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OPPORTUNITY FOR ADULT BONDING/
MEANINGFUL NEIGHBORHOOD ROLES AND
LIFE-SATISFACTION AMONG USA MIDDLE SCHOOL
STUDENTS*

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ABSTRACT. This study investigated the relationship between adolescent life-satisfaction and bonding to adults/developing meaningful roles in the neighborhood within a pilot study of slightly modified version of the CDC Middle School Youth Risk Behavior Survey (MSYRBS) in a southern state in the USA. Overall, 43% of students reported that they were satisfied with their lives overall, and 34% reported that they experienced positive adult relationships and meaningful roles in their neighborhoods. After adjusting for socioeconomic status and family structure, differential associations were found between adolescent life satisfaction and bonding to adults/developing meaningful roles. Opportunities for adult bonding and meaningful roles in the neighborhood related to increased life satisfaction more strongly for Caucasian students than African-American students. *Post-Hoc* analyses suggest that the explanation for these differential relationships may involve socioeconomic status.

KEY WORDS: adolescents, bonding, life-satisfaction, meaningful roles

INTRODUCTION

Quality of life (QOL) has become an important concept in many fields (i.e. health promotion, mental health, medicine). The conceptualization of QOL is derived from two main perspectives: objective and subjective. The objective perspective consists of external indicators of QOL such as income, housing quality, and access to resources. In contrast, subjective QOL includes, but is not limited to individuals' subjective evaluations of the quality of their

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lives, such as their satisfaction with their overall lives and/or satisfaction with specific domains of their lives (e.g., school experiences, family relations)(Andrews and Robinson, 1991). Day and Jankey (1996) noted that such subjective experiences are crucial in determining a persons' overall QOL.

Theorists favoring subjective perspectives of QOL argue that an individual's subjective perception of QOL, such as life satisfaction, provides an important perspective in adolescent health research (Huebner et al., 2000). Therefore, the current study is focused on life satisfaction. Perceived life satisfaction has been defined as a persons' overall appraisal of her or his quality of life (Diener, 1984, 1994; Pavot et al., 1991). Previous studies investigating life satisfaction have been conducted primarily with adults and elderly populations; adolescent life satisfaction studies are much less prevalent (Veenhoven, 1996; Bender, 1997; Huebner, 2004). The importance of life satisfaction research with adolescents is demonstrated by studies showing that adolescents who are dissatisfied with life are more likely to abuse drugs (e.g. cocaine use), engage in violent and aggressive behaviors (e.g. physical fighting), and participate in sexual risk taking behaviors (e.g., unprotected sexual intercourse) (Valois et al., 2001, 2002, 2004; Zullig et al., 2001).

Understanding the full range of determinants and correlates of life satisfaction in adolescents is likely to be an exceedingly difficult process. As youth progress through different developmental stages, they often undergo biological and psychosocial changes resulting in fluctuations in competence/self-esteem, and increased social pressure, which may lead to reduced life satisfaction and/or depression (Harter, 1982; Holmbeck et al., 1995). At this time, if protective factors are not in place, adolescents may subsequently turn to maladaptive coping behaviors (e.g. substance abuse, aggressive behavior) (Valois et al., 2001, 2002, 2004; Zullig et al., 2001).

The emergence of positive psychology may play a key role in the identification of protective factors that prevent youth from developing psychopathology, reduce risk factors, build resiliency, and increase life satisfaction (Greenburg et al., 2001). For example, the Search Institute postulates that youth developmental assets are key ways to build resiliency and thriving in adolescents (Leffert et al., 1998; Scales et al., 2000). The 40 developmental assets consist of both internal and external assets organized into eight categories. The internal assets (i.e. commit-

ment to learning, positive values, social competencies and positive identity) are the values, skills, and competencies that adolescents develop to guide themselves and to become self-regulating. External assets (i.e. support, empowerment, boundaries/expectations, and constructive use of time) consist of the opportunities and relationships that adults provide to young people (Benson et al., 1998; Scales, 2001).

In the present study, we focused on external assets, specifically the elements of youth empowerment related to bonding with adults and developing meaningful roles in the neighborhood. Currently, the literature on the relationships between youth life satisfaction and neighborhood resources is sparse. According to Leffert et al. (1998) "*there is (sic) almost no empirical data on youth's perceptions of their value to the community or if they have useful roles and how this may impact their lives.*" One exception is a study by Homel and Burns (1989) which showed that Australian pre-adolescent children who lived in commercial areas, particularly inner-city neighborhoods with extensive social problems, reported lower life satisfaction than children who lived in residential areas.

Empowerment and its components consist of a constellation of elements that are essential to positive and socially appropriate development during adolescence (Chinman and Linney, 1998). For example, elements of empowerment, such as bonding to positive adults and bonding to the community, are thought to provide youth with positive traits, positive labels, and in general, a positive identity (Erickson, 1968; Bem, 1978; Rosenburg, 1998). In an empirical study conducted by the Search Institute, these aspects of empowerment were predictive of adolescent thriving, school success, helping others, delaying gratification, overcoming adversity, valuing diversity, and maintaining good health habits (Scales et al., 2000).

Nevertheless, much remains to be learned about adolescents' life satisfaction and their neighborhood resources and empowerment factors (i.e., bonding to adults, developing meaningful neighborhood roles). Recent models of child and youth objective and subjective quality of life, conceptualize multiple key domains of overall quality of life. For example, Land et al. (2001) include the domains of *material well-being; social relationships; health, safety/behavioral concerns; productive activity, place in community, and emotional-spiritual well-being* in their model of overall quality of life. Cummins (1996) proposes a similar conceptualization of *subjective* quality of

life (i.e., life satisfaction). Both models suggest the interrelatedness of adolescent life satisfaction and positive bonds with adults and meaningful neighborhood roles.

As outlined by Cummins (1996), additional elements, such as family structure and socio-economic status, play a significant role in determining child and adolescent life satisfaction. For example, adolescents living in non-intact homes are more likely to *change* residences compared to those living in intact two-parent homes. Residential mobility, an element of social relationships, often severs relationships with neighboring family and friends often causing the child emotional distress (Land et al., 2001; Cummins, 1996). In addition, families in low socio-economic situations may have limited command over material resources and may be deprived in terms of necessities of food, housing, and clothing (Duncan and Brooks-Gunn, 1997; Bianchi, 1999) resulting in lower levels of well-being.

Thus, research and theory suggest that knowledge of individual differences in opportunities for bonding/developing meaningful community roles has the ability to assess to some degree, positive youth development and to contribute to the understanding of life satisfaction of adolescents. Based on the extant research and conceptual models of Land et al. (2001) and Cummins (1986), it was hypothesized that there would be significant, positive association between overall life satisfaction and opportunities for adult bonding/meaningful neighborhood roles in adolescents as young as middle school age. As a way of disaggregating our data to address some concerns in the literature regarding race and gender differences in both developmental assets and life satisfaction, analyses were separated by specific race/gender categories. Furthermore, given the associations among socio-economic status (SES), family structure, and adolescent life satisfaction, socio-demographic (i.e., SES, family structure) items were used as covariates in this study (Cummins, 1996; Duncan and Brooks-Gunn, 1997; Bianchi, 1999).

METHOD

Participants

This study involved 2987 middle school students responding to the Middle School Youth Risk Behavior Survey (MSYRBS) in a

southern state in the USA. Usable data were obtained from 2482 students, yielding a response rate of 83%. Students were eliminated from this study if they were not African American or Caucasian and if they did not have complete responses to any empowerment, life satisfaction or race/gender questionnaire items. Gender for the sample was split at 49.2% female and 50.8% male. The final sample for analysis consisted of 2138 middle school students with usable data. Ethnicity was split between African Americans at 43% and Caucasians at 57%. The percentage of students in grade six was 36%, grade seven was 33%, and grade eight was 31%. Demographic data are reported in Table I.

Instrumentation

The Middle School Youth Risk Behavior Survey (MSYRBS) was developed in a joint effort between the Division of Adolescent and School Health (DASH, Atlanta) and the American Legacy Foundation (Washington, DC). National experts in adolescent health, and

TABLE I
Demographic characteristics

Variable	<i>n</i>	Percentage (%)
Females	1094	50.80
Males	1056	49.20
Whites	1262	58.59
Blacks	892	41.41
White Females	602	28.30
Black Females	485	22.60
White Males	659	31.00
Black Males	392	18.10
Grade 6	765	35.81
Grade 7	694	32.49
Grade 8	677	31.69
Intact family	1040	51.36
Non-intact family	985	48.64
Qualify for Free or Reduced lunch (low SES)	852	42.62
Does not qualify	1147	57.38

This study analyzed Black and White respondents only ($n = 2138$). Subjects other than Black or White were eliminated.

health risk behaviors for youth developed the MSYRBS, which was determined to have adequate content validity. The original instrument consisted of 63 items for: tobacco, alcohol and other drug use; violent/aggressive behaviors; physical activity; eating behaviors; life satisfaction, youth empowerment and demographic information such as age, grade, gender and socio-economic status (via eligibility status for a free or reduced price lunch at school).

Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS)

The Life Satisfaction scale included in the Middle School Youth Risk Behavior Survey was the Brief Multidimensional Student Life Satisfaction Scale (BMSLSS), (Seligson et al., 2003) based on the six domains (family, friends, school, self, living environment, and a global item, overall life satisfaction) of the Multidimensional Students' Life Satisfaction Scale (Huebner et al., 1998; Gilman et al., 2000) which has been validated with adolescents through exploratory and confirmatory factor analytic procedures. The reliability of the scale is supported by a Cronbach's alpha of .85. The six life satisfaction items in the BMSLSS are: "I would describe my satisfaction with my family life as"; "I would describe my satisfaction with my friendships as"; "I would describe my satisfaction with my school experience as"; "I would describe my satisfaction with myself as"; "I would describe my satisfaction with where I live as"; and a global question "I would describe my satisfaction with my overall life as". Seven response options from the widely used Terrible-Delighted Scale (Andrews and Withey, 1976) were used for each of these questions: (a) terrible, (b) unhappy, (c) mostly dissatisfied, (d) mixed (equally satisfied and dissatisfied), (e) mostly satisfied, (f) pleased, and (g) delighted. Prevalence data for self-reported levels of life satisfaction are located in Table II by frequency and percent.

Opportunity for Bonding/Meaningful Roles

Researchers responsible for administration of the MSYRBS for this southern state (in the USA), slightly modified a youth empowerment scale to accommodate a middle school student population. The scale was renamed once modified to reflect its items. Modifications (minor rewording of three items) were made based upon piloted data, interpretability of participants and the focus on perceived opportunity for empowerment for middle school students. The original scale,

TABLE II
Life satisfaction, and opportunity for adult bonding/meaningful involvement by frequency and percent

	Black Females N(%)	Black Males N(%)	White Females N(%)	White Males N(%)
<i>Level of life satisfaction</i>				
Dissatisfied (values)	288 (59.75)	115 (58.06)	337 (57.51)	360 (56.34)
Satisfied (values)	194 (40.25)	164 (41.94)	249 (42.49)	279 (43.66)
<i>Neighborhood involves youth in decision-making.</i>				
Presence of developmental asset	121 (25.91)	154 (40.74)	105 (18.85)	147 (24.02)
Absence of developmental asset	346 (74.09)	224 (59.26)	452 (81.15)	465 (75.98)
<i>Given chances to make neighborhood better</i>				
Presence of developmental asset	124 (26.55)	143 (37.83)	120 (21.54)	153 (25.00)
Absence of developmental asset	343 (73.45)	235 (62.17)	437 (78.46)	459 (75.00)
<i>Work with others and adults to make neighborhood better</i>				
Presence of developmental asset	148 (31.69)	163 (43.12)	148 (26.57)	171 (27.94)
Absence of developmental asset	319 (68.31)	215 (56.88)	409 (73.43)	441 (72.06)
<i>Youth able to make difference in neighborhood</i>				
Presence of developmental asset	198 (42.40)	204 (53.97)	204 (36.62)	248 (40.52)
Absence of developmental asset	269 (57.60)	174 (46.03)	353 (63.38)	364 (59.48)
<i>Talk to people in power about an issue</i>				
Presence of developmental asset	201 (43.04)	183 (48.41)	232 (41.65)	230 (37.58)
Absence of developmental asset	266 (43.04)	195 (51.59)	325 (58.35)	382 (62.42)

described elsewhere (Reininger et al., 2003), appeared to have adequate factor structure and internal consistency (i.e. $\alpha = 0.78$). The brief Opportunity for Bonding/Meaningful Roles scale utilized in this study consisted of the following items: (1) My neighborhood involves youth in important decisions; (2) I am given lots of chances to make my neighborhood better; (3) I am given chances to work with other young people and adults in my neighborhood to make it better; (4) Young people of my age are able to make a difference in my neighborhood; and (5) If I feel strongly about an issue, I would talk to people in power (such as mayor, school board, city council, etc) about my opinion. Each item was scored on a five-point Likert-type response scale (1 = strongly disagree to 5 = strongly agree), similar to what was recorded as its predecessor. The alpha coefficient was $\alpha = 0.82$ for this brief Opportunity for Bonding/Meaningful Roles scale.

Socio-Economic Status (SES)

SES was determined via a proxy measure. The questionnaire item: "At school are you eligible for a free or reduced price lunch." SES was also coded on a binary scale (yes/no). SES was used as a control variable in the present study.

Family Structure

Family structures was measured by one question in the present study: "Who are the primary adults who live in your home?" Response items for family structure were (a) My mother and father (real or adoptive); (b) My mother only (real or adoptive); (c) My mother and stepfather; (d) My mother and another adult/other adults; (e) My father only (real or adoptive); (f) My father and stepmother; (g) My father and another adult/other adults; and (h) Other relatives, non-relatives, or guardians. Family structure was also used as a control variable in the study.

Procedure

The Middle School Youth Risk Behavior Survey (MSYRBS) should be considered a pilot study for this southern state in the USA. A sample of 30 middle schools participated in the MSYRBS in the spring of 2003 (excluding special education), upon agreement with school district superintendents and principals. Using random starts,

second period classes were selected with an equal probability computerized sampling program. Passive consent forms were sent home to eligible students at least five days in advance. Only those parents who did not want their child to participate were required to return forms. Trained data collectors administered the survey insuring anonymity, privacy, and confidentiality. Human subjects approval according the referent university's internal review board was met prior to survey administration.

Data Analysis

All six discrete variables from the life-satisfaction scale were pooled to form a pseudo-continuous dependent variable ranging in score from 6 (1×6) to 42 (7×6). The life satisfaction score was expressed as mean life satisfaction score (MSS) with lower scores indicative of reduced satisfaction with life.

The analyses were conducted separately for the four race-gender groups, white females (WF), black females (BF), white males (WM), and black males (BM). The use of indicator or dummy variables to represent the four groups (WF, BF, WM, BM) would have assumed that the coefficients of all risk and confounding variables were constant across all four race-gender groups. Because this assumption was false, the four groups were analyzed separately. For the outcome variable, three levels of outcome (satisfied, midrange and dissatisfied) were considered for the logistic regression, conducted at $\alpha = 0.05$ for this analysis. The pooled dependent variable was collapsed/categorized into three outcome levels: dissatisfied, midrange, and satisfied adolescents. Because middle school students falling into the midrange category were measured with one survey question, whereas the other two categories comprised three questions collapsed into a composite, a numeric collapse of the MSS determined subject classification. MSS scores ranging from 6 to 27 were categorized as dissatisfied; MSS scores ranging from 28 to 34 composed the midrange group; and MSS scores of 35 or greater defined the satisfied group. Odds ratios (OR) and 95% confidence intervals (CI) were calculated to determine which developmental asset variables were associated with reduced life satisfaction for each race-gender group for both the midrange and dissatisfied levels. Students at the satisfied level served as the referent group. Variables that did not meet the 0.05 significance level were not retained in the model.

For bonding to adults/developing meaningful roles, the youth developmental asset was considered present when a student reported that they strongly agreed or agreed, compared to individuals who were neutral, disagreed or strongly disagreed. Previous studies reported similar analysis for assets (Atkins et al., 2002). Based on race-by-gender interactions observed in the Reninger et al. (2003) study, separate analysis were conducted for the following race gender groups, black females (BF), black males (BM), white females (WF), and white males (WM), to further adjust for differences that existed between race. Both dependent variables and independent variables were dichotomized to enable the computation of odds ratios (OR) and corresponding confidence intervals (CI). In all analyses, middle school students who reported being satisfied with their lives were compared to dissatisfied students for the dependent variable.

Initially, frequencies were tabulated to determine the percentage of participants with the presence of the asset and individuals who are satisfied with life. Among the four-race/gender groups frequencies were reported for family structure and SES. Subsequent unadjusted odds ratios (OR) and 95% confidence intervals (CI) were calculated to determine associations between independent and dependent variables. Follow-up multivariable OR's and CI's were computed between opportunity for bonding/meaning roles and life satisfaction adjusting (holding items constant across levels) for SES and family structure. Students whose overall composite score fell into the dissatisfied range served as the referent group, and students who reported that they were neutral, disagreed or strongly disagreed to asset questions served as the referent group. For SES and family structure, students living with both mother and father (real or adoptive) served as the referent group and students who did not receive free lunch served a referent group. Both SES and family structure were used as control variables in the multivariable analysis. These control variables as utilized, held items constant across the testing of association and significance.

RESULTS

Socio-demographics

According to estimates approximately 48.1% (BF = 63.73% BM = 61.64%; WF = 40.29%; WM = 36.11%) of the total sample live in non-intact

homes. Additionally 42.62% (BF = 64.43%; BM = 63.96%; WF = 31.88%; WM = 23.10%) qualify for free or reduced price lunch. Based on estimates, African Americans appear more likely to live in non-intact families and more likely to qualify for free or reduced price lunch (Table I).

Life Satisfaction

The BMSLSS, a six-item scale used to measure students perceived life-satisfaction was categorized into two domains (i.e. dissatisfied, and satisfied). The prevalence rates for dissatisfied, and satisfied were roughly 57%, and 43% respectively. Specific race/gender frequencies are located in Table II.

Perceived Opportunity for Youth Empowerment

For perceived youth empowerment, the prevalence rates were as follows (i.e. those whose responses were usually or in the agree ranges for selected items): 26.68% agreed that the neighborhood involved youth in decision making; 26.96% agreed that they were given the opportunity to make the neighborhood better; 31.74% agreed that they are given chances to work with others to make the neighborhood better; 42.57% agreed that young people their age are able to make a difference in the neighborhood; and finally, 43.04% will talk to people in power about their opinion on an issue. Frequencies for specific race/gender groups are displayed in Table II.

UNADJUSTED ASSOCIATIONS BETWEEN PERCEIVED LIFE SATISFACTION AND RELATED VARIABLES

Black Females

Associations between empowerment items and perceived life satisfaction were observed only at the $p < 0.05$ level. Specifically, the items of neighborhood involves youth in decision making (OR = 1.67), working with others and adults to make the neighborhood better (OR = 1.70) and talking to people in power about an issue (OR = 1.45) were significantly associated with overall life satisfaction. No other *significant* associations were observed among Black Females.

Black Males

Among Black Males perceived life satisfaction was positively associated with living in an intact family structure (OR = 1.66). No other associations were observed.

White Females

Among White Females significant associations were observed between perceived life satisfaction and neighborhood involves youth in decision making (OR = 1.55), youth are given chances to make neighborhood better (OR = 1.98), working with others and adults to make the neighborhood better (OR = 1.63), youth are able to make a difference in the neighborhood (OR = 1.95), talking to people in power about an issue (OR = 1.74), SES (OR = 1.60), and living in an intact family structure (OR = 2.51).

White Males

Among White Males unadjusted associations between perceived life satisfaction were observed for, neighborhood involves youth in decision making (OR = 1.63), youth are given chances to make the neighborhood better (OR = 2.02), working with others and adults to make the neighborhood better (OR = 1.98), youth are able to make a difference in the neighborhood (OR = 1.69), and living in an intact family structure (OR = 1.77) (Table III).

ADJUSTED ASSOCIATIONS BETWEEN PERCEIVED LIFE
SATISFACTION AND OPPORTUNITY FOR ADULT
BONDING/MEANINGFUL ROLES

Black Females

Among Black Females no associations were observed for sociodemographic variables, while controlling for the scale components of adult bonding/meaningful involvement. Significant associations for life satisfaction were observed for neighborhood involves youth in decision-making (OR = 1.61), and work with others to make

TABLE III

Unadjusted associations between life satisfaction and the independent variables opportunity for adult bonding/meaningful activity, sex and family structure

	Black Females (BF) OR (CI)	Black Males (BM) OR (CI)	White Females (WF) OR (CI)	White Males (WM) OR (CI)
Qualify for Free or Reduced Price Lunch (SES)	.997 (.663-1.44)	1.09 (.771-1.67)	1.60* (1.11-2.33)	1.54 (1.05-2.27)
Living in an intact family: Mother and Father (real or adoptive)	1.10 (.757-1.63)	1.66* (1.09-2.51)	2.51**** (1.75-3.59)	1.77*** (1.26-2.49)
Neighborhood involves youth in decision making	1.67* (1.09-2.53)	.801 (.583-1.33)	1.55* (1.02-2.38)	1.63** (1.13-2.30)
Youth are given chances to make neighborhood better	1.49 (.991-2.26)	1.15 (0.757-1.75)	1.98** (1.32-2.98)	2.02**** (1.39-2.93)
Youth are able to work with others and adults to make neighborhood better	1.70* (1.15-2.52)	1.36 (0.901-2.06)	1.63* (1.12-2.37)	1.98**** (1.38-2.83)
Youth able to make difference in neighborhood	1.09 (0.757-1.59)	1.17 (0.784-1.77)	1.95*** (1.37-2.77)	1.69*** (1.22-2.34)
Youth are able to talk to people in power about an issue	1.45* (1.01-2.10)	1.14 (0.764-1.72)	1.74** (1.23-2.45)	1.29 (.934-1.80)

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; **** $p < 0.0001$.

neighborhood better (OR = 1.63) while adjusting for both SES and family structure variables.

Black Males

No significant associations were observed for perceived opportunity for adult bonding/meaningful roles and life satisfaction among Black males, while adjusting for SES. However, significant associations were observed for family structure (Odds Ratios ranging from 1.57 to 1.61) and perceived life satisfaction adjusting for SES and each element of adult bonding/meaningful roles.

White Females

Positive relationships were observed between perceived life satisfaction and youth are given chances to make the neighborhood better (OR = 1.90), youth are given opportunities to work with others to make neighborhood better (OR = 1.58), youth able to make a difference in neighborhood (OR = 0.90), and youth are able to talk to people in power about an opinion (OR = 1.62), when compared to those who disagreed with these statements adjusting for socio-demographic variables. Adjusting for SES and each element for adult bonding/meaningful roles, significant associations were observed between perceived life satisfaction and family structure with Odds Ratios ranging from 2.42 to 2.49.

White Males

Positive relationships for White Males were observed between perceived life satisfaction and neighborhood involving youth (OR = 1.78), youth being given chances to make the neighborhood better (OR = 2.15), youth are given opportunities to work with others to make neighborhood better (OR = 2.03), and youth are able to make a difference in the neighborhood (OR = 1.77) adjusting for sociodemographic variables. Both family structure and SES were significantly associated in multivariable models adjusting for elements of adult bonding/meaningful roles with Odds Ratios ranging from 1.49 to 1.77 (Table IV).

TABLE IV

Adjusted multivariable regression model results via odds ratios and 95% confidence intervals for opportunities for adult bonding/meaningful roles

	Black Females OR (CI)	Black Males OR (CI)	White Females OR (CI)	White Males OR (CI)
Involves youth in decision-making. SES	1.61 (1.06-2.46)* .992 (0.663-1.49)	0.871 (.571-1.33) 1.04 (.675-1.60)	1.42 (0.982-2.20) 1.44 (0.982-2.12)	1.78 (1.21-2.60)** 1.48 (.933-2.19)
Family Structure	1.14 (0.761-1.70)	1.61 (1.05-2.47)*	2.44 (1.69-3.53)****	1.77 (1.25-2.50)**
Given chances to make neighborhood better	1.49 (.984-2.27)	1.14 (.749-1.75)	1.90 (1.25-2.91)**	2.15 (1.47-3.14)****
SES	.985 (0.659-1.47)	1.05 (.682-1.61)	1.42 (0.966-2.09)	1.52 (1.02-2.27)*
Family Structure	1.09 (.730-1.63)	1.59 (1.04-2.44)*	2.47 (1.71-3.57)****	1.75 (1.24-2.48)**
Work with others to make neighborhood better	1.63 (1.09-2.42)*	1.39 (0.917-2.12)	1.58 (1.07-2.34)*	2.03 (1.41-2.92)****
SES	0.987 (0.659-1.47)	1.09 (0.703-1.67)	1.42 (0.964-2.09)	1.46 (0.982-2.18)
Family Structure	1.06 (0.707-1.58)	1.60 (1.04-2.45)*	2.49 (1.73-3.61)****	1.70 (1.20-2.41)**
Able to make difference in neighborhood. SES	1.08 (0.737-1.56) .969 (.648-1.45)	1.18 (0.779-1.79) 1.06 (.691-1.64)	1.90 (1.33-2.74)**** 1.44 (.981-2.13)	1.77 (1.27-2.47)**** 1.49 (1.01-2.23)*
Family Structure	1.09 (.737-1.64)	1.57 (1.03-2.41)*	2.44 (1.68-3.55)****	1.71 (1.21-2.42)*
Able to talk to people in power about issue SES	1.43 (0.983-2.08) 0.962 (0.644-1.38)	1.12 (0.743-1.70) 1.05 (0.681-1.61)	1.62 (1.14-2.31)** 1.40 (0.954-2.07)	1.36 (.973-1.90) 1.42 (.954-2.10)
Family Structure	1.12 (0.752-1.68)	1.58 (1.03-2.42)*	2.42 (1.67-3.51)****	1.73 (1.23-2.45)**

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; **** $p < 0.0001$. SES = Social Economic Status, FAMSTR = Family Structure (intact/non-intact).

Note: Covariate coefficients (SES and FAMSTR) were added to increase interpretation.

POS HOC ANALYSIS

Given the relative lack of significant association observed for elements of empowerment and life satisfaction among African American adolescents, additional analyses were undertaken. The initial analysis consisted of determining if African Americans were more likely to report that they were from lower socio-economic backgrounds explored through the proxy measure: Do you qualify for free or reduced price lunch at school. This analysis revealed that African Americans were nearly 6 times more likely to report that they come from lower socio-economic backgrounds (OR = 5.90, 95%CI = 4.44–9.84, $p < 0.0001$). In addition, a model was created to determine if socio-economic status related significantly to opportunities for adult bonding/meaningful roles and life satisfaction, controlling for race. The analysis revealed significant associations between opportunities for adult bonding/meaningful roles and life satisfaction among both males and females who reported that they were from higher socio-economic backgrounds. Specific Odds Ratios and 95% Confidence Intervals for this analysis are located in Table V.

DISCUSSION

The purpose of this study was to examine the associations between neighborhood resources (i.e., perceived opportunities for adult bonding/meaningful roles) and overall life satisfaction in a large, diverse middle school student sample from a Southeastern state in the United States. The results demonstrated that these middle school students reported similar prevalence rates for overall life satisfaction as reported in other adolescent studies with the BMLSS (Valois et al., 2001; 2002; 2004).

The findings of this study also demonstrated that opportunities for adult bonding/meaningful neighborhood roles are related to increased life satisfaction among adolescent middle school students; however, this association appears to be differentially associated with race and gender differences. Adjusted odds ratios revealed more significant associations with life satisfaction among Caucasian students than African-American students. Fewer significant associations

TABLE V
 Odds Ratios and 95% Confidence Intervals for adjusted associations between life-satisfaction and opportunities for adult bonding/
 meaningful roles by SES

	Lower SES Background Males (OR/CI)	Lower SES Background Females (OR/CI)	Higher SES Background Males (OR/CI)	Higher SES Background Females (OR/CI)
Neighborhood involves youth in decision making	1.10 (.718-1.69)	1.42 (0.936-2.17)	1.43 (0.991-2.07)	1.77** (1.15-2.73)
Youth are given chances to make neighborhood better	1.36 (.884-2.09)	1.42 (.930-2.17)	1.84** (1.27-2.66)	2.02*** (1.34-3.05)
Youth are able to work with others and adults to make neighborhood better	1.48 (0.966-2.26)	1.68* (1.12-2.52)	1.93*** (1.35-2.76)	1.56* (1.07-2.28)
Youth able to make difference in neighborhood	1.15 (.758-1.74)	1.02 (.697-1.48)	1.85*** (1.33-2.57)	2.04***** (1.43-2.91)
Youth are able to talk to people in power about an issue	1.09 (0.718-1.65)	1.51* (1.04-2.20)	1.37 (0.991-1.91)	1.63** (1.15-2.29)

Note: Analysis Adjusted for Race, * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; **** $p < 0.0001$; ***** $p < 0.00001$; SES = Socioeconomic Status (higher/lower).

were observed among African-American females, with no significant associations within African American males.

The relative lack of significant associations between the African-American adolescents' life satisfaction and neighborhood bonding/meaningful role measures warrants explanation. Thus, post hoc analyses were used to further explore interrelationships among life satisfaction, neighborhood empowerment experiences, and socio-demographic variables. First, analyses were conducted to determine the extent of the relationship between race and of socioeconomic status in this sample. The analysis revealed that African Americans were nearly 6 times more likely to report that they came from lower socioeconomic backgrounds. Second, analyses were conducted to determine the extent of the association between opportunities for adult bonding/meaningful roles and life satisfaction, calculated separately for low versus high socioeconomic status males and females, controlling for race. These analyses revealed more significant associations for males and females from higher socioeconomic backgrounds than lower socioeconomic status backgrounds.

Taken together, these results suggest that socioeconomic factors may help illuminate findings of racial differences in the relationships between adult bonding/meaningful neighborhood role variables and global life satisfaction in this age group. That such empowerment factors predict life satisfaction for Caucasian, but not African-American US adolescents indicates that other factors (e.g., alternative environmental assets) are more important correlates of life satisfaction for African-American youth.

Clearly, environmental and social factors in the Southeastern US are different for Caucasian and African American youth. Some African-American neighborhoods may provide more toxic environments, due to high levels of crime, poverty, and family and institutional disintegration, resulting in a lack of community belongingness, which has previously been shown to be inversely related to various well-being indexes in adolescents (Chipuer et al., 2003). Despite the high prevalence rates of perceived opportunity for empowerment reported in this middle school sample of African-American youth, it is possible that many African Americans may experience more limited roles within the community than perceived.

Given that the African American students in the present sample were significantly more likely to be living in lower socioeconomic

circumstances, they also are more likely to possess fewer material resources and are more likely to live in socially disorganized communities with more limited access to positive neighborhood contacts. Such circumstances may encourage students and their families to seek bonding opportunities outside of their immediate neighborhood environments, such as church organizations, extended families, and youth recreational centers (Sutherland et al., 1992).

Whatever the case, research is needed to explore further the particular environmental assets that are most strongly related to life satisfaction for African-American adolescents. Such information will be critical for designing prevention and health promotion programs that are tailored to the unique needs of African-American middle school students, at least in certain locations.

The results of this study should be interpreted with caution, due to various limitations. First, these data apply only to youth in this particular southeastern US state; the data may not apply to all middle school adolescents. Second, despite the confidential nature of the study, subjects may under-report or over-report behaviors due to social desirability. Similarly, the estimates of participation were obtained from self-reports; actual community participation levels could differ from adolescents' perceptions. Moreover, these data are cross-sectional and cannot be used to imply causal relations. It is not clear from these findings whether increases in neighborhood opportunities for positive bonding with adults and meaningful roles lead to increased life satisfaction or vice versa. Future longitudinal and/or experimental studies are needed to determine the direction of these effects. Finally, further research is needed to examine the specific psychosocial mechanisms that account for the association between empowerment opportunities and overall life satisfaction for Caucasian adolescents

This study also had several noteworthy strengths. First, the use of a well-developed brief scale for assessing self-reported life satisfaction for adolescents (Huebner et al., 2000) was advantageous. Second, the use of a newly developed brief scale for perceived adolescent empowerment (i.e., opportunity to develop positive bonds with adults and meaningful roles in the neighborhood community) appears promising (Paxton et al. in press). Third, the large, diverse sample of middle school students was also an important strength of the study. Finally, unlike some previous studies, controlling for SES effects

clarified interpretation of the race and gender effects, suggesting possible explanations for the lack of association between African-American middle school students' overall life satisfaction and opportunities for developing positive bonds with adults and meaningful roles in their neighborhoods.

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