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Cool Girls, Inc. and Psychological Need Satisfaction in Female Pre and Early Adolescents

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COOL GIRLS, INC. AND PSYCHOLOGICAL NEED SATISFACTION IN FEMALE PRE AND EARLY ADOLESCENTS

by

KANDI FELMET

Under the Direction of Gabriel P. Kuperminc

ABSTRACT

This study sought to better understand the process of how youth development programs work by examining psychological need satisfaction among youth that participated in a weekly after school program, Cool Girls, Inc. The sample included 216 pre and early adolescent females participating in Cool Girls Club at sites in Atlanta, GA. It was hypothesized that Cool Girls participants would experience support for the basic psychological needs of autonomy, competence and relatedness, and such need satisfaction would be associated with youth well-being. Engagement emerged as an important component of participation associated with perceived need satisfaction such that participants that reported being highly engaged experienced perceived need satisfaction. However, perceived need satisfaction was not associated with outcomes of well-being. Implications for future research are discussed.

INDEX WORDS: Engagement, Self-determination, Need satisfaction, Positive youth development, After school program

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by

KANDI FELMET

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INTRODUCTION

Over the past two decades researchers have shifted the focus of prevention programs to emphasize the promotion of positive youth development (PYD) (Morely & Rossman, 2007). Youth development programs (YDPs) aim not only to prevent youth from engaging in risky behavior, but also to promote positive outcomes such as academic success, healthy behaviors, and overall well-being (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004). A central premise of the PYD approach is that all youth have the potential to develop into healthy, productive individuals. The most effective PYD programs emphasize the positive development of the whole child by providing opportunities to enhance health, self-confidence, interests, and skills (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; Vesely et al., 2004). PYD programs increase youth's access to external (support from caring adults and peers, educational activities and information) and internal resources (self-esteem, values, motivation, positive identity) through opportunities and experiences, allowing them to develop to their full potential (Kuperminc et al., 2005; J. Roth & Brooks-Gunn, 2003; Scales, 1999).

Research on after-school YDPs has demonstrated that well-run programs promote positive development by offering a supportive environment with opportunities that respect youths' perspectives, develop relevant skills, build confidence in using skills effectively, and provide youth with feelings of connection to others (J. Roth & Brooks-Gunn, 2003). Although research shows that YDPs can be effective in contributing to a wide range of outcomes, the mechanisms through which this change occurs are not well understood (Kuperminc, Smith, & Henrich, 2013). One way these programs are thought to work is through social and motivational processes that build internal resources (self confidence, skills, etc.) that enable youth to identify and pursue prosocial goals, make better decisions about health and behavior (Kuperminc et al., 2013). Self Determination Theory (SDT) provides a relevant framework because it posits that the motivations for accomplishing valued goals flourish in contexts (relationships, settings, etc.) that individuals experience as supporting their psychological needs for competence, connection with

others (relatedness), and autonomy (Deci & Ryan, 2011). In the literature perceived support for these needs is referred to as need satisfaction (Kuperminc et al., 2013; La Guardia, Ryan, Couchman, & Deci, 2000). Drawing from SDT, this study posits that YDP participants are most likely to achieve positive youth development outcomes when they experience that the program supports these psychological needs. Therefore, this study examined the extent to which participants experience Cool Girls, Inc., a PYD program for urban pre and early adolescent girls in Atlanta, GA, as supporting their psychological needs for self-determination, and whether need satisfaction mediates the relationship between participation in the program and well-being outcomes.

Cool Girls, Inc.

Cool Girls, Inc. strives to promote positive development by increasing access to resources for female, low-income, primarily African American youth. Cool Girls, Inc. is a weekly after school program that provides academic support and life skills development for girls in 2nd to 8th grades. Specifically, Cool Girls, Inc.'s theory of change states that increasing girls' access to resources and teaching girls how to seek out help when in need will aid their positive development. The effects of building resources through youth programming for this population have been understudied (Institute, 2003; Smith & Barker, 2009). Thus, the Cool Girls, Inc. program provides an ideal context to study the effects of building resources on development. There is strong evidence from studies spanning childhood through late adulthood, that indices of well-being increase when individuals experience their social environment as supporting their basic psychological needs (Chirkov, Ryan, Kim, & Kaplan, 2003; Milyavskaya et al., 2009). SDT's assertion that positive youth development will occur when youths' psychological needs are supported aligns with the Cool Girls, Inc. program's theory of change, which states that girls will thrive when they feel connected to others, skilled and knowledgeable, and free to make decisions independently. Therefore, the present study examined how the process of supporting the basic psychologi-

cal needs of autonomy, competence, and relatedness may mediate the link between program participation and well-being in low-income African American pre and early adolescent females (see *Figure 1*).

Autonomy, Competence, Relatedness and Positive Youth Development

The development of individuation and autonomy in adolescence can be particularly difficult for low-income, minority youth who may have additional environmental and economic stressors in their lives (Allen & Land, 1999; Allen, Moore, Kuperminc, & Bell, 1998; Gutman & Midgley, 2000). This is a time when significant gender differences emerge in both physical and mental health. It is well documented that adolescent females suffer from depression at significantly higher rates than their male peers (APA, 1994). Further, the prevalence of obesity is higher in African American females than males, and this disparity emerges in childhood (Robinson, Gordon-Larsen, Kaufman, Suchindran, & Stevens, 2009). SDT asserts that when contexts support the three basic psychological needs of autonomy, competence, and relatedness, individuals experience need satisfaction, are more likely to make positive choices, such as avoiding unhealthy behaviors, or maintaining a focus on academic achievement reflecting positive youth development (Dawes & Larson, 2011; Ryan & Deci, 2009). This is because the basic psychological needs function to direct individuals to engage in activities that satisfy these needs, reliably predict whether individuals will thrive, and inform interventionists about which aspects of a social context effectively engage individuals (Deci & Ryan, 2011). Thus, supporting autonomy, competence, and relatedness has valuable implications for positive youth development (Sands & Doll, 1996) and ultimately for YDPs.

Competence involves feeling capable and effective. Autonomy reflects an individual's sense of control over their actions and ability to make decisions. Relatedness refers to feeling a sense of belonging and connectedness to others (Deci & Ryan, 2000). Although limited, research shows that need satisfaction is important across the domains of relationships (family, friends, and romantic), education, work, and activities (e.g. physical activity, leisure) (Milyavskaya & Koestner, 2011). These results have been

reflected in samples of eastern and western cultures, regardless of gender, as well (Chirkov et al., 2003; Sheldon, Cheng, & Hilpert, 2011). With respect to youth populations, research has demonstrated that perceived support for competence, autonomy, and relatedness is associated with improved academic performance and emotional well being of elementary through college-aged students (Deci, Vallerand, Pelletier, & Ryan, 1991; Grolnick, Ryan, & Deci, 1991; Robert J. Vallerand, Fortier, & Guay, 1997; Véronneau, Koestner, & Abela, 2005), particularly in low-income African American adolescents (Gutman & Midgley, 2000; Sanders, 1998). However, little is known about the process in which this occurs. Considering the dramatic increases in rates of depressive symptoms observed in females in adolescence (Compas, Ey, & Grant, 1993), and the association between lower levels of self-determination and depression (Ryan & Deci, 2000; R. J. Vallerand, 1997), it is particularly relevant for female youth to have contexts in which their psychological needs are supported to facilitate well being.

Specifically, both perceived competence and autonomy have been shown to be important to educational achievement since educational activities are typically individualistic and relatedness has been shown to be important to social activities like team sports and fitness classes and also may be important to value transmission (Robert J. Vallerand, 2000). However, research shows that young adolescent girls experience greater limitations and prohibitions to their autonomy than their male counterparts and older adolescents (Nota, Soresi, Ferrari, & Wehmeyer, 2011). Further, because boys are more likely to be called on in class and selected as leaders (Sadker & Zittleman, 2009), girls are less likely to feel supported in terms of their sense of competence and autonomy, and at greater risk for not having these psychological needs satisfied. As social support and relational connections have been shown to be more important for girls' motivation than for boys (Goodenow & Grady, 1993), environments which support psychological needs have great potential to positively impact girls' development. Although research focused specifically on need satisfaction in female adolescents is limited, these age and gender

differences suggest some individuals may benefit from support for specific psychological needs over others.

Basic Psychological Needs and Youth Development Programs (YDPs)

The environments in which people learn, work and interact socially play an important role in individuals' perceived need satisfaction. The degree to which other people in these social contexts support an individual's basic psychological needs influences their internal interest in an activity and ultimately, their well-being (G. Roth, Assor, Niemiec, Ryan, & Deci, 2009; Ryan & Deci, 2009; Robert J. Vallerand, Pelletier, & Koestner, 2008). YDPs have the potential to be a valuable resource for providing youth with such conditions to support autonomy, competence, and relatedness, particularly during adolescence when the importance of social environments becomes increasingly important. At their best, YDPs provide youth with a supportive network of adults and peers and by providing skill-building activities that allow youth to express their opinions and ideas, facilitating positive youth outcomes (Catalano et al., 2002). However, despite considerable research on the effects of YDPs, there is no published research regarding how YDPs specifically support the development of the internal resources of autonomy, competence and relatedness, and how this relates to well-being.

Indicators of Well-Being

Healthy behaviors and academic outcomes are commonly studied as indicators of adolescent well-being (Meltzer, Fitzgibbon, Leahy, & Petsko, 2006; Scales, Benson, Leffert, & Blyth, 2000), both of which have been associated with positive youth outcomes such as enhanced self-concept, mental health, reproductive health, and reduced risk behaviors (Kuperminc, Thomason, DiMeo, & Broomfield-Massey, 2011; Oman, Vesely, & Aspy, 2005; Scales et al., 2000; Smith & Barker, 2009). This study examined academic orientation and healthy behaviors (i.e., healthy nutritional choices and engagement in physical activity) as indicators of well-being which are expected to result from experiencing need satisfaction at Cool Girls.

Academic Orientation.

Academic orientation reflects a student's achievement, effort, persistence, and motivation in school as an indicator of youth well being. A strong academic orientation reflects positive choices in school, which are likely associated with distal outcomes including high school graduation, college attendance, and ultimately a successful career. Although many researchers have used academic achievement alone as an outcome measure (Gilman, Dooley, & Florell, 2006; Gutman & Midgley, 2000; Scales, 1999; Smith & Barker, 2009), researchers have argued for a broader conceptualization that also incorporates the effort and motivation that individuals put into their academic work (Kuperminc et al., 2011; Scales et al., 2000). A positive academic orientation is reflected in how much students value schoolwork, how hard they work to complete it, and how well they do (Kuperminc et al., 2011; Little, Wimer, & Weiss, 2008; Scales et al., 2000; Wigfield & Cambria, 2010). Evidence suggests it is particularly important to consider academic orientation among low-income, minority youth as achievement motivation and engagement have been shown to significantly predict school success across ethnic groups, including African Americans (Gutman & Midgley, 2000; Scales et al., 2000).

Academic orientation has been significantly associated with reduced risk behaviors in addition to other indicators of healthy development and well-being (Kuperminc et al., 2011; Scales et al., 2000; Smith & Barker, 2009). In fact, academic orientation can be considered a marker of an adolescent's ability to learn increasingly difficult information and skills and build self-esteem at a time when they are undergoing the cognitive, social, and biological transitions of adolescence (Scales et al., 2000). Furthermore, Deci's (1991) review of research on motivation, education, and self-determination found that students who are intrinsically motivated and report high feelings of perceived autonomy and competence are more likely to stay in school, are higher in achievement, report greater enjoyment, interest, and satisfaction with academic work and school in general, and are better adjusted than students with less self-determination. More recently, the satisfaction of psychological needs has been directly associated with

achievement motivation as autonomy-supportive classroom environments have been indirectly associated with academic achievement through enhanced youth perceptions of competence (Hardre & Reeve, 2003). Thus, this study considered a broader perspective of youth's academic success, academic orientation, as a marker of well-being which includes grades, effort, and motivation (Kuperminc et al., 2011).

Healthy Behaviors.

Developing healthy habits in early adolescence is important for future maintenance of healthy diet and physical activity, and the promotion of healthy behaviors may be particularly important for female, low-income, African American adolescents. In fact, poorer health in childhood and adolescence has been shown to be a significant predictor of poor physical health in adulthood, particularly for African American females (Nicholson & Browning, 2012). Research shows significant disparities in physical activity levels and obesity emerge among African American females in childhood and extend through adolescence into adulthood (Gordon-Larsen, Adair, Nelson, & Popkin, 2004; Hedley et al., 2004; Kimm et al., 2002). These disparities are well documented, not only across race and ethnicity, but also across gender in African American youth (Robinson, Stevens, Kaufman, & Gordon-Larsen, 2010), highlighting the need for prevention efforts to target low-income, preadolescent, African American females. Much of the research in obesity focuses on diet and activity levels (Deckelbaum & Williams, 2001), but other sociocultural and environmental factors underlie this disparity as well (Gordon-Larsen, Nelson, Page, & Popkin, 2006). A review of recent literature suggests such disparity likely results from the interaction of community contextual factors such as neighborhood disadvantage (e.g. reduced access to physical fitness facilities and supermarkets) among low-income minority groups, as well as other social and demographic factors like education and parental education (Gordon-Larsen et al., 2006; Nicholson & Browning, 2012; Powell, Auld, Chaloupka, O'Malley, & Johnston, 2007). In addition, research suggests the daily stressors associated with living in low-income neighborhoods such as fear of crime and victimization may prevent young adolescents, particularly females, from leaving their homes, resulting in reduced physical activity

and poorer health (Nicholson & Browning, 2012). A recent study of racial and ethnic disparities in obesity during adolescence revealed that the prevalence of being overweight or obese is highest among African American females as compared to African American males and Hispanic and White males and females (Nicholson & Browning, 2012). Furthermore, African American females were twice as likely as Whites to be obese in young adulthood (Nicholson & Browning, 2012).

Healthy behavior patterns such as regular exercise and eating healthy foods, developed in adolescence are associated with long-term positive health outcomes such as reduced risk for chronic diseases like diabetes and cardiovascular disease in adulthood (Freedman, Khan, Dietz, Srinivasan, & Berenson, 2001; McDade et al., 2011). Like academic orientation, healthy behaviors demonstrate an adolescent's level of ability to cope with normal life challenges, and have been associated with self-esteem and decision-making skills (Scales et al., 2000). Further, such behavior is related to other positive outcomes such as school performance and self-esteem during adolescence, and into early adulthood (Scales et al., 2000). There is substantial evidence that YDP's can significantly influence youth's development of healthy behaviors through the promotion of healthy diet and physical activity (Kuperminc et al., 2011; Pate et al., 2000; Strunin, Douyon, Chavez, Bunte, & Horsburgh, 2010). YDP's have been shown to promote exercise and healthy eating practices (Pate et al., 2000), which has been associated with reduced risk behaviors, healthy development and greater well-being in youth, and specifically within African American samples (Kuperminc et al., 2011; Smith & Barker, 2009). This study examined healthy behavior as a reflection of well-being using indicators of youths' nutrition and engagement in physical activity.

Cool Girls Inc. strives to foster need satisfaction by exposing girls to caring adults who will support the girls' feelings of competence, autonomy, and relatedness to others (Cool Girls Inc., 2009). Specifically, program participation can promote need satisfaction and intrinsic motivation through positive feedback (support for competence), interpersonal involvement with peers, Cool Girls staff, teachers,

mentors (support for relatedness), and by providing opportunities to make individual decisions (support for autonomy). Therefore, it was expected that the satisfaction of these psychological needs would be associated with well-being as reflected by positive academic orientation and orientation toward a healthy lifestyle.

Participation in Youth Development Programs

Participation is a multi-dimensional construct that involves both the extent of exposure to program activities and engagement. Generally, participation can be defined as “active involvement.” Whereas attendance, defined in terms of the amount of time young people spend in after school programs such as Cool Girls, is often used as a primary indicator of participation, a sole reliance on attendance does not capture the full meaning of participation (Harvard Family Research Project, 2004). Although it is clear that regular attendance is necessary, it is not a sufficient indicator of participation (Durlak, Weissberg, & Pachan, 2010). To better assess participation, it should be measured comprehensively, as rich information regarding associations between other aspects of participation and youth outcomes is lost when only attendance is considered (Cross, Gottfredson, Wilson, Rorie, & Connell, 2010; Harvard Family Research Project, 2004; J. Roth, Malone, & Brooks-Gunn, 2010). Recently, researchers have focused on both the *exposure* that youth have to program activities, and the extent to which youth *engage* with the activities and the program as a whole (Durlak, Mahoney, Bohnert, & Parente, 2010; Larson, 2000; Vandell et al., 2005; Weiss, Little, & Bouffard, 2005). This study considered both dimensions of participation.

Exposure.

Roth et al. (2010) define exposure as a multi-dimensional construct that represents the frequency of attendance over multiple years. Exposure consists of three aspects of participation: intensity, duration, and breadth. *Intensity* is defined as the frequency of attendance during one year, *duration* as the length of time in attendance, and *breadth* as an individual’s involvement across different types of pro-

gram activities. Numerous studies have shown significant positive associations between each of these components of participation and various youth outcomes, but few researchers have conducted analyses of the combined effects of the components of participation on youth outcomes (Harvard Family Research Project, 2004). This study examined program exposure as one of two dimensions in the overall measure of participation as a predictor of perceived support for the basic psychological needs.

Engagement.

Engagement is a multidimensional construct which reflects both the psychological and behavioral aspects of active ASP participation (Bartko, 2005) and represents an individual's enjoyment, effort, and interest in program activities (Mahoney, Lord, & Carryl, 2005; J. Roth et al., 2010). Larson's theory of positive youth development (2000) asserts that ASPs can be a valuable context to promote positive youth outcomes such as greater achievement and increased self-control and self-efficacy through engagement. This is because ASPs provide structured, voluntary youth activities that foster a unique combination of intrinsic motivation and concentration not found in other youth activities like school or leisure time (Larson, 2000). Indeed, many studies have shown that the positive effects of ASPs are directly related to participant engagement (Dawes & Larson, 2011; Larson, 2000; Mahoney et al., 2005; Shernoff, 2010; Weiss et al., 2005). For example, Mahoney et al (2005) found significantly higher academic outcomes among youth that were highly engaged in ASP program activities than youth who were less engaged.

Engagement at the individual level reflects the behavior and affect of a specific child over a specified period of time (Mahoney et al., 2005). Individual-level engagement has been associated with differences in academic outcomes for youth who are "highly engaged" in ASPs (Mahoney et al., 2005). Finally, research indicates that youth can become engaged through active participation, but other factors such as youth characteristics, social ecologies, and program features (setting, activities) influence this association (Durlak, Mahoney, et al., 2010; Pearce & Larson, 2006). The present study examined

participants' engagement as one of two dimensions in the overall measure of participation as a predictor of perceived support for the basic psychological needs (see Figure 1).

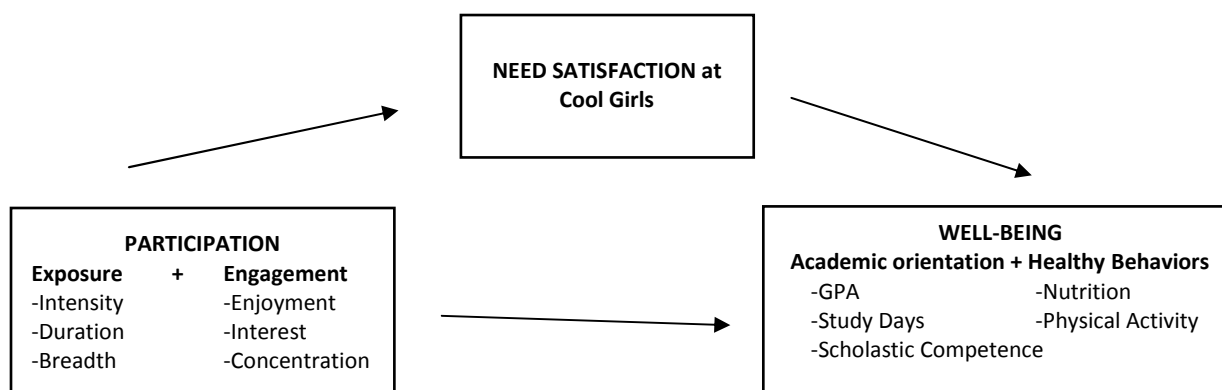


Figure 1 Proposed Mediation Model

The process through which youth become engaged in youth programs is not fully understood (Dawes & Larson, 2011; Mahoney et al., 2005; Pearce & Larson, 2006). The literature suggests that engagement develops as a result of having positive experiences, feeling challenged and enjoying activities (Mahoney et al., 2005; Pearce & Larson, 2006). Research also demonstrates that engagement is sustained by the desire to continue in the program and get more out of it, which is facilitated by feeling a sense of competence and satisfaction (Dawes & Larson, 2011). These findings demonstrate an overlap in engagement and needs satisfaction due to the importance of internalized motivation to both constructs. The main focus of this study was on the role of engagement in supporting the basic psychological needs, and it was expected that participation would be associated with increased perceived need satisfaction. However, the potential reciprocal process, that the program's support for psychological needs was associated with increased engagement, was also examined in follow-up analyses.

In sum, the present study examined the role of perceived support for the basic psychological needs in explaining the link between participation in Cool Girls, Inc. and youth well-being. In particular, it was hypothesized that participation in Cool Girls was positively associated with increased perceived need satisfaction, particularly among those with greater exposure to the program and who are highly engaged. Second, it was hypothesized that perceived need satisfaction would contribute to a positive

academic orientation and orientation toward a healthy lifestyle. Finally, it was hypothesized that perceived need satisfaction, at Cool Girls would mediate the association between participation and that girls' well-being as measured by academic orientation and healthy behaviors.

METHOD

Program Description

Cool Girls, Inc. is a comprehensive YDP "dedicated to the self-empowerment of girls in low-income communities" (Cool Girls Inc., 2009). Cool Girls' theory of change emphasizes that access to social resources will aid girls' PYD by "...breaking the cycles of poverty, low self-esteem, and teen pregnancy" (Cool Girls Inc., 2009). In particular, Cool Girls seeks to promote PYD through education, exposure to opportunities, experiences, and caring adults (e.g. program staff, volunteers, and mentors). Cool Girls is a free after-school program (ASP) that serves about 400 girls in grades 2 through 12 at 11 sites across Atlanta, GA. The majority of participants are low-income and African American. The comprehensive program includes Cool Girls Club, a weekly after-school program for girls in 2nd-8th grade that provides youth with academic assistance and a life skills curriculum which educates girls about sexual health, hygiene, healthy relationships and bullying, conflict resolution, self-esteem and cultural awareness. Additional program components involve fitness, technology, and leadership programs; academic tutoring and test preparation; one-to-one mentoring; and various field trips, summer programs and weekend workshops to promote health and wellness. This study used data drawn from a three-year longitudinal evaluation of Cool Girls, Inc. with baseline and follow-up surveys.

Participants

The evaluation involved two cohorts of youth recruited from 2009-2011. Baseline and follow-up youth survey data from the two cohorts (N = 216) of participants were analyzed. The sample was composed of female youth in 5th through 8th grade who participated in Cool Girls, Inc. The sample was pre-

dominantly African American, and most participants were eligible for a free or reduced price lunch (see Table 1).

Table 1 Demographic Variables for Cool Girls

	Cool Girls (N = 216)
	Percentage
<u>Grade</u>	
5th	40.7
6th	33.8
7th	16.7
8th	8.8
<u>Ethnicity</u>	
African American	79.8
Latina/Hispanic	10.4
Asian/Vietnamese	3.1
Pacific Islander	0.5
Caucasian	0.5
"Other"	5.7
<u>Free or reduced-price lunch</u>	96.1

Note. Grade level at baseline.

Procedure

All Cool Girls, Inc. participants in grades 5th through 8th were invited to participate in the study. Cool Girls, Inc. distributed informed consent documents to youth with program applications. In addition, site coordinators distributed informed consents to youth at each site and collected signed documents for the research staff. Additionally, Cool Girls staff included the informed consent documents in Cool Girls participant application packets for parents at the beginning of each school year. Youth were required to return consent forms signed by a parent or guardian in order to participate in the study. As a result of fluctuations in Cool Girls Club enrollment, particularly at the beginning of the academic year, it is difficult to estimate response rates. However, based on previous studies of Cool Girls, Inc., a conserva-

tive estimate is that 60% of eligible Cool Girls (i.e. grades 5-8) participated in the study (Kuperminc et al., 2011).

Youth completed self-report baseline and follow-up surveys during the fall and spring of the 2009-2010 or 2010-2011 academic years. Participants completed the forty-five minute survey online after-school at Cool Girls club in a computer lab at their school or at Georgia State University. Research staff monitored computer labs and answered participants' questions during data collection at each site. The participants that could not be located during Cool Girls club were invited to participate during Cool Girls sponsored events or on-line at home. Each youth received a five-dollar gift card upon completion of the survey at baseline and follow-up.

Measures

Need Satisfaction.

Participants completed the 9-item Need Satisfaction Scale (see Appendix A for questions) (La Guardia et al., 2000), which assessed perceived support for the basic psychological needs for feeling autonomous, competent, and related. Items were phrased to assess how well participants' basic needs for relatedness, autonomy, and a sense of competence are met when they are with a specific target figure (e.g. mother, father, friend, significant adult), in this case, when they are at Cool Girls Club. (i.e., "*When I am at Cool Girls Club, I feel cared about*", "*When I am at Cool Girls Club, I have a say in what happens and can voice my opinion*", and "*When I am at Cool Girls Club, I feel very capable and effective*"). Items were rated on 4-point scale ranging from 1 = *Not at all true* to 4 = *Very true*. This measure has been shown to be psychometrically sound, with reliabilities ranging from .85-.94 across target figures. It has also been correlated with attachment variables and well-being (La Guardia et al., 2000). In addition, a confirmatory factor analysis provided evidence of construct validity for the three basic psychological needs (LaGuardia et al 2000). These items formed a composite (see Table 2). Participants' average per-

ceived need satisfaction was examined as the potential mediator between participation and well-being (see Figure 1).

Table 2 Cronbach's Alpha Coefficients for Baseline and Follow-Up Measures

	<u>Baseline</u>	<u>Follow-up</u>
Need Satisfaction (3 items)	.85	.86
Engagement (3 items)	.73	.65

Program Participation.

Based on Larson's (2000) recommendations, participation was measured by intensity, duration, breadth, and engagement. *Intensity* was measured with one item that reflects the frequency of attending Cool Girls activities and the Cool Girls program (e.g., "I attend the Cool Girls program:" with response options ranging from "almost every week" to "a few times a year"). One item was used to measure participants' *breadth* of participation across program components (i.e., "This year I participated in (please check all that apply)" with response options including various program activities). *Duration* of participation in Cool Girls was measured by one item (i.e., "How long have you been in Cool Girls?" with response options ranging from "This is my first year" to "I have been in Cool Girls 4 years or more"). *Engagement* was measured with 3 items that assess participants' enjoyment, interest, and concentration on program activities. Response options for engagement items ranged from 0 = Not a lot to 4 = Very much. These items formed an engagement composite (see Table 2). Intensity, breadth, duration, and engagement were each examined as predictors of support for self-determination and well-being (see Figure 1).

Academic Orientation.

Academic orientation was measured with items assessing grades, the number of days per week spent studying or doing homework outside of school, and participant attitudes about their academic ability (Kuperminc et al., 2011). Participants were asked to report their most recent grades earned in

reading and mathematics on a 5-point scale (0 = F to 4 = A). These items were correlated at baseline ($r = .66, p < .01$) and follow-up ($r = .26, p < .01$), and these two grades were averaged to create a single self-report GPA variable ranging from 0 to 4. A single item was used to measure the number of days spent studying or doing homework each week (e.g. *"How many days a week do you study after school"*). Responses ranged from 0-5 days. Participant attitudes about their academic ability were measured with a modified measure of scholastic competence (6 items; $\alpha = .68$) from the Self-Perception Profile for Children (see Appendix B for questions) (Harter, 1985; Kuperminc, Darnell, & Alvarez-Jimenez, 2008; Kuperminc et al., 2011). Participants rated items such as *"I am good at my schoolwork"* on a 4-point scale ranging from 1 = *Not true* to 4 = *Always true* (See Appendix B). Each aspect of academic orientation will be examined separately as individual outcomes that reflect of well-being.

Healthy Behaviors.

Healthy behavior was assessed with five items regarding nutrition and physical activity. These items come from the CDC's Youth Risk Behavior Surveillance System (YRBSS), which measures six categories of priority health-risk behaviors in youth (CDC, 2004). Several published studies have assessed the reliability and other psychometric properties of the YRBS questionnaire and the CDC has reported thorough rationale for the inclusion of each item (CDC, 2004). Specifically, nutrition was measured with four items to assess the frequency participants consumed fruits, vegetables, carbonated beverages, and fast food each day over the past 30 days on 6-point scale ranging from 1 = *I did not eat (item) during the past 30 days* to 6 = *5 or more times per day* (See Appendix C). These four items were used to construct a healthy nutrition index. Physical activity was assessed with one item. This item measured the amount of time participants spent doing physical activity over the last week, and response options ranged from zero to seven days.

RESULTS

Preliminary Analyses

Attrition Analyses.

88.6% (n = 140) of the participants that completed a baseline assessment (n = 158) also completed a follow-up. Attrition analyses were conducted comparing these two groups with t-tests and chi-squares on all study variables (time in Cool Girls, frequency of attendance, Cool Girls activities, engagement, need satisfaction, scholastic competence, GPA, study days, healthy nutrition, and physical activity) and covariates (number of parents living in home, living with extended family, grade, cohort, year in Cool Girls, and ethnicity).

Girls who completed both assessments differed from those who completed baseline or follow-up only in their level of program participation at the baseline assessment. First, Cool Girls that completed both assessments had been enrolled in Cool Girls for a longer period of time ($M = 1.93$, $SD = 1.04$) than those that completed only the baseline ($M = 1.59$, $SD = .86$) $t(182) = -2.11$, $p < .05$). Second, participants that completed both assessments were involved in a broader range of activities ($M = 1.52$, $SD = 1.09$) than those that took only the follow-up ($M = .97$, $SD = .43$) $t(156) = -2.09$, $p < .05$).

With respect to covariates, participants that completed only baseline were more likely to be in cohort 2 ($\chi^2(1, N = 198) = 6.35$, $p < .05$), in their 1st year of Cool Girls ($\chi^2(1, N = 198) = 9.19$, $p < .01$), and in 5th grade ($\chi^2(1, N = 198) = 4.95$, $p < .05$). Finally, 11% (n = 18) of the participants completed follow-up only. This group was also compared to participants who completed both baseline and follow-up on all study variables and covariates. Participants that completed follow-up only were more likely to be African American ($\chi^2(1, N = 158) = 4.96$, $p < .05$).

Missing Data.

The percentage of missing data in the study variables ranged from 16.6% to 39.6%. The data were imputed using multiple imputation (Widaman, 2006) in SPSS, quantitative data analysis software

because missingness was greater than 5% (Allison, 2009; Collins, Schafer, & Kam, 2001). Multiple imputation maximizes statistical power by retaining each case, maintaining the variability of residuals, and by producing several data sets, thereby maximizing representativeness of the imputed values (Widaman, 2006).

Correlations.

Nearly all of the baseline study variables were significantly correlated with their follow-up measure, suggesting stability of the measures from time one to time two. However, baseline frequency of attendance and engagement were not correlated with their follow-up measure, suggesting variation in these aspects of participation over time.

Engagement was correlated with perceived need satisfaction both at baseline and follow-up. None of the other indicators of participation (duration, breadth, or intensity) were significantly correlated with perceived need satisfaction. Perceived need satisfaction (assessed at follow-up) was correlated only with study days. Further, the participation variables of duration, breadth, and intensity had few associations with well-being indicators. In particular, only breadth was associated with GPA at baseline and engagement was associated with nutrition at follow-up.

Finally, several covariates were significantly correlated with study variables. Free lunch was negatively correlated with engagement. Living with extended family was negatively correlated with perceived needs satisfaction. Number of parents in the home was positively correlated with GPA. Grade level was negatively correlated with duration of participation, perceived needs satisfaction, GPA, and number of study days. Cohort was also correlated with breadth of activities. Correlations among all study variables are shown in Tables 2 and 3. Means and standard deviations for all study variables are shown in Table 4.

Table 3 Correlations of Demographic Variables with Participation, Perceived Needs Satisfaction, Academics and Health Outcomes.

Variable	Cohort	#Parents	Ext. Family	Ethnicity	Free Lunch	Grade
Duration	-.03	-.01	.08	-.04	-.04	-.18*
Breadth	.31**	-.03	.00	.01	-.16	-.11
Intensity	-.11	.01	.00	.01	-.03	-.09
Engagement	.06	-.03	-.04	-.15	-.20*	-.10
Need Satisfaction	.02	.15	-.24**	-.10	-.02	-.21*
Scholastic Competence	-.09	.05	.06	-.08	.01	-.01
GPA	-.11	.18*	.08	.07	.14	-.30**
Study Days	.15	.00	-.07	-.04	.14	-.22**
Physical Fitness	.06	-.01	-.07	-.13	.08	-.08
Healthy Nutrition Index	.01	.16	.02	-.02	-.05	-.04*

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

Table 4 Correlations Among All Study Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.
1. Duration1	-	.07	-.06	.05	.10	.07	.02	.10	.07	.09	.15	.17	.19	.04	.05	.06	.02	.07	-.07
2. Breadth1		-	.00	-.01	.02	.13	.15*	.11	.13	.16	.33**	.06	-.02	.01	.14	.05	.01	-.03	.07
3. Intensity1			-	.03	-.06	-.01	-.01	-.03	-.01	.01	-.03	.02	-.09	-.09	.02	.08	-.09	-.17	.09
4. Engage1				-	.18	.06	.03	.06	.16	.18*	-.07	-.04	.14	.17*	.04	.01	.03	.18	-.00
5. Nd Satis.1					-	.15	.08	.16*	.02	.11	.16	.18	.18	.21*	.02	.06	.18	.07	.13
6. ScholComp1						-	.32**	.21*	-.00	.17*	.11	.20	.07	.06	.48**	.27**	.18*	.03	.03
7. GPA1							-	.20*	.05	.14	-.06	.12	.03	.12	.16	.41**	.07	.05	.04
8. Study D.1								-	.20**	.26*	-.05	.08	.13	.09	.08	.11	.32*	.20	.08
9. Phys. Act.1									-	.15	.13	.01	.02	.10	-.01	-.00	.04	.30**	.06
10. Nutrition1										-	-.06	.19	.02	.06	.13	.15	-.04	.06	.31*
11. Breadth2											-	-.01	-.00	-.02	.16	-.00	.09	.03	.09
12. Intensity2												-	.24	.08	.12	.04	.02	.03	.19
13. Engage2													-	.29**	.14	.08	.24	.26**	.17
14. Nd Satis.2														-	.03	.09	.23**	.09	.12
15. ScholComp2															-	.41**	.17	.14	.14
16. GPA2																-	.18	.13	.10
17. Study D.2																	-	.22*	.14
18. Phys. Act.2																		-	.21
19. Nutrition2																			-

Note. Duration baseline and follow-up survey values are the same.

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

Table 5 Means and Standard Deviations for Cool Girls

	Cool Girls	
	Baseline Mean(SD)	Follow-up Mean(SD)
Duration	1.8(1.0)	2.0(1.1)
Breadth	1.8(1.6)	1.8(1.6)
Intensity/Frequency	4.5(.99)	4.6(.81)
Engagement	3.5(.64)	3.5(.58)
Need Satisfaction	3.4(.58)	3.4(.62)
Scholastic Competence	3.2(.60)	3.3(.54)
GPA	3.3(.63)	3.3(.59)
Study Days	2.6(1.6)	2.7(1.6)
Physical Fitness	3.9(2.3)	4.0(2.2)
Healthy Nutrition Index	2.0(1.1)	2.1(1.1)
Grade Level	5.9(.96)	-
Number of Parents	1.3(.64)	-
Extended Family	.22(.41)	-

Examination of Potential Covariates.

The following variables were tested as potential covariates: grade level (elementary vs. middle school), number of parents in the home, living with extended family or not, ethnicity (African American, Latina, or “other”), and cohort. Grade level was negatively associated with perceived needs satisfaction at follow-up ($B = -.26, p < .01$). Grade level was also negatively associated with the frequency ($B = -.16, p < .05$) and duration ($B = -.35, p < .01$) of participation. Cohort was positively associated with breadth of activities ($B = .10, p < .01$). In addition, duration was positively related to breadth ($B = .26, p < .05$) and frequency of participation ($B = .10, p < .01$). Covariates that significantly predicted study variables and those that were associated with attrition were included in all further analysis of those variables, as suggested by Jaccard, Guilamos-Ramos, Johansson and Bouris (2006).

Primary Analyses

Hypothesis 1.

To test the first hypothesis, I used multiple regression to examine whether girls who participate in Cool Girls, Inc. experience increased perceived needs satisfaction from baseline to follow-up (see Table 6; Figure 1, path a). Covariates and baseline levels of each participation variable (i.e. frequency of attendance, duration, breadth, engagement) were included in the regression model. As shown in Table 6, girls who reported higher levels of engagement perceived increased needs satisfaction. Further, when controlling for perceived needs satisfaction at baseline, engagement remained significant. Additionally, the covariate, living with extended family, was significantly associated with perceived needs satisfaction at follow-up, which can be seen in Table 5. Finally, the measures of participation accounted for 23% of variance in perceived needs satisfaction (see Table 5).

Table 6 Participation Predicting Need Satisfaction at Follow-Up

	<i>B</i>	<i>SE</i>
Number of Parents	.07	.07
Live Extended Family	-.35*	.12
Cohort	.08	.10
Ethnicity	-.02	.08
Grade	-.18	.11
Duration	.00	.05
Breadth	-.03	.04
Frequency	.01	.14
Engagement	.23*	.10
Total R ²	.23*	

Note. Estimates are averaged over multiply imputed datasets (n = 5).

* $p < .05$.

Hypothesis 2.

Next, I used multiple regression to determine whether perceived needs satisfaction was associated with changes in the well-being domains (i.e. academic orientation, physical activity, healthy nutrition) from baseline to follow-up (Figure 1, path b). I conducted five regressions to examine the associa-

tion between perceived needs satisfaction and each well-being variable (i.e. scholastic competence, GPA, study days, physical activity, and healthy nutrition). Covariates and baseline levels of each dependent variable were included in each regression model (see Table 7). As seen in Tables 7 and 8, perceived needs satisfaction was not significantly associated with any of the well-being variables.

Table 7 Need Satisfaction Predicting Academic Outcomes at Follow-Up

	<u>GPA</u>		<u>Study Days</u>		<u>Scholastic Competence</u>	
	<i>B</i>	SE	<i>B</i>	SE	<i>B</i>	SE
Number Parents	0.05	0.07	-0.05	0.31	0.004	0.08
Live with Extended Family	0.06	0.11	-0.002	0.36	0.09	0.1
Ethnicity	0.001	0.07	-0.02	0.18	-0.01	0.06
Grade	-0.12	0.08	-0.23	0.23	0.02	0.09
Cohort	-0.05	0.08	0.35	0.22	-0.04	0.08
Needs Satisfaction	0.02	0.09	0.45 [^]	0.23	0.04	0.12
Total <i>R</i> ²	0.19		0.19		0.25	

Note. [^] *p* = .06.

Table 8 Need Satisfaction Predicting Healthy Behavior at Follow-Up

	<u>Healthy Nutrition Index</u>		<u>Physical Activity</u>	
	<i>B</i>	SE	<i>B</i>	SE
Number Parents	0.3	0.17	-0.04	0.32
Live with Extended Family	0.37	0.38	-0.29	0.55
Ethnicity	-0.01	0.2	-0.25	0.31
Grade	0.07	0.23	-0.52	0.43
Cohort	0.08	0.2	0.02	0.37
Need Satisfaction	0.18	0.22	0.05	0.39
Total <i>R</i> ²	0.16		0.13	

Hypothesis 3.

Only one of the independent participation variables, engagement, was significantly associated with perceived needs satisfaction, the proposed mediator. However, perceived needs satisfaction did not significantly predict any of the dependent well-being variables. Thus, I did not conduct the media-

tion analysis to examine whether perceived needs satisfaction mediates the associations between program participation and well-being (Cohen, Cohen, West, & Aiken, 2003; Mallinckrodt, Abraham, Wei, & Russell, 2006).

I conducted further analyses to examine the direct associations of participation variables with well-being. Engagement significantly predicted physical activity ($B = .84$, $SE = .33$, $p < .05$) at follow-up, and duration was significantly negatively associated with healthy nutrition at follow-up ($B = -.19$, $SE = .09$, $p < .05$). No other participation variables were significantly associated with well-being outcomes. I also further examined the relationship between need satisfaction and engagement. Indeed, need satisfaction significantly predicted engagement ($B = .25$, $SE = .09$, $p < .05$).

Finally, I split the sample by first year Cool Girls versus participants that had been in Cool Girls for two years or more and re-tested my hypotheses to determine if there were significant differences between these two groups in the associations between need satisfaction and well-being. Indeed there were no significant findings from these analyses and the results were similar to those reported above based on the entire sample.

DISCUSSION

A large body of research demonstrates the association between participation in YDPs and positive developmental outcomes (Catalano et al., 2004; Durlak, Weissberg, et al., 2010). However, the factors and processes that motivate youth to participate and stay engaged in programs to attain these outcomes need further exploration. This study sought to explore this process by examining the role of perceived support for basic psychological needs in the association between participation in a YDP, Cool Girls, Inc., and youth well-being. It was hypothesized that participation in Cool Girls would be positively associated with increased perceived needs satisfaction. It was also hypothesized that perceived needs satisfaction would be associated with a positive academic orientation and orientation toward a healthy lifestyle, and that perceived needs satisfaction at Cool Girls would mediate the association between par-

ticipation and girls' well-being. Partial support was found for the hypothesis linking participation to increases in perceived needs satisfaction, but hypotheses linking needs satisfaction to health behavior were not supported.

The main finding of this study demonstrates the important link between engagement and need satisfaction. However, there was no support for the proposed mediational model linking program exposure and perceived need satisfaction or perceived need satisfaction and well-being. Indeed, the study variables were not even correlated as expected. Generally, participation was not associated with perceived need satisfaction or well-being. Instead, only engagement was associated with perceived need satisfaction and nutrition. Further, perceived need satisfaction was only associated with one well-being outcome, nutrition. Given the lack of associations among study variables, it is important to consider context-specific factors for this population, as well as to consider alternative theoretical frameworks that may better explain the process youth experience through participating in ASP's.

Engagement and need satisfaction are related constructs such that intrinsic motivation is a critical component of engagement and need satisfaction, and both are important for behavior change. Drawing from SDT, the satisfaction of the basic psychological needs of autonomy, competence, and relatedness are critical for well-being, and environments that provide support for these needs can foster internal motivation (Ryan & Deci, 2000). Engagement theory describes the development of initiative, which is similar to the psychological need for a sense of autonomy described in SDT (Larson, 2000). Initiative represents internal motivation and is described as the ability to direct effort and attention toward an appropriately challenging goal. Settings that provide activities that are interesting, enjoyable, and challenging foster the development of initiative. Programs may foster engagement and self-determination simultaneously as intrinsic motivation is a key component of both constructs. Further, the two constructs are likely mutually reinforcing (Kuperminc et al., 2013). Consistent with literature, engagement emerged as a key aspect of participation associated with needs satisfaction in this study

(Dawes & Larson, 2011; Larson, 2000). However, the three measures of participation that reflect program exposure (duration, breadth, intensity) were not significant predictors of perceived needs satisfaction. It is important to note the measures of program exposure were based on youth self-reports, which likely limited their reliability. Specifically, youth's recall of the frequency of attendance over the course of a full academic year may have been inaccurate. Also, the measure of breadth asked youth to indicate whether or not they participated in various components of the program. Youth may not have been aware of the distinction between different program components given that many of the components are integrated throughout the weekly programming (e.g. Cool Tech may be computer activities during Cool Girls club, not a distinct activity). Finally, because the program offerings differ for girls who have been involved for a year or more versus those in their first year of involvement (i.e. eligibility to be matched with a mentor) there are inherent differences in program exposure among participants. Thus, creating a composite was not an appropriate alternative either as including duration would bias the measure. Unfortunately, program records of participation were not available.

Perceived needs satisfaction, the proposed mediator, was not associated with expected outcomes of youth well-being as measured by academic orientation and healthy behaviors. These results are not consistent with the literature, but may be due to the specific behavioral outcomes measured in this study. In terms of the healthy behavior outcomes, nutrition and physical activity may not be the best indicators of feeling needs satisfaction. This is because youth might not always have a choice in the activities they engage in or the foods they eat. In many cases their choices may be constrained by parents' work schedules, what gets packed in their lunches, options at school, etc. For example, youth that are unable to participate in organized extracurricular activities through school may still have opportunities to be active in their neighborhood. Alternatively, if the neighborhood is unsafe they may choose to be active in their home. In other words, a motivated individual may choose to be active even when choices are limited. Additionally, evidence illustrates other factors such as number of televisions or elec-

tronics in the home and parental behavior significantly influence youth's choice to engage in physical activity (Roemmich, Epstein, Raja, & Yin, 2007). Likewise, research suggests children and adolescents may value sedentary activities more than physical activity and being healthy (Epstein, Roemmich, Saad, & Handley, 2004).

Similarly, nutrition choices may be limited as a result of environmental factors including availability and parental choice; making it difficult to measure associated change. Further, research demonstrates that children and adolescents do indeed exercise autonomy in food choices (Bassett, Chapman, & Beagan, 2008) as a result of various factors that influence youth's nutritional choices, which may confound researchers' understanding of youth's choices. These factors include taste and appearance, convenience, and media marketing, all of which result in the selection of less healthy foods (Neumark-Sztainer, Story, Perry, & Casey, 1999). For girls, caloric and fat content also play a role in food selection (Neumark-Sztainer et al., 1999). Perhaps most importantly, youth in general report that eating healthy (fruits and vegetables) is simply not a priority among their other responsibilities including school, family, friends, etc. (Neumark-Sztainer et al., 1999). This is supported by follow-up analyses that examined the association between participation variables and youth well-being. Duration was negatively associated with healthy nutrition. It is possible that this reflects a general age trend as girls become older toward less healthy dietary behavior.

Additionally, a primary focus of the Cool Girls Inc., program is academic support, which is provided at every meeting. Fitness and nutrition are not necessarily part of the curriculum each week. Although needs satisfaction was not associated with measures of healthy behavior, follow-up analyses indicated engagement was positively associated with physical activity. This is consistent with the literature on youth engagement in which youth commonly exhibit both intrinsic motivation and concentration in physical activities (Larson, 2000). It is possible that perceived needs satisfaction was not associated with healthy behavior due to lack of sufficient exposure to the content such that the time devoted to educat-

ing girls about healthy behavior may not have been intense enough to change behavior as measured in this study. Further, the healthy behavior measures (nutrition and physical activity) are used by the CDC Youth Risk Behavior Surveillance (YRBS) among 9-12th graders; they are not widely used at the middle school level as they were in this study (CDC, 2012).

With respect to academic orientation, it is less clear why these results are not consistent with the literature. One possibility is that it may be difficult to detect any significant change in academic orientation because academic intrinsic motivation and enjoyment of learning are known to decline across childhood and through adolescence (Gottfried, Marcoulides, Gottfried, Oliver, & Guerin, 2007). It would be expected that girls would experience needs satisfaction from participating in Cool Girls, which would buffer the typical decline, but girls may not have had sufficient exposure in terms of duration to experience a buffered effect. Of note, the expected declines in academic orientation among early adolescents were not seen in this sample, which may suggest additional time in the program is needed to detect the effects of participation and need satisfaction on academic outcomes.

Intrinsic motivation is an important component of the constructs of engagement and need satisfaction, such that individuals get engaged in activities that are motivating and ultimately derive a sense of satisfaction, and more motivation from activities that satisfy the basic psychological needs. However, the development of needs satisfaction is more psychological in nature beyond interest, enjoyment, and concentration. For instance an individual may join an activity because they enjoy it or are interested in it (e.g. soccer). If the coach and other teammates are not friendly and supportive of a new participant, after a few practices it is likely that even a skilled individual will quit, despite her interest and enjoyment of the activity. On the other hand, it is much more likely for a less skilled individual to continue participating and work hard, if she feels connected to and supported by others in that setting, feels able to participate and feels like their involvement matters. Thus, it is proposed that these constructs be framed in terms of developmental progression in which they interact and are mutually reinforcing. This has

been previously suggested by Kuperminc, Smith, and Henrich (2013) in their review of research examining the social and motivational processes in after-school settings, and is evidenced in this study as both need satisfaction and engagement significantly predict each other.

Such a developmental progression suggests that needs satisfaction occurs after an individual becomes engaged, and that engagement alone (interest, enjoyment, concentration) is not sufficient to account for long-term involvement in rewarding activities. It takes time to become engaged, but needs satisfaction may require even longer-term participation to develop. Although average need satisfaction was high, it is possible that duration of participation may not have been long enough to detect an association between duration and need satisfaction. Of note, in this study older girls perceived lower need satisfaction, which suggests need satisfaction functions differently based on age and provides support for a developmental progression. This aligns with engagement theory as age and developmental level affect youth's skill development and activity choices (Larson, 2000). Further, needs satisfaction may work differently for youth depending on how long they have participated in the program. Girls may continue to participate in a program that they enjoy and feel challenged by in the short-term, but need satisfaction, a deeper level of intrinsic motivation, may be critical to sustained engagement and long-term outcomes beyond the first year of participation.

Thus, future research needs to explore the development and interplay between engagement and need satisfaction. This could be done using the experience sampling methodology in which participants are signaled to respond to a questionnaire or prompt at certain occasions over time (Kubey, Larson, & Csikszentmihalyi, 1996). Experience sampling allows researchers to track variations in self-report data pertaining to frequency and intensity of experiences, activities, thoughts and psychological states (Csikszentmihalyi & Larson, 1987). In addition this method provides an ecologically valid assessment of behavior and experience because data of time, place and social context are easily collected with each response. Experience sampling has been used effectively across populations and in children as

young as ten years old (Kubey et al., 1996). With current technology, this method is even more efficient in collecting a wealth of data quickly and with reduced participant burden as respondents could complete measures online or via a smart phone application. Specifically, this type of study would allow researchers to identify the trajectory of developing engagement and needs satisfaction over time. Variables of interest might include participation (e.g. frequency of attendance, breadth of activities), engagement, needs satisfaction, and behavioral variables such as diet, activity and academics. Participants could be prompted to respond to questions each week before, during, or following the cool girls club meeting. Weekly measures might include a consistent set of questions about participation, needs support, engagement, healthy behaviors, and a section for qualitative responses. Ideally, the measures would be completed throughout the youth's extended participation in a YDP and compare experiences and perceptions of first year participants versus girls that have been involved for a year or more.

Because this study involved low-income, African-American and Latina minority females living in an urban area, these results may not reflect typical youth development, and cannot be generalized to the general youth population. Instead, the unique context must be taken into consideration. Specifically, the youth in this sample come from urban public schools in which most students reside in single parent and low-income households. In addition the youth live in disadvantaged neighborhoods in which there is likely limited access to supermarkets and/or fresh fruit and vegetable supplies (Zenk et al., 2005). Further, caregivers' work schedules, may limit youths' choices about whether to attend after school programming. They may, however, be able to choose among the programs offered in their schools or communities. Thus, this study more generally measures the effect of Cool Girls, Inc. compared to any other after extracurricular offered.

Since participation in extracurricular activities among early adolescent African Americans is generally associated with positive outcomes such as higher grades, positive academic orientation, and resiliency (Fredricks & Eccles, 2008), it may have been more appropriate to focus on more proximal indica-

tors that reflect attitudes and motivation related to well-being outcomes of academics and healthy behaviors. Considering the likely stressful environments in which these youth live, they experience a variety of limitations that restrict their autonomy and choice of activity and nutrition. Thus, actual behavior change as measured in this study may take much longer than one academic school year.

Alternatively, theories unrelated to motivation may better explain these unexpected results. Among urban, low income, African American youth, gender is a significant factor related to educational expectations. Specifically, boys have been found to report significantly lower educational expectations than girls, and their teachers and parents also report lower expectations for boys than girls (Wood, Kaplan, & McLoyd, 2007). In this female sample, girls reported high academic orientation overall at baseline and follow-up, suggesting it may not have been sensitive to programmatic effects and may be influenced by other contextual factors specific to this population.

Additionally, resilience theory may more appropriately explain these data. Resilience, an individual's ability to successfully cope with stress reflects a dynamic process that has been associated with positive youth development (Garmezy & Rutter, 1983; Jarrett, 1997). Despite years of oppression and poverty, U.S. African American culture has evolved into a resilient group through the development of complex networks of resources and social support (Fleisher, 2009). Social factors that may better account for positive youth outcomes within low-income African American youth as early as 5th grade, in urban areas include relationships with parents, extended family, and community members (Jarrett, 1997; Yakin, McMahon, & University, 2003). A recent review of research on resilience further supports the use of the social-ecological theory of resilience in understanding the processes that result in positive youth development in stressful environments (Ungar, Ghazinour, & Richter, 2012).

On a different note, it may be more appropriate to apply need satisfaction theory differently. For instance, it may be that specific facets of need satisfaction are more relevant for certain youth depending on personal circumstances. For example, a child that struggles with self confidence and scholas-

tic competence may benefit more from competence support than a child with poor relationship quality at home that may benefit from relatedness support. From this perspective, the individual relationships youth form with program staff may actually be the most important aspect of program participation (rather than curricula, etc.), and these relationships will vary in the ways in which they support specific needs and facilitate need satisfaction (Li & Julian, 2012). It may be that the development of relationships characterized by attachment, reciprocity, progressive complexity, and balance of power provide support for individual-specific needs and this leads to positive outcomes.

Overall, engagement emerged as a key factor in understanding the link between participation in a YDP and positive youth outcomes. Although perceived needs satisfaction was not a significant predictor of youth well-being outcomes, engagement emerged as a predictor of one aspect of well-being, physical activity. At a minimum these results provide further support for the importance of engagement in the development of positive outcomes for youth. Because, intrinsic motivation is a key component of both self-determination theory and engagement, these results do not preclude the notion that Cool Girls, Inc. provides support for autonomy, competence and relatedness. Further research is necessary to better understand the details of the process of becoming motivated and sustaining engagement.

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APPENDICES

Appendix A Need Satisfaction Scale from LaGuardia et al. 2000

	Not At All True	Not True	True	Very True
1. When I am at Cool Girls Club, I feel free to be who I am.	1	2	3	4
2. When I am at Cool Girls Club, I feel like a competent person (like I am good at things).	1	2	3	4
3. When I am at Cool Girls Club, I feel cared about.	1	2	3	4
4. When I am at Cool Girls Club, I feel like I cannot succeed.	1	2	3	4
5. When I am at Cool Girls Club, I have a say in what happens and can voice my opinion.	1	2	3	4
6. When I am at Cool Girls Club, I do not feel close to the people there.	1	2	3	4
7. When I am at Cool Girls Club, I feel very capable and effective.	1	2	3	4
8. When I am at Cool Girls Club, I have a good relationship with the people there.	1	2	3	4
9. When I am at Cool Girls Club, I feel controlled and pressured to be certain ways.	1	2	3	4

Appendix B Adaptation of Harter's Self-Perception Profile for Children

	Not True	A Little True	Often True	Always True
1. I am good at my schoolwork.	1	2	3	4
2. I am just as smart as other people my age.	1	2	3	4
3. I am slow in finishing my schoolwork.	1	2	3	4
4. I often forget what I learn.	1	2	3	4
5. I do my class work well.	1	2	3	4
6. I have trouble figuring out the answers in school.	1	2	3	4