efficacy	.22	-.12	-.02	.17	1.00	--	--
6. Depression	-.33*	-.16	-.40**	-.28*	-.18	1.00	--
7. Aggression	-.07	.11	-.01	-.03	-.20	.15	1.00
8. Age	-.30*	-.04	-.17	-.32*	-.12	.36**	-.14

$* p < .05$ $** p < .01$

Family Support Hypotheses (H4-H9)

Table 5 presents correlations among family support variables and youth outcomes. Because age was significantly related to youth-reported depression and perceived family support, it was included as a covariate in regressions that included these variables. As expected, perceived family support was correlated with exposure to parents and overall exposure to adult relatives (H4), and all three variables were negatively correlated with youth-reported depression (H5). However, neither perceived family support nor exposure to adult relatives were significantly related to aggression (H6) or perceived collective efficacy (H7). Further, there was no significant interaction between perceived family support and exposure to adult relatives on youths' depression or aggression (H8; see Table 6).

Table 6

Standardized Regression Coefficients for Interaction Effects between Perceived Family Support and Adult Relative Exposure on Youth Outcomes

Variable	Depression ($N = 54$)			Aggression ($N = 53$)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Age	.33*	.25	.25	-.10	-.14	-.14
Perceived Family Support		-.06	-.03		-.08	-.05
Exposure to Adult Relatives		-.33*	-.31*		-.10	-.09
Family Support x Relative Exposure			.07			.05
Change in R^2	.11	.12	<.01	.01	.02	<.01

$* p < .05$ $** p < .01$

Given that there was no significant interaction between perceived family support and exposure to adult relatives on youths' outcomes, separate analyses were conducted to investigate the potential moderating role of perceived collective efficacy using each family support measure (see Table 7). Although perceived collective efficacy significantly moderated the effect of perceived family support on aggression, the plotted interaction did not support hypothesis H9; perceived family support was negatively associated with aggression for youth reporting low levels of neighborhood collective efficacy, but not related to aggression for youth reporting high levels of neighborhood collective efficacy (see Figure 1). No significant interactions emerged between collective efficacy and exposure to adult relatives.

Table 7

Standardized Regression Coefficients for Effects of Perceived Family Support and Adult Relative Exposure on Youth Outcomes with Collective Efficacy as Moderator

Variable	Depression ($N = 54$)			Aggression ($N = 53$)		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Perceived Support Analyses						
Age	.33*	.27	.28*	-.10	-.15	-.12
Perceived Family Support		-.13	-.10		-.07	-.01
Perceived Collective Efficacy		-.17	-.18		-.22	-.25
Family Support x Collective Efficacy			.19			.35*
Change in R^2	.11	.05	.03	.01	.06	.12
Social Exposure Analyses						
Age	.33*	.24	.25			
Exposure to Adult Relatives		-.35**	-.36**	-.11	-.11	
Perceived Collective Efficacy		-.20	-.23	-.21	-.21	
Relative Exposure x Collective Efficacy			.12		<.01	
Change in R^2	.11	.15	.01	.06	<.01	

* $p < .05$ ** $p < .01$
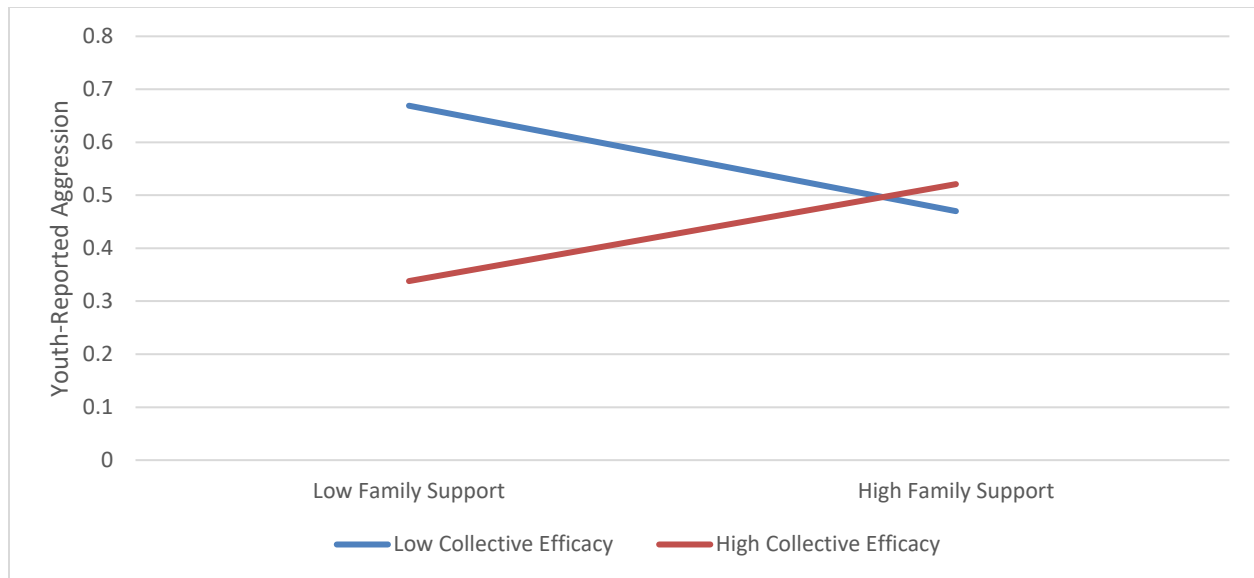
Figure 1. Relationship between perceived family support and youth-reported aggression depicted at two levels of perceived collective efficacy (-1 SD below mean and +1 SD above mean), with age entered as a covariate. Perceived family support was negatively associated with aggression at low levels of collective efficacy, b = -.094, $t(48)$ = -2.165, p = .035, but not significantly related to aggression at high levels of collective efficacy, b = .086, $t(48)$ = 1.717, p = .092.

Table 8

Bivariate Correlations between Peer Support Variables and Youth Outcomes

Variable	1	2	3	4	5	6	7
1. Unsupervised Exposure to Nonfamilial Peers	1.00	--	--	--	--	--	--
2. Supervised Exposure to Nonfamilial Peers	-.08	1.00	--	--	--	--	--
3. Total Exposure to Nonfamilial Peers	.56**	.78**	1.00	--	--	--	--
4. Perceived Friend Support	.07	.10	.13	1.00	--	--	--
5. Perceived Collective Efficacy	-.03	-.09	-.09	.34*	1.00	--	--
6. Depression	.52**	-.14	.21	.06	-.18	1.00	--
7. Aggression	.05	-.10	-.05	-.18	-.20	.15	1.00
8. Age	.29*	-.32*	-.08	-.14	-.12	.36**	-.14

* p < .05   ** p < .01

Friend Support Hypotheses (H10-H15)

Table 8 presents correlations among nonfamilial peer support variables and youth outcomes. Contrary to expectations, perceived friend support was not related to peer exposure

(H10), and neither perceived friend support nor total exposure to nonfamilial peers were significantly correlated with youths' depression (H11) or aggression (H12). In addition, perceived collective efficacy was not related to any peer exposure variables (H13). However, two unexpected positive correlations emerged—one between perceived friend support and collective efficacy, and another between unsupervised exposure to nonfamilial peers and youth-reported depression. However, there were no significant relationships between supervised or total peer exposure and depression, which suggests that a lack of supervising adults during peer interactions is a risk factor that overrides any potential benefit of peer exposure for youths' emotional well-being.

Table 9 displays results from regression models testing the interaction between perceived friend support and nonfamilial peer exposure on youth outcomes. The interaction was not significant when regressed onto depression but was significant when regressed onto aggression, partially supporting hypothesis H14. Specifically, perceived friend support was negatively associated with aggression at high levels of peer exposure but was not significantly related to aggression at low levels of peer exposure (see Figure 2).

Table 9

Standardized Regression Coefficients for Interaction Effects between Perceived Friend Support and Nonfamilial Peer Exposure on Youth Outcomes

Variable	Depression ($N = 54$)			Aggression ($N = 53$)	
	Step 1	Step 2	Step 3	Step 1	Step 2
Age	.33*	.36**	.36*		
Perceived Friend Support		.08	.08	-.16	-.24
Exposure to Nonfamilial Peers		.21	.21	-.02	.05
Friend Support x Peer Exposure			<.01		-.30*
Change in R^2	.11	.06	<.01	.03	.08

*$p < .05$ **$p < .01$
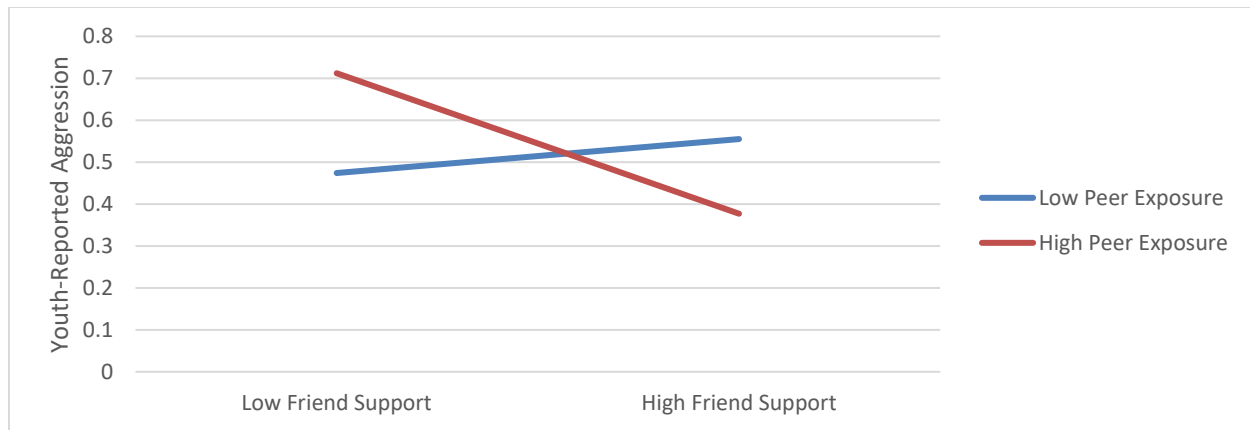
Figure 2. Relationship between perceived friend support and youth-reported aggression depicted at two levels of nonfamilial peer exposure (-1 SD below mean and +1 SD above mean). Perceived friend support was negatively associated with aggression at high levels of peer exposure, b = -.112, $t(49)$ = -2.370, p = .022, but not significantly related to aggression at low levels of peer exposure, b = .027, $t(49)$ = .774, p = .443.

Based on the results described above, a combined peer support variable was calculated by multiplying the two raw variables—perceived friend support and total exposure to nonfamilial peers—to be used in analyses testing the moderating role of collective efficacy when predicting youth-reported aggression. With regard to depression, separate analyses were conducted to investigate the potential moderating role of perceived collective efficacy using each peer support measure. However, no significant interactions emerged across any of these analyses (see Tables 10 and 11), indicating that perceived collective efficacy did not moderate relationships between the peer support variables and youths' emotional and behavioral outcomes (H15).

Table 10

Standardized Regression Coefficients for Effects of Perceived Friend Support and Peer Exposure on Depression with Collective Efficacy as Moderator

	Depression ($N = 54$)		
Variable	Step 1	Step 2	Step 3
Perceived Support Analyses			
Age	.33*	.32*	.30*
Perceived Friend Support		.19	.23
Perceived Collective Efficacy		-.25	-.22
Friend Support x Collective Efficacy			.10
Change in R^2	.11	.06	.01
Social Exposure Analyses			
Age	.33*	.32*	.32*
Exposure to Nonfamilial Peers		.21	.21
Perceived Collective Efficacy		-.16	-.16
Peer Exposure x Collective Efficacy			.02
Change in R^2	.11	.08	<.01

* $p < .05$ ** $p < .01$

Table 11

Standardized Regression Coefficients for Effects of Perceived Friend Support and Peer Exposure on Aggression with Collective Efficacy as Moderator

	Aggression ($N = 53$)	
Variable	Step 1	Step 2
Adjusted Peer Support [a]	-.12	-.12
Perceived Collective Efficacy	-.21	-.23
Peer Support x Collective Efficacy		-.06
Change in R^2	.06	<.01

* $p < .05$ ** $p < .01$

[a] Adjusted peer supported calculated by multiplying perceived friend support and total peer exposure measures due to significant interactive effect between the two variables on self-reported aggression.

Exploratory Analyses

Alone time and youth outcomes (H16). Table 12 contains data on correlations among time spent alone, peer-age relative exposure, perceived social support measures, and youths' outcomes. Proportion of out-of-school wake time spent alone demonstrated relationships with

youth outcomes in the hypothesized directions—alone time was positively correlated with depression and not related to aggression. In addition, time spent alone was associated with age, supporting the hypothesis that adolescents spend more time alone as they get older.

Table 12

Bivariate Correlations between Alone Time, Exposure to Peer-Age Relatives, Perceived Support Variables, and Youth Outcomes

Variable	1	2	3	4	5	6	7	8	9
1. Alone Time	1.00	--	--	--	--	--	--	--	--
2. Unsupervised Exposure to Peer-Age Relatives	-.13	1.00	--	--	--	--	--	--	--
3. Supervised Exposure to Peer-Age Relatives	-.49**	-.35*	1.00	--	--	--	--	--	--
4. Total Exposure to Peer-Age Relatives	-.59**	.29*	.79**	1.00	--	--	--	--	--
5. Perceived Family Support	-.11	-.03	.11	.09	1.00	--	--	--	--
6. Perceived Friend Support	.04	-.02	.08	.06	.18	1.00	--	--	--
7. Perceived Collective Efficacy	.01	-.12	.16	.09	.17	.34*	1.00	--	--
8. Depression	.28*	.04	-.41**	-.39**	-.28*	.06	-.18	1.00	--
9. Aggression	-.07	.40**	-.06	.20	-.03	-.18	-.20	.15	1.00
10. Age	.38**	.02	-.38**	-.38**	-.32*	-.14	-.12	.36**	-.14

$* p < .05$ $** p < .01$

The role of peer-age relatives (H17). Similar to total adult relative exposure, total exposure to peer-age relatives was also significantly related to less depression (Table 12). However, it should be noted that adult relatives were likely to be present during opportunities for interaction with peer-age relatives, as exposure to peer-age relatives was more likely to be supervised than unsupervised (Table 3) and was significantly correlated with exposure to adult relatives (Table 4). Peer-age relative exposure was not significantly correlated with either perceived family or perceived friend support. Further, comparisons of the correlation coefficients revealed no significant differences between perceived family and friend support subscales in their relation to peer-age relative exposure, $z = 0.16$, $p = .88$. Total exposure to peer-age relatives did not demonstrate any interactive effects with perceived family or friend support, nor perceived collective efficacy, on either outcome.

Longitudinal analyses. Independent samples t-tests confirmed that those who completed a second interview did not differ from those who did not on any of the time exposure or self-report measures, including perceived family and friend support, collective efficacy, or behavioral health outcomes. Chi-square analyses also indicated that the longitudinal subsample did not significantly differ from the subsample who did not complete a second interview in terms of gender, race/ethnicity, grade, and household composition. Table 13 includes bivariate correlations between Time 1 and Time 2 measures. Moderate correlations emerged between Time 1 and Time 2 measures of perceived friend support, depression, and aggression. However, the correlation between Time 1 and Time 2 perceived family support did not reach statistical significance, suggesting there was more variability in this measure over time compared to the other scales.

Table 13

Bivariate Correlations between Time 1 (T1) and Time 2 (T2) Perceived Social Support and Self-Reported Behavioral Scales

T1 Variables	T2 Family Support	T2 Friend Support	T2 Depression	T2 Aggression
Exposure to Adult Relatives	.28	.22	-.06	.30
Exposure to Nonfamilial Peers	-.07	.19	-.23	-.43
Exposure to Peer-Age Relatives	.25	.40	-.18	.47*
Perceived Family Support	.29	.03	.03	.21
Perceived Friend Support	-.34	.49*	-.10	.02
Depression	-.47*	-.19	.44*	-.39
Aggression	-.07	-.12	.12	.55*

* $p < .05$

Prior to running regression analyses, depression at Time 2 was transformed using a square root transformation due to significant positive skew. Table 14 displays results from regression analyses using Time 2 dependent measures while controlling for Time 1 behavioral

measures. Perceived family support and adult relative exposure did not significantly predict

behavioral outcomes at Time 2. However, nonfamilial peer exposure demonstrated a significant

negative effect on aggression at Time 2 when effects of perceived friend support and behavioral

health at Time 1 were controlled. In addition, a negative relationship between nonfamilial peer

exposure at Time 1 and depression at Time 2 trended toward significance, $\beta = -.36$, $t(19) = -1.79$,

$p = .09$.

Table 14

Standardized Regression Coefficients for Effects of Time 1 Perceived Support and Social Exposure Measures on Time 2 Behavioral Outcomes

Variable	Time 2 Depression	Time 2 Aggression
Family Support Variables		
Dependent Measure at Time 1	.49*	.60**
Perceived Family Support	.11	.21
Exposure to Adult Relatives	.17	.21
R^2 (change)	.20 (.04)	.41 (.11)
N	23	20
Peer Support Variables		
Dependent Measure at Time 1	.45*	.54**
Perceived Friend Support	.10	-.02
Exposure to Nonfamilial Peers	-.36	-.42*
R^2 (change)	.28 (.12)	.48 (.18)
N	23	20
Peer-Age Relatives Variable		
Dependent Measure at Time 1	.52*	.46*
Exposure to Peer-Age Relatives	.24	.31
R^2 (change)	.20 (.04)	.39 (.09)
N	23	20

* $p < .05$ ** $p < .01$

DISCUSSION

Supportive relationships with family and friends promote health and resilience during adolescence, especially for youth facing extreme challenges associated with living in impoverished and under-resourced neighborhoods. While the effects of perceived social support on adolescent behavioral development are well documented in the literature, few researchers have systematically investigated the effects of perceived support while accounting for adolescents' social context, including their exposure to potential sources of support and the overall social climate in the neighborhood. The current study provides preliminary evidence that, at least in the context of peers, social exposure may determine the effect of perceived support on adolescents' behavioral health, namely aggressive behavior. In contrast, availability and access to adult relatives is critical for adolescent emotional well-being regardless of their perceived quality of family support, while the neighborhood social climate may influence how perceived family support relates to adolescent behaviors.

Family Support and Adolescent Behavioral Health

Adolescents report less depression when they spend more time with adult family members. This finding may result from transactional processes; adolescents with less access to their parents or other adult relatives may have fewer opportunities to access family support when they need it. At the same time, adolescents with higher levels of depression may intentionally withdraw from their families; depressed adolescents prefer to spend more time alone or in their bedroom and less time with family members compared to other youth (Larson, Raffaelli, Richards, Ham, & Jewell, 1990; Silk et al., 2011). This social withdrawal can maintain negative affect by limiting access to emotional support that is critical for coping with depressive symptoms such as loneliness, worthlessness, and hopelessness. Alternatively, the relationship

between adolescents' family exposure and depressive symptoms may be attributable to an interaction between biological factors and their social environment. For instance, children of depressed parents are more likely to exhibit depressive symptoms due to genetic vulnerabilities. At the same time, depressed parents may spend less time with their children, so parental depression may be a third variable that drives the relationship between adolescent depression and adult relative exposure.

The relationship between perceived family support and adolescent depression was no longer significant when accounting for the effect of adult relative exposure, implying that, in terms of family influence on adolescents' emotional well-being, adolescents' perceptions of the quality of their family relationships may be less relevant than their actual access to support. This could be attributed to typical developmental changes that occur in youths' perceptions of and interactions with their parents, particularly during middle adolescence, when parent-youth conflict tends to increase temporarily while youths' perceptions of parental support tend to decrease (De Goede, Branje, & Meeus, 2009; Herrenkohl, Kosterman, Hawkins, & Mason, 2009). These family processes are natural byproducts of the typical developmental processes occurring during adolescence, when youth exercise more independent decision-making, explore sexuality, and begin to form identities separate from the family system (De Goede et al., 2009; Eccles et al., 1993; Gutman & Eccles, 2007). Adolescents' perceptions of family support likely decline during this time due to increased family tension related to shifting parent-child power dynamics. Consequently, adolescent-perceived family support may not reflect the actual level of support parents and other adult relatives provide when adolescents need it, and may not be consistent with or as relevant to their mental health as the actual supportive actions of adult family members.

It is important to note that, although adult relative exposure comprises both parents and non-parental relatives, parents may be overrepresented in the data; adolescents spent twice as much time around parents as other adult relatives. Therefore, the effects of adult relative exposure on adolescents' mental health could be more attributable to parental and caregiving support than other sources of family support. While parental and non-parental exposure were not necessarily mutually exclusive, and adolescents sometimes spent time around both parents and other adult relatives at the same time, adolescents who spent more time with non-parental relatives tended to spend less time with their parents overall. Other relatives may step in to compensate for gaps in parental availability more often than they join parents in shared activities with their children during a typical week, particularly in disadvantaged and predominantly Black neighborhoods, where parents often rely on extended kinship networks for childcare (Hunter et al., 1998; Jarrett et al., 2010; Schinke et al., 2010).

Spending more time with preadolescent and adolescent relatives was also associated with less depression in the current study, although this is probably at least partially attributable to the protective effect of adult relatives given that they were likely to be present and supervising interactions with peer-age relatives. In fact, other researchers have found that time and relationship quality with parents predict less depressive symptoms while time and relationship quality with siblings are not directly associated with adolescent depression, even though adolescents who spend more time with or feel closer to their parents also spend more time with or feel closer to siblings (Desha, Nicholson, & Ziviani, 2011). Still, peer-age relatives appear to be a distinct source of support that is not captured by the social support measures that are most prominent in the literature; exposure to peer-age relatives was not related to either family or friend subscales of the perceived social support measure and may need to be assessed separately

to understand the importance of these relationships to adolescents' behavioral health. Unlike adult family members, who are likely to be in a position of authority or be responsible for monitoring the adolescent's needs, peer-age family members vary greatly in their social roles and responsibilities in their relationship with the adolescent depending on individual or family structural characteristics. Differences in age and gender, number of siblings, and presence of half- or step-siblings in the home moderate the effects of sibling relationship quality and exposure on adolescent mental health (Vogt Yuan, 2009). Therefore, the peer-age relative exposure variable may have been too heterogeneous to observe consistent effects on youths' outcomes in this study. Further research is needed in this area to understand how and under what circumstances access to support from siblings and cousins influences youths' outcomes, while taking into account age, gender, birth order, personality differences, and relationship quality.

Peer Support and Adolescent Behavior

Perceived friend support is only associated with lower aggression when adolescents have more exposure to—and opportunities to interact with—their peers outside of school, whereas perceived friend support is not related to behavior when adolescents spend less time around peers. Although this model appears to be underpowered given the low variance explained, several peer processes may account for the association between perceived friend support and reduced aggression for adolescents who spend more time around peers. On one hand, adolescents who view their friends to be supportive also perceive their friendships to be less conflictual and thus may have fewer opportunities or motives to behave aggressively when spending time with peers (Cillessen, Jiang, West, & Laszkowski, 2005). They may also avoid using aggression during conflicts with peers if they value their friendships and do not want to risk rupturing the relationship. Alternatively, their friends may be less willing to provide support to adolescents

that display more aggressive behaviors; peers who view their friends to be physically aggressive experience their friendships as more conflictual (Cillessen et al., 2005). Early behavior problems also contribute to peer rejection, lower social competence, and fewer friendships in adolescence (Bagwell, Molina, Pelham, & Hoza, 2001). Adolescents who spend less time with their peers may have fewer opportunities to engage in aggressive behavior in general, so their perceptions of friendship quality may be less relevant to their behavior in the absence of significant peer exposure.

Notably, this interactive effect between peer support variables was not present when depression was the outcome variable. This may be due to lacking sufficient power to detect an effect, as the overall model did not meet the necessary conditions to achieve a power level of .80. However, the pattern of findings corresponds with other research that suggests that, while aggressive behaviors influence relationship dynamics and friendship quality, depressive symptoms do not interfere with adolescents' likelihood of making and keeping friends (Cillessen et al., 2005; Hogue & Steinberg, 1995). It is also possible that adolescents are more likely to exhibit similar affect as their friends when they perceive their friendships to be more supportive, as adolescents who are more satisfied with their friendships endorse more similarities with their friends (Linden-Andersen, Markiewicz, & Doyle, 2009). Thus, future studies in this area should incorporate adolescents' ratings of friends' depressive symptoms to account for potential contagion effects when assessing the importance of friend support and peer exposure on adolescents' emotional functioning.

Alternatively, the absence of a significant interaction between peer exposure and perceived friend support on adolescent depression could be explained by other methodological limitations, as the peer exposure variables did not differentiate between actual "friends" and

other peers. General peer exposure may not be relevant to the effect of perceived friend support

on adolescents' depression if youth are spending significant time with peers but are not

necessarily spending time with individuals they consider to be friends. At the same time, the only

peer variable associated with depression was unsupervised peer exposure, which was relatively

strongly related to higher levels of depression while supervised peer exposure and perceived

friend support were not significantly related to depression. This could imply that unsupervised

peer interactions provide more opportunities for peer victimization or negative peer interactions

that compromise emotional functioning. It could also be that youth who spend more

unsupervised time with peers have less access to supportive adults in general. Together with the

negative correlation between adult relative exposure and depression, these results suggest that

the influence of the presence of supportive adults during peer interactions overrides the influence

of the peer interactions themselves on youths' outcomes.

The Importance of Neighborhood Social Context

Although the effect of perceived family support on adolescents' behavioral outcomes

does not vary by the context of adolescents' family exposure, its effect on aggressive behavior

does depend on adolescents' views of their neighborhood's collective efficacy. Perceived family

support only demonstrated a protective effect on aggression when adolescents reported low

levels of neighborhood collective efficacy. This finding supports previous claims that parents

and caregivers may compensate for poor social control in the neighborhood by increasing their

active involvement and monitoring efforts in their children's lives, which may simultaneously

prevent or redirect adolescent aggression and leave adolescents feeling supported by their

families (Furstenberg, 1999; Rankin & Quane, 2002). This also implies that youth-perceived

quality of family support has a stress-buffering effect on youths' aggression, even within a

similarly disadvantaged neighborhood context, as participants were recruited from a relatively homogenous, limited geographic area. Perceived collective efficacy did not moderate the effect of adult relative exposure on adolescents' behavioral outcomes, suggesting that access to adult relatives is associated with youths' behavior similarly regardless of the neighborhood social climate.

Perceived collective efficacy also did not moderate the effect of peer support on adolescents' behavioral outcomes, nor correlated with any peer exposure variables. One plausible explanation is that adolescents' peer exposure is not necessarily occurring within their neighborhood or with peers from their neighborhood, so their perceptions of the neighborhood social climate may not be an indicator of the actual contexts in which adolescents spend time with peers (Tompsett, Veits, & Amrhein, 2016; Weerman et al., 2015; Wikström et al., 2010). In fact, a significant proportion of adolescents' routine activities were found to be situated outside of their home neighborhoods in the current sample (Colburn, Pratt, Mueller, & Tompsett, 2019) as well as other studies (Basta, Richmond, & Wiebe, 2010; Wikström et al., 2010). Furthermore, neighborhood collective efficacy is not the only contextual variable that contributes to informal social control. As noted earlier, parents often increase monitoring efforts to compensate for poor neighborhood control and lack of other adult supervision, so parental supervision of peer activities could offset any effects of neighborhood collective efficacy on peer influence (Furstenberg, 1999; Rankin & Quane, 2002). In addition, neighborhood collective efficacy may be more relevant to unstructured peer time, whereas participation in structured peer activities would be expected to exert similar effects on adolescents' behavior regardless of the general neighborhood social climate (Osgood & Anderson, 2004; Osgood et al., 1996; Weerman et al., 2015; Wikström et al., 2010). Future studies of peer support should take into consideration the

varied social and contextual factors that can affect the level of supervision and social control experienced by adolescents during peer interactions.

Developmental Trends over Time

Given youths' increasing autonomy and changing social relationships during adolescence, it is important to acknowledge how their social support, exposure, and behaviors change over the course of this developmental stage. Older adolescents spent more time alone or in unsupervised contexts with peers and less time with adults or peer-age relatives, supporting that adolescents moved toward increased independence and individuation from family during their teenage years (Eccles et al., 1993; Gutman & Eccles, 2007; Larson & Richards, 1991). Notably, while age appeared to account for shifts in peer exposure from supervised to unsupervised contexts, age was not associated with unsupervised exposure to peer-age relatives, despite negative relationships between age and supervised peer-age relative exposure as well as between supervised and unsupervised peer-age relative exposure. This may be attributable to varying roles that adolescents have with their siblings or other adolescent relatives based on structural dimensions, such as age differences or number of siblings (Ardelt & Day, 2002; East & Khoo, 2005; Vogt Yuan, 2009). As adolescents age, parents may increase their trust and confidence in their ability to behave responsibly and be more willing to leave them unsupervised. At the same time, younger siblings may also experience less parental supervision when their older siblings are expected to take on supervisory roles, so relationships between age and parental supervision may be complicated by other factors such as birth order and parent-sibling dynamics (Boisvert & Wright, 2008; East & Khoo, 2005).

Older adolescents also endorsed more depressive symptoms, which is consistent with previous research on the developmental trajectory of depression during adolescence, where

depressive symptoms tend to increase during early adolescence and peak during mid- to late-adolescence (Adkins, Wang, Dupre, van den Oord, & Elder, 2009; Rawana & Morgan, 2014). This developmental trend has been associated with typical stressors of transitioning to adulthood, including difficulty adjusting to increasing independence and sense of control (Adkins et al., 2009). Adolescents in disadvantaged neighborhoods, and ethnic minority youth in particular, may experience more difficulty adjusting to their increasing independence as they approach adulthood due to additional socioeconomic stressors and family responsibilities, such as financial burden associated with expectations of contributing to household income, or increasing responsibility for caring for younger relatives (Adkins et al., 2009; Miller & Taylor, 2012). Alternatively, the correlation between age and depressive symptoms may be attributable to the decreases in time spent with supportive adults as they become more independent. In fact, age is no longer significantly related to depression when controlling for adult relative exposure, suggesting that changes in family exposure and adult supervision at home may explain the developmental trend in adolescent depression.

Longitudinal analyses revealed that peer exposure predicts decreases in aggression and (to a lesser extent) depression over time when controlling for the effects of perceived friend support on behavioral health. These results were somewhat unexpected given the controversial findings of peer influence on adolescent behavioral health in the literature. Although these analyses were underpowered due to a small sample size, this pattern of findings implies that peer exposure may be a social resource that promotes resilience during adolescence over time, potentially due to increased opportunities to form meaningful connections with peers. This is consistent with other studies that demonstrate spending time with peers can have positive effects on adolescent behavioral outcomes, particularly with peers who display prosocial characteristics

or within the context of structured activities (Benhorin & McMahon, 2008; Fredricks & Eccles, 2005; Jain & Cohen, 2013). In fact, Masten and colleagues (2012) used a longitudinal quasi-experimental design to demonstrate that spending more time with friends during adolescence decreases neural stress responses to social stressors, such as peer rejection or exclusion, during young adulthood. Conversely, perceived family support and adult relative exposure were not associated with changes in behavioral health over time. Given the wide age range of the sample and the turbulence in family relationships that occurs during this period, the lack of significant effects over time may be due to variation in family dynamics across the sample. Interestingly, correlations between Time 1 and Time 2 variables revealed that initial depression levels predicted less perceived family support at follow-up, whereas initial perceived family support was not related to depression at follow-up. This implies that adolescent depression does not result from conflictual family relationships, but rather increased depressive symptoms during adolescence interfere with youths' perceptions of their family relationships. This supports the findings from Branje and colleagues (2010) that longitudinal pathways from adolescent depressive symptoms to perceived parental relationship are stronger than pathways from perceived parental relationship to adolescent depressive symptoms. Taken together with the cross-sectional findings that suggest a protective effect of adult relative exposure on adolescent depression, these results indicate that adolescents' perceptions of family support may be easily influenced by their own emotional states and, consequently, may not accurately represent the actual quality of their family relationships.

Limitations and Future Directions

As noted in the Methods section, the limited sample size reduces the power achieved by each analysis, which decreases the probability of detecting an effect that may be meaningful in

reality. This means that a nonsignificant p value is not necessarily indicative of the absence of a true relationship between variables, so more weight should be given to conclusions that rely on patterns of significant findings rather than the absence of statistically significant relationships. This particularly applies to interpreting the moderation analyses, as interactive effects require more power to detect, particularly in field studies using observational study methods such as the current study (Aguinis, 1995; Durand, 2013; McClelland & Judd, 1993). Therefore, the lack of significant interactions across most of the regression analyses may be largely attributable to inadequate power to detect interactive effects that exist among variables.

In addition, underpowered analyses are more susceptible to the influence of random variation in the sample, which can result in exaggerated effect sizes, so larger effect sizes are needed to achieve an acceptable power level (i.e., .80) and decrease the likelihood of erroneous significant findings due to random variation in the data (Gelman & Weakliem, 2009; Wainer, 2007). Analyses using GPower revealed that Pearson correlation coefficients above .37 and regression R^2 values above .13 would be needed to achieve a power level of .80 while maintaining an alpha level of .05 for the cross-sectional analyses conducted. Only seven significant findings met these conditions: the negative correlations between adult relative exposure and the peer exposure variables, the positive correlation between parental exposure and perceived family support, the negative correlation between adult relative exposure and youth-reported depression, the positive correlation between unsupervised peer exposure and depression, the negative correlation between total peer-age relative exposure and depression, the positive correlation between age and time spent alone, and the interaction between perceived family support and collective efficacy on youth-reported aggression. These findings are less likely to be exaggerated effects resulting from random variation or lack of representativeness of the data

compared to other significant effects that did not meet the minimum effect size criteria outlined by GPower.

Additionally, the large number of analyses conducted in this study increased the probability of finding a significant result purely by chance. A total of 37 statistical tests were interpreted to assess the hypotheses in this study, so the probability of finding at least one significant result by chance is 85% (see Methods section for the procedure for calculating this probability). Therefore, definitive conclusions about adolescents' resilience factors cannot be drawn based on a single significant finding due to the high probability that a particular effect will reach statistical significance due to random error, and additional research needs to replicate these findings in larger samples before determining the implications for theory. However, conclusions supported by multiple significant findings are less likely to be attributable to random variation in the data. To demonstrate, the formula for calculating the probability of finding a significant result by chance can be modified, as shown in (4), to determine the probability of finding s number of significant results by chance out of k total tests interpreted. Of the 37 null hypotheses tested, 11 significant findings emerged. The probability is exponentially less than .00001% that all 11 findings—or even just the seven findings noted above as meeting GPower cutoffs—are attributable to random error.

$$P = 1 - (1 - \alpha^s)^k \qquad (4)$$

Considering both of these limitations on the interpretability and validity of the results, the single conclusion that is most supported by the data—both in terms of meeting the effect size criteria for acceptable power and having the support of multiple significant findings—is the negative association between exposure to adult relatives and adolescent depression. This finding was supported by three different significant correlations at acceptable levels of power. Youth

reported fewer depressive symptoms when they spent more time around adult relatives or peer-age relatives (which tended to occur in the presence of adult relatives) and less time around peers in the absence of supervising adults. The probability that this pattern of findings occurred by chance is less than 0.5%. Regression analyses also indicated that the relationship between adult relative exposure and youth-reported depression persisted even when controlling for age and perceived family support, with an effect size well above the level necessary to achieve the desired power level of .80. Although these data are correlational and cross-sectional, and causality cannot be determined, these findings lend support to the important role of adult relatives in promoting youths' emotional adjustment during adolescence, irrespective of adolescents' perceptions of their family relationships. Future research should investigate other potential mechanisms that link adult relative exposure or supervision with internalizing distress.

The longitudinal analyses were particularly underpowered given the high attrition rate from the initial interview, so these findings should be considered exploratory rather than conclusive about the effects of social support on youth outcomes. Regression models needed to have R^2 above .28 when predicting depression and above .31 when predicting aggression to achieve a power level of .80. Only one significant finding met this condition; initial peer exposure significantly predicted lower youth-reported aggression at follow-up when controlling for initial aggression and perceived friend support. However, this relationship did not reach statistical significance in the correlation matrix and was not supported by the cross-sectional data. Thus, additional research with more robust samples needs to be conducted to confirm whether adolescent peer exposure has long-term effects on their behavior. Future studies should also include potential mechanisms of such a relationship, such as peer group behavioral norms and informal social control enacted by peers.

In addition to random error associated with small sample studies, the time diary coding process likely introduced additional error into this study that may have inflated the effect sizes that emerged or suppressed other effects that exist among the variables. Adolescents' recall of individuals present during their activities was not always consistent or comprehensive, and their estimates of when or how long they were at each location often lacked precision or did not line up with their descriptions of their activities. As a result, the coding process required a high amount of inference to identify types and duration of adolescents' social exposure. Although attempts were made to minimize rater bias using interrater consultation and double-coding of all ambiguous data, assumptions made about missing data could have led to exaggerated estimates of social exposure. However, if rater bias did influence the coding process, it is expected that all cases were equally affected and that estimated time variables were skewed in the same direction across the cases, so any effect on the resulting relationships with youths' outcomes found in this study should be negligible.

Given that the retrospective time diary method used in this study was prone to both recall bias and rater bias, this method of capturing adolescents' social context may be less accurate or representative compared to other methods of measuring social exposure, such as ecological momentary assessment (EMA). The time diaries also lacked information regarding the nature, quality, or duration of adolescents' social interactions, so it is possible that adolescents kept to themselves or limited interactions to certain contacts while in the presence of others. Therefore, the social exposure variables in this study are more representative of their opportunity to interact with various social contacts and may not translate to actual duration or quantity of social interaction. This is particularly relevant to interpreting interactions (or the lack thereof) between perceived social support and social exposure on youths' outcomes; it may be that more social

interaction enhances perceived social support effects on youths' outcomes, whereas more opportunity to interact alone does not influence perceived support effects if adolescents are not actually taking the opportunity to engage with their family or peers. EMA could potentially address these limitations by assessing adolescents' actual engagement with social contacts in the moment. On the other hand, the time diary method may provide a more comprehensive sample of adolescents' time than EMA, which captures a random sampling of moments across a study period but rarely assesses the actual duration of adolescents' social exposure as they move through space over the course of a day.

This study relied on adolescent report to measure the variables of interest, including social exposure variables. Therefore, correlations that emerged among the variables could be due to self-reporting bias rather than true relationships between constructs. In particular, results regarding adolescent depression need to be interpreted cautiously, as depressed adolescents may hold pessimistic views about their relationships and over-emphasize negative social experiences, such as loneliness or exclusion, that may shape their responses or lead to underreporting of their social activities during the interviews. Additionally, participants could have underreported their own behavioral health problems due to a social desirability bias, which could have suppressed the effects found in this study, particularly those pertaining to adolescent aggression. Notably, the aggression measure was substantially skewed in a positive direction within the overall sample; the maximum mean-item score obtained on the aggression measure was 1.15 out of 5, indicating that all participants tended to deny many more items than they endorsed. This signifies limited variability in the aggression measure in this sample and suggests that floor effects may have prevented detecting significant effects of other variables on youths' aggression. In addition to social desirability bias, it is possible that adolescents' self-ratings of aggressive behaviors

were skewed by their reference point for behavioral norms in their community. For instance, they may be exposed to more instances of aggression and violence in the community compared to adolescents in other communities, and consequently may rate themselves lower on certain aggressive behaviors by comparison. It is also important to note that the aggression measure included four different types of aggression—reactive and proactive overt (physical) aggression, and reactive and proactive relational aggression. It is unlikely that any adolescent exhibits all four types of aggression. Instead, adolescents may tend to exhibit more behaviors from a particular category and no behaviors from other categories of aggression, resulting in low total scores across the sample. Additionally, social support variables may exert different effects on each type of aggression, so using the total score in analyses may have masked effects that exist with individual subscales of the aggression measure.

The neighborhood social context was assessed using youths' individual ratings of their neighborhood collective efficacy, a construct that has traditionally been measured at the aggregate level using a composite of adult residents' ratings (Browning et al., 2004; Morenoff et al., 2001; Sampson et al., 1997). Youths' perceptions of their neighborhoods often differ from those of adults, likely due to their unique social experiences (Duncan et al., 2002; Spilsbury, Korbin, & Coulton, 2012). Moreover, individual perceptions of the neighborhood social climate are variable and subject to the influence of individual and family factors, so effects of collective efficacy found in this study may be more attributable to youths' internal processes than actual neighborhood characteristics (Duncan et al., 2002; Romero, Richards, Harrison, Garbarino, & Mozley, 2015). Regarding exposure to peers and peer-age relatives, coding decisions prioritized participants' perceptions about whether or not they believed an adult was supervising, which may not have corresponded with adults' actual monitoring of their activities. This probably

resulted in underestimates of participants' actual supervised exposure, as participants sometimes

reported that adults were present but not supervising their activities, even if the same adults were

identified as being in supervisory roles at other times during the interview. As a result, the

unsupervised exposure variables may not necessarily represent adolescents' actual time spent in

situations where adults are not monitoring or able to intervene to exert control over their

behavior, so analyses may have underestimated the relationships between unsupervised time and

behavioral problems. While it is also possible that adolescents sometimes reported that they "felt

supervised" when adults were not truly aware of their activities, it is less likely that

overestimates of their supervised time influenced the results in this study because adolescents

who believe their activities are being monitored tend to adjust their behavior accordingly,

regardless of adults' reported monitoring efforts (Cottrell et al., 2003).

This study also utilized a wide age range (8 to 21 years) to define "peers" and "peer-age"

relatives, and other age-related characteristics (e.g., age discrepancy, birth order) were not

assessed that may influence how egalitarian the peer relationship dynamics are. During the

interviews, participants sometimes identified older siblings and other "peer-age" relatives as

acting in a supervisory role, implying that these relatives may have more responsibility for caring

for youths' needs or exerting social control in the absence of adults. Alternatively, some older

participants discussed being responsible for monitoring younger relatives or peers when adults

were not present or were preoccupied. These examples demonstrate the variation in these

relationship power dynamics, which are expected to produce differential effects on adolescents'

behaviors. When specific ages were not available in the data, participants' labels of individuals'

broad age category (i.e., "teens," "adults," "little kids") were used to code the peer-age exposure

variables. This strategy likely resulted in different categorization of social contacts based on

participants' perceptions of their relationship or their own definitions of "peer-age" and "adult."

For instance, some adolescents tended to identify siblings or cousins as "adults" if they were at

least 18 years of age, even if their role in relation to the participant was more akin to a peer.

Altogether, these challenges in coding the peer-age variables may have led to differences in how

peer exposure was operationalized from case to case, so these variables may not accurately

represent the actual time adolescents are spending with peers and peer-age relatives.

Several other limitations in the study design may restrict the generalizability of these

results. The results may have been skewed due to selection effects for adolescents who

participated, as most were recruited from structured activities (e.g., community center,

afterschool activities, neighborhood programs). Given the low aggression scores across the

sample noted above, the sample of adolescents who opted to participate may have been more

prosocial as a group compared to the general population. Therefore, these data may not

accurately portray social support effects in a more antisocial group. In particular, relationships

between peer support variables and adolescent aggression in this study would not be expected to

hold in more antisocial samples given the vast literature that supports the negative influence of

deviant peers on adolescents' behaviors (e.g., De Coster et al., 2006). However, despite the focus

in the literature on relationships between neighborhood disadvantage and juvenile delinquency,

most adolescents living in disadvantaged urban neighborhoods do not engage in violent or

criminal behavior, so supportive peer groups may be protective more often than they are risk

factors for violence (Fabio, Tu, Loeber, & Cohen, 2011).

Notably, participants were largely recruited from a low-income community with the

highest crime per capita in the metropolitan area, and local culture or other characteristics of the

geographic area may limit the generalizability of these results to other communities. In

particular, the area is generally walkable due to limited vehicle traffic and availability of

sidewalks, and many participants primarily walked or biked to and from their routine activities.

Relationships between the social exposure variables and adolescents' behavioral health may

differ in areas where adolescents need to rely on vehicular transportation to attend activities or

visit friends. For instance, less time walking through their neighborhoods may translate to less

exposure to other social contacts within their neighborhoods as they move through their

communities. In addition, youth who need to secure a ride to see their friends or attend

extracurricular activities may spend less time with peers altogether, and consequently more time

alone or with family. For these youth, limited access to their peers could dampen the effects of

peer exposure or perceived friend support on their behavior. Further, youth who spend more time

with peers in such communities may have more resources in general, so peer effects may be

difficult to distinguish from individual or family protective factors.

Finally, it is important to note that this study did not take into account technological

means of connecting with social contacts, such as via text or social media. Adolescents are

increasingly using cell phones and the internet to communicate with their social networks, with

most adolescents in the United States reporting daily use of social media (Charmaraman,

Gladstone, & Richer, 2018; Lenhart, 2015). Likewise, the literature on social media effects on

adolescents' social and behavioral functioning is rapidly growing and evolving given the ever-

changing technological landscape, although there is consensus that social media and technology

use has both positive and negative effects on adolescent social and emotional development

(Charmaraman et al., 2018; Radovic, Gmelin, Stein, & Miller, 2017; Subrahmanyam &

Greenfield, 2008). Adolescents' online social activities usually involve members of their offline

social networks, while also providing opportunities to strengthen ties with known individuals

they have less contact with in their offline lives (Reich, Subrahmanyam, & Espinoza, 2012; Subrahmanyam, Reich, Waechter, & Espinoza, 2008). The oversight of adolescents' online social activities in the current study probably had the most impact on the results found for peer exposure effects. Adolescents' access to electronic means of communication allows them to stay in touch with peers at all hours with minimal to no adult supervision, increasing unsupervised peer exposure virtually (Reich et al., 2012). Peers can continue to exert influence over adolescents' behavior via social media long after school ends, so the current study may have grossly underestimated the amount of time adolescents socialize with peers without supervision. At the same time, electronic means of communicating are characteristically different from face-to-face interactions, particularly in the level of control adolescents have in choosing to engage with or attend to certain peers or social media content, so online peer interactions may exhibit different associations with adolescents' behavioral health compared to face-to-face interactions. Additionally, some researchers have suggested that adolescents' electronic communications with peers interfere with their family interactions, so the family exposure variables in this study may not represent the actual extent to which adolescents are socializing with their family (Subrahmanyam & Greenfield, 2008). More attention is needed in this area that examines both in-person and online social support opportunities to understand the implications of these varied modes of social exposure on adolescents' well-being.

Despite the limitations, the results of this study have several implications for research, intervention, and policy. Research on social influences and social support effects needs to incorporate measures of social context, such as adolescents' actual exposure to support sources, as the social context potentially shapes the ways that social interactions or relationship characteristics relate to youths' well-being. Retrospective time diaries can provide a

comprehensive sample of youths' social exposure and opportunities to incorporate rich qualitative data about youths' social activities. However, given that this and other common methods (e.g., EMA) rely on adolescent report, more innovative methods of capturing naturalistic observations of social interactions are needed to better understand the role of social context in promoting or undermining adolescent resilience. The potential interaction between peer exposure and perceived friend support implies that social context may be particularly relevant to studies of peer influence, and variation in the social contexts may explain inconsistencies across studies of peer effects.

The primary finding from this study was the significant negative association between adult relative exposure and adolescents' depressive symptoms. Paradoxically, this developmental stage is characterized by normative increases in independence and depression. In terms of clinical intervention, caregiver participation in behavioral therapy is more commonly recommended for externalizing concerns, especially when treatment involves caregiver training to set consistent limits and modify reactivity to their child's behaviors. However, this study supports that, for adolescents living in socioeconomically deprived communities, parents and other caregivers may also be valuable allies in treatment for internalizing concerns. Even when youth do not perceive their caregivers to be supportive, they may benefit from interventions that increase the stability of their relationships and the time they spend together. On the community level, programs and institutions that provide opportunities for family bonding and intergenerational contact could promote emotional resilience during adolescence, while also reducing time spent socializing with peers in unstructured, unsupervised settings. More importantly, caregivers may require more predictable work schedules and access to stable income to reduce occupational barriers to spending time with their children, so workplace

initiatives and policies that increase job opportunities, job stability, and work-life balance may

indirectly facilitate more adult relative exposure for youth.

REFERENCES

Adkins, D. E., Wang, V., Dupre, M. E., van den Oord, E. J. C. G., & Elder, G. H. (2009).

Structure and stress: Trajectories of depressive symptoms across adolescence and young

adulthood. *Social Forces*, *88*, 31–60. doi: 10.1353/sof.0.0238

Aguinis, H. (1995). Statistical power with moderated multiple regression in management

research. *Journal of Management*, *21*, 1141–1158. doi: 10.1177/014920639502100607

Aneshensel, C. S., & Sucoff, C. A. (1996). The neighborhood context of adolescent mental

health. *Journal of Health and Social Behavior*, *37*, 293–310. doi: 10.2307/2137258

Ardelt, M., & Day, L. (2002). Parents, siblings, and peers: Close social relationships and

adolescent deviance. *The Journal of Early Adolescence*, *22*, 310–349. doi:

10.1177/02731602022003004

Armstrong, T. A., Katz, C. M., & Schnebly, S. M. (2015). The relationship between citizen

perceptions of collective efficacy and neighborhood violent crime. *Crime & Delinquency*,

61, 121–142. doi: 10.1177/0011128710386202

Attar, B. K., Guerra, N. G., & Tolan, P. H. (1994). Neighborhood disadvantage, stressful life

events, and adjustment in urban elementary-school children. *Journal of Clinical Child

Psychology*, *23*, 391–400. doi: 10.1207/s15374424jccp2304_5

Bagwell, C. L., Molina, B. S. G., Pelham, W. E., & Hoza, B. (2001). Attention-Deficit

Hyperactivity Disorder and problems in peer relations: Predictions from childhood to

adolescence. *Journal of the American Academy of Child & Adolescent Psychiatry*, *40*,

1285–1292. doi: 10.1097/00004583-200111000-00008

Basta, L. A., Richmond, T. S., & Wiebe, D. J. (2010). Neighborhoods, daily activities, and

measuring health risks experienced in urban environments. *Social Science & Medicine*,

71, 1943–1950. doi: 10.1016/j.socscimed.2010.09.008

Bellair, P. E., & Browning, C. R. (2010). Contemporary disorganization research: An assessment

and further test of the systemic model of neighborhood crime. *Journal of Research in*

Crime and Delinquency, *47*, 496–521. doi: 10.1177/0022427810375578

Benhorin, S., & McMahon, S. D. (2008). Exposure to violence and aggression: Protective roles

of social support among urban African American youth. *Journal of Community*

Psychology, *36*, 723–743. doi: 10.1002/jcop.20252

Boisvert, D., & Wright, J. P. (2008). Nonshared environmental influences on sibling differences

in externalizing problem behavior. *Criminal Justice and Behavior*, *35*, 863–878. doi:

10.1177/0093854808318495

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to*

Meta-Analysis. Chichester, West Sussex, UK: John Wiley & Sons.

Bowen, G. L., & Chapman, M. V. (1996). Poverty, neighborhood danger, social support, and the

individual adaptation among at-risk youth in urban areas. *Journal of Family Issues*, *17*,

641–666. doi: 10.1177/019251396017005004

Branje, S. J. T., Hale, W. W., Frijns, T., & Meeus, W. H. J. (2010). Longitudinal associations

between perceived parent-child relationship quality and depressive symptoms in

adolescence. *Journal of Abnormal Child Psychology*, *38*, 751–763. doi: 10.1007/s10802-

010-9401-6

Brody, G. H., Lei, M.-K., Chen, E., & Miller, G. E. (2014). Neighborhood poverty and allostatic load in African American youth. *Pediatrics*, *134*, e1362–e1368. doi: 10.1542/peds.2014-1395

Browning, C. R. (2009). Illuminating the downside of social capital: Negotiated coexistence, property crime, and disorder in urban neighborhoods. *American Behavioral Scientist*, *52*, 1556–1578. doi: 10.1177/0002764209331526

Browning, C. R., Dietz, R. D., & Feinberg, S. L. (2004). The paradox of social organization: Networks, collective efficacy, and violent crime in urban neighborhoods. *Social Forces*, *83*, 503–534. doi: 10.1353/sof.2005.0006

Brunson, R. K. (2007). "Police don't like Black people": African-American young men's accumulated police experiences. *Criminology & Public Policy*, *6*, 71–101. doi: 10.1111/j.1745-9133.2007.00423.x

Burk, W. J., van der Vorst, H., Kerr, M., & Stattin, H. (2012). Alcohol use and friendship dynamics: Selection and socialization in early-, middle-, and late-adolescent peer networks. *Journal of Studies on Alcohol and Drugs*, *73*, 89–98. doi: 10.15288/jsad.2012.73.89

Canty-Mitchell, J., & Zimet, G. D. (2000). Psychometric properties of the Multidimensional Scale of Perceived Social Support in urban adolescents. *American Journal of Community Psychology*, *28*, 391–400. doi: 10.1023/A:1005109522457

Charmaraman, L., Gladstone, T., & Richer, A. (2018). Positive and negative associations between adolescent mental health and technology. In M. A. Moreno & A. Radovic (Eds.), *Technology and Adolescent Mental Health* (pp. 61–71). doi: 10.1007/978-3-319-69638-6_5

Church, W. T., II, Jaggers, J. W., & Taylor, J. K. (2012). Neighborhood, poverty, and negative

behavior: An examination of differential association and social control theory. *Children

and Youth Services Review*, *34*, 1035–1041. doi: 10.1016/j.childyouth.2012.02.005

Cillessen, A. H. N., Jiang, X. L., West, T. V., & Laszkowski, D. K. (2005). Predictors of dyadic

friendship quality in adolescence. *International Journal of Behavioral Development*, *29*,

165–172. doi: 10.1080/01650250444000360

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed). Hillsdale, N.J:

L. Erlbaum Associates.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis.

Psychological Bulletin, *98*, 310–357.

Colburn, S., Pratt, M., Mueller, C., & Tompsett, C. J. (2019). How adolescents define their home

neighborhoods conceptually and spatially. *Journal of Community Psychology*, *48*, 709-

725. doi: 10.1002/jcop.22290

Cottrell, L., Xiaoming Li, Harris, C., D'Alessandri, D., Atkins, M., Richardson, B., & Stanton,

B. (2003). Parent and adolescent perceptions of parental monitoring and adolescent risk

involvement. *Parenting: Science & Practice*, *3*, 179–195.

doi: 10.1207/S15327922PAR0303_01.

De Coster, S., Heimer, K., & Wittrock, S. M. (2006). Neighborhood disadvantage, social capital,

street context, and youth violence. *The Sociological Quarterly*, *47*, 723–753.

doi: 10.1111/j.1533-8525.2006.00064.x

De Goede, I. H. A., Branje, S. J. T., & Meeus, W. H. J. (2009). Developmental changes in

adolescents' perceptions of relationships with their parents. *Journal of Youth and

Adolescence*, *38*, 75–88. doi: 10.1007/s10964-008-9286-7

DeCoster, J., & Iselin, A.-M. (2005). *Comparing Correlation Coefficients*. Retrieved from

    http://www.stat-help.com/spreadsheets.html

Desha, L. N., Nicholson, J. M., & Ziviani, J. M. (2011). Adolescent depression and time spent

    with parents and siblings. *Social Indicators Research*, *101*, 233–238. doi:

    10.1007/s11205-010-9658-8

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. (2010).

    New well-being measures: Short scales to assess flourishing and positive and negative

    feelings. *Social Indicators Research*, *97*, 143–156. doi: 10.1007/s11205-009-9493-y

D'Imperio, R. L., Dubow, E. F., & Ippolito, M. F. (2000). Resilient and stress-affected

    adolescents in an urban setting. *Journal of Clinical Child Psychology*, *29*, 129–142.

Dubow, E., Edwards, S., & Ippolito, M. (1997). Life stressors, neighborhood disadvantage, and

    resources: A focus on inner-city children's adjustment. *Journal of Clinical Child &*

    Adolescent Psychology, *26*, 130–144. doi: 10.1207/s15374424jccp2602_2

Duncan, S. C., Duncan, T. E., & Strycker, L. A. (2002). A multilevel analysis of neighborhood

    context and youth alcohol and drug problems. *Prevention Science*, *3*, 125–133. doi:

    10.1023/A:1015483317310

Dupéré, V., Leventhal, T., & Lacourse, É. (2009). Neighborhood poverty and suicidal thoughts

    and attempts in late adolescence. *Psychological Medicine*, *39*, 1295–1306. doi:

    10.1017/S003329170800456X

Durand, C. P. (2013). Does raising Type 1 error rate improve power to detect interactions in

    linear regression models? A simulation study. *PLoS ONE*, *8*, e71079. doi:

    10.1371/journal.pone.0071079

East, P. L., & Khoo, S. T. (2005). Longitudinal pathways linking family factors and sibling

relationship qualities to adolescent substance use and sexual risk behaviors. *Journal of*

Family Psychology, *19*, 571–580. doi: 10.1037/0893-3200.19.4.571

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac

Iver, D. (1993). Development during adolescence: The impact of stage-environment fit

on young adolescents' experiences in schools and in families. *American Psychologist*, *48*,

90–101. doi: 10.1037/0003-066X.48.2.90

Eisman, A. B., Stoddard, S. A., Heinze, J., Caldwell, C. H., & Zimmerman, M. A. (2015).

Depressive symptoms, social support, and violence exposure among urban youth: A

longitudinal study of resilience. *Developmental Psychology*, *51*, 1307–1316. doi:

10.1037/a0039501

Elliott, D. S., Wilson, W. J., Huizinga, D., Sampson, R. J., Elliott, A., & Rankin, B. (1996). The

effects of neighborhood disadvantage on adolescent development. *Journal of Research in*

Crime and Delinquency, *33*, 389–426. doi: 10.1177/0022427896033004002

Fabio, A., Tu, L.-C., Loeber, R., & Cohen, J. (2011). Neighborhood socioeconomic disadvantage

and the shape of the age–crime curve. *American Journal of Public Health*, *101*, S325–

S332. doi: 10.2105/AJPH.2010.300034

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using

G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*,

41, 1149–1160. doi: 10.3758/BRM.41.4.1149

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical

power analysis program for the social, behavioral, and biomedical sciences. *Behavior*

Research Methods, *39*, 175–191. doi: 10.3758/BF03193146

Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding

healthy development in the face of risk. *Annual Review of Public Health*, *26*, 399–419.

doi: 10.1146/annurev.publhealth.26.021304.144357

Fraser, M. W., Galinsky, M. J., & Richman, J. M. (1999). Risk, protection, and resilience:

Toward a conceptual framework for social work practice. *Social Work Research*, *23*,

131–143. doi: 10.1093/swr/23.3.131

Fredricks, J. A., & Eccles, J. S. (2005). Developmental benefits of extracurricular involvement:

Do peer characteristics mediate the link between activities and youth outcomes? *Journal

of Youth and Adolescence*, *34*, 507–520. doi: 10.1007/s10964-005-8933-5

Furstenberg, F. F. (1999). *Managing to Make It: Urban Families and Adolescent Success*.

Chicago, IL: University of Chicago Press.

Gelman, A., & Weakliem, D. (2009). Of beauty, sex, and power: Statistical challenges in

estimating small effects. *American Scientist*, *97*, 310–316.

Goldman, M. (2008). Why is multiple testing a problem? Retrieved from Stat.berkeley.edu

website: https://www.stat.berkeley.edu/~mgoldman/Section0402.pdf

Goodwin, N. P., Mrug, S., Borch, C., & Cillessen, A. H. N. (2012). Peer selection and

socialization in adolescent depression: The role of school transitions. *Journal of Youth

and Adolescence*, *41*, 320–332. doi: 10.1007/s10964-011-9723-x

Gutman, L. M., & Eccles, J. S. (2007). Stage-environment fit during adolescence: Trajectories of

family relations and adolescent outcomes. *Developmental Psychology*, *43*, 522–537. doi:

10.1037/0012-1649.43.2.522

Hammack, P. L., Richards, M. H., Luo, Z., Edlynn, E. S., & Roy, K. (2004). Social support

factors as moderators of community violence exposure among inner-city African

American young adolescents. *Journal of Clinical Child and Adolescent Psychology*, *33*, 450–462. doi: 10.1207/s15374424jccp3303_3

Haroz, E. E., Ybarra, M. L., & Eaton, W. W. (2014). Psychometric evaluation of a self-report scale to measure adolescent depression: The CESDR-10 in two national adolescent samples in the United States. *Journal of Affective Disorders*, *158*, 154–160. doi: 10.1016/j.jad.2014.02.009

Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. *Communication Methods and Measures*, *1*, 77–89. doi: 10.1080/19312450709336664

Herrenkohl, T. I., Kosterman, R., Hawkins, J. D., & Mason, W. A. (2009). Effects of growth in family conflict in adolescence on adult depressive symptoms: Mediating and moderating effects of stress and school bonding. *Journal of Adolescent Health*, *44*, 146–152. doi: 10.1016/j.jadohealth.2008.07.005

Hirschi, T. (1969). *Causes of Delinquency*. Berkeley: University of California Press.

Hogue, A., & Steinberg, L. (1995). Homophily of internalized distress in adolescent peer groups. *Developmental Psychology*, *31*, 897–906.

Howard, K. A. S., Budge, S. L., & McKay, K. M. (2010). Youth exposed to violence: The role of protective factors. *Journal of Community Psychology*, *38*, 63–79. doi: 10.1002/jcop.20352

Hunter, A. G., Pearson, J. L., Ialongo, N. S., & Kellam, S. G. (1998). Parenting alone to multiple caregivers: Child care and parenting arrangements in Black and White urban families. *Family Relations*, *47*, 343-353. doi: 10.2307/585265

Hurd, N. M., Stoddard, S. A., & Zimmerman, M. A. (2013). Neighborhoods, social support, and

    African American adolescents' mental health outcomes: A multilevel path analysis. *Child*

    Development, *84*, 858–874. doi: 10.1111/cdev.12018

Hurst, Y. G., & Frank, J. (2000). How kids view cops: The nature of juvenile attitudes toward the

    police. *Journal of Criminal Justice*, *28*, 189–202. doi: 10.1016/S0047-2352(00)00035-0

Jain, S., & Cohen, A. K. (2013). Behavioral adaptation among youth exposed to community

    violence: A longitudinal multidisciplinary study of family, peer and neighborhood-level

    protective factors. *Prevention Science*, *14*, 606–617. doi: 10.1007/s11121-012-0344-8

Jarrett, R. L., Jefferson, S. R., & Kelly, J. N. (2010). Finding community in family:

    Neighborhood effects and African American kin networks. *Journal of Comparative*

    Family Studies, *41*, 299–328. doi: 10.3138/jcfs.41.3.299

Jocson, R. M., & McLoyd, V. C. (2015). Neighborhood and housing disorder, parenting, and

    youth adjustment in low-income urban families. *American Journal of Community*

    Psychology, *55*, 304–313. doi: 10.1007/s10464-015-9710-6

Kandel, D. B. (1978). Homophily, selection, and socialization in adolescent friendships.

    American Journal of Sociology, *84*, 427–436. doi: 10.1086/226792

Kerr, M., Stattin, H., & Burk, W. J. (2010). A reinterpretation of parental monitoring in

    longitudinal perspective. *Journal of Research on Adolescence*, *20*, 39–64. doi:

    10.1111/j.1532-7795.2009.00623.x

Kiuru, N., Burk, W. J., Laursen, B., Salmela-Aro, K., & Nurmi, J.-E. (2010). Pressure to drink

    but not to smoke: Disentangling selection and socialization in adolescent peer networks

    and peer groups. *Journal of Adolescence*, *33*, 801–812. doi:

    10.1016/j.adolescence.2010.07.006

Krippendorff, K. (2004). Measuring the reliability of qualitative text analysis data. *Quality and Quantity*, *38*, 787–800. doi: 10.1007/s11135-004-8107-7

Larson, R., Raffaelli, M., Richards, M. H., Ham, M., & Jewell, L. (1990). Ecology of depression in late childhood and early adolescence: A profile of daily states and activities. *Journal of Abnormal Psychology*, *99*, 92-102. doi: 10.1037/0021-843X.99.1.92

Larson, R., & Richards, M. H. (1991). Daily companionship in late childhood and early adolescence: Changing developmental contexts. *Child Development*, *62*, 284–300. doi: 10.1111/j.1467-8624.1991.tb01531.x

Lee, J.-S., Lee, J., & Hoover, L. T. (2017). What conditions affect police response time? Examining situational and neighborhood factors. *Police Quarterly*, *20*, 61–80. doi: 10.1177/1098611116657327

Lenhart, A. (2015). *Teens, social media & technology overview 2015*. Retrieved from Pew Research Center website: https://www.pewresearch.org/internet/2015/04/09/teens-social-media-technology-2015/

Lenzi, M., Vieno, A., Perkins, D. D., Pastore, M., Santinello, M., & Mazzardis, S. (2012). Perceived neighborhood social resources as determinants of prosocial behavior in early adolescence. *American Journal of Community Psychology*, *50*, 37–49. doi: 10.1007/s10464-011-9470-x

Leventhal, T., & Brooks-Gunn, J. (2011). Changes in neighborhood poverty from 1990 to 2000 and youth's problem behaviors. *Developmental Psychology*, *47*, 1680–1698. doi: 10.1037/a0025314

Linden-Andersen, S., Markiewicz, D., & Doyle, A.-B. (2009). Perceived similarity among adolescent friends: The role of reciprocity, friendship quality, and gender. *The Journal of Early Adolescence*, *29*, 617–637. doi: 10.1177/0272431608324372

Loebach, J. E., & Gilliland, J. A. (2016). Free Range Kids? Using GPS-Derived Activity Spaces to Examine Children's Neighborhood Activity and Mobility. *Environment and Behavior*, *48*, 421–453. doi: 10.1177/0013916514543177

Maimon, D., Browning, C. R., & Brooks-Gunn, J. (2010). Collective efficacy, family attachment, and urban adolescent suicide attempts. *Journal of Health and Social Behavior*, *51*, 307–324. doi: 10.1177/0022146510377878

Marcus, A. F., Echeverria, S. E., Holland, B. K., Abraido-Lanza, A. F., & Passannante, M. R. (2015). How neighborhood poverty structures types and levels of social integration. *American Journal of Community Psychology*, *56*, 134–144. doi: 10.1007/s10464-015-9732-0

Marsee, M. A., Barry, C. T., Childs, K. K., Frick, P. J., Kimonis, E. R., Muñoz, L. C., … Lau, K. S. L. (2011). Assessing the forms and functions of aggression using self-report: Factor structure and invariance of the Peer Conflict Scale in youths. *Psychological Assessment*, *23*, 792–804. doi: 10.1037/a0023369

Masten, C. L., Telzer, E. H., Fuligni, A. J., Lieberman, M. D., & Eisenberger, N. I. (2012). Time spent with friends in adolescence relates to less neural sensitivity to later peer rejection. *Social Cognitive and Affective Neuroscience*, *7*, 106–114. doi: 10.1093/scan/nsq098

McClelland, G. H., & Judd, C. M. (1993). Statistical difficulties of detecting interactions and moderator effects. *Psychological Bulletin*, *114*, 376–390. doi: 10.1037/0033-2909.114.2.376

McHale, S. M., Whiteman, S. D., Kim, J.-Y., & Crouter, A. C. (2007). Characteristics and

correlates of sibling relationships in two-parent African American families. *Journal of

Family Psychology*, *21*, 227–235. doi: 10.1037/0893-3200.21.2.227

McMahon, S. D., Coker, C., & Parnes, A. L. (2013). Environmental stressors, social support, and

internalizing symptoms among African American youth. *Journal of Community

Psychology*, *41*, 615–630. doi: 10.1002/jcop.21560

McMahon, S. D., Felix, E. D., & Nagarajan, T. (2011). Social support and neighborhood

stressors among African American youth: Networks and relations to self-worth. *Journal

of Child and Family Studies*, *20*, 255–262. doi: 10.1007/s10826-010-9386-3

Miller, B., & Taylor, J. (2012). Racial and socioeconomic status differences in depressive

symptoms among Black and White youth: An examination of the mediating effects of

family structure, stress and support. *Journal of Youth and Adolescence*, *41*, 426–437. doi:

10.1007/s10964-011-9672-4

Morenoff, J. D., Sampson, R. J., & Raudenbush, S. W. (2001). Neighborhood inequality,

collective efficacy, and the spatial dynamics of urban violence. *Criminology*, *39*, 517–

558. doi: 10.1111/j.1745-9125.2001.tb00932.x

Mrug, S., & Windle, M. (2009). Mediators of neighborhood influences on externalizing behavior

in preadolescent children. *Journal of Abnormal Child Psychology*, *37*, 265–280. doi:

10.1007/s10802-008-9274-0

Neary, J., Egan, M., Keenan, P. J., Lawson, L., & Bond, L. (2013). Damned if they do, damned

if they don't: Negotiating the tricky context of anti-social behaviour and keeping safe in

disadvantaged urban neighbourhoods. *Journal of Youth Studies*, *16*, 118–134. doi:

10.1080/13676261.2012.710745

O'Brien, D. T., & Kauffman, R. A., Jr. (2013). Broken windows and low adolescent prosociality: Not cause and consequence, but co-symptoms of low collective efficacy. *American Journal of Community Psychology*, *51*, 359–369. doi: 10.1007/s10464-012-9555-1

Orthner, D. K., Jones-Sanpei, H., & Williamson, S. (2004). The resilience and strengths of low-income families. *Family Relations*, *53*, 159–167. doi: 10.1111/j.0022-2445.2004.00006.x

Osgood, D. W., & Anderson, A. L. (2004). Unstructured socializing and rates of delinquency. *Criminology*, *42*, 519–550. doi: 10.1111/j.1745-9125.2004.tb00528.x

Osgood, D. W., Wilson, J. K., O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1996). Routine activities and individual deviant behavior. *American Sociological Review, 61*, 635–655. doi: 10.2307/2096397

Pattillo-McCoy, M. (1999). *Black Picket Fences: Privilege and Peril among the Black Middle Class*. Chicago, IL: University of Chicago Press.

Peirce, R. S., Frone, M. R., Russell, M., Cooper, M. L., & Mudar, P. (2000). A longitudinal model of social contact, social support, depression, and alcohol use. *Health Psychology*, *19*, 28–38. doi: 10.1037//0278-6133.19.1.28

Persson, A., Kerr, M., & Stattin, H. (2007). Staying in or moving away from structured activities: Explanations involving parents and peers. *Developmental Psychology*, *43*, 197–207. doi: 10.1037/0012-1649.43.1.197

Peterson, R. D., & Krivo, L. J. (2010). *Divergent Social Worlds: Neighborhood Crime and the Racial-Spatial Divide*. New York: Russell Sage Foundation.

Pinquart, M., & Sorensen, S. (2000). Influences of socioeconomic status, social network, and competence on subjective well-being in later life: A meta-analysis. *Psychology and Aging*, *15*, 187–224. doi: 10.1037//0882-7974.15.2.187

Powell, K. B. (1997). Correlates of violent and nonviolent behavior among vulnerable inner-city

    youths. *Family & Community Health*, *20*, 38–47. doi: 10.1097/00003727-199707000-

    00006

Radovic, A., Gmelin, T., Stein, B. D., & Miller, E. (2017). Depressed adolescents' positive and

    negative use of social media. *Journal of Adolescence*, *55*, 5–15. doi:

    10.1016/j.adolescence.2016.12.002

Rankin, B. H., & Quane, J. M. (2002). Social contexts and urban adolescent outcomes: The

    interrelated effects of neighborhoods, families, and peers on African-American youth.

    Social Problems, *49*, 79–100. doi: 10.1525/sp.2002.49.1.79

Rawana, J. S., & Morgan, A. S. (2014). Trajectories of depressive symptoms from adolescence

    to young adulthood: The role of self-esteem and body-related predictors. *Journal of

    Youth and Adolescence*, *43*, 597–611. doi: 10.1007/s10964-013-9995-4

Reich, S. M., Subrahmanyam, K., & Espinoza, G. (2012). Friending, IMing, and hanging out

    face-to-face: Overlap in adolescents' online and offline social networks. *Developmental

    Psychology*, *48*, 356–368. doi: 10.1037/a0026980

Romero, E., Richards, M. H., Harrison, P. R., Garbarino, J., & Mozley, M. (2015). The role of

    neighborhood in the development of aggression in urban African American youth: A

    multilevel analysis. *American Journal of Community Psychology*, *56*, 156–169. doi:

    10.1007/s10464-015-9739-6

Rosario, M., Salzinger, S., Feldman, R. S., & Ng-Mak, D. S. (2003). Community violence

    exposure and delinquent behaviors among youth: The moderating role of coping. *Journal

    of Community Psychology*, *31*, 489–512. doi: 10.1002/jcop.10066

Rowan, Z. R. (2016). Social risk factors of Black and White adolescents' substance use: The

    differential role of siblings and best friends. *Journal of Youth and Adolescence*, *45*, 1482–

    1496. doi: 10.1007/s10964-016-0473-7

Sampson, R. J. (2012). *Great American city: Chicago and the enduring neighborhood effect*.

    Chicago, IL: University of Chicago Press.

Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social-

    disorganization theory. *American Journal of Sociology, 94*, 774–802. doi:

    10.1086/229068

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A

    multilevel study of collective efficacy. *Science*, *277*, 918–924. doi:

    10.1126/science.277.5328.918

Sarason, I. G., Sarason, B. R., & Pierce, G. R. (1990). Social support: The search for theory.

    Journal of Social and Clinical Psychology, *9*, 133–147. doi: 10.1521/jscp.1990.9.1.133

Schinke, R., Yungblut, H., Blodgett, A., Eys, M., Peltier, D., Ritchie, S., & Recollet-Saikkonen,

    D. (2010). The role of families in youth sport programming in a Canadian aboriginal

    reserve. *Journal of Physical Activity and Health*, *7*, 156–166. doi: 10.1123/jpah.7.2.156

Schofield, T. J., Conger, R. D., Conger, K. J., Martin, M. J., Brody, G., Simons, R., & Cutrona,

    C. (2012). Neighborhood disorder and children's antisocial behavior: The protective

    effect of family support among Mexican American and African American families.

    American Journal of Community Psychology, *50*, 101–113. doi: 10.1007/s10464-011-

    9481-7

Shaw, C. R., & McKay, H. D. (1942). *Juvenile Delinquency and Urban Areas*. Chicago:

    University Of Chicago Press.

Shaw, C. R., & McKay, H. D. (1969). *Juvenile Delinquency and Urban Areas* (Revised). Chicago, IL: University of Chicago Press.

Siedlecki, K. L., Salthouse, T. A., Oishi, S., & Jeswani, S. (2014). The relationship between social support and subjective well-being across age. *Social Indicators Research*, *117*, 561–576. doi: 10.1007/s11205-013-0361-4

Silk, J. S., Forbes, E. E., Whalen, D. J., Jakubcak, J. L., Thompson, W. K., Ryan, N. D., … Dahl, R. E. (2011). Daily emotional dynamics in depressed youth: A cell phone ecological momentary assessment study. *Journal of Experimental Child Psychology*, *110*, 241–257. doi: 10.1016/j.jecp.2010.10.007

Slocum, L. A., Taylor, T. J., Brick, B. T., & Esbensen, F.-A. (2010). Neighborhood structural characteristics, individual-level attitudes, and youths' crime reporting intentions. *Criminology*, *48*, 1063–1100. doi: 10.1111/j.1745-9125.2010.00212.x

Spilsbury, J. C., Korbin, J. E., & Coulton, C. J. (2012). "Subjective" and "objective" views of neighborhood danger & well-being: The importance of multiple perspectives and mixed methods. *Child Indicators Research*, *5*, 469–482. doi: 10.1007/s12187-012-9165-3

Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin*, *87*, 245–251. doi: 10.1037/0033-2909.87.2.245

Stewart, E. A., Baumer, E. P., Brunson, R. K., & Simons, R. L. (2009). Neighborhood racial context and perceptions of police-based racial discrimination among Black youth. *Criminology*, *47*, 847–887. doi: 10.1111/j.1745-9125.2009.00159.x

Subrahmanyam, K., & Greenfield, P. (2008). Online communication and adolescent relationships. *The Future of Children*, *18*, 119–146. doi: 10.1353/foc.0.0006

Subrahmanyam, K., Reich, S. M., Waechter, N., & Espinoza, G. (2008). Online and offline

social networks: Use of social networking sites by emerging adults. *Journal of Applied

Developmental Psychology*, *29*, 420–433. doi: 10.1016/j.appdev.2008.07.003

Tompsett, C. J., Veits, G. M., & Amrhein, K. E. (2016). Peer delinquency and where adolescents

spend time with peers: Mediation and moderation of home neighborhood effects on self-

reported delinquency. *Journal of Community Psychology*, *44*, 263–270. doi:

10.1002/jcop.21759

Toro, P. A., Tulloch, E., & Ouellette, N. (2008). Stress, social support, and outcomes in two

probability samples of homeless adults. *Journal of Community Psychology*, *36*, 483–498.

doi: 10.1002/jcop.20190

Van Zalk, N., Van Zalk, M., Kerr, M., & Stattin, H. (2011). Social anxiety as a basis for

friendship selection and socialization in adolescents' social networks: Social anxiety in

youth peer networks. *Journal of Personality*, *79*, 499–526. doi: 10.1111/j.1467-

6494.2011.00682.x

Vogt Yuan, A. S. (2009). Sibling relationships and adolescents' mental health: The

interrelationship of structure and quality. *Journal of Family Issues*, *30*, 1221–1244. doi:

10.1177/0192513X09334906

Wagner, K. D., Ritt-Olson, A., Soto, D. W., & Unger, J. B. (2008). Variation in family structure

among urban adolescents and its effects on drug use. *Substance Use & Misuse*, *43*, 936–

951. doi: 10.1080/10826080701801550

Wainer, H. (2007). The most dangerous equation. *American Scientist*, *95*, 249–256.

Waite, E. B., Shanahan, L., Calkins, S. D., Keane, S. P., & O'Brien, M. (2011). Life events, sibling warmth, and youths' adjustment. *Journal of Marriage and Family*, *73*, 902–912. doi: 10.1111/j.1741-3737.2011.00857.x

Wallace, S. A., Hooper, L. M., & Persad, M. (2014). Brothers, sisters and fictive kin: Communication about sex among urban black siblings. *Youth & Society*, *46*, 688–705. doi: 10.1177/0044118X12450176

Warren, J. S., Jackson, Y., & Sifers, S. K. (2009). Social support provisions as differential predictors of adaptive outcomes in young adolescents. *Journal of Community Psychology*, *37*, 106–121. doi: 10.1002/jcop.20273

Weerman, F. M., Bernasco, W., Bruinsma, G. J., & Pauwels, L. J. (2015). When is spending time with peers related to delinquency? The importance of where, what, and with whom. *Crime & Delinquency*, *61*, 1386–1413. doi: 10.1177/0011128713478129

Weitzer, R., Tuch, S. A., & Skogan, W. G. (2008). Police–community relations in a majority-Black city. *Journal of Research in Crime and Delinquency*, *45*, 398–428. doi: 10.1177/0022427808322617

Wight, R. G., Botticello, A. L., & Aneshensel, C. S. (2006). Socioeconomic context, social support, and adolescent mental health: A multilevel investigation. *Journal of Youth and Adolescence*, *35*, 109–120. doi: 10.1007/s10964-005-9009-2

Wikström, P.-O. H., Ceccato, V., Hardie, B., & Treiber, K. (2010). Activity fields and the dynamics of crime: Advancing knowledge about the role of the environment in crime causation. *Journal of Quantitative Criminology*, *26*, 55–87. doi: 10.1007/s10940-009-9083-9

Wikström, P.-O. H., & Treiber, K. (2016). Social disadvantage and crime: A criminological

　　　puzzle. *American Behavioral Scientist*, *60*, 1232–1259. doi: 10.1177/0002764216643134

Wilkinson, D. L. (2007). Local social ties and willingness to intervene: Textured views among

　　　violent urban youth of neighborhood social control dynamics and situations. *Justice*

　　　Quarterly, *24*, 185–220. doi: 10.1080/07418820701294771

Wilson, W. J. (1987). *Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*.

　　　Chicago, IL: University of Chicago Press.

Wilson, W. J. (1997). *When Work Disappears: The World of the New Urban Poor*. New York:

　　　Vintage Books.

Xue, Y., Leventhal, T., Brooks-Gunn, J., & Earls, F. J. (2005). Neighborhood residence and

　　　mental health problems of 5-to 11-year-olds. *Archives of General Psychiatry*, *62*, 554–

　　　563. doi: 10.1001/archpsyc.62.5.554

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale

　　　of Perceived Social Support. *Journal of Personality Assessment*, *52*, 30–41. doi:

　　　10.1207/s15327752jpa5201_2

Zolkoski, S. M., & Bullock, L. M. (2012). Resilience in children and youth: A review. *Children*

　　　and Youth Services Review, *34*, 2295–2303. doi: 10.1016/j.childyouth.2012.08.009

APPENDIX A. HUMAN SUBJECTS REVIEW BOARD APPROVAL LETTER

BGSU.
BOWLING GREEN STATE UNIVERSITY
Office of Research Compliance

DATE: June 30, 2015

TO: Carolyn Tompsett
FROM: Bowling Green State University Human Subjects Review Board

PROJECT TITLE: [763632-2] Teen's Routine Activity Space and Perceptions of Neighborhoods
SUBMISSION TYPE: Revision

ACTION: APPROVED
APPROVAL DATE: June 30, 2015
EXPIRATION DATE: June 2, 2016
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Full Board

Thank you for your submission of Revision materials for this project. The Bowling Green State University Human Subjects Review Board has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

The final approved version of the consent document(s) is available as a published Board Document in the Review Details page. You must use the approved version of the consent document when obtaining consent from participants. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that you are responsible to conduct the study as approved by the HSRB. If you seek to make any changes in your project activities or procedures, those modifications must be approved by this committee prior to initiation. Please use the modification request form for this procedure.

You have been approved to enroll *100* participants. If you wish to enroll additional participants you must seek approval from the HSRB.

All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. All NON-COMPLIANCE issues or COMPLAINTS regarding this project must also be reported promptly to this office.

This approval expires on June 2, 2016. You will receive a continuing review notice before your project expires. If you wish to continue your work after the expiration date, your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date.

Good luck with your work. If you have any questions, please contact the Office of Research Compliance at 419-372-7716 or hsrb@bgsu.edu. Please include your project title and reference number in all correspondence regarding this project.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Bowling Green State University Human Subjects Review Board's records.

APPENDIX B. DEMOGRAPHICS QUESTIONNAIRE

1. How old are you? _____

2. Are you (check one):   □ Male   □ Female

3. What ethnicity are you? (check one):

□ White   □ African American   □ Asian or Pacific Islander   □ Arab American

□ Latino/a or Hispanic (not White)   □ Native American   □ Multiracial   □ Other

4. Who do you live with at home?
 Write down respondent answer verbatim, then check off all relevant individuals from selection below:

□ Both biological parents   □ Only one biological parent   □ Step-parent(s) or parent's boyfriend/girlfriend

□ Grandparent(s)   □ Other adult relatives (like aunts, uncles)   □ Non-related legal guardian

□ No adults over the age of 18 (or live alone)

□ Siblings: (list ages)   □ Other individuals under age 18: (list ages and relationship)

5. During the school year, how often would you say you attend school?

□ Every day   □ Most of the time   □ Sometimes   □ Rarely
□ Never, but not really dropped out   □ Dropped out

6. What is the name of your school? What street is your school on?

7. What grade are you in?

APPENDIX C. MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT

Indicate how you feel about each statement.

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
1. There is a special person who is around when I am in need.	1	2	3	4	5	6	7
2. There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7
3. My family really tries to help me.	1	2	3	4	5	6	7
4. I get the emotional help and support I need from my family.	1	2	3	4	5	6	7
5. I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7
6. My friends really try to help me.	1	2	3	4	5	6	7
7. I can count on my friends when things go wrong.	1	2	3	4	5	6	7
8. I can talk about my problems with my family.	1	2	3	4	5	6	7
9. I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7
10. There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7
11. My family is willing to help me make decisions.	1	2	3	4	5	6	7
12. I can talk about my problems with my friends	1	2	3	4	5	6	7

APPENDIX D. COLLECTIVE EFFICACY

For each of these statements, please circle whether you strongly agree, agree, disagree, or strongly disagree.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1. I live in a close-knit neighborhood	4	3	2	1	0
2. People in my neighborhood are willing to help their neighbors.	4	3	2	1	0
3. People in my neighborhood can be trusted	4	3	2	1	0
4. People in my neighborhood do NOT share the same values.	4	3	2	1	0
5. People in my neighborhood generally DON'T get along with each other.	4	3	2	1	0

For each of the following, please circle if it is very likely, likely, unlikely, or very unlikely that people in your neighborhood would act in the following manner.

	Very likely	Likely	Neither likely nor unlikely	Unlikely	Very unlikely
6. If a group of neighborhood children were skipping school and hanging out on a street corner, how likely is it that your neighbors would do something about it?	4	3	2	1	0
7. If some children were spray-painting graffiti on a local building, how likely is it that your neighbors would do something about it?	4	3	2	1	0
8. If a child was showing disrespect to an adult, how likely is it that people in your neighborhood would scold that child?	4	3	2	1	0
9. If there was a fight in front of your house and someone was being beaten or threatened, how likely is it that your neighbors would break it up?	4	3	2	1	0
10. Suppose that because of budget cuts, the fire station closest to your home was going to be closed down by the city. How likely is it that neighborhood residents would organize to try to do something to keep the fire station open?	4	3	2	1	0

APPENDIX E. PEER CONFLICT SCALE

For each of the statements below, I would like you to indicate how much the statement is true for you. Please keep in mind that all of your answers are confidential and will not be shared with anyone.

	Not at all true	Somewhat true	Very true	Definitely true
1. I have hurt others to win a game or contest	0	1	2	3
2. I enjoy making fun of others	0	1	2	3
3. When I am teased, I will hurt someone or break something	0	1	2	3
4. Sometimes I gossip about others when I'm angry at them	0	1	2	3
5. I start fights to get what I want	0	1	2	3
6. I deliberately exclude others from my group, even if they haven't done anything to me	0	1	2	3
7. I spread rumors and lies about others when they do something wrong to me	0	1	2	3
8. When someone hurts me, I end up getting into a fight	0	1	2	3
9. I try to make others look bad to get what I want	0	1	2	3
10. When someone upsets me, I tell my friends to stop liking that person	0	1	2	3
11. I threaten others when they do something wrong to me	0	1	2	3
12. When I hurt others, I feel like it makes me powerful and respected	0	1	2	3
13. I tell others' secrets for things they did to me a while back	0	1	2	3
14. When someone threatens me, I end up getting into a fight	0	1	2	3
15. I make new friends to get back at someone who has made me angry	0	1	2	3
16. Sometimes I hurt others when I'm angry at them	0	1	2	3
17. When others make me mad, I write mean notes about them and pass them around	0	1	2	3
18. I threaten others to get what I want	0	1	2	3

	Not at all true	Somewhat true	Very true	Definitely true
19. I gossip about others to become popular	0	1	2	3
20. If others make me mad, I hurt them	0	1	2	3
21. I am deliberately cruel to others, even if they haven't done anything to me	0	1	2	3
22. When I am angry at others, I try to make them look bad	0	1	2	3
23. To get what I want, I try to steal others' friends from them	0	1	2	3
24. I carefully plan out how to hurt others	0	1	2	3
25. When someone makes me mad, I throw things at them	0	1	2	3
26. When I gossip about others, I feel like it makes me popular	0	1	2	3
27. I hurt others for things they did to me a while back	0	1	2	3
28. I enjoy hurting others	0	1	2	3
29. I spread rumors and lies about others to get what I want	0	1	2	3
30. Most of the times that I have gotten into arguments or physical fights, I acted without thinking	0	1	2	3
31. If others make me mad, I tell their secrets	0	1	2	3
32. I ignore or stop talking to others in order to get them to do what I want	0	1	2	3
33. I like to hurt kids smaller than me	0	1	2	3
34. When others make me angry, I try to steal their friends from them	0	1	2	3
35. I threaten others, even if they haven't done anything to me	0	1	2	3
36. When I get angry, I will hurt someone	0	1	2	3
37. I have gotten into fights, even over small insults from others	0	1	2	3
38. Most of the times that I have started rumors about someone, I acted without thinking	0	1	2	3
39. I say mean things about others, even if they haven't done anything to me	0	1	2	3
40. When someone makes me angry, I try to exclude them from my group	0	1	2	3

APPENDIX F. CENTER FOR EPIDEMIOLOGIC STUDIES DEPRESSION SCALE-

REVISED (10-ITEM VERSION)

Please indicate for each statement below how often you felt that way within the past week.

	Not at all or less than 1 day	1-2 days	3-4 days	5-7 days in the last week	Nearly every day for 2 weeks
1. My appetite was poor.	0	1	2	3	4
2. My sleep was restless.	0	1	2	3	4
3. I felt sad.	0	1	2	3	4
4. I felt like a bad person.	0	1	2	3	4
5. I lost interest in my usual activities.	0	1	2	3	4
6. I felt like I was moving too slowly.	0	1	2	3	4
7. I wished I were dead.	0	1	2	3	4
8. I was tired all the time.	0	1	2	3	4
9. I could not focus on the important things.	0	1	2	3	4
10. I felt irritable.	0	1	2	3	4

APPENDIX G. FLOURISHING SCALE

For each of the next few statements, indicate how much you agree the statement is true about

yourself.

	Strongly Agree	Agree	Slightly Agree	Neither Agree nor Disagree	Slightly Disagree	Disagree	Strongly Disagree
1. I lead a purposeful and meaningful life.	7	6	5	4	3	2	1
2. My social relationships are supportive and rewarding.	7	6	5	4	3	2	1
3. I am engaged and interested in my daily activities.	7	6	5	4	3	2	1
4. I actively contribute to the happiness and well-being of others.	7	6	5	4	3	2	1
5. I am competent and capable in the activities that are important to me.	7	6	5	4	3	2	1
6. I am a good person and live a good life.	7	6	5	4	3	2	1
7. I am optimistic about my future.	7	6	5	4	3	2	1
8. People respect me.	7	6	5	4	3	2	1