



# Adolescents' Subjective Well-Being: The Unique Contribution of Fathers

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## Abstract

**Background** Caregiver relationships are associated with adolescent subjective well-being. Yet, little is known about the contributions of father-adolescent relationship quality to well-being including perseverance, connectedness, and happiness or the specific contributions of father-adolescent relationship quality to these outcomes after accounting for covariates.

**Objective** This study aimed to understand how father-adolescent relationships and school connectedness interact with one another when positive adolescent functioning are the outcomes.

**Methods** Adolescents ( $N=2,509$ ;  $M_{age}=15.5$ ; 51.8% male; Black and African American (47.9%), Hispanic (24.8%), and white (17.7%) participating in the FFCWBS provided cross-sectional data. A series of hierarchical regression analyses were conducted to examine direct associations between father-adolescent relationship quality and each of the three adolescent subjective well-being outcomes (perseverance, connectedness, and happiness), and to evaluate the moderating role of adolescent biological sex in these associations. Covariates included race, household income, father's residential status, the adolescent's relationship with the mother and school connectedness.

**Results** Regressions showed that father-adolescent relationship quality was significantly associated with each well-being outcome beyond the contributions of demographics, mother-adolescent relationships, and school connectedness, and had similar associations with the outcomes by sex.

**Conclusions** Our conclusions highlight the priority of including and retaining fathers in research and interventions.

**Keywords** Father-adolescent relationships · Subjective well-being

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## Introduction

Parents make important contributions to the development of adolescents' well-being (Balaguer-Estaña, 2022). While mother-adolescent relationships have been the primary focus of parent relationships across positive and negative developmental outcomes, comparatively less is known about the influence of father-adolescent relationships on adolescent subjective well-being outcomes (Diniz et al., 2021). Father-adolescent relationship research has lagged in comparison to that of mothers in part due to assumptions about fathers, such as fathers' lack of interest or engagement in parenting of their children, and their societally assumed role as economic providers (Cabrera et al., 2018). The cultivation of adolescent subjective well-being is an important aspect of developmental research, and as such, should consider the role of fathers' in cultivating this positive outcome. Higher levels of subjective well-being in adolescence are associated with positive outcomes such as life and job satisfaction in adulthood (Diener & Chan, 2011). By understanding the influence of fathers on the specific components of subjective well-being (e.g., perseverance, connectedness, and happiness), developmental scientists may find important insights into familial assets that may be bolstered to increase positive outcomes for adolescents into adulthood.

The unique contribution of father-adolescent relationships on adolescents' subjective well-being development may be further understood by accounting for other pertinent adolescent relationships (e.g., mother-adolescent relationships) and experiences (feelings of school connectedness). Developmental theories (e.g., ecological systems theory; Bronfenbrenner, 1972) posit that proximal factors such as close relationships with parents and experiences in their various environments such as feelings of connection and belonging at school influence adolescent development of personal competencies that formulate subjective well-being. In line with ecological systems theory and positive youth development frameworks, adolescents are impacted by their multiple environments as well as the numerous adults and peers with whom they interact with in these environments. That said, to understand the relation between one adult and an adolescent's individual outcomes, it may be important to conceptually and analytically factor in the other relationships or context in which the adolescent interacts.

This study seeks to understand the associations between father-adolescent relationship quality and key components of adolescent subjective well-being (perseverance, connectedness, and happiness), and the strength of these associations after accounting for demographics, mother-adolescent relationship quality, and connection to school. The sample used in this study is unique, in that it is majority racial/ethnic minority adolescents who do not live with their father. Although researchers have studied various contributions of fathers to adolescent development, the bulk of the extant literature has focused on: (a) the relations between father factors and negative adolescent outcomes (e.g., internalizing and externalizing behaviors; Gold et al., 2020), (b) comparisons of parent-adolescent relationships between mothers and fathers in relation to negative outcomes (Luijten et al., 2021), and/or (c) the isolated role of fathers by their residential status (e.g., whether fathers reside in the home with the child, or not; Gold et al., 2020; King & Sobolewski, 2006). The present study controls for a host of adolescent and father demographic factors and other salient relationships and experiences that influence subjective well-being outcomes in order to isolate the relation between father-adolescent relationship quality and adolescent subjective well-being outcomes. These trends in the literature mirror an overall focus on negative outcomes during adolescence, and the limited scope of father-adolescent research.

## Theoretical and Conceptual Frameworks

### EPOCH Model

Subjective well-being is characterized in various ways (e.g., PERMA theory of flourishing; Seligman, 2012). Prior studies conceptualized subjective well-being as the *absence* of internalizing and externalizing behavior problems (King & Sobolewski, 2006), rather than the cultivation of positive characteristics. A more modern and asset-focused conceptualization of subjective well-being is the EPOCH model (Kern et al., 2016). Kern et al. (2016) specified five components or dimensions of adolescent subjective well-being: engagement, perseverance, optimism, connectedness, and happiness (EPOCH). The EPOCH model for subjective well-being, developed with adolescents in mind, is focused on the positive characteristics that make up and sustain subjective well-being across developmental stages (e.g., late adolescence, adulthood; Kern et al., 2016). These dimensions are measured at the individual level, though their development is influenced by various proximal relationships, such as with parents and caregivers, and contextual factors, such as school experiences. Each dimension is important for considering the development of adolescent subjective well-being in context.

Because the various components of well-being support overall subjective well-being in adulthood (Kern et al., 2016). This study focuses on three aspects of subjective well-being, perseverance, connectedness, and happiness. Perseverance, connectedness, and happiness are important character strengths that protect against psychological distress, and when cultivated through positive parenting, prosocial peer interactions, and positive role models and institutions, promote the development of long-term well-being in adulthood (Kern et al., 2016; Park, 2004). Though valuable at all ages, perseverance as a means to overcome obstacles in reaching goals, connectedness as cultivation of positive and successful relationships with others, and happiness as a steady state of contentment with life are linked to greater life satisfaction, lower mental health symptoms, better physical health, and increased coping long-term (Kern et al., 2016). These aspects of subjective well-being are of particular importance in adolescence because it is a marked developmental stage of autonomy and identity building. Further, the development of subjective well-being in adolescence is linked to this outcome in adulthood (Kern et al., 2016). Though important aspects of subjective well-being, prior studies have not examined the constructs of perseverance, connectedness, and happiness as outcomes related to father-adolescent relationship quality.

### The Five Cs and Personal Positive Youth Development

The process of cultivation of the specific aspects of subjective well-being that are the focus of this study is a hallmark of asset-focused developmental theories and frameworks such as Positive Youth Development (PYD). The PYD framework shifts the lens of psychological study away from deficits and cultivation of resilience following adversity by shifting the lens towards promoting personal and proximal factors linked to adolescents' subjective well-being (Lerner et al., 2005). One common assessment of PYD can be found in Lerner et al. (2005) development of the Five Cs. Lerner et al. (2005) conceptualized PYD through adolescent cultivation of competence, confidence, character, connection, and caring (the Five Cs). This conceptualization posits that

through development of the Five Cs, an adolescent is able to engage in bidirectional, mutually beneficial, relationships within their ecosystem (Lerner et al., 2005, 2013; Masten, 2014). An extension of the Five Cs model, the personal PYD (PPYD) framework classifies adolescent competencies and suggests a refined focus on the development of individual competencies (Oliva et al., 2010). These personal competencies are categorized into social, cognitive, moral, and emotional, which nurture one another to facilitate positive characteristics such as those detailed in the EPOCH model of adolescent subjective well-being. That is to say, that the development of these personal competencies facilitates aspects of subjective well-being which in turn drives positive personal and relationship outcomes (Balaguer et al., 2021; Oliva et al., 2010).

Through PPDYD and the Five Cs an adolescent is able to maximize their personal strengths (e.g., school engagement, intentional self-regulation, future focus) and proximal assets (e.g., social network, resources, institutions), thus increasing their contributions to themselves, their families, and society, and decreasing risks and problem behaviors (e.g., mental health issues, substance use, delinquent behavior) (Lerner et al., 2006, 2013; Masten, 2014). By using a personal PYD framework this study aimed to further the understanding of how father-adolescent relationships and school connectedness interact with one another when positive adolescent functioning are the outcomes.

## Attachment Theory

Examining specific personal and relationship factors that promote subjective well-being is valuable across child and adolescent development. As a complement to PYD and Bronfenbrenner's ecological systems model, this study examines the association between father-adolescent relationships and adolescent well-being through the lens of Attachment Theory (Armsden & Greenberg, 1987; Bowlby, 1979). One way proximal relationships can be beneficial to adolescents' subjective well-being is through secure attachments. Generally, attachment refers to a bond between individuals that can facilitate adaptive social and psychological functioning (Bowlby, 1979). Researchers found sex differences in attachment styles in studies of older children and adolescents as a result of their relations with and socialization by caregivers and family over time and biological hormone changes (Del Giudice, 2019). A recent systematic review highlighted sex differences in attachment and relationships and relationship quality, and may be important for understanding individual differences in outcomes stemming from these relationships (Del Giudice, 2019). Attachment theorists posit that the contribution of quality parent-child relationships foster the development of other positive relationships within the young person's environment, such as at school, and personal competencies related to subjective well-being development (Mónaco et al., 2019).

We also must consider that current and historic systemic barriers may influence variation in parent-adolescent attachment by race/ethnicity. Stern et al. (2022) discuss the classic Attachment Theory as lacking a culturally relevant view, by not accounting for the ways in which culture, oppression, and racialized experiences influence caregiving behavior, parent-child attachment, and subsequent child outcomes. Though measures of systemic oppression are beyond the scope of this study, we acknowledge that they may play a part in the high rates of racial/ethnic minority adolescents who do not live with their father in this sample.

## Relationships and Experiences that Influence Subjective Well-being

### Father-Adolescent Relationships and Youths' Subjective Well-being

Fathers' relationships with their children contribute to subjective well-being in adolescence and beyond. Though limited, the existing literature on fathers as contributors to specific components of subjective well-being is compelling. Findings from several studies suggest that positive father-adolescent relationship quality is associated with positive long-term outcomes including life satisfaction, stable intimate relationships in adulthood, positive mental health, and better physical health outcomes such as improved weight management and lower-risk sexual behavior (Coleman et al., 2019; Hosley et al., 2008; O'Gara et al., 2019; Tornello & Patterson, 2018). That said, subjective well-being is a multicomponent construct, comprised of several key traits (e.g., capacity to engage in perseverance, cultivate connectedness), which have not been considered in relation to youths' relationship with their fathers. Additionally, few of these studies have focused on specific aspects of subjective well-being in adolescence or accounted for salient proximal and contextual factors such as the quality of mother-adolescent relationships and school experiences when examining the associations of father-adolescent relationship quality and subjective well-being in adolescence.

Despite the evolving societal role of fathers (Myers, 2013), and increased father engagement in parenting worldwide (Shwalb et al., 2013), most research on child development includes only mother-child dyads, largely due to convenience (Davison et al., 2017). Research that does include fathers varies in the conceptualization of their relationships with their children, and recent studies argue that father-adolescent relationship quality is separate from evaluations of quantified paternal involvement (e.g., time and resources; Hofferth et al., 2007; 2010; Trahan et al., 2021). Family researchers who focus on fathers' contributions to child and adolescent development stress the importance of looking beyond quantifications of time spent between father and child or financial support. While not mutually exclusive, prior research has found that children can have positive relationships with their parents regardless of these factors (Cabrera et al., 2018; Volling & Palkovitz, 2021). While important, studies that merely quantify the time and resources invested by fathers or take a deficit-focused approach leave a significant empirical gap. Thus, there is a need to investigate associations between father-adolescent relationships and specific subjective well-being outcomes.

### Contributions of Biological Sex to Father-Adolescent Relationships and Subjective Well-Being

Father-adolescent relationships situate within Bronfenbrenner's ecological systems theory (1992), which posits that both personal and proximal factors have bidirectional relations with adolescent outcomes. Adolescent biological sex is frequently explored in relation to parent-adolescent relationships, though there is some lack of consensus on its influence (Gold et al., 2020; Luijten et al., 2021). A recent study of adolescent well-being found that higher rates of mother-adolescent but not father-adolescent relationship quality were associated with lower levels of internalizing symptoms, and these associations were not moderated by adolescent sex (Luijten et al., 2021). Interestingly, Gold et al. (2020) found that

father involvement (including by both nonresidential and residential fathers) was related to lower frequencies of adolescent problem behavior across sex. However, higher levels of closeness to fathers were associated with lower frequencies of externalizing behaviors among males and internalizing behaviors among females. Further, fathers who consistently spent time with their adolescent offspring had children with fewer negative behaviors, and this relation was stronger for males than females (Gold et al., 2020). Additionally, Sarkadi et al. (2008) concluded regular father engagement influenced a myriad of positive outcomes; specifically, regular engagement was associated with a decrease in behavioral problems for males and psychological problems for females.

The above-mentioned studies detailed elements of how fathers contribute to adolescent well-being, though primarily focused on absence of negative psychosocial symptoms and low levels of behavior problems. A paucity of research tests for sex differences in the associations between father-adolescent relationships and subjective well-being, regardless of residential status and consideration of mother-adolescent relationships. Additionally, the pervasive focus on negative symptoms, rather than the promotion of positive outcomes, is stark. No studies were identified that examined sex differences in the associations between father adolescent relationships on specific aspects of subjective well-being (EPOCH; Kern et al., 2016).

Similarly, there is a lack of empirical consensus on the degree to which subjective well-being development differs based on sex. In a study of adolescent life satisfaction during the transition to young adulthood, girls had significantly greater increases in life satisfaction compared to boys. This life satisfaction then predicted subsequent school engagement and pursuit of an academic track (Salmela-Aro & Tuominen-Soini, 2010). In a study of adolescents ages 13–19, there were no sex differences in subjective well-being or life satisfaction in univariate analyses. However, females reported higher levels of life satisfaction as compared to males when covariates including age, SES, intelligence, grades, personality, and perceived parental expectations and support were controlled (Steinmayer et al., 2019). Similarly, a recent meta-analysis of sex differences (studies evaluated males versus females and men versus women) in adult subjective well-being outcomes indicated no significant difference in life satisfaction and job satisfaction by sex (Batz-Barbarich et al., 2018). Overall, there is a lack of consensus in the literature regarding sex differences in subjective well-being, indicating the need for further study. Finally, virtually no research to date has analyzed whether the strength of associations between father-adolescent relationship quality and subjective well-being differs for male and female adolescents.

Developmental theory and prior empirical work suggest that there may be differential associations by sex between father-adolescent relationships and subjective well-being. Understanding these associations may further elucidate the unique contributions of fathers on their adolescent's positive outcomes. Such investigations may be important in tailoring interventions to best support positive adolescent development and optimal functioning into adulthood.

## School Experiences and Subjective Well-Being

As delineated by the reviewed developmental theory and frameworks, understanding the unique contributions of father-adolescent relationships requires conceptual and analytic consideration of other relevant relationships and proximal experiences that are known to influence adolescent subjective well-being (Arslan, 2018; Bronfenbrenner, 1992; Liu et al.,

2016; Masten & Cicchetti, 2016; Tian et al., 2016). One such proximal experience is school connectedness. Family relationships are important contributors to adolescent subjective well-being, but school experiences also significantly affect adolescent development (Bronfenbrenner, 1992; Masten & Cicchetti, 2016). School connectedness, a construct measuring belonging and safety at school, is associated with positive outcomes in and out of school (e.g., socialization, self-efficacy, self-esteem, lower instances of mental health problems; Cunsolo, 2017; Shochet et al., 2006). Positive reports of school connectedness promote subjective well-being in elementary, middle, and high school students (Arslan, 2018; Liu et al., 2016; Tian et al., 2016). Positive relationships with teachers and school peers contribute to better health and mental well-being (Kim, 2021). The empirical evidence for the positive association of school connectedness with subjective well-being is strong, and school connectedness typically is used as a predictor in conceptual models, rather than as a covariate. In prior studies of father-adolescent relationships, demographic variables (e.g., age, income, race, sexual orientation) frequently were included as controls (Coleman et al., 2019; Hosley et al., 2008; Tornello & Patterson, 2018), though one study controlled for mother-adolescent closeness using a one-item indicator (O’Gara et al., 2019). No studies were identified that controlled for school connectedness as a covariate. In the present study, we co-vary adolescents’ reports of mother-adolescent relationships and school connectedness as important proximal and contextual factors in order to better understand the unique contributions of father-adolescent relationship quality to adolescent subjective well-being.

## Current Study

Guided by the Personal Positive Youth Development framework, Attachment Theory, and empirical research, the present study aims to fill a gap in knowledge regarding the contribution of father-adolescent relationship quality and adolescents’ subjective well-being outcomes. We conceptualize subjective well-being as expressed in the EPOCH model (Kern et al., 2016). Prior studies of father-adolescent relationships have not accounted for other influential relationships and experiences that may compete with father-adolescent relationships during this important developmental period. Prior literature on fathers’ influence on adolescent development has focused on negative emotional and behavioral outcomes (Gold et al., 2020), comparisons of father and mother relationships with their child (Luijten et al., 2021), and isolated fathers’ contribution to their child’s development by their residential status, time spent with the child, and financial support (Gold et al., 2020; King & Sobolewski, 2006). This study seeks to use a strength-focused lens to build on prior findings to deepen the empirical base on fathers’ contributions to positive adolescent outcomes.

Our research questions are as follows (1) does the quality of father-adolescent relationship have a direct relation with specific aspects of adolescent subjective well-being (perseverance, connectedness, and happiness) after accounting for other salient relationships (mother-adolescent relationships) and experiences (school connectedness) and (2) does adolescent sex moderate these relations? To answer these questions, analyses tested direct associations between father-adolescent relationship quality and adolescents’ perseverance, connectedness, and happiness. Further, the moderating role of sex on these associations was explored. We hypothesized that positive father-adolescent relationships would be associated with higher levels of subjective well-being beyond the contributions of mother-adolescent relationship quality and feelings of connectedness at school. Additionally, demographics including race/ethnicity, household income, and the fathers’ residential status

were included as covariates. Analyses of the moderating role of sex on relations between father-adolescent relationships and subjective well-being were exploratory given the paucity of research in this area. By understanding the unique influence of fathers on the specific components of subjective well-being (e.g., perseverance, connectedness, and happiness), developmental scientists may find important insights into familial assets that may be bolstered to increase positive outcomes for adolescents into adulthood.

## Method

### Data and Participants

Data for this study came from the Future of Families and Child Well-being study (formerly the Fragile Families and Child Wellbeing Study) (FFCWBS). The FFCWBS is a six-wave longitudinal data set comprised of 4898 children born in 75 hospitals across 20 major US cities (populations > 200,000) from 1998 to 2000. The initial recruitment and data collection occurred at the time of the focal child's birth, where families were randomly and sequentially sampled within the hospitals to increase responsiveness (FFCWBS, 2019; Kennedy & Gelman, 2018; Reichman et al., 2001). In order to learn more about contemporary family compositions, the FFCWBS purposefully over sampled births to unwed parents. Data used in the current study are from wave 6 when the focal child was 15 years old. Wave 6 data was collected from 2014 to 2017. Survey data collection occurred in person and by phone. Although prior waves of data (baseline–wave 5) included interviews with both the biological mother and father, at wave 6 only the primary caregiver was interviewed. The focal child was not interviewed until age 9 (wave 5). The primary caregiver reported household income and the father's residential status at wave 6. All other measures used in this study were adolescent-report at wave 6 with the exception of child sex (collected at baseline). Families deemed eligible for the FFCWBS wave 6 data collection included 95% of the original sample, excluding families where the youth had died or been adopted (FFCWBS, 2019; Kennedy & Gelman, 2018). In the current study sample, both residential and non-residential fathers were included, as well as all race and ethnicities represented in the overall study. Though FFCWBS recommends use of their constructed weight variables in analyses using their data for improved generalizability of results, the primary analyses for this study did not use weight variables. Data included in our analyses, and variables we excluded, differed from those used to create the weight variables. Thus, when included, the FFCWBS weight variable eliminated more than a quarter of participants who met this study's inclusion criteria (Kennedy & Gelman, 2018). The analytic sample for the current study excluded cases without adolescent interviews and cases without an adolescent report of the father-adolescent relationship. By not using national weights this study was able to minimize unnecessary loss in sample size and maintain a unique and diverse sample. However, these analyses were tested with national weights in sensitivity analyses.

The final analytic sample consisted of 2509 youth (51.8% male) with a mean age of 15.5 years at wave 6. The sample was objectively diverse; 47.9% of youth reported their race or ethnic group category as Black/African American, 24.8% as Hispanic or Latino, 17.7% as White, non-Hispanic, 5% multi-racial, non-Hispanic, 3.3% as other, non-Hispanic, and 0.7% as Biracial. The primary caregiver household income was relatively low, with a median annual income of \$43,000. Across all participants, 6.4% lived all or most of the time with their biological father.



## Measures

### Father-Adolescent Relationship Quality

Adolescent report of relationship quality with their father was measured using a scale constructed of six items derived from the Family Functioning and the Middle Childhood and Adolescence sections of the National Survey of Child Health (NSCH, 2003a, 2003b). All items were recoded such that higher scores indicated higher reported relationship quality. Two items were measured on a Likert scale ranging from 1 (not very close) to 4 (extremely close); Four items were measured on a Likert scale ranging from 1 (never) to 3 (often). For the first two items, the adolescent reported the degree of closeness they felt with their father and their comfort in sharing thoughts and ideas with their father. For the last four items, adolescents were asked to report on the frequency of engagement in varied activities with their father in the past month (e.g., how often did your biological father talk with you about your day in the past month?). Given the differences in response scales, items were standardized and summed to form a scale score ( $\alpha=0.86$ ).

### Adolescent Subjective Well-Being

Three of the five subscales (perseverance, connectedness, and happiness) from the EPOCH Measure of Adolescent Well-being (Kern et al., 2016) served as the outcome variables. The engagement and optimism subscales of this measure were not included in the investigation because tests of reliability indicated below acceptable levels when used in the sample and higher rates of missing data compared to the three included subscales. For the three included subscales, items were rated on a 4-point Likert scale ranging from: 1 (strongly disagree) to 4 (strongly agree). Within the EPOCH measure, perseverance is defined as “having the tenacity to stick with things and pursue a goal, despite any challenges that occur” (Kern et al., 2014). Sample items include “I finish whatever I begin” and “Once I have a plan to get something done, I stick to it” ( $\alpha=0.71$ ). The EPOCH measure defines connectedness as “feeling loved, supported, and valued by others. It’s more than simply having people in your life, but also feeling close to others” (Kern et al., 2014). Sample items include, “When something good happens to me, I have people who I like to share the good news with” and “When I have a problem, I have someone who will be there for me” ( $\alpha=0.61$ ). The EPOCH measure defines happiness as “the general feeling of happiness, cheer, and contentment with life” (Kern et al., 2014). Sample items include “I feel happy, I have a lot of fun,” and “I am a cheerful person” ( $\alpha=0.75$ ). For each subscale, items were averaged to form a scale score, with higher scores indicating better functioning. The engagement and optimism subscales from the EPOCH measure were excluded due to low internal reliability scores,  $\alpha=0.58$  and  $\alpha=0.57$  respectively.

### Covariates

Demographic covariates included the focal child’s biological sex, two race comparison variables, the primary caregiver’s household income, and the father’s residential status. The adolescent’s biological sex and was coded as 0=female and 1=male. Race comparison variables included a Black and African American comparison race variable (0=not Black or African American, 1=Black or African American), and a white comparison race variable (0=not white, 1=white). The primary caregiver’s household income variable was

continuous. Father's residential status was coded as 0=child does not live with biological father all or most of the time and 1=child does live with the biological father all or most of the time. In addition to the demographic variables analyses controlled for mother-adolescent relationship quality and school connectedness, given their use in previous studies and known associations with adolescent subjective well-being (Arslan, 2018; Liu et al., 2016; Luijten et al., 2021; Tian et al., 2016). Adolescent reports of relationship quality with their mother were measured with the same items and procedures used to assess father-adolescent relationship quality ( $\alpha=0.75$ ). School connectedness was measured using a 4-item scale from the Child Development Supplement: Panel Study of Income Dynamics (2007) to assess degree of inclusiveness, closeness, happiness and safety an adolescent feels at school. Response options included 1 (strongly disagree) to 4 (strongly agree). Items included "I feel close to people at my school" and "I feel like I am part of my school". Adolescent response options were summed to create a total score. Higher total scores indicated greater feelings of connection to school ( $\alpha=0.73$ ).

## Analytic Strategy

All data cleaning and analyses for the study were conducted in SPSS version 27 (IBM Corp, 2020). Prior to running the primary analyses, data were assessed for assumptions of normality. Descriptive statistics and univariate associations between study constructs were calculated first. In order to test the study hypotheses, a series of hierarchical regression analyses were conducted to examine direct associations between father-adolescent relationship quality and each of the three adolescent subjective well-being outcomes (perseverance, connectedness, and happiness), and to evaluate the moderating role of adolescent biological sex in these associations. All covariates were entered on step one, adolescent biological sex on step two, father-adolescent relationship variable on step three, and the interaction of the father-adolescent relationship with the adolescent's biological sex on step four. The interaction term was created by first centering, then multiplying father adolescent relationship quality with adolescent biological sex (Aiken & West, 1991). The regression analyses used the standardized regression coefficient and 5000 bootstrapped samples with 95% confidence intervals (CIs). CIs that did not include zero were considered significant. Finally, sensitivity analyses replicated the three regression analyses, with the addition of the FFCWBS wave 6 national weight variable. When weighted, the sample is nationally representative of babies born to married and unmarried parents in large U. S. cities at baseline collection.

## Results

### Attrition Analyses

Attrition analyses were conducted to investigate whether adolescents who were interviewed at wave 6 ( $N=4,898$ ) differed from adolescents included in this analytic sample ( $N=2,509$ ). Crosstabs and t-tests were used as appropriate based on the continuous or categorical nature of the variable. There were no significant differences between the two groups on adolescent sex ( $\chi^2(1)=0.02, p=0.90$ ), nor were participants more likely to identify as Black/African American ( $\chi^2(1)=0.75, p=0.39$ ) or white ( $\chi^2(1)=1.09, p=0.30$ )

than other races and ethnicities. However, adolescents in the analytic sample were significantly less likely to live with their biological father than those not in the analytic sample,  $\chi^2(1)=95.72$ ,  $p<0.001$ . Additionally, adolescents in the analytic sample had primary caregivers who reported significantly higher household incomes, compared to youth who were not included in the analytic sample,  $t(4895.16)=-20.05$ ,  $p<0.001$ . The two groups did not differ on reports of father-adolescent relationships ( $t(2926)=1.01$ ,  $p=0.31$ ), school connectedness ( $t(3384)=0.10$ ,  $p=0.92$ ), perseverance ( $t(1734.18)=1.76$ ,  $p=0.08$ ), or connectedness ( $t(3435)=0.70$ ,  $p=0.49$ ). However, adolescents in the analytic sample reported higher quality relationships with mothers than adolescents who were not included in the analytic sample ( $t(3369)=-2.50$ ,  $p=0.01$ ). Lastly, adolescents in the analytic sample reported significantly higher happiness scores than adolescents who were not included in the analytic sample  $t(2431.96)=60.80$ ,  $p<0.001$ .

## Descriptive Information and Correlations Among Study Variables

Descriptive information on and correlations among study variables as well as continuous-level covariates is presented in Table 1. For key study variables (e.g., father-adolescent relationship quality, perseverance, connectedness, and happiness subscales, and mother-adolescent relationship quality), the variable distribution statistic indicated substantial normality at the  $\pm 2$  level (Hair et al., 2022, p. 6). All continuous variables were positively associated with one another; with the exception that the primary caregiver's household income was negatively associated with perseverance and was not associated with happiness or mother-adolescent relationship quality. Analyses between categorical covariates and the key study variables showed that males reported higher levels of happiness, relative to females,  $t(2507)=-6.49$ ,  $p<0.001$ , and Black/African American adolescents reported higher levels of happiness, relative to other racial and ethnic groups in the sample,  $t(2507)=-2.54$ ,  $p=0.01$ . White adolescents, relative to all other racial and ethnic groups in the sample, reported more a positive relationship with their father,  $t(2507)=-5.81$ ,  $p<0.001$ , and higher levels of connectedness  $t(2507)=-2.81$ ,  $p=0.005$  and happiness  $t(2507)=1.06$ ,  $p=0.29$ . Finally, adolescents who lived with their biological father 50% or more of the time reported a more positive relationship with their father than youth whose fathers were not residential,  $t(2507)=-13.94$ ,  $p<0.001$ . However, these groups did not differ in reports of perseverance,  $t(2507)=2.00$ ,  $p=0.047$ , connectedness,  $t(2570)=-0.91$ ,  $p=0.36$ , or happiness,  $t(2750)=-0.79$ ,  $p=0.43$ .

## Hierarchical Regression Analyses

### Perseverance as the Outcome

The hierarchical regression revealed that at step one, the six covariates contributed significantly to the model,  $F(6, 2502)=65.20$ ,  $p<0.001$ , and accounted for 13.5% of the variation in perseverance. The addition of the adolescent biological sex variable at step two was not significant and did not account for any additional variance in the model,  $F(1, 2501)=0.50$ ,  $p=0.50$ . Introducing father-adolescent relationship quality variable into the model at step three accounted for 0.01% additional variation in perseverance and this change in  $R^2$  was significant,  $F(1, 2500)=26.05$ ,  $p<0.001$ . Finally, the interaction of father-adolescent

**Table 1** Descriptive information on and correlations between key study variables and covariates ( $N = 2509$ )

Variable	Father-adolescent relationship	Perseverance	Connectedness	Happiness	Caregiver household income	Mother-adolescent relationship	School connectedness
Father-Adolescent Relationship	–	–	–	–	–	–	–
Perseverance	0.14**	–	–	–	–	–	–
Connectedness	0.19**	0.31**	–	–	–	–	–
Happiness	0.21**	0.42**	0.52**	–	–	–	–
Caregiver Household Income	0.22**	–0.06**	0.10**	0.04	–	–	–
Mother-Adolescent Relationship	0.19**	0.28**	0.32**	0.34**	0.01	–	–
School Connectedness	0.17**	0.25**	0.36**	0.43**	0.14**	0.24**	–
<i>M</i>	–0.18	3.41	3.77	3.58	60,511.28	–0.02	3.44
<i>SD</i>	0.86	0.49	.36	0.50	59,150.43	0.71	0.58
<i>Skewness</i>	–0.10	–0.80	–1.77	–1.50	2.83	–1.04	–1.38
<i>Kurtosis</i>	–1.33	0.70	2.89	2.33	13.80	1.32	2.00

Pearson Correlation reported. \*\* $p < 0.01$

relationship quality and adolescent biological sex did not explain additional variation in perseverance and was not significant,  $F(1, 2499) = 0.03, p = 0.90$  (see Table 2).

### Connectedness as the Outcome

The hierarchical regression revealed that at step one, the six covariates contributed significantly to the model,  $F(6, 2502) = 102.30, p < 0.001$ , and accounted for 19.7% of the variation in connectedness. The addition of adolescent biological sex at step two was significant and accounted for an additional 0.3% of the variation in connectedness,  $F(1, 2501) = 10.80, p = 0.001$ . Introducing father-adolescent relationship quality into the model at step three explained an additional 0.7% of variation in connectedness and this change in R2 was significant,  $F(1, 2500) = 20.6, p < 0.001$ . Finally, the interaction of father-adolescent relationship and sex was not significant,  $F(1, 2499) = 2.23, p = 0.14$  (see Table 2).

### Happiness as the Outcome

The hierarchical regression revealed that at step one, the six covariates contributed significantly to the model,  $F(6, 2502) = 144.82, p < 0.001$ , and accounted for 25.8% of the variation in happiness. The addition of the adolescent biological sex at step two was significant and accounted for an additional 0.8%,  $F(1, 2501) = 26.63, p < 0.001$ . Introducing father-adolescent relationship quality into the model in step three explained an additional 0.9% of variation in happiness and this change in R2 was significant,  $F(1, 2500) = 31.00, p < 0.001$ . Finally, the relation between father-adolescent relationship and happiness did not vary as a function of the adolescent biological sex,  $F(1, 2499) = 0.82, p = 0.36$  (see Table 2).

### Sensitivity Analysis

Several sensitivity analyses included the same three hierarchical regression models from the primary analyses with the addition of the FFCWBS wave 6 national weight variable (see Table 3). The addition of the weight variable reduced the sample to  $N = 1,846$ , eliminating 26% of participants who met all inclusion criteria.

The first weighted hierarchical regression (perseverance as the outcome) revealed that at step one, the six covariates contributed significantly to the model,  $F(6, 1840) = 49.43, p < 0.001$ , and accounted for 13.9% of the variance in perseverance. The addition of the adolescent biological sex at step two accounted for 0.1% additional variance and was not significant,  $F(1, 1849) = 1.98, p = 0.16$ . Introducing father-adolescent relationship quality into the model in step three explained an additional 2.0% of variation in perseverance and this change in R2 was significant,  $F(1, 1838) = 38.21, p < 0.001$ . Finally, the relation between father-adolescent relationship and perseverance accounted for an additional 0.1% of the additional variance and did not vary as a function of the adolescent biological sex ( $F(1, 1837) = 1.59, p = 0.21$ ) (see Table 3).

The second weighted hierarchical regression (connectedness as the outcome) revealed that at step one, the six covariates contributed significantly to the model,  $F(6, 1840) = 63.41, p < 0.001$ , and accounted for 17.1% of the variance in connectedness. The addition of the adolescent biological sex variable at step two was significant,  $F(1, 1839) = 4.60, p = 0.033$ , accounting for an additional 0.2% variance in the model. At step three, the addition of father-adolescent relationship quality explained an added 1.0% of

**Table 2** Regression results predicting connection, perseverance, and happiness dimensions of adolescent functioning (N=2509)

	Outcome: Perseverance			Outcome: Connectedness			Outcome: Happiness		
	$\beta$	SE $\beta$	95% CI for $\beta$	$\beta$	SE $\beta$	95% CI for $\beta$	$\beta$	SE $\beta$	95% CI for $\beta$
	Black/AA versus others	0.06*	0.02	0.02, 0.10	0.01	0.01	-0.02, 0.04	0.08**	0.02
White versus others	-0.11**	0.03	-0.17, -0.06	0.04*	0.02	0.00, 0.08	-0.01	0.03	-0.06, 0.04
Household income	0.00***	0.00	0.00, 0.00	0.00***	0.00	.00, .00	0.00***	0.00	0.00, 0.00
Father's residential status	-0.04	0.04	-0.11, 0.04	0.07*	0.03	0.01, 0.12	0.07*	0.04	0.00, 0.15
Relationship with mother	0.15**	0.01	0.12, 0.17	0.12**	0.01	0.10, 0.14	0.17**	.01	0.14, 0.19
School connectedness	0.17**	0.02	0.14, 0.20	0.19**	0.01	0.16, 0.21	0.32**	0.02	0.29, 0.35
Adolescent biological sex	0.01	0.02	-0.03, 0.04	-0.05**	0.01	-0.07, -0.02	0.08**	0.02	0.05, 0.12
Relationship with father	0.06**	0.02	0.03, 0.09	0.03*	0.01	0.00, .05	0.07**	.02	0.04, 0.10
Father relationship X sex	-0.00	0.02	-0.05, 0.04	0.02	0.02	-0.01, 0.05	-.02	0.02	-0.06, 0.02
Model $R^2$	0.14			0.21			0.28		
F(9, 2500)	46.80**			73.00**			105.23**		

All statistics are from the final step of the regression equations, with all terms entered into the models. CI = confidence interval

\*  $p < .05$ ; \*\*  $p < .001$ . \*\*\*household income for perseverance  $\beta = -5.53E-7$ , for connectedness  $\beta = -9.29E-8$ , and for happiness  $\beta = -1.70E-7$

**Table 3** Weighted regression results: predicting connection, perseverance, and happiness dimensions of adolescent functioning (N= 1846)

	Outcome: perseverance			Outcome: connectedness			Outcome: Happiness		
	$\beta$	SE $\beta$	95% CI for $\beta$	$\beta$	SE $\beta$	95% CI for $\beta$	$\beta$	SE $\beta$	95% CI for $\beta$
Black/AA versus others	0.05	0.03	-0.01, 0.10	0.02	0.02	-0.02, 0.05	0.09**	0.02	0.05, 0.14
White versus others	-0.13**	0.03	-0.18, -0.08	0.06**	0.02	0.02, 0.09	0.04*	0.02	0.00, 0.09
Household income	-1.120E-6**	0.00	0.00, 0.00	-2.065E-7	0.00	0.00, 0.00	-1.459E-7	0.00	0.00, 0.00
Father's residential status	0.01	0.05	-0.08, 0.10	-0.04	0.03	-0.10, 0.02	-0.13*	0.04	-0.21, -0.05
Relationship with mother	0.08**	0.02	0.05, 0.12	0.13**	0.01	1.0, 0.15	0.16**	0.02	0.13, 0.19
School connectedness	0.21**	0.02	0.17, 0.24	0.15**	0.01	0.12, 0.18	0.24**	0.02	0.20, 0.27
Adolescent biological sex	0.02	0.02	-0.03, 0.06	-0.05**	0.02	-0.08, -0.02	0.16**	0.02	0.12, 0.19
Relationship with father	0.06*	0.02	0.02, 0.10	-0.01	0.01	-0.03, 0.02	0.05*	0.02	0.01, 0.08
Father relationship x sex	0.03	0.03	-0.02, 0.02	0.08**	0.02	0.05, 0.12	-0.02	0.02	-0.06, 0.03
Model $R^2$	0.16			0.19			0.26		
F(9, 1837)	38.30**			46.70**			67.80**		

All statistics are from the final step of the regression equations, with all terms entered into the models. CI = confidence interval

\*  $p < 0.05$ ; \*\*  $p < 0.001$

variance in connectedness, and was significant,  $F(1, 1838)=21.51, p<0.001$ . Finally, the interaction between father-adolescent relationship and adolescent biological sex explained an added 1.0% of variance in connectedness,  $F(1, 1837)=21.88, p<0.001$ , though the direct relation of the father-adolescent relationship variable on the outcome was non-significant at this step (see Table 3). Follow-up analyses to identify the nature of the interaction effect revealed that the association between father-adolescent relationship quality and connectedness was positive for males,  $B=0.07, SE B=0.01, 95\% CI [0.05, 0.10]$  and non-significant for females,  $B=-0.00, SE B=0.02, 95\% CI [-0.04, 0.03]$ .

The third weighted hierarchical regression (happiness as the outcome) revealed that at step one, the six covariates contributed significantly to the model,  $F(6, 1840)=89.00, p<0.001$ , and accounted for 22.5% of the variance in happiness. The addition of the adolescent biological sex variable at step two was significant,  $F(1, 1839)=70.80, p<0.001$ , accounting for an additional 2.9% of variance in the model. In step three, the father-adolescent relationship quality to the model explained an added 0.4% of variance, and was significant,  $F(1, 1838)=10.70, p=0.001$ . Finally, in the fourth step of the model, happiness did not vary as a function of adolescent biological sex,  $F(1, 1837)=0.52, p=0.47$  (see Table 3).

## Discussion

Through a PYD lens, this study addressed several gaps in the literature by focusing on the direct associations of father-adolescent relationship quality with aspects of adolescent subjective well-being, while controlling for a unique set of proximal factors in a diverse sample who primarily did *not* live with their fathers. We also tested the moderating role of sex on these associations. This study deviated from the extant deficit-focused literature by exploring father-adolescent relationship associations with specific components of subjective well-being as outcomes (perseverance, connectedness, happiness; Kern et al., 2016). Notably, this study conceptualized father-adolescent relationships differently than past studies which have focused on quantifying paternal involvement (residential status, time spent with child, financial contribution; Gold et al., 2020; King & Sobolewski, 2006; Luijten et al., 2021), whereas we focused on the quality of connection between father and child (Trahan et al., 2021). Limited research has focused on the association between father-adolescent relationship quality and subjective well-being in adolescence, though several studies have indicated the promotive nature of positive relationships with fathers on other aspects of adolescence development (e.g., positive health behavior, positive mental and physical health; Coleman et al., 2019; O’Gara et al., 2019). In a departure from prior studies that have frequently assessed subjective well-being as the lack of negative psychological symptoms (e.g., depression, anxiety; Videon, 2005) we assessed subjective well-being as three separate outcomes (EPOCH Model) in order to understand the contribution of father-adolescent relationships to independent aspects of subjective well-being.

Our unique sample must be considered in the discussion of these findings, specifically the high percentage of youth who live all or most of their time in a different household from their father (93.6%). The bulk of the extant literature on father-child relationships for nonresidential fathers has focused specifically on the father-child contact and financial contribution, rather than quality of relationships and involvement in the child’s life (Adamsons & Johnson, 2013; Amato & Gilbreth, 1999). Social well-being, emotional and behavioral adjustment, and academic achievement were linked to father involvement. A meta-analysis



summarized the forms of father involvement that most strongly related to child well-being as engagement in child-related activities, positive father-child relationships, and father involvement across different domains (Adamsons & Johnson, 2013). However, these findings have not been considered in terms of father-adolescent relationships and nonresidential fathers. Our study furthers the literature by considering these relationships and associated subjective well-being outcomes in a sample with a majority of adolescents who do not live with their fathers.

Consistent with our primary hypotheses, father-adolescent relationship quality was significantly associated with the subjective well-being outcomes: perseverance, connectedness, and happiness. This pattern of results is broadly consistent with prior literature on associations between father-adolescent relationships and positive outcomes in adolescence (Coleman et al., 2019; O’Gara et al., 2019; Tornello & Patterson, 2018). However, these specific subjective well-being outcomes had not been explored in relation to father-adolescent relationships.

The goal of PYD is to build and strengthen personal and contextual assets in order to facilitate positive outcomes such as subjective well-being (Lerner et al., 2006, 2013). As previously mentioned, perseverance, connectedness, and happiness are important character strengths that protect against psychological distress, and when cultivated through positive parenting, prosocial peer interactions, and positive role models and institutions, promote the development of long-term well-being in adulthood (Kern et al., 2016; Park, 2004). Additionally, within a culturally considerate Attachment Theory framework, these findings show that through multiple avenues of engagement in the adolescents’ life, father’s can build. Thus, this study is a valuable preliminary examination of the promotive nature of father relationship quality on these outcomes in a diverse adolescent sample.

Perhaps most interesting, the direct associations between father-adolescent relationship quality and the three subjective well-being outcomes were significant despite accounting for key demographic variables, relationship with mother, and school connectedness. Informed by Bronfenbrenner (1992) and Masten and Cicchetti (2016), relationship with the mother and school connectedness were included in the analyses as covariates. Consistent with existing literature, both mother-adolescent relationship quality and school connectedness were associated with subjective well-being in the current study (Arslan, 2018; Liu et al., 2016; Luijten et al., 2021; Tian et al., 2016). While these factors are important in our model of subjective well-being, our findings demonstrate that the relationship quality between a father and an adolescent is an important contributor, especially in a sample of adolescents who primarily do not live with their father, to subjective well-being beyond known salient proximal factors including mother-adolescent relationships and feelings of connection with school.

As an exploratory aim, this study examined biological sex as a moderator of the relation between father-adolescent relationship quality and subjective well-being outcomes. Connectedness and happiness, but not perseverance, differed significantly by sex, but associations between father-adolescent relationship quality and subjective well-being were similar across males and females. As previously discussed, research on the associations of biological sex (as well as gender) with various positive and negative adolescent outcomes (Batz-Barbarich et al., 2018; Salmela-Aro & Tuominen-Soini, 2010; Steinmayr et al., 2019) is equivocal. However, the racial demographics of the analytic sample (47.9% Black and African American) should be considered as prior studies have shed light on the role of gender in the socialization of Black and African American adolescents (Brown et al., 2010; Jones et al., 2018). In particular, African American parents differentially approach the socialization of their adolescents, engaging in higher levels of socialization with female adolescents

than with male adolescents (Brown et al., 2010). Additionally, Black and African American males, in particular those who are fathers, engage in less traditional, more egalitarian sex roles than other racial and ethnic groups (Jones et al., 2018). With this in mind, the significant proportion of Black and African American adolescents in this study and the prior evidence of egalitarian socialization by Black and African American parents may provide some explanation for the lack of difference in outcomes by adolescent biological sex.

Notably, the results of the sensitivity analyses (weighted; See Table 3) differed from the primary analyses (unweighted; See Table 2). The most considerable difference is in results of the weighted regression with connectedness as the outcome. In the weighted regression analysis, adolescent biological sex moderated the association between father-adolescent relationship and connectedness, unlike the unweighted analyses. Male adolescents, but not female adolescents, who reported higher quality father-adolescent relationships, reported higher connectedness scores. Prior studies report that positive relationships with and attachment to parents predict positive well-being outcomes (Bronfenbrenner, 1992; Kern et al., 2016). Connectedness in other settings (e.g., school; Shochet et al., 2007), but not connectedness as a specific aspect of well-being predicted by father-adolescent relationships. Interestingly, neither father residential status nor the father-adolescent relationship variables were significantly associated with connectedness in the weighted regression analysis, unlike the unweighted regression.

Additionally, in the analyses predicting perseverance, Black and African American adolescents, versus other races, had higher perseverance in the unweighted analysis but not in the weighted analysis. Conversely, in the analyses predicting happiness, whites, versus other races, reported more happiness in the weighted regressions than in the unweighted regressions. Potential explanation for differences in results of the weighted and unweighted analyses may come from differences between demographic characteristics of the unweighted and weighted samples. The weighted sample consisted of only 74% of the unweighted sample, and differed significantly in that the adolescents in the weighted sample were more likely to live with father, and reported lower household income and less positive relationships with their mothers than adolescents in the unweighted sample.

## Strengths and Limitations

Results of this study should be considered within the context of several important strengths and limitations. First, using the Fragile Families and Child Well-being study (FFCWBS) data set to examine these variables was a strength. FFCWBS over-sampled adolescents' born to unwed mothers in major cities across the United States. This data set provided a unique and diverse sample, and thus a unique opportunity to examine family variables without constraint of parental marital or residential status. Though weights for national representation were not used in these analyses, this study maintained the integrity of the original FFCWBS sample by including adolescents of all race/ethnicities and fathers' regardless of residential status. Additionally, use of the PYD framework to formulate the research questions was a strength. PYD, rather than other deficit-centered frameworks, focuses on the promotion or development of personal characteristics (identity, future orientation) and networks (prosocial peers and adults) to bolster positive youth outcomes (subjective well-being) (CDC, 2021). Finally, controlling for salient proximal factors, specifically mother-adolescent relationship quality and school connectedness was novel, and

elucidated the importance of father-adolescent relationships on adolescent subjective well-being outcomes beyond the contribution of these important factors.

Several limitations should be considered as well. Most significant is the ability to generalize across populations. Though FFCWBS weight variables were applied in the sensitivity analyses, primary (unweighted) findings from this study cannot be generalized across other samples of adolescents born to unwed mothers in urban cities during baseline FFCWBS data collection. Similarly, FFCWBS baseline data was collected in 77 large US cities and therefore these results cannot be generalized to families in other settings, such as rural communities. It also is important to note that attrition analyses revealed that adolescents who lived with their biological fathers at wave 6 and who had lower median caregiver household incomes were less well represented in our study findings. Additionally, the correlational design of this study precludes the inference of causality. Finally, a concrete definition of father-adolescent relationship quality does not presently exist. Though this study used the best available items to create a scale for these analyses (NSCH, 2003a, 2003b), other studies have conceptualized this construct differently (De Luca et al., 2020; Offer, 2013), leaving room to further operationalize and investigate these relationships.

## Implications for Research and Practice

There are several practical implications to our findings uniquely linking father-adolescent relationships and positive adolescent development. This study focused on middle adolescence, however the relationships we examined in adolescence existed long before data collection at age 15. These findings suggest that specific emphasis on building relationships with fathers in early childhood as well as in adolescence may be beneficial to the development of other aspects of subjective well-being across developmental periods. This indicates a need for practitioners who work with the parents and families of children and adolescents to target father-adolescent relationship development for the benefit of these specific outcomes: perseverance, connectedness, and happiness. Our results also suggest that fathers have important relationships with their adolescents in addition to the relationships adolescents hold with mothers and people at school (Ansari et al., 2020; Ebbert et al., 2019), especially when considering families with non-traditional (although common) structures (e.g., unmarried parents, single parent households, divorced households) like that of our sample. With respect to this relationship, practitioners who work with adolescents (coaches, teachers, pediatricians) ought to consider the perspective held by fathers related to their child's behavior and emotional well-being rather than being exclusively reliant on the mothers' input (Davison et al., 2017). Furthermore, the present study findings do not indicate that adolescent biological sex was a significant moderating factor on the association between father-adolescent relationships and subjective well-being outcomes, suggesting father-adolescent relationships are important in the cultivation of perseverance, connectedness, and happiness in both male and female adolescents.

Future studies examining the importance of father-adolescent relationships may benefit from considering the following suggestions. First, the original data, as well as the sample for this study, focused on biological fathers solely. Fatherhood is an evolving social construct in the US (Myers, 2013), and has long been narrowed to biological paternity and financial contribution to a child (Levine & Pitt, 1995). There is sound empirical evidence that nontraditional fathers (e.g., mothers' boyfriends, other male relatives, nonresidential fathers, i.e., "social fathers") are contributors to adolescent outcomes and therefore warrant

consideration in understanding the role of contemporary father figures in adolescent subjective well-being. It may be of further benefit to use multiple reporters, rather than adolescent-only reports, to enhance understanding of father-adolescent relationship quality and associations with adolescent subjective well-being. Additionally, subsequent studies may benefit from longitudinal analyses of these study variables to better ascertain relations across time, in particular into late adolescence and young adulthood.

## Conclusion

The present study enhanced our understanding of the unique role fathers play during adolescence. Our study findings underscore the contribution a high-quality relationship between fathers and adolescents makes to adolescent perseverance, connectedness, and happiness—a contribution distinct from that of relationships with mothers and at school and one that applied equally well to the males and females in the study. To our knowledge, this is the first study to examine the contributions of fathers in this way. This study supports the understanding that fathers are important in the lives of adolescents and important to their subjective well-being, and should be leveraged to promote positive outcomes in adolescence and young adulthood.

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**Data Availability** The original datasets and materials used for the current study are available to the public through Fragile Families and Child Well-being Study, <https://fragilefamilies.princeton.edu>.

## Declarations

**Conflict of interest** The authors report no conflicts of interest.

**Ethics Approval** Data for the Fragile Families and Child Well-being Study was collected with Institutional Review Board (IRB) approval from Princeton University as well as participating hospitals. The present study used de-identified publicly available secondary data and thus did not involve human subjects.

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