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A Study of Psychological Sense of Community as a Mediator between Supportive Social Systems, School Belongingness, and Outcome Behaviors among Urban High School Students of Color

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Abstract

Psychological sense of community (SOC) has been examined minimally among youth of color, and as a mediating variable, as well as construct implicated in promoting wellness. Using data from a sample of 401 students of color ($M_{age} = 16.55$, $SD = 1.31$; 54.7% female; 57% Hispanic/Latina[o]) from an underserved northeastern U.S. urban community, we examined the mediating relationship of psychological SOC between social support, participation in youth-based community programs, and outcomes including school belongingness, risk behaviors such as substance use and violent behavior, and psychological symptoms, including depression. Results indicated that access to social supports and youth-based community programs was negatively associated with risk behaviors and experiencing depressive symptoms, through both psychological SOC and school belongingness. Implications include the need for community-based activities for youth that not only foster support but encourage a positive psychological SOC and in-turn offset negative developmental trajectories and risk behaviors.

Keywords

Developmental outcomes; ecological supports; psychological sense of community; youth of color

Youth of color who reside in our most impoverished and isolated communities in the U.S. are fighting a battle to access supportive resources and structures. It is crucial for researchers and community leaders alike to highlight such structures and think through how forming a

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connection to one's community can create collective well-being that nurtures positive developmental outcomes among vulnerable youth. The lived experiences of adolescents of color are not often counted, unless we consider the neoliberal 'at-risk' perspective perpetuated via decades of research, scholarship, and media coverage (Lardier, 2018).

Psychological sense of community (SOC) offers a framework to conceptualize the processes and outcomes of fostering youth development. Theories of psychological SOC (McMillan & Chavis, 1986), collective efficacy, neighboring (Long & Perkins, 2003), and sense of place (Convery, Corsane, & Davis, 2012; Niemeyer, 2004) have been defined as belongingness to a community or neighborhood and a collective belief that community members will meet one another's needs (Lardier, Reid, & Garcia-Reid, 2018; McMillan & Chavis, 1986). Integral to the achievement of psychological SOC is a feeling of emotional safety that is created by membership within the neighborhood or community, perceived belongingness to a group, and identification with and within a larger neighborhood or community (McMillan & Chavis, 1986; Peterson, Speer, & McMillan, 2008). Brodsky (1996) also raised that psychological SOC is a bipolar construct, wherein a positive SOC drives individuals closer to the community and keeps them within its boundaries, and negative psychological SOC pushes community members away from the community, increasing social alienation. Elsewhere, however, Brodsky, Loomis and Marx (2002) discussed that a weak psychological SOC may not necessarily be problematic; instead, a weak psychological SOC may make community members more critical toward their community, which can effectuate social action. Nonetheless, the extant research has shown that psychological SOC functions as a positive indicator of development and well-being (Krauss, Kornbluh, & Zeldin, 2017; Lardier, 2018; Lardier, MacDonnell, Barrios, Garcia-Reid, & Reid 2017, Powell et al., 2017).

Psychological SOC encompasses four theoretical dimensions: *membership in a group*, *emotional connection*, *influence*, and *needs fulfillment* (McMillan & Chavis, 1986; Peterson et al., 2008a). *Membership* is defined as feelings of belongingness to the organization or community. *Influence* is defined as the perceived ability to make a difference in the group and feeling as though one matters as a member within the group. *Needs fulfillment* is defined as the belief that members in the group will be able to meet each other's needs and through these relational experiences, resources will be shared. *Emotional connection* is defined as an emotional connection to the group, due to shared history and shared common places and experiences.

Scholars support that psychological SOC, as a process orientation, has a *developmental cascading* effect — defined as those cumulative developmental processes that occur through transaction and relational processes, which cut across multiple domains of influence (see Masten & Cicchetti, 2010 for a more comprehensive discussion) — that positively influences a community and individuals, as well as motivates people to participate within and among the collective group toward broader social change (Lardier, 2018, 2019; Long & Perkins, 2003). Psychological SOC has also been associated with access to supportive peer and adult networks, in addition to participation in and access to youth-based community organizations (Christens & Lin, 2014; Lardier, 2018, 2019). Several measures have been used to uncover psychological SOC such as the Brief Sense of Community Scale (BSCS;

Lardier, MacDonnell et al., 2018b; Peterson et al., 2008b), which is identified as the most widely used measure of SOC. Though used in this study, the BSCS has been examined minimally among youth of color, and in relation to constructs that are implicated in promoting positive developmental outcomes (Lardier, 2018, 2019).

A key concept within community psychology is the ecological model of understanding social systems (Jason, Stevens, & Ram, 2015; Stevens, Jason, & Ferrari, 2011). This model encompasses three tiers including the “individual” (e.g., thoughts, behaviors, and feelings), the individual’s immediate network (e.g., family and peers), and the macro-system (e.g., governments, cultures, and societies). As highlighted in Sarason’s (1974) definition of psychological SOC — i.e., “the perception of similarity to others, an acknowledged interdependence with others, a willingness to maintain this interdependence by giving to or doing for others what one expects from them, the feeling that one is part of a larger dependable and stable structure” (p.157) — individuals and groups are part of a larger system, which in-turn influences the thoughts, behaviors, actions, and emotions of an individual (i.e., those outcomes and perceptions that may be developmentally beneficial; Jason, Stevens, & Ram, 2015; Stevens, Jason, & Ferrari, 2011).

Consistent with this perspective, the extant empirical literature on the positive developmental trajectories of youth has taken an ecological perspective, and in-turn examining youth’s contexts and the ways in which these contexts impact development (Christens et al., 2012). Therefore, the primary aim of the current study is to understand psychological SOC within an ecological framework (Jason et al., 2015; Stevens et al., 2011) of forming social bonds, a supportive social system, developing community connections, and, therefore, experiencing individual outcomes and perceptions that are developmentally beneficial. We examine psychological SOC as a mediating variable between supportive social relationships (e.g., social support which includes parents, peers, and staff within the school, and participation in youth-based community programs) and outcomes including school belongingness, risk behaviors such as substance use and violent behavior, and psychological symptoms, including depression.

Moving forward, we review the literature on the nature of social support systems including families, teachers, and peers, as well as participation in youth-based community organizations, and the relationship with outcomes including school belongingness, risk behaviors (e.g., substance use and violent behavior), and depressive symptoms. Next, we review the research on positive development among youth and psychological SOC. We then make a conceptual case supporting psychological SOC as a mediating variable between social support and participation in youth-based community organizations, and outcomes including school belongingness, risk behaviors, and depressive symptoms.

Literature Review

Supportive Social Connections and Positive Youth Outcomes

Youth’s connection to their immediate community plays an important role in reducing negative developmental outcomes (e.g., substance abuse) and increasing self-efficacy (Christens & Peterson, 2012). A human ecological perspective highlights that individuals’

feelings of their everyday settings such as neighborhoods, in relation to social connections, has a strong influence in human development (Jason et al., 2015; Stevens et al., 2011). For instance, the negative social conditions (e.g., limited resources, poverty, violence, abandoned properties) present within minoritized urban communities pervade the lives of youth of color, limiting their connection to the community (Ginwright, 2015), stymying growth and development, and “erod[ing] the bonds of authentic relationship and create the conditions for alienation” (Ward, 2018, p. 109). However, research also indicates that positive connections such as social bonds — defined as attachment or feelings of respect for family, teachers, school administrators, and peers, as well as the involvement, or the amount of time an individual invests in organizational activities — within an ecological context are important in developing feelings about one’s community and in predicting positive developmental outcomes (Jason et al., 2015). Research further demonstrates that adolescents with more community involvement and strong attachments —i.e., attachments to family, peers, and community members — engage in less risky behaviors (Craig et al., 2017), experience greater self-esteem, have higher academic attainment (Top, Liew, & Luo, 2017), and engage in more participatory activities such as community prevention activities (e.g., community beautification projects; Zeldin, Gauley, Krauss, Kornbluh, & Collura, 2017).

Social supports such as those found within the family and among peers are important during adolescence (Oberle, Schonert-Reichl, & Thomson, 2010). Prior studies have demonstrated the contribution of social support networks, particularly family, have in the lives of youth of color (Hayes, Blake, Darensbourg, & Castillo, 2014). For instance, the family-unit promotes positive developmental trajectories, including academic achievement, school importance and belongingness (Christens, Peterson, Reid, & Garcia-Reid, 2015; Hayes et al., 2014), and reducing both mental health outcomes (e.g., depression) and behavioral outcomes (e.g., substance use; Christens & Peterson, 2012; Lardier, Herr, Barrios, Garcia-Reid, & Reid 2018; Opara, Lardier Jr., Reid, Garcia-Reid, 2019). Viner and colleagues (2012) found that adolescents who were connected with, and supported by, their families reported lower levels of substance use. Family and parental involvement and support has also been linked with predicting feelings of competence, academic achievement, school engagement, increased self-esteem, and improved graduation rates (Zapolski, Fisher, Wei-Wen, & Barnes, 2016). Hence, social supports in the form of family are critical in adolescent developmental processes.

With regards to non-familial support, peers are an important context for developmental processes and predicting youth outcomes (Cook, Buehler, & Henson, 2009). As youth enter adolescence they become concerned with how they fit into social circles (Juvonen, Espinoza, & Knifsend, 2012). Peer networks influence youth academic and mental health outcomes (Drolet & Arcand, 2013). Vieno, Santinello, Pastore, and Perkins (2007) found that peer and parent support not only predicted psychological SOC, but directly and indirectly affected well-being. More recently, Lardier, Barrios et al. (2018) showed among Hispanic urban adolescents that peer support was a positive indicator of both community participation and school belongingness, among both males and females. Hence, positive peer influences offer vital emotional and practical support needed to promote positive outcomes such as creating a more cohesive connection to one’s community and school belongingness, and reducing risk behaviors (Boothroyd & Fisher, 2010).

Participation in community-based organizations have also been associated with positive social group participation, thriving within community spaces (Knifsend & Juvonen, 2013), experiencing increased academic performance, greater school belongingness, and positive mental health outcomes (Knifsend & Graham, 2012). Within youth-based community organizations, activities may include community organizing (e.g., social activism or writing a letter) or being provided a safe-haven and support (Scheve, Perkins, & Mincemoyer, 2012; Zeldin et al., 2017). While youth-based community organizations are limited in minoritized communities of color (Lardier, Herr et al., 2018), organizational spaces promote youth social engagement toward positive outcomes (Mueller, Lewin-bizan, & Urban, 2011; Zeldin et al., 2018), including the perceived ability to make changes in their communities and develop power and voice among youth (Zeldin et al., 2017). Hence, regardless of the type of work being provided, participation in youth-based community organizations can foster positive youth development (Fredericks & Simpkins, 2012) and promote the formation of non-familial adult relationships (Zeldin et al., 2017).

Positive Outcomes, Psychological Symptoms, and Risk Behaviors

The extant literature on youth development has examined outcome behaviors and indicators of wellness based on availability and access to social supports. Although indicators may vary, research has focused on measures that examine wellness, resilience, empowerment, and connection among youth such as school importance or belongingness (Christens & Peterson, 2012; Fredicks & Simpkins, 2012), self-esteem, depressive symptoms, and risk behaviors (e.g., substance use; Myers, Willise, & Villalba, 2011; Stein, Supple, Huq, Dunbar, & Prinstein, 2016). It is important to distinguish such effects, particularly among youth of color because, although schools are an important social space for youth, they may be unlikely to find the support that is beneficial to their needs (Lardier, Herr, Barrios et al., 2017). This is due to the probability that minority students are likely to attend schools that are under-resourced and lack access to adult allies to provide the essential support needed to succeed (Berliner, 2013; Lardier, Herr, Barrios et al., 2017).

School belongingness refers to a psychological and emotional sense of attachment or membership to one's school environment (Wehlage, 1989) and is an important indicator that is associated with reduced risk behavior and depressive symptoms (Lardier, Barrios, et al., 2018; Leve, Kerr, & Harold, 2013). It has also been described as an important ecological context of developing psychological SOC (Jason et al., 2015; Stevens et al., 2011). Some highlight that school belongingness is particularly important for youth of color because of the need for non-familial supportive relationships that can develop during adolescence, and usually occur within the school environment (Christens et al., 2015; Zeldin et al., 2018).

Studies indicate that students in underserved communities that have access to supportive resources within the school show increased overall well-being (Crisp, Taggart, & Nora, 2014). Other studies have found that students of color who experienced greater school belongingness and importance also had greater self-efficacy, participated in more community-based activities (Maurizi et al., 2013), experienced greater ethnic identity, as well as family and peer support (Garcia-Reid, Lardier, Reid, & Opara, 2018) and were less apt to use drugs and alcohol, as well as participate in violent-related behaviors (Christens,

2015; Lardier, Barrios et al., 2018). Studies elsewhere, have also shown that school importance performed as a mediator (e.g., Faircloth & Hamm, 2005; Hatchel, Espelage, & Huang, 2017; Lardier, Barrios et al., 2018). For example, Lardier, Barrios et al. (2018) showed that school belongingness mediated a large proportion of the association that social support and family cohesion had on 30-day substance use for both Hispanic males (63%) and females (88%). Similarly, Hatchel et al. (2017) found in a three year longitudinal study among a sample of LGBTQ+ high school students that school belongingness was not only negatively influenced by students' experiences with sexual harassment and depressive symptoms in school, but also performed as a mediator, which attenuated the negative effects of depression and sexual harassment victimization, over time. Hence, while the relationship with school may be tenuous, the consensus seems to be that if school belongingness can be facilitated, students of color may experience more positive outcomes and be less likely to engage in risk behaviors, as well as experience negative mental health symptoms.

Exposure to positive supports in the form of families and peers, as well as participation in youth-based community organizations simultaneously reduces susceptibility to mental health distress and risky behaviors (e.g., substance use; Christens & Peterson, 2012; Lardier, Barrios et al., 2018), and promotes positive developmental experiences such as feeling a sense of belongingness in school (Garcia-Reid, Hamme-Peterson, Reid, & Peterson, 2013; Christens et al., 2015). While contra-indicators of development are equally strong, such as the reciprocal relationship between depressive symptoms and risk behaviors (Bond et al., 2015) and violent behavior (Kennedy, Bybee, Sullivan, & Greeson, 2010), scholars agree that access to and support from allies in the form of adults and peers (Hipolito-Delgado & Zion, 2015; Lardier, Herr et al., 2018; Opara et al., 2019; Zeldin et al., 2017, 2018), as well as participation in youth-based community programs (Lardier, 2018, 2019), can limit risk behaviors during adolescence, with school belongingness playing a potential mediating role (Lardier, Barrios et al., 2018). Taken together, the existing research points toward the relationship between negative developmental outcomes (e.g., depression) and risk behaviors; however, it also highlights the positive influence that supportive adult allies (Lardier, Herr et al., 2018; Hipolito-Delgado & Zion, 2015; Zeldin et al., 2017; Zeldin, Gauley, Barringer, & Chapa, 2018) can have in limiting the effects of these negative developmental experiences.

Psychological SOC as a Mediator

Psychological SOC represents an important process within communities of color. Regarding urban youth, psychological SOC can support a youth's ability to feel empowered (Peterson & Reid, 2003) and are supported by their immediate environment, thus fostering a sense of social support, as a protective factor (Lardier, 2018, 2019). Researchers have found that having a positive psychological SOC and non-familial adult supports are associated with positive mental health outcomes, fewer feelings of loneliness, happiness, and more prolonged engagement in school settings (Fredericks & Simpkins, 2012; Krauss et al., 2017).

Within community psychology, active youth participation in organizational activities can be an important catalyst toward social change and improving the socio-political and environmental conditions of the community, as well as youth SOC (Wandersman & Florin,

2000). Studies have identified that psychological SOC can be fostered through organizational activities (a combination of individual and organizational processes) where sense of belonging and emotional attachment are infused (Powell, Gold, Peterson, Borys, & Hallcom, 2017; Speer & Peterson, 2000; Speer, Peterson, Armstead, & Allen, 2012). Research has also shown that adolescents who belong to and engage in activities in youth-based community organizations have greater psychological SOC when compared to those youth who do not belong to any group (Talo, Mannarini, & Rochira, 2014). Furthermore, psychological SOC among youth has been associated with positive attributes such as school involvement, social well-being (Cicognani, Mazzoni, Albanesi, & Zani, 2014), and reduced substance use (Lardier, MacDonnell et al., 2017). Such an attribution of psychological SOC is due to the notion that participation in youth-based community organizations and supportive relationships foster connections within the youth's neighborhood, making it more likely that youth are spending time seeking the positive attributes of their community and accessing positive social networks.

Psychological SOC theoretically performs as a mediating mechanism at this nexus. For example, Pretty, Conroy, Dugay, and Williams (1996) noted that psychological SOC may be strengthened through social support networks. Neighborhood experiences (e.g., engagement in community programs) and social supports have also been found to not only predict how adults and youth felt about other adolescents in their community, but that this was mediated through psychological SOC (Zeldin & Topitzes, 2002). This implies that how one engages and perceives their community has a relationship with their connection to that community, which in turn affects their perception of youth and other community members within their neighborhood. Peterson and Reid (2003) also examined psychological SOC as a mediator between organizational activity involvement among youth and intrapersonal psychological empowerment. These authors found that greater awareness of substance abuse problems led to lower psychological SOC among youth, which then lowered participation in organizational activities, and individuals feeling less empowered (Peterson & Reid, 2003). Elsewhere, psychological SOC has been examined as a mediator between social support and psychological well-being among military spouses (Wang, Nyutu, Tran & Spears, 2015), as well as a mediator between the strength of transgender identity and overall well-being (Barr, Budge, & Adelson, 2016). Powell et al. (2017) showed among coalition staff the indirect association between coalition leadership and intrapersonal empowerment, interactional or cognitive empowerment, and perceived coalition effectiveness. These findings indicate that it is important for coalitions to foster a SOC in order to facilitate interest and increase staff empowerment in the coalition (Powell et al., 2017). Despite the importance of these findings, few studies have been conducted among adolescents of color, and the role that psychological SOC plays in their lives (Lardier, Reid et al., 2018). Given the importance of encouraging youth to feel more connected to their community to achieve better outcomes, it is crucial for researchers to develop strategies to aid urban youth on how to connect positively with their community.

The current model for this study examines psychological SOC as a mediator between social support and participation in youth-based community organizations, and outcomes relevant to adolescent development. Theories in empowerment (Zimmerman, 2000) and on resilience (Hawkins, Catalano, & Miller, 1992) highlight the role that supportive community

environments have along the path between developmental outcomes. Further, individuals' perceptions of their everyday settings such as neighborhoods strongly contributes to human development (Jason et al., 2015). Psychological SOC, sits, therefore, between individual social experiences, their settings, and outcomes in human development (Jason et al., 2015; Kingston et al., 2009).

The Current Study

Limited research has examined psychological SOC within and among varying indicators and outcomes of well-being. Even more specifically, few studies have examined the mediating role of psychological SOC when situated among social supports, participation in youth-based community organizations, and other supportive community structures such as schools, as well as risk behaviors and depressive symptoms. The current study, therefore, extends prior research by investigating social supports (e.g., parents, peers, teachers) and participation in youth-based community organizations on psychological SOC, school belongingness, risk behaviors, and depressive symptoms among a sample of urban high school students of color.

Structural Equation Modeling (SEM) path analysis techniques were used to empirically test psychological SOC as a mediator, or a variable through which social supports and participation in youth-based community organizations were associated with aspects of school importance, risk behaviors, and depressive symptoms. Social supports and participation in youth-based community programs were included in the model as main predictors, psychological SOC as a mediator, and indicators of youth development such as school belongingness, risk behaviors, and depressive symptoms as outcomes. It was hypothesized that psychological SOC would arise from access to social supports and participation in positive community-based youth programs, which would then mediate experiences of school belongingness and, furthermore, risk behaviors, and depressive symptoms. See Figure 1, Model 1 for hypothesized model. Because of the cross-sectional design, it is important to remember that analyses tested for associational relations, and therefore, did not provide basis for causal inferences. Yet, results of the current study's analyses were expected to provide a valuable foundation for future research using longitudinal data.

Methods

Community Context

The focal community is a midsized urban community in the northeastern United States. Nearly 60% of the residents identified as African American/Black, 20% Hispanic/Latina(o), and 33% as foreign-born citizens (U.S. Census Bureau, 2015). As is all too common for urban communities of color, this city has a significant proportion of residents (30%) living below the poverty line, with an average income of less than \$33,964 (U.S. Census Bureau, 2015).

Participants

Data for this study were collected in 2017 as part of a federally funded Drug Free Communities Grant Initiative that conducted a needs assessment among urban high school students of color. This assessment supported the design and implementation of environmental prevention strategies focused on reducing substance use among adolescents within the target city. A non-probability sampling of 401 students in grades 9 through 12 were recruited through their physical education and health classes. Engaging students in their physical education and health classes allowed all students who attended school an equal opportunity to participate. In line with Institutional Review Board (IRB) approval, students who returned both parental consent and student assent forms were eligible to participate in the study.

The students in this study largely identified as Hispanic/Latina(o) (57%) and African American/Black (25.5%), with 14% identifying as Asian, and 3.5% as White non-Hispanic. Majority of students were between 16 and 18 years of age (68.8%), with a near even split between males (45.3%) and females (54.7%). At the time of data collection, 24.4% were in 9th grade, 18% were in 10th grade, 22.2% were in 11th grade, and 35.4% were in 12th grade. Over 70% of the sample received free or reduced school lunch, an indicator of low socioeconomic status (SES; Harwell & LeBeau, 2010).

Measures

Psychological Sense of Community.—*Psychological sense of community* (SOC) was measured using 8-items (sample items: I feel like a member of this neighborhood) from the Brief Sense of Community Scale (BSCS). Based on the work of McMillan and Chavis (1986), the BSCS was designed to assess four-dimensions of SOC: needs fulfillment, group membership, influence, and emotional connection. Responses were recorded using a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Peterson et al. (2008b) evaluated the 8-item BSCS (overall scale: Cronbach's $\alpha = .92$, $mean [M] = 3.81$, $standard deviation [SD] = .79$) and confirmed its factor structure as a four-factor structure that examined needs fulfillment (Cronbach's $\alpha = .86$, $M = 3.65$, $SD = .98$), membership (Cronbach's $\alpha = .94$, $M = 4.18$, $SD = .92$), influence (Cronbach's $\alpha = .77$, $M = 3.50$, $SD = .87$), and emotional control (Cronbach's $\alpha = .86$, $M = 3.91$, $SD = .89$). More recently, Lardier, Reid et al. (2018) tested the factor structure for this 8-item scale among a sample of urban youth of color and found that this second-order factor-structure fit the theoretical framework put forward by McMillan and Chavis (1986) and previously examined by Peterson et al. (2008b) (overall scale: Cronbach's $\alpha = .85$, $M = 3.81$, $SD = .79$). Alpha-level reliabilities identified by Lardier, Reid et al. (2018) for each of the subscales were as follows: .70 for needs fulfillment ($M = 3.11$, $SD = 1.04$); .80 for membership ($M = 3.13$, $SD = 1.08$); .71 for influence ($M = 2.99$, $SD = 1.04$); and .70 for emotional control ($M = 3.07$, $SD = 1.08$). For the current study, Cronbach's alpha for the overall BSCS was .83 ($M = 2.07$, $SD = .67$). See Table 1 for descriptive statistics.

Social support.—Social support was examined using the *Social Support for Adolescents Scale* (Bowen & Chapman, 1996). Social support is defined as the network of relationships that provide youth real or perceived safety and stability (Bowen & Chapman, 1996). Social

support was measured using seven items (sample items: When you need encouragement, advice, or suggestions, how helpful is your father/mother/parent? When you need encouragement, advice, or suggestions, how helpful is your school counselor?). Responses were recorded using a 4-point Likert scale (1 = *not at all helpful* to 4 = *a great deal helpful*). For the current study Cronbach's α was .86 ($M= 19.20$, $SD= 5.18$).

Participation in Youth-based Community Organizations.—*Participation in youth-based community organizations* was derived from five self-report items from the *Communities that Care Survey* an epidemiological assessment instrument (Arthur et al., 2002; Briney et al., 2012) that asked students to indicate participation in specific youth-based organizations in their community. Students responded to items (sample item: Which of the following activities for people your age do you participate in, in your community? E.g., Boys and Girls clubs.) dichotomously using either *Yes* (1) or *No* (0). Responses were totaled to reflect greater participation in youth-based community organizations (Cronbach's $\alpha = .77$, $M = 7.33$, $SD = 1.48$).

School Belongingness.—*School belongingness* was assessed using 10-items that were adapted from the *Communities that Care Survey* a nationally representative epidemiological assessment instrument that has been examined in several longitudinal studies as being a psychometrically sound measure with high internal and external validity, particularly when tested with the outcomes of interest in the current investigation (Arthur et al., 2002; Briney et al., 2012). Students were asked to indicate their belongingness and commitment to school (sample items: I feel safe at my school. In my school, students have lots of chances to help decide things like class activities and rules.). Student responses were recorded using a four-point Likert scale (1 = *strongly disagree* to 4 = *strongly agree*). Responses were summed to reflect higher composite scores of school belongingness and commitment (Cronbach's $\alpha = .80$, $M = 25.89$, $SD = 5.03$).

Depressive Symptoms.—Symptoms of depression were measured using a five-item scale that were adapted from the *Communities that Care Survey* a nationally representative epidemiological assessment instrument that has been examined in several longitudinal studies as being a psychometrically sound measure with high internal and external validity, particularly when tested with the outcomes of interest in the current investigation (Arthur et al., 2002; Briney et al., 2012). This measure assessed youth's perceived worth and value for life (sample items: Sometimes I think that life is not worth it; All in all, I am inclined to think that I am a failure.). Student responses were recorded using a four-point Likert-type scale (1 = *strongly disagree* to 4 = *strongly agree*). Responses were summed to reflect higher composite scores of depressive symptoms (Cronbach's $\alpha = .86$, $M = 8.93$, $SD = 4.28$).

Risk Behaviors.—Risk behaviors were conceptualized in this study using a combined score of two measures. The first measure assessed current and lifetime alcohol and drug use and the second measure, assessed violent behaviors. Each individual measure was then combined to *z-scores* and summed. *Alcohol and drug use* were measured using 30-items from the Youth Risk Behavioral Surveillance Survey (YRBSS), which included both lifetime alcohol and drug use (sample items: During your lifetime/the past 30-days on how many

occasions did you drink 1 or more drinks of alcohol? During your lifetime/the past 30-days on how many occasions did you smoke marijuana?; Kann et al., 2014). Responses were recorded on a seven-point Likert-type scale (1 = 0 occasions to 7 = 40 or more occasions). An average of all items was taken, with a max score of 3.90. Cronbach's alpha was .86. The mean score for this study's participants was 1.70 ($SD = .30$). While this is a lower overall mean score it is not necessarily inconsistent with prior investigations using similar scales, which have also observed lower mean response rates to substance use (e.g., Christens & Peterson, 2012; Lardier, 2019).

Violent-related behaviors were measured using an eight-item scale derived from the YRBSS (Kann et al., 2014). Questions asked students how frequently they engaged in violence-related behavior through participation (sample items: During the past 12-months, how many times have you attacked someone with idea of seriously hurting them? During the past 12-months, how many times have you been in a physical fight on school property?). Responses were recorded using an eight-point Likert-type scale (1 = Never to 8 = 40 or more time). Cronbach's alpha was .71. With a maximum of 5.25, the mean score was 1.30 ($SD = .30$). Similar to drug and alcohol use, previous studies have found equally lower overall rates of violent behavior (Christens & Peterson, 2012; Lardier, MacDonnell et al., 2017). For instance, Christens and Peterson (2012) reported a 1.59 mean for violent related behavior out of a possible 5.50.

To obtain the measure of risk behaviors, scores for substance use and violent-related behaviors, which were highly correlated ($r = .80$), were converted to *Z-scores* and summed. The combined measure yielded a mean score of .02 ($SD = 1.95$). Cronbach's alpha was .90 for all items in both scales.

Analyses

Missing data analyses were conducted initially. Using Little's missing completely at random (MCAR) test, data were found not to be MCAR. The largest amount of missing data was related to 30-day substance use (15%), which is not surprising given that methodological response bias is likely on more sensitive questions such as drug and alcohol use (Padsakoff, MacKenzie, & Padsokoff, 2012). Missing data were handled using maximum likelihood estimations through AMOS SEM software, due to data not being MCAR (Little & Rubin, 2014). Following ML techniques to handle missing data, descriptive statistics and correlation matrix were examined. Furthermore, controls were examined for inclusion in model.

Gender, age, Hispanic/Latina(o) ethnic- identity, and African American/Black racial-identity were examined for inclusion in AMOS SEM path analysis model. Results indicated that there were no significant difference by age, Hispanic/Latina(o) ethnic-identity and African American/Black racial-identity and main analytic variables. However, a significant difference was present between gender and depressive symptoms, $\chi^2(48) = 60.25, p < .05$. No other differences were noted.

SEM path analysis techniques were performed using AMOS 25.0 software (Arbuckle, 2013). Maximum Likelihood (ML) estimation procedures were used to analyze the variance-covariance matrix. Several fit indices were included. Following standard practice, we assessed first the Chi-square (χ^2) test, with non-significant χ^2 values providing some evidence of acceptable model-fit. Chi-square, however, must be considered in relation to several other fit indices (West, Taylor, & Wei, 2012). Therefore, we also examined the discrepancy-of-fit ratio (discrepancy/*df*), with indices less than 2.00 desirable; the Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), and Tucker Lewis Index (TLI), with values that are greater than .95 indicating desirable fit; and the Root Mean Square Error of Approximation (RMSEA), with values that are .05 = good fit, .05-.08 = acceptable fit, .08-.10 = marginal fit, and >.10 = poor fit (West et al., 2012). The Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) were also examined as indices to compare model fit for non-nested models (West et al., 2012). For BIC, differences larger than 10.00 provide evidence in support of the lower BIC value (West et al., 2012) and with regard to AIC, the solution closest to the saturated AIC value is considered as providing a better fit to the data (West et al., 2012).

In addition to using ML estimations, the Bollen-Stine (Bollen & Stine, 1992) bootstrap approach was employed to handle potential issues of non-normality in data, with 10,000 bootstrap resamples used, which is considered robust (Walker & Smith, 2016). Bollen-Stine bootstrap procedures have been observed as a method of handling nonnormal data, particularly in larger samples (i.e., $N > 200$; Nevitt & Hancock, 2001). Bias-corrected bootstrap confidence intervals were also used to test the significance of the mediational associations through psychological SOC. Studies have indicated that bias-corrected bootstrap confidence intervals provide more accurate intervals for small samples (Efron & Tibshirani, 1994) and skewed distributions of the indirect effect estimates (Mallinckrodt, Abraham, Wei, & Russell, 2006). Bias-corrected bootstrap confidence intervals also improve the power of the test of the indirect effect (Shrout & Bolger, 2002). A significant indirect effect is present when confidence intervals do not include zero (Hayes, 2009). While an indirect effect may be present, the strength of this effect is often difficult to determine, therefore, the *decompensation of effects, relative indirect effect* proportions were examined for mediating variables (Ditlevsen, Christensen, Lynch, Damsgaard, & Keiding, 2005)

Although an important advantage of conducting mediation analyses in SEM over standard regression methods is that SEM analyses provide model-fit information about the consistency of the hypothesized mediational model to the data and the plausibility of causality assumptions made when constructing the mediation model (Imai, Keele, & Tingley, 2010), limitations are present with regard to examining mediation cross-sectionally (Kline, 2015). However, to address such limitations, sensitivity analyses with alternative modeling specifications were employed to address potential methodological biases (Podsakoff, MacKenzie, & Podsakoff, 2012), as well as assess mediation against an equally persuasive alternative model (Thompson, 2000). See Figure 1, Model 2, for hypothesized alternative model.

Results

See Table 1 for correlation matrix. Community organization participation was correlated with all variables, apart from risk behaviors and depressive symptoms. Social support was correlated with all main analytic variables. Psychological SOC was correlated with all variables, excluding risk behaviors and depressive symptoms. School belongingness was correlated with all main analytic variables, except for risk behaviors. Depressive symptoms and risk behaviors were positively correlated. Gender was correlated with depressive symptoms.

See Figure 2 for over-identified path model, which displays only statistically significant paths and presents standardized beta weights. Gender contributed to the predicted model and was included in main analyses. This model showed good overall model fit for the sample data. The Chi-square, $\chi^2(15) = 14.27$, $p = .51$, and the discrepancy-to-*df* ratio, 1.11, were both within ranges considered to be good model-to-data fit. The other fit indices indicated overall good model fit. The RMSEA, .02 (90% CI = .000, .05), GFI, .99, AGFI, .97, TLI, .99, AIC, 56.27 (Saturated = 72.00), and BIC, 140.15 (Saturated = 215.78) were all within guidelines showing good model fit for the sample data. This model accounted for 20% of the variability in neighborhood attachment, 28% of the variability in school belongingness, 7% of the variability in risk behaviors, and 10% of the variability in depressive symptoms. Such variability (r^2) results are not uncommon, when considering that numerous variables are likely to also predict risk behaviors and depressive symptoms. Bollen-Stine bootstrapping results showed that the p value was greater than .05 ($p = .61$), indicating that the proposed model is consistent with the sample data (Bollen & Stine, 1992; Walker & Smith, 2016).

As can be seen in Figure 2, participation in youth-based community organizations was found to have both a positive direct relationship with psychological SOC and school belongingness. Furthermore, psychological SOC was shown to have a positive direct association with perceived school belongingness, and school belongingness was negatively linked with depressive symptoms. Moreover, psychological SOC had a negative direct relationship with risk behaviors. Social support also showed a positive direct association with both school belongingness and with psychological SOC, as well as a negative direct relationship with risk behaviors.

Using bias-corrected bootstrap confidence intervals, the following indirect associations from participation in youth-based community organizations and social support through psychological SOC were significant: participation in youth-based community organizations and school belongingness (indirect effect = .04, 95% CIs = .01 to .05, $p = .001$); social support and school belongingness (indirect effect = .06, 95% CIs = .03 to .09, $p = .001$); participation in youth-based community organizations and risk behaviors (indirect effect = -.03, 95% CIs = -.02 to -.06, $p = .002$); and social support and risk behaviors (indirect effect = -.04, 95% CIs = -.03 to -.09, $p = .002$).

The decomposition of effects, indirect effect proportions (see Table 2) indicated that psychological SOC mediated 19% of the association between participation in youth-based community organizations and school belongingness and 15% of the association between

social support and school belongingness. Psychological SOC also mediated nearly 100% of the relationship between participation in youth-based community organizations and risk behaviors, as well as 14% of the effect between social support and risk behaviors. These results together show preliminary evidence for the mediating role of psychological SOC.

The following indirect associations were also significant from participation in youth-based community organizations and social support through school importance: participation in youth-based community organizations and depressive symptoms (indirect effect = $-.03$, 95% CIs = $-.01$ to $-.05$, $p = .04$); social support and depressive symptoms (indirect effect = $-.09$, 95% CIs = $-.06$ to $-.14$, $p = .002$); and psychological SOC and depressive symptoms (indirect effect = $-.04$, 95% CIs = $-.03$ to $-.09$, $p = .04$). School belongingness mediated 99% of the association between participation in youth-based community organizations and depressive symptoms, 88% of the association between social support and depressive symptoms, and 33% of the association between psychological SOC and depressive symptoms.

Social support (indirect effect = $-.03$, 95% CIs = $-.03$ to $-.14$, $p = .002$) and psychological SOC (indirect effect = $-.03$, 95% CIs = $-.03$ to $-.09$, $p = .002$) both had an indirect association with depressive symptoms through risk behaviors. Risk behaviors mediated roughly 99% of the association between psychological SOC and depressive symptoms. Risk behaviors also mediated 33% of the association between social support and depressive symptoms.

When testing the alternative model specification (Figure 1, Model 2) it was found that the overall model fit to the data was less than adequate when compared to that of the original model; specifically, fit indices were as follows: $\chi^2(13) = 22.89$, $p = .01$, and the discrepancy-to-*df* ratio, 2.51. Both were outside the range of acceptable model-to-data fit. The other fit indices also indicated less than adequate model fit. The RMSEA, .10 (90% CI = .08, .15), GFI, .94, AGFI, .93, TLI, .92., AIC, 53.32 (Saturated = 72.00), BIC, 150.84 (Saturated = 215.78). When comparing the AIC and BIC, the hypothesized model provided the best fit to the sample data. The value of AIC was 56.27 for the hypothesized model and 53.32 for the alternative model, with the hypothesized model AIC closest to the saturated model of 72.00, which indicates that the hypothesized model provided a better fit to the sample data. The BIC was 140.15 for the hypothesized model and 150.84 for the alternative model, with a difference greater than 10.00 present, indicating that the hypothesized model with the lower BIC had a better fit to the sample data (West et al., 2012).

Bollen-Stine bootstrap results also indicated that the p value was not greater than .05 ($p = .02$), indicating that model-fit is poor and that issues with model specification are present with the current sample data (Enders, 2002). Consequently, bias-corrected bootstrap confidence intervals to test indirect paths yielded nonsignificant results. This suggests that mediation was not present and no results are provided for this model. Therefore, it is reasonable to conclude that the most probable order of association is that participation in youth-based community organizations and social support have an association with psychological SOC and school belongingness, which in-turn is linked to depressive symptoms and risk behaviors.

Discussion

Urban youth of color who live in under resourced areas are exposed to high amounts of violence, crime, and substance abuse, which increases their susceptibility for mental health issues such as depression and engagement in risky behaviors (Lardier, MacDonnell et al., 2017). Consequently, their environments may foster the inability to positively connect to their community, thus reducing their psychological SOC. While studies have found that having a positive psychological SOC is associated with more positive mental health outcomes (Fredericks & Simpkins, 2012; Krauss et al., 2017), limited research has examined the notion of psychological SOC as a potential mediator between ecological supports and outcomes important in youth development. The current investigation extends this scholarship among a sample of urban high school students of color and investigates within an ecological framework (see Jason et al., 2015; Stevens et al., 2011), sources of social support on psychological SOC, as a mediator, school belongingness, risk behaviors, and depressive symptoms.

Our study findings revealed that access to social supports and community-based organizations had a negative association with both risk behaviors and depressive symptoms, through both psychological SOC and school belongingness. These findings begin to highlight that psychological SOC may develop via multiple ecological supports that are important in youth development, more generally. However, both social support and psychological SOC were the only two variables that were negatively associated with risk behaviors (e.g., violence behavior and substance use) and were indirectly linked with depressive symptoms. Psychological SOC also had an indirect relationship with depressive symptoms through school belongingness. Previous studies have questioned whether sense of belongingness or psychological SOC alone reduces depressive symptoms (e.g., Fujiwara & Kawachi, 2008), or whether it is instead linked to other components of support such as school importance (Fredericks & Simpkins, 2012; Krauss et al., 2017). In addition, psychological SOC has been shown to have an association with other behavioral domains (e.g., risky behaviors; Lardier, MacDonnell et al., 2017) and likely functions as an inhibitor of both risky behaviors and promoter of positive mental health outcomes, but this spillover occurs as a result of behavioral changes — i.e., risk behaviors (Fowler, Wareham-Fowler, & Barnes, 2013; Leve et al., 2013).

These relationships between supportive ecological settings, psychological SOC, and youth outcomes undergirds that the process of developing psychological SOC can be complex and that within the community domain multiple ecological relationships are needed to create community belongingness and in-turn have an association with developmental outcomes. As Jason et al. (2015) indicated, psychological SOC or community belongingness is not only meant to encapsulate individual's experience within a group, but more so be an iterative process at a variety of ecological levels (e.g., community, schools, and group interactions). Hence, ecological supports are an important, but often overlooked, element of youth development when buttressed with psychological SOC and school belongingness, and in predicting risk behaviors and depressive symptoms among urban youth of color. Therefore, as this study drew attention to, social supports are likely important assets, but youth-based community programs serve an equally important function for urban youth in increasing

psychological SOC and in turn school belongingness, as well as offsetting mental health symptoms and risk behaviors.

These relationships further support and point toward a *developmental cascade* wherein the cumulative developmental processes have an influence on and cut across multiple domains (Masten & Cicchetti, 2010). If we consider this theoretical idea, multiple ecological social supports are likely to spill-over to positively impact youth's psychological SOC and have an indirect and positive association with school belongingness, as well as a negative relationship with internalizing behaviors such as depression and risk behaviors such as substance use and violent behavior. These general expectations begin to point toward the role of psychological SOC among process important in youth development. As Lardier, Barrios et al. (2018) note, understanding the importance of multiple domains of influence and sources of support are needed to not only foster positive youth developmental outcomes, but in removing the idea that a one-size-fits-all prevention approach is acceptable. However, longitudinal analyses are needed to uncover these processes.

Limitations

Findings from this study need to be considered with several limitations. First, the study is cross-sectional, which makes it difficult to establish causal relationships. While cross-sectional research is useful for conceptualizing and testing models to examine longitudinally (Peterson, 2014), future research should collect and analyze longitudinal data among a broader sample of urban youth to further uncover associations found within this study. Similarly, while important mediation results were identified for both youth substance use and empowerment literature, future research needs to replicate findings using mediation analyses longitudinally to uncover developmental processes and further unpack the temporal order of variables (Kline, 2015). A third limitation concerns within-group differences among this sample of largely Hispanic/Latina(o) and African American/Black youth. Though demographically labeled "Hispanic", "Latina(o)", "Black", or "African American", there are within-group variations, based on ethnic background (e.g., African origin versus African American identity, Dominican versus Cuban identity etc.) that should be captured and, therefore, considered in future scholarship. A final limitation concerns issues surrounding methodological response bias, which involves either over- or -underreporting of certain behaviors or perceptions. Although rates of substance use were low, it should not influence the significance of our results.

Implications for Youth Programming and Policy

A major question for community-based youth programs is how to foster youth belongingness or SOC. Programs and policies that seek to promote healthy development among youth within urban communities should involve young people in direct and meaningful ways. Findings from this study point toward the importance of providing youth opportunities for direct engagement in community programming to facilitate decision-making and positive collective community outcomes (Lardier, 2018; Lardier, Herr et al., 2018). This type of youth-based work may encourage not only a positive SOC (Hipolito-Delgado & Zion, 2015), but also work toward offsetting negative developmental trajectories and risk behaviors (Lardier, Barrios et al., 2018). More broadly, it is important to incorporate

youth in community projects and engage multiple sources of ecological supports (e.g., parents, peers, non-kin adult mentors) to cultivate psychological SOC and positive developmental outcomes (Hipolito-Delgado & Zion, 2015; Lardier, 2018, 2019; Lardier, Barrios et al., 2018). And while the role of schools was not directly examined in this study, it is equally important that schools work as a community nexus-point to support youth and cultivate school-based initiatives to increase the facilitation of empowering relationships between youth, their teachers, their peers, and other adult allies who may aid in buffering youth from the adverse experiences that may be present within their local community (Christens & Peterson, 2012; Kirshner, 2015; Lardier, Barrios et al., 2018; Lardier, Herr et al., 2018). Therefore, youth-based community programs and school initiatives should seek to engage youth of color to improve social and political systems beginning with ecological systems (e.g., psychological SOC, school belongingness, social supports), which have a further influence on their overall well-being.

Policymakers should consider placing monies toward creating and maintaining youth-based programs in historically disenfranchised and under-resourced urban communities. Such funding would work toward developing sustainable youth programming that creates a space for safety and support, as well as provides resources that create a SOC and work toward deterring adverse developmental experiences. As Lardier, Garcia-Reid, and Reid (2018) discussed, these programs should “highlight the variety of community resources valued by racially and ethnically marginalized youth in urban communities” (p. 498), but not often considered by mainstream U.S. culture and youth programming, which often focuses on saving and protecting, and less on creating a SOC and critically engaging young people.

Conclusion

Psychological SOC is an often overlooked experience for youth during their developmental life-course. Findings from this study point toward the positive role various ecological social supports, as well as access to and participation in youth-based community programs have with psychological SOC and school belongingness, and in turn the negative association with risk behaviors and depressive symptoms among urban youth of color. The development of a strong psychological SOC, as well as school belongingness may provide youth with overall collective identity and purpose that enhances their overall well-being. Future studies should further examine the school context as an equally critical community space, when possible. Specifically, these studies should forefront those school locales that consider the diverse cultural wealth of the student and foster the cultural and social identities of their students, creating a space of support and belongingness. It is crucial that we begin pursuing novel ways in which to promote youth psychological SOC, as well as envision ways to cultivate various levels of social support that encourages youth to imagine themselves and their communities differently (Lardier, 2018, 2019), and heal from the socio-political and historical traumas placed on the bodies of young people of color (Ginwright, 2015).

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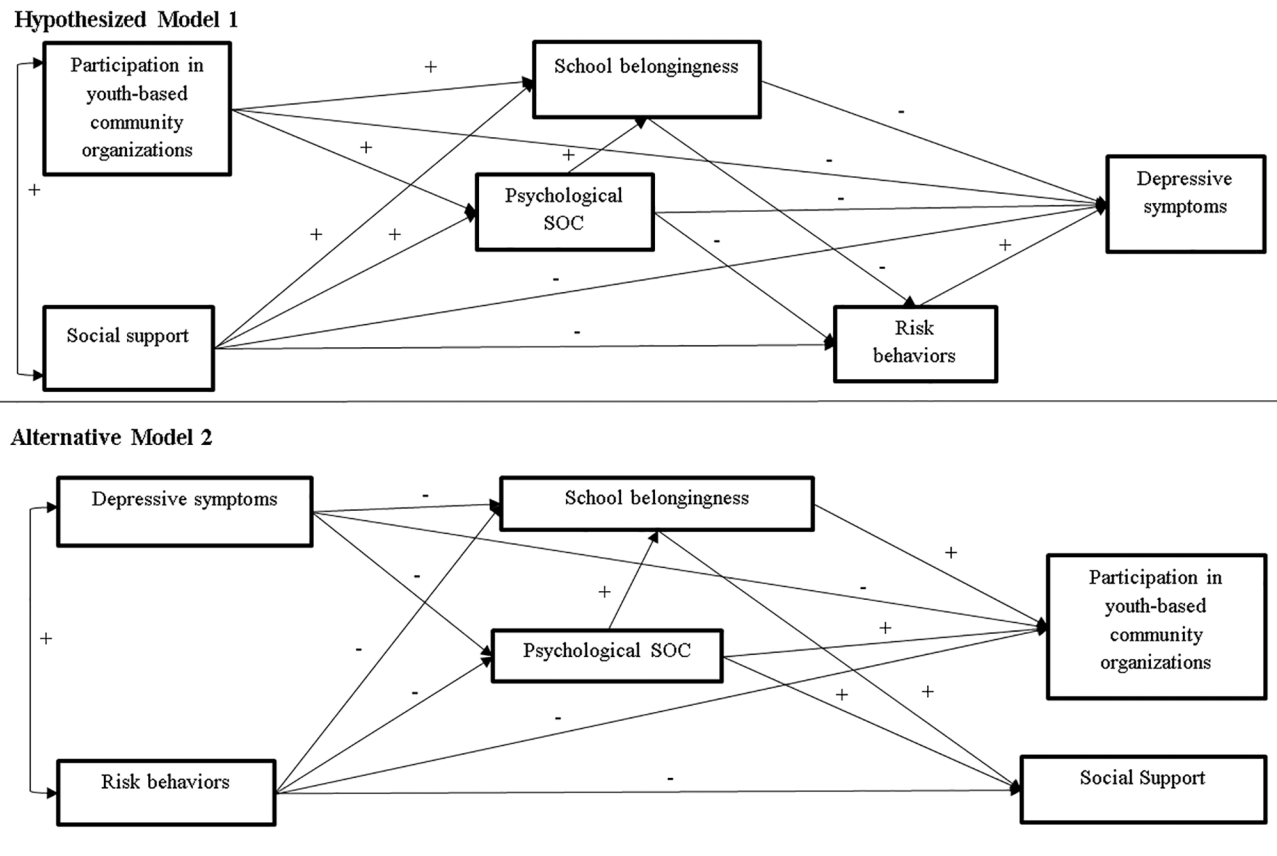


Figure 1.
Hypothesized and alternative models

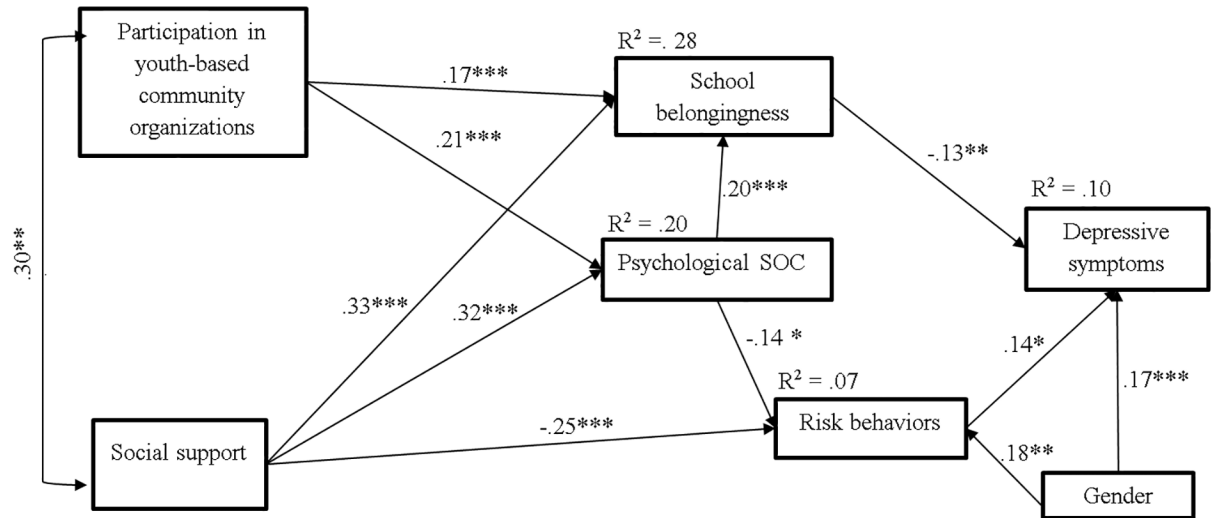


Figure 2. Standardized path diagram predicting youth outcomes (N = 401).

Note. $\chi^2(15) = 14.77, p = .47$; RMSEA = .02; GFI = .99; AGFI = .97; TLI = .99; AIC, 56.27 (Saturated = 72.00); BIC, 140.15 (Saturated = 215.78); CMIN/DF = 1.00 $p < .05^*$, $p < .01^{**}$, $p < .001^{***}$

Table 1.

Correlations and descriptive statistics for study variables (N = 401)

	1	2	3	4	5	6	7
1. Participation in Youth-Based Community Organizations	---	.30**	.30**	.32*	-.01	-.05	-.03
2. Social Support		---	.41**	.45**	-.17**	-.13**	.08
3. Psychological SOC			---	.38**	.03	-.07	.05
4. School Belongingness				---	-.07	-.13**	.05
5. Risk Behaviors					---	.11*	.03
6. Depressive Symptoms						---	-.10*
7. Gender (<i>female</i> = 1)							---
<i>Mean</i>	7.33	19.20	2.07	25.89	.02	8.93	---
<i>SD</i>	1.48	5.18	.67	5.03	1.95	4.28	---
<i>α</i>	.77	.86	.83	.80	.90	.86	---

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

Table 2.

Decomposition of effects for unconstrained model

Criterion Variable	Predictor Variable	Total Effect	Direct Effect	Indirect Effect via			Ratio of Indirect to Total Effect		
				Psychological SOC	School Belonginess	Risk Behaviors	Psychological SOC	School Belonginess	Risk Behaviors
Risk behaviors	Participation in youth-based community organizations	.03	-	-.03	-	-	.99	-	-
	Social support	-.28	-.25	-.04	-	-	.14	-	-
School belongingness	Participation in youth-based community organizations	.21	.17	.04	-	-	.19	-	-
	Social support	.39	.33	.06	-	-	.15	-	-
Depression	Psychological SOC	-.01	-	-	-.03	-.01	-	.33	.99
	Participation in youth-based community organizations	-.02	-	-	-.02	-	-	.99	-
	Social support	-.08	-	-	-.09	-.03	-	.88	.38