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Psychometric Analyses of the Parent-Adolescent Relationship Scale  
in the National Longitudinal Survey of Youth - 1997

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## Introduction

Historically, and across diverse cultures, parents have been identified as central influences in the development of their children. Today, despite recent controversy over the role and importance of parents (Harris, 2002), considerable research indicates that the parent-child relationship is important in the lives of infants, children, young adolescents and teens. Regardless of age, children need parents. Indeed, across multiple studies, it appears that the quality of the parent-child relationships is one of the more important factors in determining what kind of behaviors and attitudes adolescents adopt across domains such as health, education, reproductive behaviors, social interactions, and problem behaviors (Hair, Jager, & Garrett, 2002).

The purpose of this paper is to suggest a brief but psychometrically sound measure of the relationship between resident parents, both fathers and mothers, and their adolescent children. Reflecting our interest in outcomes for, and from the perspective of, children, we use a measure that is reported by the adolescent. Analyses in this paper examine the psychometric properties of the resident parent-adolescent relationship scale employed in the National Longitudinal Survey of Youth – 1997, and elucidate the apparent effects of the resident parent-adolescent relationship on the subsequent activities and behaviors of the teens. First, we consider evidence from the existing literature on the importance of this construct.

### *Linking Quality Parent-Adolescent Relationships to Outcomes*

The importance of parents to children's development was briefly the source of considerable controversy in the late 1990's. Judith Rich Harris (2002) argued that the primary influence of parents was genetic. Though she acknowledged that abuse by parents could undermine children's development, she contended that peers are the primary socializing forces in

children's lives and that parents could primarily affect their children by influencing the peers with whom he or she would interact (Harris, 2002). This contention that parents don't matter energized social scientists, who marshaled a body of evidence illustrating the importance of parents (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). To summarize the handful of existing high-quality, multivariate studies available, research shows that quality parent-teen relationships are linked to a wide range of positive outcomes, such as mental and emotional well-being, adjustment, and social competence, and decreased problem behaviors such as substance use, delinquency, and sexual activity (Borkowsky, Ramey, & Bristol-Power, 2002; Hair et al., 2002).

Mental and emotional well-being in adolescence has been associated with quality parent-adolescent relationships. For instance, recent cross-sectional research among youth in grades 7 - 12 has found that high parent-family connectedness is predictive of decreased emotional distress and suicidality in adolescents (Resnick et al., 1997). This finding is paired with evidence that suggests that child reports of enjoyment of shared activities with parents, the presence of parents at home during the day (e.g., at waking, after school, at dinner, or at bedtime), and high parental expectations for children's school achievement, are moderately protective against emotional distress for both younger and older adolescents (Resnick et al., 1997). Similarly, in a longitudinal study of parents and adolescents, high levels of parental support were related to affection for parents, consensus with parents, dating happiness, feelings of community attachment, low psychological distress, happiness, life-satisfaction, and an array of other positive outcomes (Amato & Booth, 1997). Complementary studies based on cross-sectional research has found that adolescents with detached relations to their parents are more likely to report higher levels of depressed mood (Mahony & Stattin, 2002). In addition, using data from the National

Longitudinal Study of Adolescent Health (Add Health), researchers have found that adolescents who feel their parents are unsupportive have less opportunity to spend with their parents throughout the day, and that those who are involved in fewer activities with their parents are more likely than their peers who are engaged with their parents to experience loneliness (Antognoli-Toland, 2001).

The development of social competence and adjustment also appears to be related to high quality parent-adolescent relationships (Hair et al., 2002). Longitudinal research by Barber and Erickson (2001) shows a supportive parent child relationship to be the primary family-level predictor of social initiative, a component of social competence, in older teens (14-17); parental support was also indirectly related to social initiative in younger teens (Barber & Erickson, 2001). The parent-adolescent relationship is directly associated with self-confidence, empathy, a cooperative personality (Barber & Erickson, 2001; Hair et al., 2002), psychological well-being (Franz, McClelland, & Weinberger, 1991), self-reliance, flexibility, positive social orientation, ego resilience, and competent interaction styles in all relationships (Engels, Finkenauer, Meeus, & Dekovic, 2001; Kerns & Stevens, 1996; Zahn-Waxler & Smith, 1992).

The parent-child relationship also appears to be related to positive teen behaviors and outcomes in the academic setting. For instance, lower levels of high school dropout have been associated with early mother-adolescent attachment in an all-White population (Garnier & Stein, 1998). In addition, parental involvement and connection with older teens (14-18) significantly predicted higher grades and higher academic expectations (Herman, Dornbusch, Herron, & Herting, 1997).

Problem behaviors, such as school suspensions, delinquent acts, and violent crime, have also been linked to the quality of the parent-child relationship. For instance, longitudinal

research of an all-White high school sample suggests that lower levels of parental support are linked with higher levels of adolescent deviant behavior and lower levels of “socially approved, normatively expected” behaviors, such as church involvement and academic performance (Jessor & Jessor, 1975). Research on large samples of young adults has found poor quality relationships with parents to be associated with the development of antisocial tendencies (Barber & Erickson, 2001) and emotional distress (Blum & Rinehart, 1997), two characteristics that may be antecedents to problem behaviors (Hawkins et al., 1998). Furthermore, a study of over 12,000 teenagers found a link between a positive parent-child relationship and committing fewer violent behaviors, for both older and younger teens (Blum & Rinehart, 1997; Resnick et al., 1997). Studies of specific populations have supported this pattern, as well. For example, a large sample of mostly Mormon teens showed a link between warm and supportive mother-adolescent relationships and less teen involvement in problem behaviors (Bahr, Maughan, Marcos, & Li, 1998). In the context of adolescent development, problem behaviors, such as violent and deviant acts, are widely viewed as harmful in and of themselves. It is important to note that such behaviors can also be harmful in the context of the consequences they may bring about, such as school suspensions, expulsions, and poor peer relations (Capaldi & Stoolmiller, 1999; Rodney, Crafter, Rodney, & Mupier, 1999).

Perhaps the most studied outcomes in regard to the parent-adolescent relationship are those concerning alcohol, tobacco, and drug use. It is important to acknowledge that the direction of causality is not always clear and may well be bi-directional. Also, some studies do not control for important confounding influences. However, multivariate longitudinal studies do find an association. Several studies have revealed that positive relationships or connectedness between parents and adolescent is associated with lower levels of use, or nonuse, for all three of

these substances (Blum & Rinehart, 1997; Hundleby & Mercer, 1987; Resnick et al., 1997). The majority of the studies, however, appear to have focused on one substance-related outcome at a time. Poor parent-adolescent relationships have been linked to increased alcohol use among teens (Jessor & Jessor, 1977; Whitbeck, Hoyt, Miller, & Kao, 1992) and to early onset of alcohol and cigarette use (Brooks-Gunn & Furstenberg, 1989; Jessor & Jessor, 1977). In a mostly White sample, parental supportiveness was inversely related to the likelihood of smoking one year later for teens who had not smoked previously, and buffered the likelihood of teens who had experimented with smoking from becoming regular smokers (Chassin, Presson, Sherman, Montello, & McGrew, 1986).

Similar patterns have been found for drug use. Attachment between parents and adolescents has been associated with the nonuse of drugs in older teens (Brook, Brook, Gordon, Whiteman, & Cohen, 1989); a quality relationship with parents has been associated with less involvement with drugs and decreased influence of drug-using peers in a White and Hispanic population (Coombs, Paulson, & Richardson, 1991); positive teen-parent relationships have been linked with less drug use in a largely Mormon sample (Bahr et al., 1998); and distress in the mother-adolescent relationship in fatherless homes appears to be related to higher rates of 10<sup>th</sup>-grader drug use (Farrell & White, 1998).

Precocious sexual activity is another problem behavior that the quality of the parent-adolescent relationship appears to affect (Manlove, Terry-Humen, Romano Papillo, Franzetta, & Ryan, 2002). For instance, adolescents who have high-quality relationships with their parent are less likely to initiate sex or be sexually active (Miller, 1998). If pregnant, teens with quality parent-child relationships have better reproductive health outcomes (Miller, Sabo, Farrell, & Xu, 1998). In analyses of the AddHealth survey, parent-adolescent connectedness has been

associated with delayed sexual intercourse (Blum & Rinehart, 1997; Resnick et al., 1997); similarly, research on 13-18 year old youth has linked poor quality parent-child relationships to increased sexual activity for females (Whitbeck et al., 1992). Finally, research by Jessor and Jessor (1975) suggests that a lack of parental support is linked to the development of characteristics in high-schoolers, such as greater deviance, that would lead to sexual activity.

In summary, the quality of the parent-adolescent relationship appears to be associated with fewer negative or problem behaviors and more positive outcomes, such as academic achievement and social competence. It is worth noting, however, that these relationships are not valuable only for these related effects; a high-quality relationship between a teen and their parent is a positive and important outcome, in and of itself. Studies consistently find that a happy family life is very highly rated by a majority of adolescent and adults.

#### *Measures of Parent-Adolescent Relationships*

The quality of the parent-adolescent relationship can be described in different ways (DeCato, Donohue, Azrin, Teichner, & Crum, 2002). Researchers have discussed it in terms of parent-child attachment, connectedness, degree of communication on key issues, and warmth or affection in the relationship. DeCato and colleagues (2002) conducted an in-depth review of a number of available measures to assess satisfaction with the relationship between parents and youth. Their review initially yielded over 75 different types of measures that included self-reports, rating scales, structured clinical interviews, open-ended questions, projective instruments, Q-sorts, and observational coding schemes. Of these, they reviewed 20 instruments that met the needs of the project on indicators of positive child outcomes: (a) they were closed-ended, self-report scales; (b) they focused on the satisfaction of the relationship between a specific youth and parent or included subscales that measured satisfaction with the parent-

adolescent relationship; and (c) they were developed and used with preadolescents (ages 10-12), adolescents (ages 13-17), or parents of preadolescents and adolescents. Of the 20 instruments, only five collected information from the perspective of the adolescent. These included (a) Adolescent's Perception of Deprivation-Satisfaction (Rushing, 1964), (b) Child-Parent Relationship Scale (Swanson, 1950), (c) Index of Child's Perception of Parent's Dissatisfaction (Farber & Jenne, 1963), (d) Parental Control Measure (Prinz, Foster, Kent, & O'Leary, 1979), and (e) Youth Happiness with Parent Scale (DeCato, Donohue, Azrin, & Teichner, 2001).

The DeCato (2002) review presented detailed information on each of these five measures. To summarize, the authors noted that the Adolescent's Perception of Deprivation-Satisfaction scale was easy to understand, however it did not have tested psychometric properties, and the adolescents needed to have siblings and relationships with both parents in order to respond to the measure. In addition, the DeCato review reported that the questions may be outdated for today's youth. For the Child-Parent Relationship scale, the authors concluded that the scale did an adequate job of measuring global satisfaction with the parent youth relationship, however, its psychometric properties had not been demonstrated in a current sample, and its questions may not be relevant to today's youth. The Index of Child's Perceptions of Parent's Dissatisfaction evaluated youths' perceptions of parents' satisfaction with him or her in several key areas, such as curfew, schoolwork and chores. It did not, however, assess youths' satisfaction with their parents' behavior. Also, important for our purposes, it does not assess parent-child relationships, and psychometric properties for the measure were not provided. The largest drawback to the fourth measure in the DeCato review, Parental Control, is its singular focus on parental discipline without attention to any other aspect of the parent-youth relationship. The fifth scale, YHPS, created by DeCato and colleagues, demonstrated adequate psychometric properties in a sample

of conduct-disordered youth ( $\alpha = .78$ ), and was correlated positively with the youths' overall happiness with their parents and negatively with the youths' problem behaviors. Additionally, the 11-item scale attempts to measure multiple aspects of the parent adolescent relationship (e.g., communication, friends and activities, curfew, household rules, schoolwork, rewards, discipline, chores, alcohol and drugs, illicit behaviors, as well as an overall happiness question). The major weakness is that the YHPS has only been evaluated and used in a clinical sample of behaviorally-disordered and substance-abusing male youth.

The National Longitudinal Study on Adolescent Health (AddHealth) uses a self-report measure of four items for the quality of the parent-adolescent relationship (Resnick et al., 1997). This measure has demonstrated high ( $\alpha = .83$ ) internal consistency. On the negative side, the items are all very general in nature (e.g., How close do you feel towards your mother/father? How much do you feel your mother/father cares about you? How satisfied are you with your relationship with your mother/father? To what degree do you feel loved and wanted by family members?) and do not evaluate any specific behaviors between the youth and the parent. There is some indication that this measure does not distinguish among specific demographic characteristics, such as race, as expected. It also appears to be highly skewed (U.S. Department of Health and Human Services: Office of the Assistant Secretary for Planning and Evaluation, 2001).

The measure we selected for this paper, from the National Longitudinal Survey of Youth, 1997 cohort, is designed to tap into both the global aspects of the parent youth relationships, such as identification with the parent (e.g., I think highly of him/her), as well as whether the youth feels supported by the parent (e.g., How often does s/he criticize you or your ideas?). The remainder of the paper will examine and report the psychometric properties of this measure.

## Methods

### *Database*

In this paper, we analyzed data from the National Longitudinal Survey of Youth, 1997 cohort (NLSY97), which collects information over time from a nationally representative sample of adolescents (N = 8984) aged 12-16 in 1997. The survey is funded by the Bureau of Labor Statistics of the U.S. Department of Labor, and is intended to examine school progress, labor force behavior, and the transition from school to work. The NLSY97 also collects information on a broad array of child and family interactions and relationships. Data are collected annually from youth; in Round 1 (1997) they were also collected from one parent or parent figure respondent. This paper uses data from Round 1 (1997) for the parent-adolescent relationship scale and Round 4 (2000) for the youth outcome measures.

### *Sample*

We focus on the respondents who were ages 12 (31.9%), 13 (34.3%), and 14 (33.8%) at the end of 1996 (n = 4724), these being the ages that received the full battery of questions on the parent-child relationship. For those households that had more than one youth respondent (n = 656), a single respondent was randomly selected for analysis; our final analytic sample is 4548 youth. Just over 50% of the respondents are White, 25% are African American, 21% are Hispanic, and 3% are of another racial/ethnic background. Fifty-one percent of the sample is male. Participants represent a range of socio-economic status. Nearly 17% of family incomes were located below 100% of the poverty threshold, 16% were at 100-200%, 25% were at 200-400%, and 16% were at 400% or greater; however, almost 26% of respondents had missing data on income. The majority of respondents lived with two biological parents (50%), or a single

biological parent (31%). Smaller percentages lived with a biological parent and an unrelated parent figure (13%), or in “other” family structures (5%).

### *Measure of Parent-Child Relationship*

Eight questions were employed to investigate the parent-adolescent relationship. Some of the questions were adapted by Kristin Moore and Marjorie Gunnoe at Child Trends from items developed by Rand Conger and Katherine Jewsbury Conger for use in the IOWA Youth and Family Project (IYFP), a study of the relationship between economic hardships, psychological well-being and family relations among rural farm families (Conger & Elder, 1994). Other questions are from the National Survey of Children. Respondents received these items, and other questions, in the form of a self-administered, laptop computer-based questionnaire. On average, it took 13.41 seconds to answer each question about the relationship with their mother and 10.99 seconds for each question about the relationship with their father. The first three questions addressed the youth’s identification with the parent(s); responses were measured on a 5-point Likert scale, ranging from “strongly disagree” to “strongly agree.” The subsequent five questions addressed perceived parental supportiveness; responses were measured on a 5-point Likert scale, ranging from “never” to “always.” Each question was coded from 0 to 4 points. These items were not subject to formal cognitive pre-testing for the NLSY97.

Together, these eight items provide a broad perspective on the parent-adolescent relationship. The 8-item scale includes all parent-child relationship measures asked in the survey. The questions are: (a) “I think highly of him/her,” (b) “S/he is a person I want to be like,” (c) “I really enjoy spending time with him/her,” (d) “How often does s/he praise you for doing well?,” (e) “How often does s/he criticize you or your ideas?,” (f) “How often does s/he help you do things that are important to you?,” (g) “How often does s/he blame you for her/his

problems?”, and (h) “How often does s/he make plans with you and cancel for no good reason?”

The 3-item scale uses the identification items; the 5-item scale complements the 3-item scale, using the remaining five items that assess supportiveness and behavior.<sup>1</sup> The 4-item scale uses the four items with the largest loadings on a factor analysis of the 8-item scale; these are items “b,” “c,” “d,” and “f” from the list, above. This collection includes two questions from the three identification items and two questions from the five supportiveness items. We analyzed all four different variations on the parent-child relationship scale. For the purposes of this paper, however, we will focus on two—the 8- and 4-item versions—which have proven to be the most effective. It is interesting to note that these scales differ from the 5- and 3-item versions in that they comprised both identity and behavior items. It is also worth noting that in the abbreviated four-item version, all items measured behaviors or attitudes that were positive in nature (e.g., helping youth with things that were important to him/her).

For both scales, scores were calculated for respondents who answered at least 75% of the items. In the case of missing responses on, at most, 25% of the items, raw scores were weighted as follows:  $\text{rawscore} * ((\# \text{ of total items}) / (\# \text{ of total items} - \# \text{ items missing}))$ ; for example, the score of a respondent who missed two questions on the 8-item scale, would be  $\text{rawscore} * (8 / (8 - 2))$ . This procedure assigns the respondent’s average response across the questions answered to the missing responses. The small percentage of respondents who answered fewer than 75% of the items on a given scale was coded as missing on that scale.

We limit our analyses to the measure for residential parents since the missing data on non-residential parents is quite high due to a skip pattern problem in the questionnaire.

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<sup>1</sup> For more information on the 5- and 3-item scales, contact the authors.

*Cut-point creation.* To establish an indicator of quality parent-child relationships, a reasonable cut-point needed to be created. Very little has been published establishing criteria or rules to guide setting cut-points; however, we have worked to develop and articulate a set of criteria (Moore, Vandivere, & Redd, 2002). These guidelines are based on several different research-based best practices; they include reliance on previous research to identify important levels, breaks, or nonlinearities; use of clinical work to identify positive or problem levels of behaviors; avoiding very small numbers above the cutoff, either for all children or for critical sub-groups (e.g., boys and girls); avoiding very large numbers that place all children in a risk group (unless that is an accurate picture); not basing the cut-point on a single item or answer; and reflecting a set of responses with strong face validity.

For the parent-child relationship scale, previous analyses and clinical validity work are not available. Consequently, other criteria were used to develop a cut-point. The possible range of scores for the 8-item version was 0 to 32; the possible range for the 4-item scale was 0 to 16. In determining the cut-point for a quality relationship, we decided that a youth would need to respond, on average, with a 3 on the 4-point response options to be characterized as having a quality relationship with their parent. A 3 on the identification items corresponds to a response of “agree.” The same score corresponds to “usually” on the five supportiveness items. This would translate to a value of 24 on the 8-item scale, and a value of 12 on the 4-item scale.

It is, of course, possible to achieve these scales’ values in a variety of ways. Some of the possibilities include a combination of very high scores and a zero, which would suggest rather mixed feelings or, possibly, random responses. To explore such possibilities, we examined the response patterns of youth with scores between 22 and 26 on the 8-item scale. Over 47% of the youth who scored a 24 on the relationship scale answered a “3” to a least half of the items, and

another 23% of the youth answered “4” on over half of the items. In addition, around 85% of the youth who scored 24 did not answer zero to any of the questions. In contrast, for those youth who scored 23, only 31 % answered a “3” to a least half of the items, only 4% answered “4” to over half of the items, and over 21% answered zero to at least one question. Accordingly, a cut-off of 24 seemed appropriate.

### *Procedures*

To assess the psychometric properties of the NLSY97 parent-adolescent relationship scale, we examined the quality of the data, the reliability of the scale, and the validity of the scale.

*Data quality.* We employed two procedures to examine the general data quality of the relationship scale. First, we examined the distribution of the responses to confirm that there was variation. It was anticipated that the distribution of responses would be skewed. Second, we examined the level of non-response or missing data on both versions of the scale

*Reliability.* We tested the internal consistency of the items that comprise the scale. Cronbach’s alpha was chosen to measure internal consistency/reliability. A higher level on the alpha indicates that the scale items hang together well in a given administration (Carmin & Zeller, 1985). Reliability was examined for both scale versions. Internal reliabilities greater than .70 are considered to be adequate.

*Validity.* We examined demographic patterns, construct validity, and prospective validity to test the overall validity of the relationship scale. To examine the demographic patterns, we looked at the percentage of youth who reported a positive relationship with their parent for several characteristics, including age, gender, and family structure. For construct validity, we examined whether another measure of the parent-adolescent relationship was related to the

relationship scales through zero-order correlations and regression models with demographic controls. To investigate prospective validity, we conducted two sets of analyses. First, we examined how the mean of the scale functioned over time for each relationship scale. Second, we examined the predictive validity of each scale. Specifically, we tested whether the parent-adolescent relationship scales predict, as expected based on the research literature, outcomes for youth four years later. These analyses were conducted for both versions of the scale.

## Results

### *Data Quality*

*Distribution of responses.* We found substantial variation in the distribution of scores for the 8-item mother-adolescent relationship scale, though there was, as expected, a concentration of higher scores (indicating more positive relationships). The same tendency was found with the 8-item scale for the adolescent's relationship with the father. There was also variation in the 4-item version of the scale, with scores across the full range of the scale and some concentration on the higher end of the scale.

The values for skewness for the mother-adolescent scales were negative for both versions (e.g., -0.94 for the 8-item scale, -0.85 for the 4-item version), indicating distributions somewhat skewed towards higher scores (see Table 1 for skewness and kurtosis values). For the father-adolescent relationship scales, the level of skewness remained about the same for both versions of the scale (e.g., -1.00 for the 8-item scale, -0.83 for the 4-item version). The 4-item version and the 8-item version of the scale had similar skewness and kurtosis values.

[Table 1 about here]

*Missing data.* The level of non-response was very low for the mother-adolescent relationship scale (see Table 1). The questions should have been asked of all youth living with

their biological mother ( $n = 4214$ ) or mother figure ( $n = 334$ ; total  $n = 4548$ ). The scores for the 8-item scale were missing for only two respondents: one youth declined to answer all of the 8 items, and one declined to answer 3 out of the 8 items and was eliminated using our convention requiring responses on at least 75% of the items. Additionally, nine respondents received weighted scores on the 8-item scale because they did not respond to either 1 or 2 of the 8 items for the scale. Three respondents received weighted scores on the 4-item scale because they did not respond to one item of the four.

The number of missing responses was also very low for the father-adolescent relationship scale. From our sample, 3451 youth living with a father ( $n = 2738$ ) or father figure ( $n = 713$ ) should have answered the questions. The “father figure” category included individuals such as stepfathers and cohabiting partners of the mother/mother figure. The 8-item scale score is missing for only one respondent because this youth answered “don’t know” to 4 out of 8 questions. Ten respondents received weighted scores on the 8-item scale because they did not respond to either 1 or 2 of the 8 items. Similarly, six respondents received weighted scores for the 4-item scale.

#### *Reliability/Internal Consistency*

Most versions of the relationship with resident mother scale were found to have an acceptable level of internal consistency, with a Cronbach’s alpha ranging from .72 to .74 (see Table 2). The level of internal consistency for the relationship with resident father scale was generally high, with a Cronbach’s alpha of .82.

[Table 2 about here]

The reliability of the scales was also examined across demographic characteristics (see Table 2). The internal consistency of both the mother and father scales tended to be higher for

females than for males. The level of internal consistency also increased with the age of the adolescent.

For the race/ethnicity subgroups, the internal consistency of the mother scales was lower for non-Hispanic Black and Hispanic youth than for youth of other race/ethnicity groups. For the father scales, the same tendency was found.

We also conducted a factor analysis on the eight items included in the longest version of the scale. For the whole sample, as well as for each race/ethnicity and socioeconomic group, all items grouped into a single factor. It should be noted, however, that two variables that tapped into the negative side of the parent-youth relationship (i.e., parent criticizes youth's ideas, parent makes and cancel plans with the youth) consistently had factor loadings less than .30, the lowest among the 8-items. These two items and two other items with relatively low loadings were dropped to create the four-item scale.

### *Demographic Patterns*

The demographic patterns for our relationship scale functioned as we expected (see Tables 3 and 4). For the 8-item version of the scale, the percentage of youth reporting a positive relationship with his or her parent decreased among older adolescents. In addition, a higher percentage of girls than boys rated their relationships with their mothers as positive; likewise a higher percentage of boys than girls rated their relationships with their fathers as positive. Furthermore, a higher percentage of positive relationships were reported in families with two biological parents present. A similar pattern was found for the 4-item version of the scale.

[Tables 3 and 4 about here]

### *Construct Validity*

In the self-administered questionnaire of NLSY97, Round 1 (1997), a question that tapped into the construct of the parent-adolescent relationship but was not included in our 8-item scale was asked. It was a single youth-report item about the parent figure: “When you think about how s/he acts towards you, in general, would you say that s/he is very supportive, somewhat supportive, or not very supportive?” Using this item, we assessed the construct validity of the parent-adolescent relationship scale through two methods.

First, we employed simple zero-order correlations to examine the association between the single-item measure and our longer parent-adolescent relationship scales. All of the zero-order correlations were in the expected direction and were statistically significant. The correlations were relatively strong for both the mother and the father versions of the 8-item scale (.55 and .63, respectively). The 4-item scales have similar correlations (mother: .53; father: .62).

In addition, we ran regression models where the 1-item supportiveness measure predicted the scale versions of the parent-adolescent relationship. For each model, we controlled for a standard set of demographic characteristics that included the youth’s age, gender, race/ethnicity, as well as socio-economic status, family structure, and parental education. Even after controlling for demographic characteristics, the 1-item supportiveness measure was the strongest predictor of the different scales of the parent-adolescent relationship, with most of the standardized betas between .50 and .61. These analyses followed a similar pattern as the zero-order correlations; the 8- and 4-item versions for both the mother and father relationships were predicted well by the single item.

*Prospective Validity*

*Analyses of developmental patterns.* As expected, the mean score on the relationship scale decreased between 1997 and 1999 for each relationship type (on the 8-item scale, for example, from 25.15 to 24.44 for mother- adolescent and 24.53 to 23.82 for father- adolescent, respectively) and for each version of the scale (for the mother-adolescent relationship, for example, from 16.06 to 15.50 for the 5-item, 12.07 to 11.67 for the 4-item, and 9.09 to 8.94 for the 3-item, respectively). Adolescents rated their relationships with their parents as more positive in 1997 (Round 1) than they did in the subsequent rounds of the survey. The proportion of the sample that reported having a positive relationship with their parent also declined. On the 8-item scale, reports of a positive relationship with the residential mother fell from almost 70% of the sample in 1997 to just over 53% in 1999; reports of a positive relationship with the residential father fell from almost 64% to 46.5% in the same period. In the same time period, a similar pattern emerged for the 4-item scale: reports declined from about 63% to 48% of the sample for positive mother-youth relationships, and about 56% to 40% for positive father-youth relationships. Because we expected this decline over time in the quality of the relationships, and because relationship quality was measured over a year apart, we did not conduct test-retest reliability analyses.

Descriptive statistics showed the percentage of youth who would be characterized as having a positive relationship with his or her parent for each scale—as determined by the cut-point—across the years. In 1997, the 8-item scale demonstrated that slightly less than 70% of the youth reported having a positive relationship with their mother and/or father; the 4-item scale provided a stricter estimate (63%). A similar pattern was found in 1998 (57% vs. 50% for

mothers, 49% vs. 42% for fathers, respectively) and 1999 (53% vs. 48% for mothers, 46.5% vs. 40% for fathers, respectively).

*Predictive validity.* In assessing the predictive validity of the relationship scales, we ran logistic regressions in which a positive parent-adolescent relationship in 1997—as defined by the cut-off variable—was the predictor. Youth outcomes in Round 4 (2000) of delinquency, substance use, sexual activity, and school suspensions, and good grades in 8<sup>th</sup> grade were the dependent variables; see the Appendix for a description of the variables used in the models. For each model, we controlled for our standard set of demographic characteristics, described above. We also included a variable reporting on past behaviors as a control for each problem behavior outcome (i.e., for use in the delinquency models, 1997 reports of having committed delinquent acts). Tables 5 and 6 show the odds ratios from the logistic regression models for each outcome.

As expected, a positive mother- or father-adolescent relationship in 1997, as measured by the 8-item scale, consistently predicted less delinquency, less sexual activity, fewer suspensions, and better grades, net of demographic control variables and a past behavior control when available. The 8-item scale did not predict less substance use. For the 4-item scale, a positive mother-adolescent relationship predicted all outcomes except less substance use. The 4-item positive father-adolescent relationship scale predicted less delinquency and sex, and higher grades, but did not significantly predict fewer suspensions or less substance use. In all cases, the direction of the prediction was in the expected direction—positive relationships with parents were related to less delinquency, sexual activity, and suspensions, and higher academic grades.

[Tables 5 and 6 about here]

To further test the predictive validity of the scales, we ran each logistic model for specific demographic subgroups (e.g., regarding race/ethnicity, poverty, and gender). The log odds ratio

for the relationship variable is presented in Tables 7-9. Each of these models was run with and without the full set of demographic and past behavior control variables used in the previous models.

In examining the odds ratios for each racial/ethnic group (see Table 7), it was apparent that both versions of the parent-adolescent relationship scales consistently produced significant associations within the sample of White adolescents; this was especially true in regard to the mother-adolescent relationship scale. On the other hand, there were only sporadic significant associations for the Black and Hispanic adolescent samples. However, the directions of the odds ratios (e.g., fewer behavior problems, less sexual activity, and better grades) followed a similar pattern to those of the White sample.

The same basic pattern was found for poverty level (see Table 8). The odds ratios for the sample of adolescents above the poverty threshold were consistently significant; however, few significant associations were found for the sample below the poverty threshold. As with the racial/ethnic subgroup analyses, though non-significant, the directions of the odd ratios for adolescents in families below the poverty threshold followed the expected pattern of association with fewer behavior problems and better grades.

In contrast, considering gender subgroups, most versions of the relationship with mother scales produced significant associations for both male and female adolescents (see Table 9). For instance, positive relationships with mothers were related to less delinquency, sexual activity, suspensions, and better grades for both genders. However, positive relationships with fathers seemed to work best in the female adolescent sample. Positive relationships between female adolescents and fathers were related to lower levels of delinquency, sexual activity, and

suspensions, and better grades. For male adolescents, only sporadic significant findings were present.

[Tables 7-9 about here]

### Summary and Discussion

The 4- and 8-item versions of the parent-adolescent relationship scale generally exhibit excellent data quality, and they demonstrate variability in the distribution of responses: not all youth rated their parents positively. Furthermore, the two versions of the scale had quite similar skewness and kurtosis values, and each had very little missing data. This suggests that young adolescents were able and willing to answer questions about the quality of the relationship with his or her parents. In fact, post-interview remarks indicate that respondents of the NLSY97 have found the questions in the self-administered questionnaire (which houses these relationship questions) to be the most engaging and enjoyable in the survey.

These scales appear to be reliable measures of the parent-adolescent relationship—overall, and across demographic characteristics. The Cronbach's alphas and factor analyses for the scales suggest that the items hang well together as a construct.

Evidence also indicates that the parent-adolescent relationship scales are valid measures. Both scales follow the expected patterns for the demographic characteristics of age, gender, and family structure. Regarding construct validity, the zero-order correlations and regression models for the mother- and father-adolescent relationship scales were predicted well by the single item that measured the same construct.

Moreover, as expected, the mean score for the parent-adolescent relationship was found to decrease over time for both versions of the scale, as the young adolescents entered their

middle and late teens. In addition, the percentage of adolescents who report a positive relationship with their parents also decreases as the young adolescents age.

Both versions of the scale did well on predictive validity for the whole sample. Based on the research literature, we would expect the quality of the parent-adolescent relationship to be negatively related to problem behaviors such as delinquency, substance use, and sexual activity. The 8-item measure for both parents predicted less delinquency, less sexual activity, and fewer suspensions four years later. In addition, it predicted better grades at the end of 8<sup>th</sup> grade. The shorter 4-item version of the scale, though not as comprehensive, did nevertheless predict to several problem behaviors and to better grades.

The predictive validity for the 4-item scale, however, did not perform as well when we examined it by specific subgroups. For instance, both versions of the scale seem to function better in a White adolescent sample and in a sample above the poverty threshold. For Black adolescents, Hispanic adolescents, and adolescents in poverty, coefficients were generally in the hypothesized direction but typically fell short of statistical significance. To ensure that the poverty analyses were not mimicking the racial/ethnic group findings, we repeated our analyses for the sample of White adolescents below the poverty threshold and for Blacks and Hispanics above the poverty threshold. These results looked more like the poverty threshold sample findings than the racial/ethnic subgroup findings. The sample of White adolescents below the poverty threshold had sporadic significant findings. Furthermore, the sample of Black and Hispanic adolescents above the poverty threshold produced more significant findings than the sample of Black and Hispanic youth below the poverty threshold, but less than the sample of White adolescents above the poverty threshold. Thus, the scale works best among non-poor

White adolescents; somewhat less well for non-poor Black and Hispanic adolescents, and poor White adolescents; and least well for poor Black and Hispanic adolescents.

Additional work on how to strengthen these measures for specific subgroups is needed. It is possible that other factors are more crucial for these outcomes in low-income and minority subgroups, and would need to be added to the scale. Indeed, there is evidence that at least one other parent-youth relationship measure has been effective in disadvantaged and minority contexts (Moore & Chase-Lansdale, 2001). It is also possible that there is too little variation in the dependent variables for disadvantaged youth, or that this scale predicts to other positive outcomes (e.g., thriving), rather than negative outcomes such as delinquency and substance use.

One limitation of the analyses presented in this paper is the fact that the parent-youth relationship measures were included in the NLSY97 only for young adolescents aged 12-14 in 1997. However, the items were repeated with similar success in subsequent rounds when the youth were older (1998, 1999), so they seem to be appropriate for teens. Nevertheless, their appropriateness for younger children needs to be established, or modified items need to be developed.

In addition, this parent-youth relationship measure focuses only on resident parents. There is no inherent reason that the measure would not work with non-resident parents; in fact, some of the items were chosen to explore relationship issues found among non-resident parents, such as the question about making plans and canceling for no good reason. However, due to skip patterns in the NLSY97, the questions were not asked of all non-resident parents, so definitive tests could not be conducted for non-resident parents. Nevertheless, preliminary analyses of the 8-item scale for adolescents who had seen their non-residential parent (primarily fathers) within the last 12 months show that the scale seems to be functioning well for non-residential parents.

However, the full range of psychometric analyses, presented in this paper, has not been conducted on this subsample.

In conclusion, these parent-adolescent relationship measures from the NLSY97 seem to be reliable and valid measures of an important construct. They seem well measured for Whites and non-poor adolescents, in particular. Further work might strengthen the scale for use among minority and low-income adolescents.

The 8-item measure works the best; however, based on the preceding analyses, the 4-item scale would be a good alternative. Both of these scales were more successful measures than the 5- and 3-item versions that we also investigated.<sup>2</sup> As referred to in the Measures section, it is interesting to note that the 8- and 4-item versions of the parent-youth scale are distinct from the 5- and 3-item versions in that they comprise both identity and behavior items. Furthermore, the 4-item version measures only behaviors and attitudes that are positive in nature (e.g., helps with things that are important to him or her).

The 8- and 4-item versions have variability in their distribution, have little missing data, are reliable overall and across demographic subgroups, follow expected demographic patterns, and enjoy construct validity. Additionally, they demonstrate predictive validity for the whole sample. The major drawback to these measures is that their predictive nature does not seem to work well within specific subgroups of the population (e.g., non-White adolescents and those living below the poverty threshold). Nevertheless, beyond being a reliable and valid measure, the construct of quality parent-adolescent relationships is an important aspect of children's lives, in and of itself; either variation of the relationship scale is therefore recommended for use in national data systems interested in the well-being of children and youth. These parent-adolescent

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<sup>2</sup> For more information on the 5- and 3-item scales, contact the authors.

relationship measures may also be useful tools for programs, evaluators, or longitudinal researchers interested in tracking the development of children and youth.

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