

EMPOWERED YOUTH, HEALTHY SEX AND RELATIONSHIPS: THE IMPLICATIONS
OF POSITIVE YOUTH DEVELOPMENT FOR HOLISTIC SEXUAL HEALTH IN
EMERGING ADULTHOOD

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ABSTRACT

Bianka Monique Reese: Empowered Youth, Healthy Sex and Relationships: The Implications of Positive Youth Development for Holistic Sexual Health in Emerging Adulthood
(Under the direction of Carolyn T. Halpern)

Most research on emerging adult sexuality has focused on narrow aspects of sexual health, primarily investigating the determinants of adverse sexual health consequences such as unintended pregnancy and sexually transmitted infections (STIs). However, individuals and their partners experience positive sexual health outcomes such as physical pleasure and intimacy that also define their sexual health. This dissertation applies a positive youth development (PYD) perspective to elucidate the adolescent contexts, attitudes, and behaviors that contribute to holistic sexual health in emerging adulthood (a period of increased independence and greater social acceptability of sexual exploration). I used data from the National Longitudinal Study of Adolescent to Adult Health to: 1) identify constructs of developmental assets during adolescence (grades 7-12) that align with PYD and examine sociodemographic differences, and 2) explore the implications of PYD for seven outcomes representing holistic physical, emotional, and social aspects of sexual health among emerging adults (ages 18-26).

Four latent constructs of PYD—confidence, autonomy, parental bonds, and community bonds—captured the positive personal and contextual attributes of adolescence that contribute to healthy development. Different population subgroups of youth reported varying degrees or perceptions of these PYD assets. In longitudinal models, strong bonds with parents in adolescence were associated with increased reciprocity of love between partners, and with increased enjoyment of oral sex and reduced risk of unintended pregnancy (among females only) in emerging adulthood. Autonomy was also associated with increased enjoyment of oral sex

among females in emerging adulthood. Among emerging adults in current relationships lasting 3 months or longer, community bonds in adolescence were also related to increased enjoyment of oral sex for females, and increased love for partner and relationship quality for both males and females.

Findings support the importance of PYD, particularly positive bonds with parents, for holistic sexual health in emerging adulthood. Notably, this expands the range of well-being indicators linked to positive parent-child relationships. Results add to the literature by identifying the developmental assets that promote long-term sexual health, and also those that might be lacking for some youth, all to inform sexual health promotion efforts that work to enhance multidimensional aspects of well-being.

To my sister and role model Erika Reese, who epitomizes perseverance, bravery, and spirit,
“I did it all. I owned every second that this world could give. I saw so many places, the things
that I did. With every broken bone, I swear I lived.” – Ryan Tedder

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as it greatly inspired my education trajectory—making connections between different health behaviors and health outcomes, and how to address them at multiple societal levels. I am thankful to Dr. Ennett for always challenging me with insightful questions to clarify the importance of my research for public health research and practice.

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LIST OF ABBREVIATIONS AND SYMBOLS

Add Health	The National Longitudinal Study of Adolescent to Adult Health
β	Beta coefficient
CASI	Computer-assisted self-interviewing
CDC	The Centers for Disease Control and Prevention
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CI	Confidence interval
df	Degrees of freedom
EFA	Exploratory Factor Analysis
GED	General Education Development
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HPV	Human papillomavirus
HRSA	Health Resources and Services Administration
ICPSR	Inter-University Consortium for Political and Social Research
NH	Non-Hispanic
NHSLs	National Health and Social Life Survey
NSSHB	National Survey of Sexual Health and Behavior
OLS	Ordinary Least Square
OR	Odds ratio
PYD	Positive Youth Development
RMSEA	Root mean square error of approximation
RRR	Relative risk ratio

SE	Standard error
SES	Socioeconomic status
SIECUS	Sexuality Information and Education Council of the United States
STI	Sexually transmitted infection
TLI	Tucker-Lewis Index
US	United States
WLSMV	Weighted least squares mean and variance adjusted
WHO	World Health Organization
YRBSS	Youth Risk Behavior Surveillance System

CHAPTER 1: INTRODUCTION

Background and Significance

Until recently, adolescent ¹ and young adult ² sexuality has primarily been studied through a lens of risk and peril. The vast literature to-date provides evidence for the many factors that contribute to negative sexual health outcomes such as unintended pregnancy, sexually transmitted infections (STIs), and sexual violence.¹ Current prevalence rates of these outcomes paint a bleak picture of the status of sexual health among adolescents and young adults in the United States (U.S.). Though there has been considerable decline in rates over the past 20 years, teen pregnancy and birth rates are still the highest among most other developed countries.² Stark racial/ethnic and geographic disparities in negative sexual and reproductive health outcomes persist,³ and high rates of unintended pregnancy and STIs remain public health concerns as nearly half of all pregnancies in the U.S. are unintended ⁴ and young people aged 15-24 represent half of the 20 million new STIs reported each year.⁵

While continuing to understand the key influences on and health consequences of risky sexual behaviors is crucial, engaging in sexual activity during adolescence does not necessarily produce worse health outcomes than postponing sex until young adulthood.⁶ Moreover, individuals and their partners experience a range of important and understudied positive physical, psychological, and relational sexual health outcomes that together make-up their complete sexual health profiles. Recent definitions of “sexual health” have expanded to

¹Adolescent defined as a young person aged 10-18 years. “Adolescent” and “youth” are used interchangeably throughout this dissertation.

²Young adult defined as an individual aged 18-32 years.

incorporate more holistic dimensions of sexuality and take a wide-range of behaviors and experiences into account. Along with this expansion of the definition of sexual health, newer research has explored factors contributing to essential positive aspects of sexual health development, and how those factors can be enhanced. This recent transition highlights the increasingly adopted perspective that adolescent and young adult sexuality is a normative aspect of human development,¹ and is fundamental to holistic well-being throughout life.⁷ Given that by age 20 over 70% of the U.S. population has had vaginal intercourse,³ there is an urgent need to continue to explore the developmental factors, experiences, and conditions that enhance positive sexual health, as well as the factors that reduce risk of adverse sexual and reproductive health outcomes for individuals throughout the lifespan.

Defining Holistic Sexual Health

Being sexually healthy means that individuals and their partners are not only free of adverse outcomes, but experience positive sexual health outcomes such as physical pleasure, intimacy, commitment, and high romantic relationship quality. Indeed, several definitions of “sexual health” incorporate multidimensional elements of sexuality and well-being.⁸ One of the most widely-cited definitions of sexual health originated from the World Health Organization (WHO) in 1994, and more recently reframed in 2006:

...a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence.⁹

Other definitions of sexual health acknowledge its multilevel components. Fortenberry (2013) developed a holistic “sexual health paradigm” consisting of vital health components such as sexual pleasure, sexual choice, sexual knowledge, and sexual rights that each affect sexual behaviors and functions.⁸ Similarly, a recent Centers for Disease Control and Prevention

(CDC)/Health Resources and Services Administration (HRSA) Advisory Committee described sexual health as encompassing “physical, emotional, mental, social, and spiritual” realms.”^{10, p.41} The last definition also acknowledges the "socioeconomic and cultural contexts" that influence sexual health and access to resources that "support healthy outcomes for individuals, families, and communities.”^{10, p.41} This inclusion is important as cultural contexts, particularly societal gender expectations and social and religious stigma associated with sexuality, greatly impact sexual expression, identity, and especially relationships.

On the interpersonal level, having the skills to navigate sexual and romantic relationships successfully is a primary human developmental achievement by adulthood. The National Commission on Adolescent Health defines one major component of sexual health as the “ability to develop and maintain meaningful interpersonal relationships” and “express affection, love, and intimacy.”¹¹ Because sex is generally a partnered behavior, relationship/social experiences, such as communication or trust between partners, can also boost or undermine sexual health. Finally, as each of the above definitions acknowledges, sexual health also encompasses sexual satisfaction or pleasure. That is, the individual positive physiological, psychological, and emotional aspects of sexual experiences.¹² Sexual satisfaction may involve the physical satisfaction from a sexual or intimate experience, including experiencing orgasms, as well as the emotional satisfaction stemming from intimacy and pleasing one’s partner¹³ and/or increased sexual self-esteem (positive personal feelings of control, attractiveness, and skills in relation to sexuality).¹⁴ The diversity of these outcomes highlights the range of physical, emotional, and social factors that are at play in the experience of holistic sexual health.

For most people, sexuality encompasses engaging in a variety of behaviors beyond vaginal intercourse, including but not limited to masturbation, kissing, mutual touching, oral-genital sex, and anal sex.¹⁵⁻¹⁷ However, studies seldom consider factors associated with healthy

sexual practices of these behaviors and little is known about the levels of pleasure associated with different sexual activities, particularly oral sex, which is a well-documented element of intimate experiences among young adult couples.^{15,18,19} Utilizing more comprehensive definitions of sexual health supports a transformation of the ways in which adolescent and young adult sexual health is studied, in particular the outcomes, behaviors, and capabilities that constitute “optimal”²⁰ sexual health. In sum, holistic sexual health encompasses a wide range of beneficial, health-promoting behaviors in the physical, mental, emotional, and social realms for individuals and partners. However, because of cultural and sociocontextual factors, males and females might face different obstacles in achieving complete sexual health and attendant positive outcomes.

Biological Sex Differences in Holistic Sexual Health

Due to gendered sexual scripts, males and females may place different importance on certain aspects of positive sexual health, for example physical pleasure for men and emotional intimacy for women, particularly within a heterosexual context.^{21,22} Though not universal, men tend to show more sexual desire than women, initiate sex more often in relationships,^{23,24} and report more orgasms on average compared to women.^{25,26} Women are more varied in their sexual expression, but often do desire commitment or connection as a context for sexual activity.^{23,24} According to sexual script theory, sexual interactions are often constructed and experienced to align with dominant cultural expectations (the "scripts") that are learned, internalized, and acted out.²⁷ Most gendered sexual scripts prescribe courses of action that encourage men to pursue and enjoy sexual encounters,²⁸ while dissuading young women who pursue similar sexual desires.^{29,30} Due to these persistent sociocultural sexual scripts and social desirability concerns, young men might prioritize achieving orgasms or sexual satisfaction (as to exhibit their sexual prowess) and

young women might be hesitant to expect or request positive sexual outcomes despite their actual experiences and attitudes.

Further, according to relational-cultural theory,³¹ women especially value interpersonal connections with others in various facets of life and therefore might be more likely than men to emphasize emotional closeness and intimacy as key to positive sexual experiences and relationship quality.³² However, contemporary qualitative studies have also described other sexual scripts that heterosexual men adhere to, including gaining intimacy from mutual sexual pleasure, that do not fit into the traditional (stereotypical) male sexual profile.³³ Given these theoretical propositions, positive sexual health experiences could vary according to biological sex and for specific outcomes among opposite-sex couples. Additionally, given the context of sexual scripts, any effort to examine positive sexual well-being must consider whether and how males and females differ in the fulfillment of sexual health.

Holistic Sexual Health and Overall Well-Being

As individuals age from adolescence to adulthood, the prominence and influence of sexuality and romantic relationships increases,^{34–36} therefore, “healthy sexual development (or the lack thereof) can have spillover effects in other aspects of life.”^{37, p.505} Associations between sexual health and other vital mental, emotional, and physical health outcomes are bidirectional³⁸ as sexual schemas, identities, and relationships are intricately entwined and significantly impact, and can be impacted by, life experiences across domains.^{39–43} Additionally, the perceptions or evaluations of different sexual behaviors, including the levels of pleasure of a variety of activities, could also have perceived or actualized consequences for individual health and relationships.⁴⁴

Studies have found evidence of the impact of holistic sexual health on certain aspects of general well-being throughout the life course. For both males and females, sexual satisfaction

and sexual self-esteem have been positively associated with happiness,⁴⁵ general self-esteem,^{25,46,47} emotional regulation,^{23,47} life satisfaction,⁴⁸ and relationship commitment,^{23,26} and inversely related to depression,^{25,46,47} substance use,⁴⁷ stress,²³ and anxiety.²³ There is also some evidence that sexual health is correlated with increased self-esteem²⁵ and relationship satisfaction,^{26,49,50} and reduced depression⁵¹ among emerging adults, specifically. Studies have also found positive associations between sexual health and risk reduction behaviors. For instance, after incorporating various social, emotional, physical, and mental aspects of positive sexual health, Hensel & Fortenberry (2013) found that in a cohort of 387 adolescent women aged 14-17, sexual health was associated with increased sexual choice, including vaginal and anal sex abstinence, as well as increased birth control use at last sex, and absence of any STIs and sexual coercion.²⁰ The same skills and experiences that enhance sexual health—such as efficacy, communication, and emotional regulation—are likely beneficial for overall health and protective against risk behaviors as well.^{47,52}

Positive sexual health-related expectations and behaviors, such as desire for sexual pleasure and intimacy, are related to the use of contraception, which has direct implications for other sexual and reproductive health outcomes including risk of unintended pregnancy and STIs. Several studies find that positive aspects of sexuality significantly influence experiences with contraception in young adulthood, though the direction of this association is unclear.^{12,13,53–56} Use of hormonal contraceptive methods or condoms during sex has been found to enhance sexual enjoyment for some young adults,^{53,54} but has also inhibited pleasure for others,⁵³ and some partners might refrain from using contraception so as to not reduce pleasure during sexual activity. Grady et al. (1999) explored the factors that influence contraceptive use among 1,189 individuals aged 20-27 and found that both men and women considered physical pleasure to be “very important” when determining whether to use contraception.⁵⁵ Though there is no

consensus on the direction of the link, the desire for positive sexual health experiences, like sexual pleasure, is associated with decision-making around contraception and in turn has implications for unintended pregnancy and STI prevention efforts. In fact, promoting how the use of male and female condoms can be more pleasurable has been found to increase uptake and consistent use of condoms,^{12,56} highlighting the importance of considering positive sexual health desires and outcomes in comprehensive sexual health education so that all adolescents could experience lasting, healthy relationships into emerging adulthood and beyond.

Holistic Sexual Health Among Emerging Adults

“Emerging adulthood”³ is a life stage often consisting of many changes in residence, education, employment, and relationship formation.³⁴ In emerging adulthood, exploration of sexual and romantic identity is more socially acceptable than in adolescence. During this period, most emerging adults are sexually active, have had several sexual partners, and have had great diversity in their sexual and relationship experiences.^{35,57-59} This new exploration during a later developmental period might have implications for sexual health that are different from adolescents (who likely face more constraints in exploring sexual interests and forming their sexual identities) or older adults (who most likely have already formed their sexual identities and/or are in stable, long-term relationships).^{34,60} Additionally, changing patterns of relationship formation in the U.S. demonstrate that emerging adults spend more time dating and cohabiting before they marry than in any other historical period.⁶⁰ Thus, romantic relationships become prevalent in emerging adulthood and there is great diversity in relationship experiences, which could have important implications for sexual identity development, interpersonal skill-building, and ultimately sexual health in emerging adulthood and beyond.

³ Emerging adults defined as individuals aged 18-26 years.

Though a variety of behaviors, experiences, and outcomes comprise one's sexual health repertoire, little attention has been given to understanding holistic sexual health outcomes among emerging adults as a distinct age-group. There are a limited number of potential national data sources or surveys available that assess outcomes such as orgasm frequency or enjoyment of oral sex among emerging adults, which reduces our ability to gain a cohesive understanding of how emerging adults experience multidimensional aspects of sexual health, as well as the potential adolescent contributors to these patterns. Because most individuals have had some sexual experiences by emerging adulthood,³ early opportunities for adolescents to build quality intrapersonal and interpersonal capabilities could go a long way in promoting healthy sexual development into emerging adulthood when individuals likely experience greater opportunity for sex. Thus, there is a continued need to elucidate how and under what circumstances adolescents' contexts, attitudes, and behaviors contribute to long-term positive sexual health outcomes, as well as the capabilities and qualities that are needed to navigate relationships during a period when sexual and romantic relationships become more salient and individuals have greater freedom in exploring their sexual identities.³⁴

Preparation for Adulthood and Sexual Health Education

Given the salience of sexuality in adolescence, and because sexual health is an integral component of long-term overall health and is related to general well-being and risk reduction, adolescence is a key period to strengthen protective factors that empower youth to advocate for themselves, exercise their sexual choice to abstain from sex, or engage in healthy behaviors and have enjoyable experiences if they do choose to have sex. Though relatively new, the "positive sexuality" or "sex positivity" perspectives represent a growing body of research that acknowledges that holistic positive sexual outcomes, such as sexual satisfaction, sexual self-esteem, and high relationship quality, are valid and ideal, and that everyone should be equipped

with the skills to achieve optimal, complete sexual health. As sexuality and sexual identity exploration manifest in adolescence for most people,¹ lasting sexual health can be promoted when adolescents have access to accurate sexual health information and positive skill-building experiences.^{61,62} However, although they are bombarded with sexual images and expressions daily, adolescent sexuality continues to be stigmatized in the U.S. Relatedly, the ideology that sexual activity outside the context of marriage is harmful or immoral manifests in government policies, research funding, and especially sexual education curricula.

Ideological impact on sex education can be seen in the limited scope of many sexual education programs; programs often do not educate youth on qualities of healthy relationships, do not provide empowering opportunities for youth to practice communication or negotiation skills, nor consider sexual enjoyment and sexual choice as essential components of sexual health.^{63,64} Additionally, many programs have an abstinence-only focus or an exclusive focus on preventing STIs and unplanned pregnancy,^{65,66} and some lack fidelity in implementation or only have minimal short-term effects on sexual health.⁶⁶⁻⁶⁹ Such sexual health education programs do not fully prepare youth for the responsibilities they will encounter as they become sexual beings in emerging adulthood and beyond as they do not incorporate inclusive education or provide information about how to maintain equally respectful and potentially pleasurable relationships, among other competencies.⁶¹ Though various evidence-based sexual health standards (e.g., National Sexuality Education Standards)⁷⁰ and curricula (e.g., Be Proud! Be Responsible!)⁷¹ were recently created to better prepare adolescents for sexual relationships (by incorporating age- and developmentally-appropriate, comprehensive aspects of sexual health), many adolescents lack access to these resources. Enhancing knowledge and interpersonal skills through utilization of these resources could not only help youth avoid adverse consequences, but also prepare them to take control of their health and relationships throughout life.

Some scholars propose that existing sexual education programs can be enriched by incorporating elements of positive youth development programming that help youth build general competencies to navigate complex sexual and romantic relationships throughout the life course.⁷² This dissertation uses a framework of positive youth development to explore the ways in which a wide range of adolescent skills, characteristics, and contexts are related to sexual health in emerging adulthood. The following sections outline the positive youth development framework and how the dimensions are relevant to holistic sexual health.

Positive Youth Development

The positive youth development (PYD) perspective represents the comprehensive interdisciplinary research, programmatic efforts, and policies that propose that healthy development across the life course is best promoted by creating opportunities for youth to develop and strengthen key assets (e.g., communication skills, autonomy, empathy) that enable individuals to flourish in various contexts of life.⁷³ Adolescents possessing these developmental assets are more able to develop and preserve their own holistic well-being, sustain healthy relationships, and thrive into emerging adulthood and beyond.^{73,74} In empirical studies, PYD serves as an assets-based (as opposed to risk-focus) conceptual framework by which to identify the positive youth attributes that reflect ideal psychosocial health throughout life.

The PYD perspective first came to prominence among developmental scientists and youth practitioners in the early 1990s in response to the growing prevalence of risk behaviors among adolescents in the U.S.⁷⁵ Prior to the PYD movement, “adolescence” was often defined in the scientific literature and characterized in the media as a life period full of massive changes, stress and conflict among youth and their families. Young people were viewed as experimenters with risky behaviors, and much of the research on adolescent development positioned “healthy” adolescents as completely uninvolved in premarital sex, drugs, or delinquency.⁷³ However,

research on adolescent development in the past three decades has exposed the overgeneralization of these perceptions. Not all youth and families experience such conflict, and in fact, most adolescents adjust in healthy ways, enjoying positive outcomes.⁷³ Likewise, some adolescents are resilient and flourish despite significant obstacles and limited resources.⁷⁶ Just as Karen Pittman proposed in the early 1990s, “Problem-free is not fully prepared;” youth and their families require positive skills and qualities to successfully navigate the changing relationships and responsibilities during the transition to adulthood.^{77, p.1} Focusing on reducing deficits and problem behaviors is only part of the battle; enhancing the positive attributes and assets of youth is equally important.

Numerous PYD conceptualizations and theoretical models aimed at measuring healthy adolescent development exist.⁷⁸ Consistent across each model is the emphasis on sustained and supportive, prosocial environments in families, schools, and communities, and diverse individual thriving functions including academic achievement, compassion, and a positive view of self.⁷⁶ As an illustration of the PYD approach to research and the operationalization of the dimensions, one of the most widely-used frameworks of PYD is the Five Cs model of PYD outcomes.⁷⁹ The Five Cs model suggests that “healthy” development can be exhibited by a set of key internal developmental outcomes:

Competence: the self-assurance of and success in the social, cognitive, academic, physical, and vocational areas of life. Competence includes tangible personal and interpersonal skills and abilities (e.g., literacy, employment skills), as well as positive adolescent perceptions of these abilities.^{74,80,81}

Confidence: the positive views of one’s self and worth, including optimistic aspirations for future achievement and high self-esteem.^{74,80,81}

Connections: enduring, strong prosocial bonds with people and institutions (i.e., parents, family, peers, school, church and neighborhoods) fostered through high-quality relationships, mentoring, counseling, team work, and participation in other prosocial, engaging activities.^{74,80,81}

Character: valued, prosocial behaviors like self-control, morality, respect for rules, and spirituality.^{74,80,81}

Caring: a sense of compassion and empathy for others.^{74,80,81}

If the Five Cs are exhibited over time, a sixth “C” of *contribution* will result, representing the importance of youth becoming engaged and active citizens, making positive contributions to society.^{82,83} Similar to all PYD frameworks, the model proposes that adolescents who possess the Five Cs have the attributes and skills to develop and preserve their own well-being (potentially including multidimensional aspects of sexual health), thrive, and become productive members of society.^{73,74} The Five Cs model is just one conceptual framework of PYD, but others, such as the Search Institute of Minnesota’s Assets Model of 40 developmental external and internal assets,⁸⁴ exhibit similar properties with a focus on thriving and positive assets, as well as supportive family and community environments. One goal of this dissertation is to identify the personal and contextual attributes that align with the general PYD framework based on available indicators in a survey of a large, heterogeneous sample of U.S. adolescents.

PYD is of increasing interest among researchers,⁷⁶ but because PYD is interdisciplinary, various terms and constructs comprise a number of different models. Differences exist in how studies have operationalized the PYD constructs, making it challenging to accurately summarize the implications of PYD for adolescent and future well-being, including holistic sexual health. Nonetheless, the PYD perspective represents a shift in the conceptualization of how to address youth problems, and there is a massive body of literature that provides evidence for the benefits of PYD programs focusing on strengths and assets among youth (and not risk and shortcomings)

in preventing problem behaviors and promoting healthy behaviors. (For a widely-cited comprehensive review of programs see Catalano et al.⁸⁵) Several studies have found various *immediate* positive implications of PYD experiences in general: reduced substance use^{86,87} and violent behavior,⁸⁶ increased school engagement,^{76,87-89} and improved parent-child relationships⁸⁷ in adolescence. Fewer studies have explored positive *long-term* implications of PYD experiences. However, those that have find that PYD opportunities in adolescence are related to improved emotional regulation and^{90,91} civic engagement⁹² in young adulthood.

This evidence suggests that PYD-related experiences may strengthen valued behaviors and qualities in adolescence and contribute to positive social functioning and well-being in young adulthood, however contemporary literature on the health implications of PYD has limitations. Research findings are often not generalizable to all youth in the U.S. because studies utilize non-representative samples, including at-risk youth,^{88,93} youth currently participating in rigorous mentorship or PYD intervention programs,^{86,87} or youth residing in a specific geographic location.⁹⁰ Further, studies often do not examine long-term PYD health implications and rather focus on improved outcomes solely in adolescence.^{76,89} In addition, some studies rely on adult retrospective reports of adolescent experiences⁹¹ that might be biased because of recall error or social desirability pressures. Though PYD could have a positive impact on immediate and long-term health, more research using nationally representative samples of youth and prospective reports of PYD is needed to fully understand the circumstances and potential implications of PYD that exist for diverse groups of adolescents and for diverse outcomes.

PYD and Sexual Health

Despite the passage of time since the development of the WHO's multidimensional definition of sexual health and the inclusion of outcomes like sexual pleasure and relationship satisfaction as positive and vital aspects,⁹ only a handful of studies have explored relationships

between adolescent developmental assets and connections, and positive aspects of sexual health. Explanatory constructs from various PYD frameworks reflect different aspects of an adolescent's psychosocial status and life, and are applicable to sexual behavior and sexual health, as PYD experiences and attributes can influence self-schemas, identities, and the formation and maintenance of relationships.^{90,94,95} Further, possibly because brain development continues into early adulthood,⁹⁶ some adolescents may build peer and intimate relationships without sufficient cognitive and interpersonal skills needed to sustain a healthy relationship. PYD opportunities can mitigate this by helping youth build crucial social skills, including listening, negotiation, conflict management, and communication, that can be used in their sexual and romantic relationships throughout life.

Certain comprehensive school- or community-based sexual education programs do educate youth on safe sexual practices and provide safe spaces for youth to practice healthy social skills, however PYD programs or constructs often complement existing sexual education programs by helping youth build empowerment and efficacy to use those skills in their increasingly important peer and romantic relationships.⁹⁷ This comprises assisting youth in developing the capacity to articulate their own desires (including abstaining from sex), listening to their partners, and assuming joint responsibility for contraception and pleasurable sex.⁷² PYD can also encourage youth to take control of their overall well-being, establish goals and aspirations, and promote sexual health development as an integral component of human development and health. However, these programs and experiences do not need an explicit sexuality component to have an impact on sexual health outcomes;⁷² the skills and prosocial bonds fostered in youth development opportunities represent the skills and relationships that are also vital to successful sexual health development.

Several studies have found evidence of a beneficial impact of adolescent PYD dimensions (e.g., competence, parent-child communication, spirituality, and achievement aspirations) on immediate and long-term risk-reducing behaviors including delayed sexual initiation,^{86,88,97-101} fewer sexual partners,⁹⁸⁻¹⁰² greater condom and/or contraception use,^{88,98-100,102-109} reduced risk of unintended pregnancy and/or birth,^{88,97-101,110} and reduced risk of STIs.¹⁰⁹ Relatively fewer studies have examined the association between PYD dimensions and positive sexual health outcomes; however, protective PYD factors such as family connectedness or confidence have been linked to increased sexual self-efficacy during adolescence,¹⁰⁷ communication with parents about sexuality,³⁷ and even enhanced sexual satisfaction among a sample of Dutch adolescents.⁹⁴

In one recent study, young adults who had close bonds to adult mentors in adolescence reported higher self-efficacy, optimism, and romantic relationship satisfaction in adulthood (aged 25-35 years).⁹¹ Similarly, in another study, 7th graders who had family support and high parental involvement were more “competent” in their romantic relationships in their early twenties.¹¹¹ Though there is some evidence that certain PYD dimensions are correlated with aspects of positive sexuality (for example, sexual pleasure, sexual self-esteem, contraception negotiation, and relationship quality),²⁶ more research is needed to unravel these and other long-term implications of PYD for positive sexual health, particularly using population-based adolescent samples and validated PYD frameworks.

Limitations of Research on PYD and Sexual Health

There are five key limitations of past research on potential links between PYD and holistic sexual health. First, few studies have explored the long-term connection between PYD and holistic sexual health outcomes among emerging adults as a distinct age-group. Emerging adulthood marks a critical period to examine sexual health as romantic relationships are more

prevalent than in adolescence and there is great diversity in experiences, but our knowledge of certain pleasure-related, emotional, and social aspects of their sexual health is limited. Second, few studies use nationally representative samples; previous research that has focused on holistic sexual health outcomes in emerging adulthood has largely relied on convenience samples that lack generalizability^{37,112} or samples of college students^{112,113} who might experience different social environments related to the acceptability of and opportunity for sex compared to the general population. A third limitation is that most of the current literature only examines cross-sectional associations between PYD and holistic sexual health,^{25,26} which does not allow the longitudinal examination of emerging adulthood experiences relative to the adolescent experiences that precede them. Fourth, cross-sectional data of sexual health in emerging adulthood also often rely on retrospective reports of adolescent experiences, which might be inaccurate due to recall bias. Lastly, some studies only incorporate single indicators of positive sexual health^{25,37,114} or PYD,¹¹⁵ which is limiting because sexual health encompasses and is impacted by multidimensional experiences. It is unknown if and in what ways multifaceted components of healthy development show similar positive associations with holistic components of sexual health, in addition to reducing engagement in risk behaviors.

Study Overview

To fill the aforementioned gaps in the literature, this dissertation research utilized a diverse, population-based sample of U.S. adolescents followed into adulthood to identify constructs of adolescent assets that align with PYD, test differences by sociodemographic characteristics, and explore the implications of PYD for healthy sex and romantic relationships in emerging adulthood. Chapter 2 outlines the theoretical framework of the dissertation. Then, each set of research questions described below is addressed in a separate chapter, followed by a

conclusion chapter that summarizes the findings and the implications of this research for public health practice and future research on youth development and sexual health.

Research Questions

Paper 1 (Chapter 3): Identify Latent Constructs of Positive Youth Development.

Using exploratory factor analysis (EFA), which latent constructs of PYD emerge from indicators of personal and contextual assets in a large, diverse sample of adolescents in the U.S.? Using confirmatory factor analysis (CFA), what is the degree to which the Five Cs of PYD model (i.e., connectedness, competence, confidence, character, and caring)⁷³ fit the data? How prevalent are the assets that comprise PYD in a diverse sample of adolescents? Are there differences in PYD by biological sex, race/ethnicity, and socioeconomic status?

Paper 2 (Chapter 4): Examine Implications of PYD for Holistic Sexual Health. What are the implications of PYD for broad physical, emotional, and social indicators of sexual health including enjoyment of oral sex, orgasm frequency, reciprocated love, relationship quality, unintended pregnancy risk, and past-year STI risk among heterosexual emerging adults in a current or recent relationship?

Data Source

Analyses are based on in-home data from Waves I (Chapter 3) and III (Chapter 4) of the National Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is a probability-based, nationally representative survey of 20,745 U.S. adolescents enrolled in grades 7 through 12 in the 1994-1995 school year (Wave I). Add Health to-date has completed one in-school and four in-home waves of interviews. Wave III interviews (n=15,197) were completed in 2001-02, when sample members were aged 18-26, the period of emerging adulthood.

This research contributes to the growing evidence of the implications of PYD for positive well-being by examining the possible antecedents of sexual health and how the contexts and

experiences in adolescence influence emerging adult sexual and romantic experiences.

Identifying the critical precursors to holistic sexual health throughout the lifespan can lead to the formation of more effective youth development and sexual health intervention programs that enhance diverse aspects of well-being.

CHAPTER 2: THEORETICAL FRAMEWORK

This chapter outlines the theoretical basis that guides the conceptualization of this study, the PYD approach to research, and how attributes and resources in adolescence combine to foster positive development and healthy outcomes, including healthy sex and relationships, throughout the life course. The theoretical framework includes multilevel (developmental systems and life course theory), interpersonal (social cognitive theory and attachment theory), and intrapersonal (identity formation theory) related theories.

Multilevel: Developmental Systems and Life Course Theory

A healthy transition to adulthood does not merely entail the avoidance of drugs, violence, and unsafe sexual activity, nor is individual behavior the sole contributor to healthy development. Indeed, current literature provides evidence for health-promoting and skill-building opportunities at multiple societal levels as equally (or more) vital to cognitive, emotional, behavioral, and social functioning throughout the life course.⁸⁵ Stemming from **developmental systems theory**, PYD approaches to research and programming incorporate a bidirectional, “person-in-context” perspective,^{73,76,95,116} recognizing that the social influences of parents, peers, partners, and neighbors are as important to child development as individual behaviors. The reciprocal nature of these influences indicates that an adolescent can be shaped by his or her environment, but he or she can also act in ways that alter their environment.⁷⁶ According to developmental systems theory, no single factor solely affects health and development, but rather human development is impacted by diverse factors at multiple interacting levels.¹¹⁶ The PYD perspective identifies interrelated adolescent assets—not deficits—and acknowledges that all youth have individual attributes and could have access to

supportive contextual resources that can be strengthened to promote healthy behaviors and positive outcomes.

Life-course theory also provides a general organizing framework for this dissertation. According to life-course theory, human development (and related health outcomes) is conceptualized as a trajectory influenced by interactions between genetics and individual behavior, and also by social and historical contexts and cumulative conditions during the transitions throughout life.¹¹⁷ Adolescence represents one important transition in the life course, the transition from childhood to emerging adulthood, and is largely impacted by circumstances and conditions in early life, while at the same time being a significant contributor to well-being in later life. Adolescence is a life stage marked by the onset of puberty and consisting of many transformations, not only in education and community connections, but in relationships with family, peers, and romantic partners. In this transition, adolescents must navigate complex social, emotional, and psychological changes.⁷³ According to life course theory, how a person develops throughout life is largely influenced by the timing and sequencing of these important transitions in adolescence.¹¹⁸ Within a particular historical and cultural context, if the transitions occur off-time or out of normative sequence, then social or other health consequences might ensue that are different from those who experience an event in what is considered “normal” timing and order. For example, young girls who begin puberty early, often begin romantic and sexual experiences earlier than their on-time maturing peers,^{119,120} which may put them at greater risk for immediate and long-term adverse sexual health outcomes.^{120,121} Often times, however, the environment—both the availability and quality of resources/opportunities and the strengths of social relationships, especially, impact how adolescents might cope with these many transitions in adolescence and into adulthood.⁸²

The importance of social relationships is a central component of linked lives, which is another proposition of life course theory. Linked lives emphasizes that the prominent social bonds in a person's life (with parents, siblings, peers, or romantic partners) have a collective influence on their behavior and health trajectories, while also the interdependent nature of social networks enables individuals to influence the trajectories of those in their social circles.¹¹⁸ This concept helps explain why new roles and experiences during the many transitions in adolescence not only impact the individual, but also those within their networks. People live within social settings; thus, it is important to consider diverse social, cultural, and historical contexts and how those experiences and resources combine to contribute to health and development over time.

Lastly, individuals make decisions and act within societal and historical constraints, however these decisions enable them to form and impact their own life course trajectories.¹¹⁸ In other words, individuals exercise agency, another life course perspective principle, which also has an influence on their health and well-being throughout life. Because of agency and the understanding that human development is a life-long process, youth “select into personal experiences, interpersonal relationships, and social settings in ways that reflect their past and contribute to their futures”; therefore youth play a key role in their own development.^{122, p.274} PYD experiences enhance capabilities for youth to capitalize on existing sociocontextual resources in households, schools, and communities⁷⁶ that help them manage physical and social changes and strengthen positive qualities, like agency or decision-making, that foster healthy development throughout the life course.

Interpersonal: Social Cognitive Theory and Attachment Theory

Developmental systems and life course theories provide a paradigmatic framework for how earlier positive experiences and contexts can affect later behavior and health outcomes. Elements of social cognitive theory, attachment theory, and identity formation theory further

elucidate key factors and directional hypotheses for these mechanisms. One fundamental property of the PYD perspective is that adolescents need strong connections to prosocial peers and adults to foster healthy development. **Social cognitive theory** asserts that important social units—family, friends, teachers, and community institutions—influence positive adolescent behaviors and competencies by modeling socially desired behaviors, expectations, and beliefs, and by providing rewards or consequences for (or expressing favorable/unfavorable attitudes toward) desired behaviors.¹²³ Individuals learn new skills from observing others’ modeled behaviors, even without them having to explicitly practice those observed skills, in a process of “observational learning.”^{123, p.6} The more social interactions youth have with prosocial adults and peers, the more opportunities they have to develop positive social skills and connections (e.g., listening, communication, empathy). Desired behaviors are reinforced as adolescents receive positive and/or negative feedback from parents, peers, or the outer community; adolescents internalize these social cues and subsequently make adjustments to their behaviors.¹²⁴ A PYD approach to research and programming recognizes that adolescent prosocial bonding can lead to prosocial behaviors (e.g., caring, volunteering, or spirituality), therefore families and communities have the potential to be vital sources of support for healthy development.⁷⁶

Parents and guardians, specifically, often play prominent roles in healthy adolescent development, especially in regard to fostering positive social skills and healthy relationships. According to **attachment theory**,¹²⁵ adolescents construct working models of relationships, and their self within a relationship, based on their relationship with their parents.¹²⁶ Adolescents draw on these working models in their future interactions with romantic partners,¹²⁶ often emulating parents’ behaviors and their affective patterns of expression.¹¹¹ High-quality parent-child relationships characterized by warmth, love, and open communication then allow youth to practice important relationship competencies and form values or expectations for themselves and

their future relationships. In other words, high-quality parent-child relationships help strengthen interpersonal skills, but also an individual's self-identity and functioning within a relationship, which allows one to interact effectively with others, express personal desires, and cope with differences.

Intrapersonal: Identity Formation Theory

Individuals might be better-skilled at these social competences, and potentially experience healthier relationships throughout life, if they have a positive self-identity, where they believe in their self-worth and exercise a sense of purpose and control. Strong attachment in families, in fact, can enhance the identity formation process as young people often adopt the beliefs and values that align with close individuals in social contexts, especially parents/caregivers. According to Erikson's **identity formation theory** (1968), adolescence is a life stage when individuals often for the first time try to make sense of who they are and their hopes for the future, including goals for their sexual and romantic relationships.¹²⁷ Therefore, when young people take on new roles and interactions, having strong guiding principles and a solid foundation allows space to build a positive "sense of inner identity" and "ability" that reflects their beliefs, aspirations, and context.^{127, p.87} A positive identity helps facilitate a strong sense of self-worth, confidence, and autonomy through "intentional self-regulation:" a cognitive process whereby one purposefully reflects on their hopes, behaviors, and desires, which allows them to select life goals and leverage their skills and resources to achieve these goals.^{128,129} Assets such as positive identity and self-regulation are fundamental to sexual health development because individuals who are equipped with these psychosocial competencies might be better-positioned to take advantage of existing opportunities to achieve their personal goals for themselves in their relationships. Positive identity and self-regulation also help explain why

some individuals might limit their engagement in risky sexual behaviors that may jeopardize their goals.¹²⁸

Identity crises can emerge during the identity development process¹³⁰ when contradictions between individual beliefs and the expectations of others (or their own aspirations) result in uncertainty or shame¹³¹ and adolescents have limited ability to cope with these and other various stressors.¹³² This is when key influences at the interpersonal level significantly matter. High-quality social bonds to family or prosocial organizations (e.g., school clubs or churches), as those promoted by PYD efforts, foster a supportive environment for youth to engage in “self-discovery” and enhance their positive values and capabilities, including successful coping skills that help buffer against identity-related stress.^{130, p.254} Adolescents with limited positive attachment to family or other prosocial adults and peers, on the other hand, might have fewer resources to utilize if a conflict occurs during the identity formation process, which could undermine positive identity development and have adverse implications for many related functions of human life, including managing sexual health and relationships.

In the context of sexual health, the mechanisms described by social cognitive and attachment theory, identity formation theory, and intentional self-regulation help explain how early contexts either promote or undermine development and the ability of individuals to function positively within relationships, feel empowered to express personal desires, and achieve positive sexual health outcomes. In summary, strong parent, peer, or community attachment contexts act as spaces for crucial skill-building and identity-forming opportunities for adolescents. Therefore, it is important to examine if and how diverse experiences and contexts in adolescence (a sensitive time period with various biological and psychosocial transitions) might be relevant for future sexual health, to build a collective understanding about what factors are critical for lasting, holistic well-being.

CHAPTER 3: POSITIVE YOUTH DEVELOPMENT AMONG A POPULATION-BASED SAMPLE OF ADOLESCENTS

Introduction

The positive youth development (PYD) perspective offers a conceptual framework for enumerating the adolescent contexts, resources, perceptions, and behaviors that could potentially contribute to health, including holistic sexual health outcomes in emerging adulthood. The PYD perspective represents the interdisciplinary research, programmatic efforts, and policies which propose that healthy development across the life course is best promoted by creating opportunities for youth to develop and strengthen key psychosocial skills (e.g., autonomy, empathy, and communication) that enable individuals to flourish in various contexts of life.⁷³ Properties of the PYD framework were derived from developmental systems theory, which emphasizes that individual persons and their context mutually interact and compound to impact human development.¹¹⁶ As such, models of PYD identify internal individual attributes like resiliency, compassion, and a positive view of self, as well as positive social functioning and interactions in supportive, prosocial environments in families, schools, and communities, as key developmental assets for youth.^{76,78} The model proposes that when adolescents possess these positive developmental assets, they are more able to develop and preserve their own holistic well-being, sustain healthy relationships, and thrive into emerging adulthood and beyond.^{73,74} When applying a PYD perspective to empirical studies or youth programming, focusing on (by identifying and/or strengthening) adolescent assets across multiple societal domains, as opposed to risk behaviors or deficits, can promote healthy behaviors and positive outcomes for young people during adolescence and in the future.

There is a large body of literature that provides evidence for the benefits of PYD opportunities that allow the strengthening of assets among youth (rather than focusing on shortcomings or merely reducing risk) to prevent problem behaviors and promote healthy behaviors.^{76,86–91,93} However, it is challenging to summarize the evidence found in previous research on the associations between PYD indicators and well-being because there is no consensus on the measurement of PYD. Though PYD is of increasing interest among interdisciplinary researchers,⁷⁶ studies differ on how they have defined and operationalized its constructs, the measurement tools and survey items used, and how different constructs are either combined or used in isolation. To improve the utility of the PYD model, more research is needed in three general areas to better measure and understand PYD and its relevance to and implications for human development: 1) research that identifies and comes to a consensus on the universal constructs that comprise a framework of positive healthy development; 2) research that identifies which PYD assets are most relevant for youth in different contexts and examines the prevalence estimates of the developmental assets identified in these models for diverse groups of youth, and; 3) research that tests how relevant these constructs are to different aspects of human development and health during adolescence and beyond. The following three sections describe these gaps in our understanding of PYD measurement and the application of the model for research in more detail.

Considerations in PYD Measurement

To address the first prominent gap in the research base on PYD of a lack of consensus on the constructs, there is a need for more clarity and consistency on the best method for measuring PYD in empirical analyses using survey data.⁷³ Numerous PYD conceptualizations and theoretical models have been developed,⁷⁸ the most-used being the Five Cs model of PYD outcomes⁷⁵ and the Search Institute of Minnesota's 40 Developmental Assets consisting of

external and internal assets.⁸⁴ Given the different models, however, questions remain about whether there are specific developmental assets at the individual, interpersonal, and contextual levels that are absolutely key to youth development, and what degree of “possessing” these attributes is necessary for healthy development. In descriptions of the core assumptions of the PYD perspective, scholars propose that it is more beneficial to create opportunities for youth to broaden their number of developmental assets across multiple settings, than to focus on building one particular strength, or several within just one setting.⁷⁶ Thus, ideal models of PYD should incorporate various positive individual attributes and supportive environmental resources across societal domains such as family, school, neighborhood, and community.^{84,133}

Relatedly, it is unknown whether PYD should be evaluated from a youth perspective, that is, by youth responding to questions about their experiences and perceptions, or by more external indicators such as parent and teacher reports of youth engagement in PYD activities. Actual participation in existing youth programs (e.g., summer camp) might have different predictive power for future well-being than adolescent perceived positive attributes (e.g., autonomy), and youth might value these characteristics differently than adults.¹³⁴ Again, studies vary in the measurement of PYD and the types of data used to assess it, however, operationalizing PYD using survey data derived from a variety of perspectives could inform future intervention efforts by identifying potential factors that contribute to positive youth outcomes.

Sociodemographic Differences in PYD Experiences

A second gap in the research base on PYD measurement is a clear understanding of which PYD assets are most important for youth in different contexts, and if there should be culture- or context-specific PYD models. Youth development experiences are conceptualized to foster ideal qualities for youth in general, but it is unclear whether some groups value PYD characteristics differently based on cultural and environmental factors or whether some groups

endorse fewer or more of the personal attributes that comprise the PYD characteristics. Before applying indicators of a PYD framework to examine their influence on different outcomes, studies should verify whether the constructs are structurally stable (in other words, have similar meanings or measurement invariance) for diverse groups of adolescents with unique cultural and social contexts. Few studies, however, have evaluated how the positive indicators comprising a PYD framework operate for different sex, racial/ethnic, and economic groups of adolescents or have examined sociodemographic differences in levels of PYD characteristics (or participation in PYD programs) using population-based samples of youth. Thus, the research base could benefit from an assessment of whether there are certain assets that are more or less important for youth in distinct communities so that interventions based on PYD frameworks could be tailored to support positive development for diverse adolescents.

Nonetheless, there may be differences in endorsement or levels of the positive attributes and qualities that comprise most models of PYD for various youth populations, especially gender or sex differences, which has been the primary focus of most previous research. Studies have noted higher levels of PYD among females compared to males,^{81,135–137} but this could be an artifact of existing sex differences and gender expectations. For example, females are more likely than males to value or report internalizing, prosocial behaviors, connections, and caring for others—all considered ideal developmental outcomes. These patterns are likely influenced by societal gender expectations and concerns about maintaining masculinity and femininity, which may limit positive development, or influence the report/endorsement of certain characteristics, such as sympathy expression for males¹³⁸ or high self-confidence for females.¹³⁹

While most studies explore sex differences in endorsement of PYD characteristics, the literature has largely neglected to examine racial/ethnic or socioeconomic status (SES) differences in PYD. The period of adolescence consists of biological, psychological, and social

transitions, and not all youth start these transitions at the same time, continue at the same pace, or adapt in similar ways with similar outcomes.⁷³ These variations in developmental pathways are greatly influenced by variations in context,⁷³ mainly that youth do not have equal access to quality positive developmental resources and opportunities such as mutually supportive prosocial adult-youth relationships^{116,140} or ongoing, safe youth-serving community programs.⁷³ This might be due to persistent disadvantage resulting from institutional racism and/or lack of financial resources, among other reasons. Racial and ethnic minority youth often experience continuous prejudice or discrimination that might affect their self-schemas and identity development.¹⁴¹ Additionally, the lack of affordable or available positive school-based or community-based resources can weaken development for some youth. For example, Black and low-income youth often report lower teacher engagement and teacher expectations,¹⁴¹ which in turn limits school attachment, positive belief in the future, and academic achievement among students who might internalize these negative teacher perceptions, racial stereotypes, and/or are not provided with adequate resources to succeed as a result of these perceptions.

Gender and racial minorities and low-income youth in particular have unique stressors; however access to enriched individual and community resources that provide coping support, foster agency, and help youth solve problems, can buffer against undesirable health consequences and promote more positive outcomes.¹⁴² For instance, in a sample of 62 low-income African American families, students with significant parent engagement (e.g., communicating about and monitoring academic progress), perceived teacher support, and school attachment had higher GPA's than students without these assets.¹⁴³ In another study of low-income, inner-city Hispanic girls, indicators of social support (e.g., closeness, encouragement) provided by families, teachers, and peers were associated with increased school engagement.¹⁴⁴ Similar patterns emerged by parental education attainment: racial minority adolescents with

parents who had at least a Master's degree had the highest rates of participation in and experiencing more diverse types of youth development activities, as well as fewer risk behaviors.¹⁴⁵ Though some adolescents mature in disadvantaged communities and schools, PYD resources and opportunities provided in a supportive environment with avenues for youth to build competencies and social capital can help offset these situations, cultivating engaged, resilient individuals.¹⁴⁴

In sum, having positive development opportunities or resources can increase resiliency in disadvantaged situations for some youth, while promoting well-being across the life course, possibly including holistic aspects of sexual health among other understudied outcomes. In developing and implementing intervention programs for youth in diverse settings, it is important to have a conceptualization or framework of PYD that guides the focus of the intervention and that is valid for the target population (i.e., which skills/assets to enhance, how youth might value these qualities based on cultural or social experiences, the players involved, and in which societal domains to target).

PYD and Contributions to Health

A third major gap in the existing literature on PYD measurement and application includes a lack of a clear understanding of how relevant PYD is for human development and health. Without more clarity in general measures and for different populations, it is challenging to test whether the constructs described in PYD models and of focus in youth development programming are related to concurrent and future well-being. Previous research provides evidence for the *immediate* implications of PYD experiences, such as parental and family connectedness and positive self-identity, for general development and health including reduced substance use^{86,87} and delinquency,⁸⁶ increased school engagement,^{76,87-89} improved parent-child relationships,⁸⁷ increased self-esteem,^{90,91,93} and increased use of contraceptives¹⁰⁶ in

adolescence. Gaps remain in understanding whether and in which ways PYD has *long-term* implications for development and health as little attention has been given to examining longitudinal associations. The few studies that have explored lasting implications largely find that PYD opportunities in adolescence are related to positive well-being in young adulthood, including outcomes such as emotional regulation,^{90,91} civic engagement,⁹² and greater community volunteer work.⁹² This evidence implies that PYD-related experiences are relevant for and contribute to different aspects of positive social functioning and well-being in adolescence and young adulthood. However, more research using nationally representative samples of youth and prospective reports of PYD is needed to fully understand the potential implications of PYD that exist for diverse groups of adolescents and for different outcomes across multiple societal domains.

In summary, contemporary research findings on the measurement and potential health implications of PYD have limitations. There is no one framework of PYD agreed upon by interdisciplinary scholars. Additionally, studies are often not generalizable to all youth in the U.S. because they utilize non-representative samples of youth.^{86-88,90,93} Oftentimes studies will neglect to examine sociodemographic differences in the relevancy or meaning of various PYD assets, or will fail to examine differences in the endorsement of a shared group of assets for all youth. Both scenarios make it challenging to examine if PYD assets and their contributions to health vary across groups of adolescents with different demographic characteristics and living in different contexts across the U.S. Finally, most studies on PYD also solely examine improved outcomes in adolescence, so it is unclear how relevant PYD is to human development and health in the transition to adulthood and beyond.^{76,89} The following section describes how previous studies have operationalized positive development and explored the implications for adolescent

well-being, with an emphasis on the specific model used in this dissertation and the current limitations regarding model development for diverse groups of adolescents.

Operationalizing PYD: The Five Cs Model of PYD

Keeping in mind all of the unanswered questions and different measurement and application gaps in the literature, PYD serves as an incredibly useful assets-based framework for identifying the positive attributes that reflect ideal psychosocial human development and for testing how this conceptualization of development contributes to multidimensional outcomes across the life course. According to a review of PYD frameworks, three of the most widely-used models in empirical studies include the Five Cs Model of PYD, the Developmental Assets Model, and The Four Essential Elements framework.¹³³ The Five Cs model is one of the most empirically supported PYD models and has the most evidence of the predictive validity of the constructs to-date, however most of the studies evaluating the properties of the Five Cs model utilize just one dataset.¹³³ The Developmental Assets Model, consisting of 40 external resources and adolescent internal strengths, is another popular model of PYD;⁸⁴ however, the large number of important PYD constructs identified in this framework limits the utility and applicability of the model, especially when assessing the implications of PYD for longitudinal outcomes. The Four Essential Elements (frames positive development to include belonging, mastery, independence, and generosity) has the least amount of research testing the validity of the model,¹³³ though it remains a useful framework of PYD for studies exploring the PYD connections to various immediate and long-term well-being outcomes.

Given the few empirically-driven and well-tested frameworks of PYD available, the current study uses the Five Cs model of PYD as a framework to guide the conceptualization and incorporation of an assortment of PYD-related variables across multiple domains. Several studies have found that the Five Cs model of PYD is a structurally stable model of ideal developmental

characteristics across adolescence^{135,136,146–148} and has validated predictive power.^{81,106,135,148–151}

The Five Cs model suggests that “healthy” development can be exhibited by a set of key internal developmental outcomes: competence, confidence, connection, character and caring.⁷⁵ The model proposes that adolescents who possess the Five Cs have the attributes and skills to develop and preserve their own well-being (potentially including multidimensional aspects of sexual health), thrive, and contribute productively to society.^{73,74} In fact, the Five Cs have been linked to less engagement in risky health behaviors and other positive outcomes in adolescence. Studies on the associations between the levels (or number) of the Five Cs and health outcomes find that they are related to reduced depression,^{81,135,148–150} substance use,^{135,148,150} and delinquency,^{135,148,150} as well as positive outcomes like increased contraception,¹⁰⁶ increased participation in prosocial activities such as volunteering or tutoring (contribution),^{81,135,148,149,151} and improved self-regulation.¹⁵⁰

Only one study to-date has examined the sociodemographic differences in levels of the Five Cs model of PYD by gender, race/ethnicity, and SES. Using data from 646 fifth graders (37.5% Latino, 35.5% White, and 7.6% Black) in the first wave of the 4-H Study of Positive Youth Development, Theokas and colleagues (2006) found that gender, race/ethnicity, and family household income were significantly related to a second-order factor score of PYD comprised of the Five Cs, as were developmental resources from the family, school, and neighborhood domains.¹³⁷ Gender, race/ethnicity, and household income were also related to community participation, substance use and delinquency. Girls reported higher scores on the Five Cs, greater community participation, and lower risk behaviors compared to boys. Household income was positively associated with the Five Cs and negatively associated with depression. Lastly, compared to white youth, black youth reported more delinquency, although race was unrelated to PYD in this study.

Results from Theokas et al. (2006) demonstrate that the Five Cs could be more salient for girls compared to boys, which might reflect prevailing gender norms and expectations. Additionally, findings from this study suggest that physical and economic family-level resources, like household income, are associated with adolescent development, perhaps because families with more resources can provide greater access to PYD opportunities than families with limited means. Studies like this are helpful in identifying how endorsement of the Five Cs might differ by demographic characteristics so that targeted interventions can be created for underserved youth. However, much more work is needed to not only determine if these specific measures are capturing the same latent constructs for different populations, but also to fully describe any differences in the prevalence and experience of the Five Cs for youth across the U.S.

Though these studies provide support for the structural stability and predictive validity of the Five Cs model of PYD, the current evidence has limitations: First, a majority of the studies on the measurement and health implications of the Five Cs model use longitudinal data from the 4-H Study of Positive Youth Development (2002-2010), which at Wave 8, includes approximately 7,000 adolescents in 5th-12th grade in 42 states across the country (approximately 36% participated in a rigorous PYD program).^{81,136,146-150} Consequently, there is a lack of evidence for the structural relationships and predictive validity of the Five Cs based on other, more diverse data. Studies utilizing the 4-H Study of Positive Youth Development make a great contribution to scientific literature on the structure of the Five Cs model and implications of positive experiences in adolescence for health; however, these and other existing studies derived and evaluated Five C constructs from nonrepresentative and/or small samples of adolescents (e.g., elementary school students participating in afterschool PYD programs, adolescent girls at-risk for early pregnancy, Irish adolescents) with varied degrees of diversity.

In addition to data limitations, there are weaknesses in measurement and design of current research. As highlighted previously, few studies have compared scores or levels of the positive attributes that make up the Five Cs between demographically diverse groups. Thus, how the Five Cs describe overall youth development for disadvantaged groups in particular is less clear and it is unknown if the model can serve as a universal framework of PYD for all youth in the U.S. Third, few studies also use prospective indicators of PYD and thus rely on adult retrospective reports of adolescent experiences⁹¹ that might be biased due to social desirability pressures. Lastly, studies often do not examine long-term PYD health implications but rather focus on changes in behavior and improved health outcomes solely in adolescence.^{76,89} Therefore, it is uncertain which aspects of PYD, like those identified in specific models like the Five Cs, have predictive power for health and well-being after high school, which limits our understanding of the positive attributes that define longer-term healthy development. Taken together, more empirical work on the measurement construction of the Five Cs using different data sources and exploration of the Five Cs by various sociodemographic characteristics is needed to fully validate the model.

Current Study

The aims of the current study were primarily descriptive in nature and add to the existing body of literature on indicators of positive youth development by identifying relevant constructs among different societal domains in a large sample of adolescents and exploring the prevalence and group differences of these assets that comprise PYD. Specifically, I used confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) to identify latent constructs of PYD emerging from a host of indicators of positive personal and contextual attributes aligning with the Five Cs model in a large, U.S. adolescent population-based sample. I then examined if there were differences in mean scores of PYD by biological sex, race/ethnicity, and SES. I

hypothesized that there would be a significant mean difference between male and female adolescents on all emergent PYD factor scores and higher PYD for females compared to males based on findings from previous literature. I also hypothesized that there would be significant mean differences between racial/ethnic groups on all emergent PYD factor scores. In comparison to non-Hispanic white youth, racial/ethnic minorities will experience lower scores on PYD, indicating historically reduced access to PYD resources and opportunities for racial/ethnic minority adolescents as compared to white adolescents in the U.S. Lastly, I hypothesized that there would be significant mean differences between SES groups on PYD factor scores. Adolescents with parents who earned a college degree or more will have higher scores, indicating access to more assets and PYD opportunities compared to adolescents with parents who did not attain a college degree.

Methods

Study Sample

I used data from Wave I of the National Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is a longitudinal study of a nationally representative sample of 20,745 U.S. adolescents who, at study entry, were in grades 7-12 (and mostly between ages 12-19) during the 1994-95 school year.¹⁵² The adolescent in-home interviews at Wave I were conducted using audio-CASI technology (audio-computer assisted self-interview) via laptop computers. Additionally at Wave I, a resident parent (usually the mother) also completed a self-administered questionnaire that assesses household- and family-level information. All analyses with Add Health data use sampling weights to adjust for unequal probability of selection into the sample and nonresponse. After restricting to those respondents at Wave I (n=20,745) with a valid sampling weight (n=18,924) and non-missing data on all proposed PYD indicators, the final sample included 17,533 adolescent respondents in grades 7-12. Approximately 7% of eligible

respondents at Wave I were excluded because of missing data on PYD indicators; most missing data occurred in the quality of parental relationship (particularly father-child relationships) and religious attachment survey items. Respondents without complete data on all PYD indicators (and thus excluded from analyses) were less likely to live in a two-parent household (32% vs. 55%, $p < 0.001$), were more likely to have a parent with less than a high school diploma (22% vs. 12%, $p < 0.001$), and were a year older on average (16.5 years vs. 15.4 years, $p < 0.001$) compared to respondents with complete data on all study indicators at Wave I.

Measures

Positive Youth Development. To select indicators, I first generated a list of 76 survey items, based on the literature, of dimensions of positive youth development as conceptualized by the Five Cs model of PYD (competence, confidence, connection, character and caring).^{75,81,136,146,149} All measures came from the Wave I in-home adolescent interview. Some survey items were dichotomous, indicating the presence or absence of the characteristic/resource (e.g., ever skipped a grade); other items were measured on ordinal scales indicating perceptions of the amount of the construct present (e.g., perception of intelligence compared to peers).

Survey items representing PYD encompassed indicators of relationship quality with the adolescents' mother and father, family and peer connectedness, bonds with adults, and school, neighborhood, and community attachment. Items also included perception of ability and intelligence, personal expectations for achievement, problem-solving skills, and academic and health competence. PYD also included several indicators of self-esteem, autonomy, and perceived personal qualities, as well as past 12-month frequency of delinquent behaviors and items representing criticism and conflict with others. Appendix A presents an exhaustive list of survey items I originally hypothesized to load onto the five distinct factors representing the Five Cs of PYD.

The following demographic variables were used as comparison groups for analyses:

Biological sex was based on confirmed interviewer report at Wave I, indicating that the respondent is male or female. **Race/ethnicity** was based on respondents' self-identified race and Hispanic ethnicity. Five racial/ethnic categories were created using different combinations: non-Hispanic white, non-Hispanic black, non-Hispanic Asian/Pacific Islander, Hispanic (any race), and non-Hispanic other race. **Parental education attainment**, used as a proxy for SES, consisted of the highest level of education obtained by either of the respondent's parents or caregivers (less than high school; high school graduate/general education diploma; some college or post-high school business, trade, or vocational school; or college graduate or more) and was reported by the resident mother in the parent Wave I in-home interview and supplemented by adolescent report if the parent information was missing.

Additionally, as some healthy development skills or PYD settings may change in relevancy and availability depending on other individual or neighborhood characteristics, CFA models controlled for age,^{135,145-147} family structure,¹¹⁴ and neighborhood urbanicity.¹³⁷ **Age** was computed as the difference, in whole years, between respondent date of birth, and the date of the Wave I interview. **Family structure** at the Wave I interview was based on respondents' reports of living with two biological parents, two parents where at least one is not a biological parent, single parent or living in any other type of household structure. **Neighborhood urbanicity**, taken from Wave I contextual data, was dichotomized based on whether adolescents resided in census block groups that were in completely urbanized areas or partly rural areas.

Analysis

Confirmatory Factor Analysis. After examining standard univariate descriptive statistics (including quantiles, range, and empirical density estimates, such as frequencies and histograms, of the distribution the variables of interest) and linearity and normality assumptions

to check for variability in the items, I employed confirmatory factor analysis (CFA) to describe factor structures that reflect the Five Cs proposed by the PYD framework. CFA is driven by theory and allows researchers to test hypotheses about specific factor structures and latent constructs derived from survey data.¹⁵³ I tested how well the measured variables in Add Health represented five first-order latent constructs (factor scores) of the “distinct, but related” Five Cs.^{81,136,146} Adequate item representation of latent constructs was defined by factor loadings of individual measured variables greater than 0.40.¹⁵⁴

The following goodness of fit indices were also used to assess measurement model validity: Chi-square tests, root mean square error of approximation (RMSEA), comparative fit index (CFI), and Tucker-Lewis index (TLI). Though there is no consensus for cutoffs,¹⁵⁴ non-significant Chi-square tests, RMSEA values less than .06, CFI values greater than .90 (greater than .95 preferred), and TLI values greater than .90 (greater than .95 preferred) suggested adequate model fit of the data.¹⁵⁵ The CFA was conducted using Mplus version 7.0 and using weighted least squares mean and variance adjusted (WLSMV) estimation.¹⁵⁶ Mplus software accounts for categorical variables and other non-normality in the data, as well as control variables. The software also incorporates sampling weights and cluster variables to account for the complex survey sampling design of Add Health.

The following steps were taken during the CFA: I began with indicators that aligned with a theoretical model of the Five Cs, examined model fit indices, and based on these findings, made adjustments to the measurement of the latent variables with theoretical justification in order to achieve better model fit. Items that did not load on an intended factor or that simultaneously loaded on multiple factors were eliminated because they violated simple solution requirements of CFA models.^{157,158} I also used modification indices, one-by-one, in an attempt to construct better-fitting models. Lastly, I used stratification by biological sex, race, and parental

education separately and with two and three-way interactions to derive group-specific models. After dozens of iterations of this CFA process, with various measurement models using different sets of indicators, no model with acceptable fit was found. This suggested that the baseline CFA model was misspecified, and that there may be additional indicators that are needed to provide better model fit. The primary reason could be that the applied sets of indicators available in Add Health, though spreading across several domains of PYD, did not adequately represent the Five Cs of PYD, as they were not originally designed to test this specific theoretical model.

Exploratory Factor Analysis. After being unable to derive a CFA solution with good model fit that aligned with the Five Cs, I performed exploratory factor analysis (EFA) to identify the number of constructs and the underlying factor structure of PYD, in general, given the original set of 76 items provided in Add Health. EFA is used to identify underlying latent constructs without applying a preconceived structure on the number of constructs that emerge and their relationships.¹⁵⁷ The purposes of EFA are to 1) determine how many latent variables, or factors, underlie a set of items; 2) condense information so that variation among relatively many measured variables is explained by using a smaller number of factors; 3) define the substantive meaning of the latent variables; and 4) allow researchers to easily identify items that perform better or worse for explaining a particular underlying construct.¹⁵⁷

WLSMV estimation and oblique geomin rotation were used to estimate the factor model. WLSMV is considered to be robust with regard to categorical data, non-normal data, and large samples.¹⁵⁶ Based on the theoretically-informed assumption that PYD-related factors would be correlated, I used oblique geomin rotation, which allows intercorrelations between factors while maximizing the simplicity of the factor structure.¹⁵⁹ The number of factors to be retained was determined by four criteria: 1) inspection of the scree plot (the point where the “bend” occurs in the plot signifies the number of factors that should be extracted); 2) high factor loadings greater

than 0.4 for measured items; 3) eigenvalues of the emergent factor scores, or variance of the factors, greater than 1; and 4) theoretical justification.^{154,159} Chi-square, CFI/TLI, and RMSEA calculations were also examined to determine the number of factors and model fit.

The EFA was repeated numerous times with different sets of items removed to assess the overall model fit and to improve individual factors. The reliability of items in each factor was examined by Cronbach's alpha, a measure of internal consistency, or how much variance a group of items in a scale has in common.¹⁵⁷ Lastly, two-sample t-tests (for biological sex) and one-way analysis of variance (ANOVA, for race/ethnicity and highest parental education attainment) were conducted to compare mean scores in the emergent PYD factors and test hypotheses about differences in the prevalence of the assets that comprise PYD by sociodemographic characteristics. Post-estimation Bonferroni multiple comparisons tests were conducted to further elucidate group differences for race/ethnicity and highest parental education attainment. Mplus version 7.0 was used for the EFA measurement models and Stata version 14.2 was used for all other calculations.

Results

Exploratory Factor Analysis

A total of 24 of the 76 items were highly skewed with 95% or more endorsing or not endorsing the attribute/characteristic and were therefore excluded; examples include past 12-month delinquency, school suspension and expulsion, and skipping a grade in school. As a result, the EFA was run with 52 items. Figure 1 presents the scree plot, which indicates a bend between four and five factors (and four factors with eigenvalues greater than 1), suggesting that this approximate number of factors should be retained given these indicators.

Factor solutions for three to nine factors were conducted and the results of the fit statistics for the factor solutions are found in Table 1. No solution achieved adequate overall model fit according to all criteria.

The EFA consistently yielded 4 theoretically interpretable PYD factor scores with eigenvalues above 1, labeled for interpretability as: confidence, autonomy, parental bonds, and community bonds. Table 2 presents the Wave I Add Health survey items that comprised each factor score, the factor loadings for each item within those factors, and eigenvalues and Cronbach's alpha for the PYD scales. See Appendix B for a complete factor structure matrix. The emergent confidence factor encompassed feelings of having a lot to be proud of, liking oneself as they are, being socially accepted, and having good qualities. The autonomy (in families and households) factor included decisions about spending time with friends, clothes to wear, entertainment to watch, and other household decisions. The parental bonds factor was comprised of ratings on the closeness, love, communication and satisfaction in relationships with parents or caregivers. Lastly, the community bonds factor included perceptions of how much teachers care and how much an adolescent feels a part of the school, as well as participation in church services and activities.

The PYD factor scores representing multilevel assets were slightly or moderately correlated, as presented in Table 3. The highest correlation emerged for the confidence and parental bonds factors ($r = 0.31$). Further analyses used these 4 emergent PYD factor scores.

Sample Characteristics

Table 4 displays the distribution of sample characteristics. Approximately half of the sample was male (51%) and half female (49%). A majority of the sample was non-Hispanic white, and approximately 35% was a racial or ethnic minority (16% Non-Hispanic black, 12% Hispanic, 4% Non-Hispanic Asian, and 3% Non-Hispanic other race). About 31% of the sample

had a parent who earned a college degree or more, another 30% had a parent who attended some college or post-high school business, trade, or vocational school. About 27% of the sample parents had a high school diploma or GED and 12% had not attained a high school diploma. Most respondents were living with two biological parents (approximately 55%), however approximately 24% lived in a single-parent home. Slightly less than half of the sample lived in a partly rural area (approximately 48%). The mean age was 15.4 years. Across the sample of youth, there were high mean scores on the confidence, autonomy, parental bonds, and community bonds factor scores, representing high levels of PYD.

Sociodemographic Differences in PYD Assets

Biological Sex

Figure 2 presents mean values and standard errors of the PYD factor scores by biological sex. Females had lower mean scores on the confidence factor (mean= -.012, standard error [SE]=.019) compared to males (mean=.055, SE=.017; $p=.001$), but males had lower mean scores on the autonomy factor compared to females (mean= -.005, SE=.023 and mean=.017, SE=.023, respectively; $p=.0003$). Additionally, compared to males (mean=.119, SE=.010), females had lower mean scores (mean= -.031, SE=.022) on the parental bonds factor ($p<.001$). There was also greater variance in scores on the parental bonds factor among females compared to males. There was no statistically significant difference in mean scores on the community factor by biological sex ($p=.0756$), however males had slightly higher scores than females (mean=.037, SE=0.018 and mean=.025, SE=.024, respectively).

Race and Ethnicity

Figure 3 presents mean values and standard errors of the PYD factor scores by race and ethnicity groups. Results indicate there were overall significant differences in the confidence factor by race/ethnicity groups ($F[1,4]=79.7$, $p=.000$). Non-Hispanic black youth had the highest

mean scores in the confidence factor (mean=.193, SE=.030), followed by non-Hispanic white youth (mean=.020, SE=.015), non-Hispanic youth of other races (mean= -.042, SE=.069), Hispanic youth (mean= -.078, SE=.031), and non-Hispanic Asian youth (mean= -.272, SE=.064). There were statistically significant group differences in the confidence factor between non-Hispanic white and black youth ($p=.000$), non-Hispanic white and Hispanic youth ($p=.000$), and non-Hispanic white and Asian youth ($p=.000$). There were also group differences in the confidence factor between non-Hispanic Asian and Hispanic youth ($p=.000$), non-Hispanic Asian and black youth ($p=.000$), non-Hispanic Asian and youth of other races ($p=.001$), and non-Hispanic black and Hispanic youth ($p=.000$).

There were also overall significant differences on the autonomy factor by race/ethnicity ($F[1,4]=27.7, p=.000$): non-Hispanic white youth had the highest mean score on the autonomy factor (mean=.042, SE=.024), followed by non-Hispanic other race youth (mean=.036, SE=.060), non-Hispanic black youth (mean= -.019, SE=.030), Hispanic youth (mean= -.109, SE=.048), and non-Hispanic Asian youth (mean= -.180, SE=.030). There were statistically significant group differences between non-Hispanic white and black youth ($p=.000$), non-Hispanic white and Hispanic youth ($p=.000$), and non-Hispanic white and Asian youth ($p=.000$). There were also group differences in the autonomy factor between non-Hispanic Asian and Hispanic youth ($p=.000$) and non-Hispanic Asian and black youth ($p=.000$).

A similar pattern emerged for the parental bonds factor. Results indicate there were overall significant differences in the parental bonds factor by race/ethnicity ($F[1,4]=8.17, p=.000$) and that non-Hispanic white youth had the highest mean parental bonds factor score (mean=.070, SE=0.021), followed by non-Hispanic other race youth (mean=.061, SE=.056), non-Hispanic black youth (mean=.016, SE=.032), Hispanic youth (mean= -.018, SE=.035), and non-Hispanic Asian youth (mean= -.180, SE=.030). There were only statistically significant

group differences between non-Hispanic white and Hispanic ($p=.000$) and non-Hispanic white and Asian youth ($p=.000$).

For the community bonds factor, there were overall group differences by race/ethnicity ($F[1,4]=10.5, p=.000$). Non-Hispanic Asian youth had the highest mean scores for community bonds (mean=.058, SE=.021), followed by non-Hispanic white youth (mean=.058, SE=.021), Hispanic youth (mean= -.003, SE=.035), non-Hispanic black youth (mean= -.045, SE= .034), and non-Hispanic other race youth (mean= -.106, SE=.067). There were statistically significant group differences between non-Hispanic black and Asian youth ($p=0.01$), non-Hispanic white and Hispanic youth ($p=.001$), non-Hispanic white and black youth ($p=.000$), and non-Hispanic white and youth of other races ($p=.008$). There was also a group difference between non-Hispanic Asian and other-race youth ($p=.020$).

Parental Education Attainment

Figure 4 depicts the mean values and standard errors of the PYD factor scores by highest parental education attainment. Results indicate there were overall significant differences in the confidence factor by highest parental education attainment ($F[1,3]=41.4, p=.000$). Youth whose parents earned a college degree had the highest mean scores in the confidence factor (mean=.087, SE=.021), followed by youth whose parents attended some college (mean= .046, SE=.021), earned a high school diploma or GED (mean= -.007, SE=.024), and lastly youth whose parents did not complete high school (mean= -.137, SE=.037). There were also overall significant differences on the autonomy factor by parental education attainment ($F[1,3]=18.1, p=.000$). Youth whose parents attended some college (mean= .051, SE=.025) or earned a high school diploma/GED (mean=.047, SE=.025) had similarly high mean scores on the autonomy factor. This was followed by youth whose parents earned a college degree (mean= -.034, SE=.028) and youth whose parents did not complete high school (mean= -.099, SE=.040).

For the parental bonds factor, there were also overall significant differences by parental education attainment ($F[1,3]= 15.5, p =.000$). Youth whose parents earned a college degree had the highest mean scores in the parental bonds factor (mean=.102, SE=.020), followed by youth whose parents attended some college (mean=.037, SE=.025), earned a high school diploma or GED (mean=.036, SE=.024), and youth whose parents did not complete high school (mean= -.055, SE=.037). Lastly, results indicate overall significant differences in the community bonds factor by parental education attainment ($F[1,3]= 9.32, p=.000$). Similar to the confidence and parental bonds factors, youth whose parents earned a college degree had the highest mean scores in the community bonds factor (mean=.103, SE=.025), followed by youth whose parents attended some college (mean=.019, SE=.023), earned a high school diploma or GED (mean= -.005, SE=.029), and youth whose parents did not complete high school (mean= -.047, SE=.035).

Discussion

Positive Youth Development Measurement

The first goal of this study was to identify the assets that comprise positive youth development by evaluating the underlying factor structure of a model of PYD represented by dozens of indicators available in a survey of a large, heterogeneous sample of adolescents in the U.S. It was hypothesized based on previous research that five PYD assets, representing the Five Cs (confidence, competence, connections, caring, and character), would emerge as important constructs in CFA models. The results did not support the Five Cs model as significant using these data, likely because the Add Health survey was not originally designed to test this model explicitly. There might be other unmeasured factors that define healthy development and ultimately impact well-being in emerging adulthood, including holistic sexual health. For instance, the constructs “character” and “caring” had fewer related observed measures in the Add Health data to be considered for the CFA or EFA models compared to the other C’s. Though

there is no consistent guidance on the operation of PYD constructs, the measured items included in this study aligned with theory and empirical research^{75,81,136,146,149} and assessed different aspects of an adolescent's life that could not only protect against risky sexual behaviors, but also contribute to positive sexual experiences over the life course. Additionally, due to these measurement and data limitations, I was unable to test for measurement invariance of the Five Cs model. Therefore it is unclear how relevant these assets are for diverse youth groups in this study. More research using various national datasets with different indicators is needed to continue to evaluate the structure of the Five Cs model and determine whether it is a valid model for conceptualizing PYD for diverse youth in different settings throughout the U.S.

Given these empirical challenges, including the inability to confirm the Five Cs model and test for measurement invariance using these data, exploratory factor analysis was used to assess an underlying latent construct of PYD without forcing any preconceived structure on the data. Four constructs of overall positive youth development emerged, including confidence, autonomy, parental bonds, and community bonds. Though these factors do not correspond to a specific model of PYD, they represent various aspects of overall PYD repeatedly identified in the literature as ideal characteristics of healthy development. These factors are also conceptually-driven, reasonably coherent, and represent the best solution given the data. The individual assets of confidence and autonomy, and the interpersonal wider assets of parental and community bonds, correspond to multilevel attributes of healthy human development. Other studies have found one or more of these four constructs as appropriate components of PYD (e.g., Barber & Olden, 1997; Deskian, 2011, Glopen, David-Ferdon, & Bates, 2010; Theokas & Lerner, 2006; Zarrett & Lerner, 2008).^{74,98,105,137,160}

Sociodemographic Differences in PYD

A second goal of this study was to compare levels of this shared set of PYD assets by biological sex, race/ethnicity, and SES. I found that different youth population groups had varying degrees or perceptions of the positive attributes of PYD.

Biological Sex

Males reflected more PYD than females, with the largest difference in scores between the two groups on the parental bonds factor. This finding was unexpected because previous research has often found higher PYD in general among females (e.g., Lerner et al. 2005; Heck & Subramaniam, 2009; Bowers et al., 2010; Hyde, 2014).^{81,133,139,146} However, in each of the cited studies, PYD is operationalized using different frameworks, variables, and data sources, making it challenging to come to a consensus on the potential differences in the reporting of PYD, especially for parent-child relationship quality by biological sex. In this study, though males had higher scores on the parental bonds factor on average compared to females, there was greater variance in parental bonds scores among females. One reason for this pattern could be related to puberty and changing parent-child relationships. Other research noting lower-quality parent-child bonds for female youth suggest that females may have more volatile relationships with parents over the course of adolescence. Volatility and perceptions of parental relationship quality largely depend on age, pubertal timing, and their associated changing roles and expectations between parents and children.¹⁶¹⁻¹⁶⁴ Because females tend to reach puberty at earlier ages compared to males, more conflict and distress might be present in those families at any given time, influencing their perceptions of the quality of the parent-child relationship.

Females' lower and more variable average scores on perceptions of parental bonds compared to males is actually consistent with other research using Add Health data and similar measurements of relationship quality.¹⁶⁵⁻¹⁶⁷ These studies find statistically significant differences

in parental closeness by sex, and that boys report higher parental closeness in adolescence compared to girls. However this difference tends to level out over time; both sexes report similar parent-adolescent relationship quality by emerging adulthood.¹⁶⁵⁻¹⁶⁷ Collectively however, the role of biological sex on perceptions of parental bonds has drawn limited attention in previous research, and it is possible that other measures of parent-adolescent involvement not considered in this study would reflect other sex differences. Even so, the results suggest that the strength of parental bonds, at least combined perceived aspects of parent-child closeness, love, and communication, might be a characteristic of youth development for both sexes.

Race/Ethnicity

This study also found differences in PYD by race/ethnicity: the hypothesis that non-Hispanic white youth would exhibit higher PYD compared to racial and ethnic minority youth (likely because white youth have historically greater access to PYD-type resources and opportunities compared to other groups) was partially supported. Non-Hispanic white youth had the highest mean scores on the autonomy and parental bonds factors, whereas non-Hispanic black youth had the highest mean scores on the confidence factor and Non-Hispanic Asian youth had the highest mean scores on the community bonds factor, perhaps reflecting different cultural expectations.

The confidence factor exhibited the most variability in average scores among racial/ethnic groups. Youth may perceive where they rank on PYD dimensions according to their unique cultural and social experiences, which might explain why this factor was so variable. Literature on identity formation processes suggests that the high self-confidence reported among black youth in comparison to other racial and ethnic groups stems from positive evaluations from those closest to them (family, peers, teachers, and coaches).^{141,168} This “microsocial” support helps enhance psycho-emotional resources that buffer against society’s low status placement,

racial and economic discrimination, and persistent negative racialized media portrayals that could negatively impact confidence or self-esteem among black youth.^{168, p.132} Previous research using Add Health data has noted higher self-esteem ratings among black youth, usually the highest among black males, compared to other race/ethnicities.^{169,170}

Other racial/ethnic differences in PYD found in this study could also be due to diverse cultural expectations for positive behaviors and attributes that vary across different groups. For example, in this study, non-Hispanic Asian American youth had lower scores on the confidence and autonomy factors, but the highest scores on the community bonds factor. This pattern could be a reflection of cultural influences that value community over self in many Asian communities,¹⁷¹ whereas other communities might not emphasize the same expectations or emphasize them to the same degree. Additionally, the community factor consists of survey items related to school attachment. Previous literature notes the value placed on academic success among Asian communities,¹⁷² which could also help explain why the community bonds factor score was the highest in this group. However, with a firm focus on academic achievement, Asian American youth might experience less autonomy in their families, and perhaps less confidence due to anxiety and familial pressure related to achievement or lack thereof.¹⁷² These results for Asian American youth are consistent with previous research using Add Health data finding lower self-esteem,¹⁷⁰ autonomy,¹⁷³ and higher school attachment among this group compared to other racial/ethnic groups.¹⁷⁴

Socioeconomic Status

Similarly to the hypotheses for differences in PYD by race/ethnicity, the hypothesis that youth in the highest SES groups (as defined by highest parental education attainment) would report higher PYD compared to youth living in lower SES groups was partially supported. Youth whose parent(s) had a college degree had the highest mean scores on the confidence, parental

bonds, and community bonds factors, but not the autonomy factor. Parents with a college education or more are likely in higher-SES groups with the resources (including time, money, social capital, and expertise) to maximize their children's development.¹⁷⁵ The lower score on the autonomy factor could potentially reflect parents' inclination for behavioral monitoring, or even over-involvement, often reported by young people and parents in more highly educated families.¹⁷⁶ In these parent-child relationships, parents tend to have more control over their children's lives, usually to prioritize opportunities or structured activities that enhance adolescents' cognitive, social, and physical competencies. This could be one explanation for the lower autonomy scores among these youth. However, this lower autonomy score did not translate into poorer parental bonds or a lack of confidence. Perhaps increased parental closeness reflects more parental monitoring or reduced autonomy for youth in these more highly educated families, but through these interactions, youth perceive that their parents care about them and are invested in their well-being, enhancing other aspects of their development.^{165,177} These patterns of PYD by SES suggest that certain groups might have greater access to PYD resources and opportunities compared to others, potentially through increased parental instrumental support, though this study did not test this mechanism directly.

In summary, present findings indicate that the relative levels of PYD assets, at least as measured here, vary across demographic groups. How much an individual endorses a particular asset of PYD could in large part depend on its relevance in specific sociocultural and historical contexts, as well as access to positive developmental opportunities. More work is needed to determine whether there are more culturally-appropriate frameworks of PYD for diverse groups of youth that are linked to immediate and long-term health outcomes. Future research could explore this possibility using a variety of data sources reflecting different youth perspectives.¹⁷⁸ Similarly, more work is needed on cross-cultural comparisons of *existing* models of PYD,

including the Five Cs. Although present data did not allow for testing measurement invariance across the PYD constructs, this is an important next step to evaluate the relevance of existing models for different youth populations, allowing for the creation of better targeted youth development programs and interventions.

Limitations

Present results should be interpreted in light of several limitations. The primary limitation is the inability to derive an acceptable factor solution representing the Five Cs using available measured variables. As a result, I was unable to test the reliability and construct validity of the Five Cs model with these data and to test for measurement invariance by demographic characteristic. Therefore, it remains unclear if there are different types of assets that are more or less relevant for different youth populations in this study.

Second, a majority of the original 76 indicators of PYD tested in this study were adolescent self-report of perceived attributes or experiences, for example perceived parent-adolescent communication or attendance at religious services in the past year. Self-report could be inaccurate because of social desirability bias, though this concern should be minimized via the use of audio-CASI. Relatedly, this study did not incorporate parent or school reports of adolescent competencies and participation in PYD activities. Adolescent perspectives and the value placed on these PYD assets might differ from adult perspectives. Consequently, parent or school reports could be differentially related to the measurement of PYD, and are not captured here. Future studies using Add Health data could merge parent (usually the resident mother) report of elements like shared parent-child activities or contextual household data, with adolescent reports to garner multiple perspectives on the factors that characterize PYD.

Third, this study did not examine interactions between sociodemographic characteristics, or intersectionality, which would reflect the interplay of social, economic, and environmental

conditions that influence adolescent development. There could be within-group differences, particularly among heterogeneous racial/ethnic groups, in PYD that might also have implications for measurement and subsequent youth programming development. The study also does not explore differences in PYD by other important sociodemographic characteristics that likely influence a person's identity and experience, for example characteristics like gender identity, sexual orientation, region of residence, or immigration status. These interactions and additional features likely also affect perceived placement or endorsement of PYD characteristics and conditions.

Despite these limitations this study also has several notable strengths. A key one is the use of a large, diverse, and nationally representative sample of U.S. adolescents who were not selected on the basis of participation in robust PYD programs. A second related strength is the comparative exploration of developmental assets across different demographic groups, often not explored in previous research. Third, in this study I applied and evaluated a theoretically-based model of youth development to incorporate multilevel aspects of youth experiences that could contribute to healthy development. Finally, although indicators of PYD tested in this study were largely derived from adolescent self-report, Add Health offers an expansive set of youth development indicators, which allowed the exploration of four key features of healthy development among a demographically diverse sample of U.S. adolescents

Conclusions

In conclusion, while this study was unable to test the factor structure of the Five Cs model of PYD, four latent constructs consistently emerged that capture the positive personal and contextual attributes of adolescence that contribute to healthy development. The results of this study suggest more empirical research on the measurement of the Five Cs using different data sources and exploration of the Five Cs by various sociodemographic characteristics is needed to

fully validate the model, particularly to ensure that it is relevant for diverse groups of youth—an ideal property for all theoretical frameworks of PYD. The field would benefit from more research on the psychometric properties and appropriateness of models of PYD since existing literature exploring the factor structure of various models of PYD by demographic characteristics aside from biological sex is limited.

In addition, the results of this study indicate that different population subgroups of youth report varying degrees or perceptions of these positive characteristics proposed by PYD. Youth in different sex, race/ethnicity, and SES groups might perceive their standings on these assets in relation to others in incongruent ways based on historical perceptions and access to resources or social capital. There might also be varying endorsement of the PYD assets by demographic groups because of different cultural expectations for certain population groups. Because of this heterogeneity in the experiences and perceptions of adolescents in the U.S., it is reasonable to expect that there is not just one model of PYD that provides an accurate and optimal representation of development and ideal assets across all communities and cultures. Thus, more empirical work is needed to find the best models for different groups; researchers should incorporate a variety of metrics to define and measure healthy development beyond a focus on risk-avoidance while developing and testing the psychometric properties of PYD constructs. They should also take into account possible sex, race/ethnicity, and social class differences in the endorsement and relevance of ideal developmental assets among youth.

Figure 1. Scree plot of exploratory factor analysis solutions representing positive youth development using data from Wave I of the National Longitudinal Study of Adolescent to Adult Health (1994-1995).

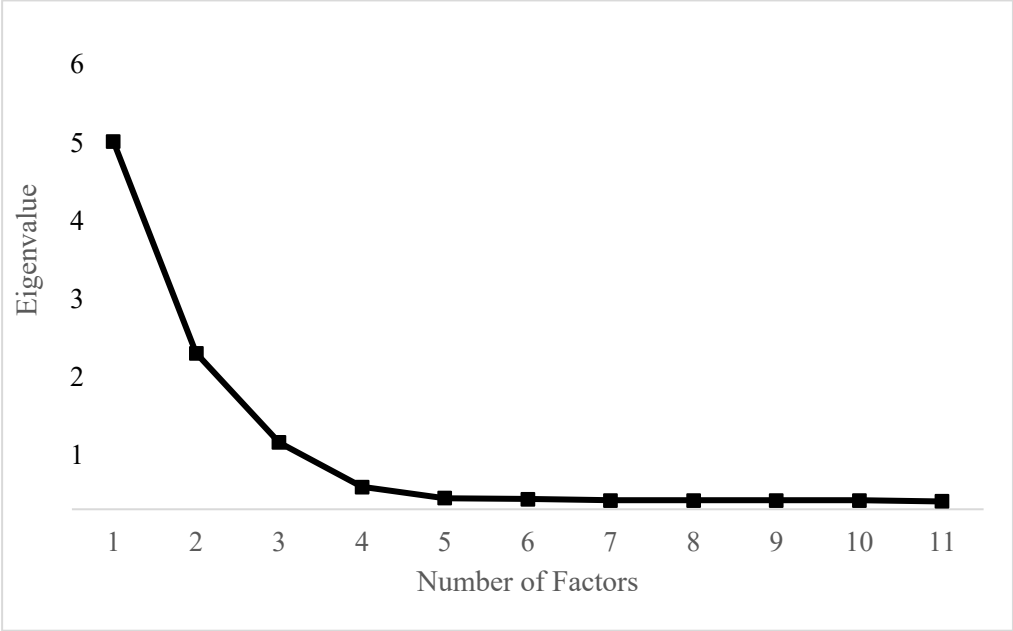


Table 1. Fit indices for nine exploratory factor analysis solutions representing positive youth development using data from Wave I of the National Longitudinal Study of Adolescent to Adult Health (1994-1995).

Factors	Chi-square	df	p-value	CFI	TFI	RMSEA
2 Factors	121613.8	298	0.00	0.94	0.94	0.14
3 Factors	71990.1	273	0.00	0.95	0.96	0.11
4 Factors	39259.8	249	0.00	0.97	0.96	0.08
5 Factors	20710.6	226	0.00	0.97	0.97	0.08
6 Factors	11344.4	204	0.00	0.98	0.97	0.07
7 Factors	5413.1	183	0.00	0.98	0.97	0.07
8 Factors	2208.6	163	0.00	0.98	0.98	0.06
9 Factors	1082.9	144	0.00	0.99	0.98	0.05

Model fit indices abbreviations: df= degrees of freedom; CFI=comparative fit index; TLI=Tucker-Lewis index; RMSEA=root mean square error of approximation

Table 2. Positive youth development factor scores: Survey items from The National Longitudinal Study of Adolescent to Adult Health (Wave I, 1994-1995).

Positive Youth Development Factor Score	Add Health Survey Item	Factor Loading
<p>Confidence (Eigenvalue=3.16) ($\alpha=0.86$)</p>	<i>Do you agree or disagree with the following statement?</i>	
	You have a lot to be proud of.	.732
	You like yourself just the way you are.	.639
	You feel like you are doing everything just about right.	.588
	You feel loved and wanted.	.820
	You are well coordinated.	.504
	You have a lot of energy.	.488
	When you get sick, you get better quickly.	.396
	You are physically fit.	.532
<p>Autonomy (Eigenvalue=1.63) ($\alpha=0.63$)</p>	<i>Do your parents let you make your own decisions about:</i>	
	The people you hang around with?	.614
	What time you go to bed?	.452
	What you wear?	.572
	How much television you watch?	.502
	Which television programs you watch?	.465
<p>Parental bonds (Eigenvalue=2.74) ($\alpha=0.84$)</p>	How close do you feel to your mother/father? ^a	.680
	How much do you think she/he cares about you? ^a	.504
	<i>Do you agree or disagree with the following statement?</i>	
	Most of the time, your mother/father is warm and loving toward you. ^a	.702
	You are satisfied with the way your mother/father and you communicate with each other. ^a	.851
<p>Community bonds Eigenvalue=2.25) ($\alpha=0.68$)</p>	How much do you feel that your teachers care about you?	.401
	<i>How strongly do you agree or disagree with the following statements?</i>	
	Feel close to people at school.	.413
	Feel like a part of school.	.500
	Happy to be at school.	.404
	In the past 12 months, how often did you attend religious services? ^b	.713
Many churches, synagogues, and other places of worship have special activities for teenagers—such as youth groups, Bible classes, or choir. In the past 12 months, how often did you attend such youth activities? ^b	.777	

^a Parent-child relationship quality questions are assessed separately for residential mother/maternal figure and residential father/paternal figure. When both parents were present in the household, the higher of the two scores on each dimension was used. In single-parent homes, the values on each dimension are reported in reference to the residential mother- or father-figure present.

^b 2,256 respondents at Wave I reported “no religion” and were coded as 0 on all religion variables, indicating no religious services/youth activities involvement.

Table 3. Bivariate (Pearson) correlation matrix of positive youth development factor scores.

	Confidence	Autonomy	Parental Bonds	Community Bonds
Confidence	1.00			
Autonomy	0.10	1.00		
Parental Bonds	0.31	-0.04	1.00	
Community Bonds	0.22	-0.02	0.19	1.00

Note: Bolded values are correlations significant at the 0.05 level (two-tailed).

Table 4. Distribution of sample characteristics, Wave I of the National Longitudinal Study of Adolescent to Adult Health (n=17,533).

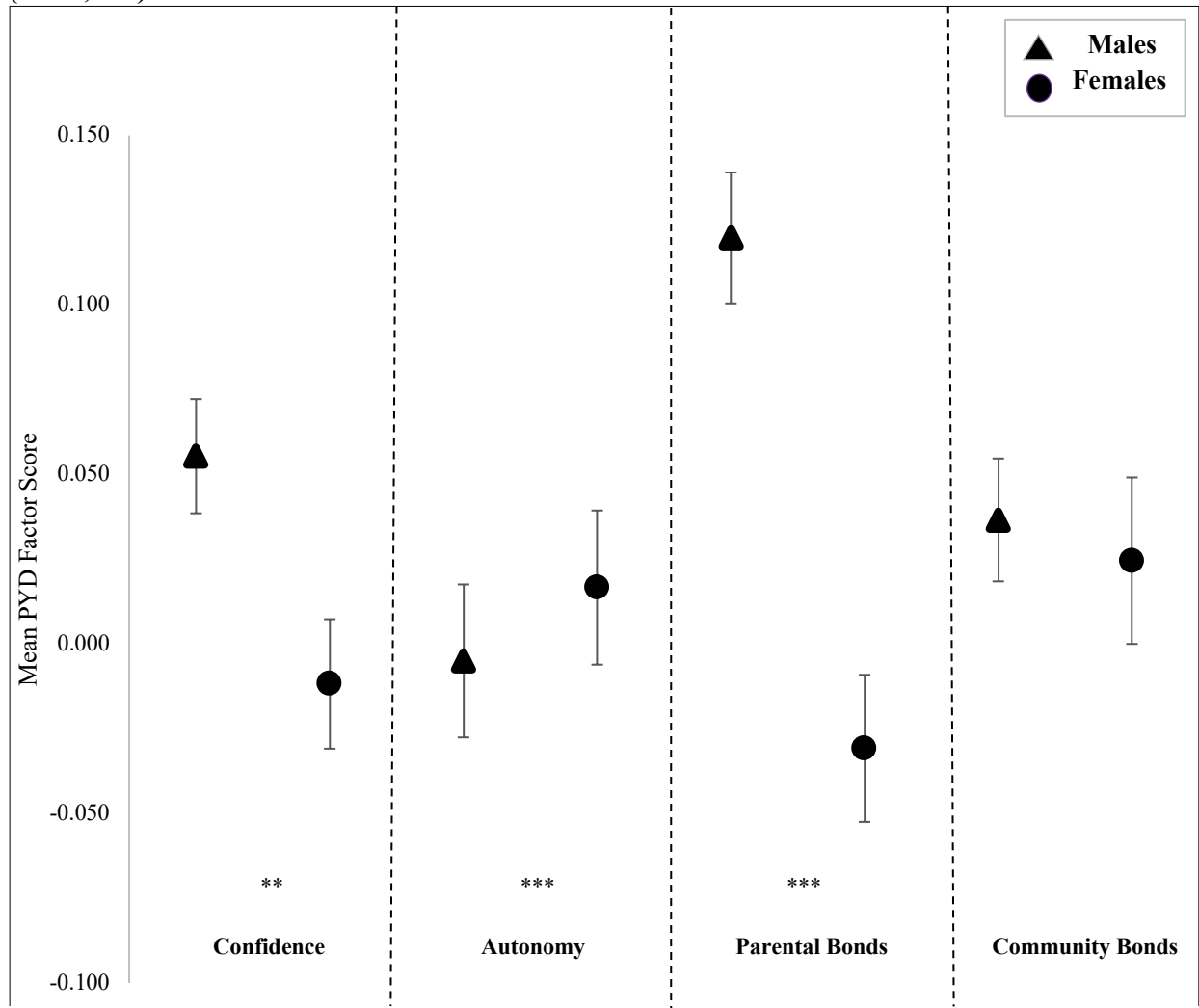
Sample characteristic	%	(n)
Biological sex		
Males	50.9	(8,647)
Females	49.1	(8,906)
Race/ethnicity		
Non-Hispanic White	65.5	(9,023)
Non-Hispanic Black	15.7	(3,783)
Hispanic (all races)	11.8	(2,969)
Non-Hispanic Asian	3.9	(1,283)
Non-Hispanic Other-race	3.1	(495)
Parental education attainment		
Less than high school	12.0	(2,303)
High school graduate/GED	27.1	(4,399)
Some college	29.9	(5,052)
College graduate or more	31.0	(5,799)
Family structure		
Two biological parents	55.2	(9,265)
Other two parent	17.6	(3,262)
Single parent	23.5	(4,343)
Other family structure	3.7	(683)
Neighborhood urbanicity		
Completely urbanized	51.9	(9,768)
Partly rural	48.1	(7,637)
Age at Wave I in years		
Range: 11-21	Mean	(SE)
	15.4	0.12
Standardized PYD Factor Scores ^a		
Confidence factor	.019	.012
Autonomy factor	.004	.015
Parental bonds factor	.044	.016
Community bonds factor	.027	.015

Note: Percentages and means are weighted to reflect Add Health's sampling and design (Ns are unweighted) to yield U.S. national probability estimates for youth in grades 7-12 in the 1994-1995 school-year.

^a Range on PYD Factor Scores: Confidence: -4.77 – 2.30; Autonomy: -2.35 - 0.75; Parental bonds: -5.31 - 0.82; Community bonds: -3.27 – 1.78.

SE=standard error

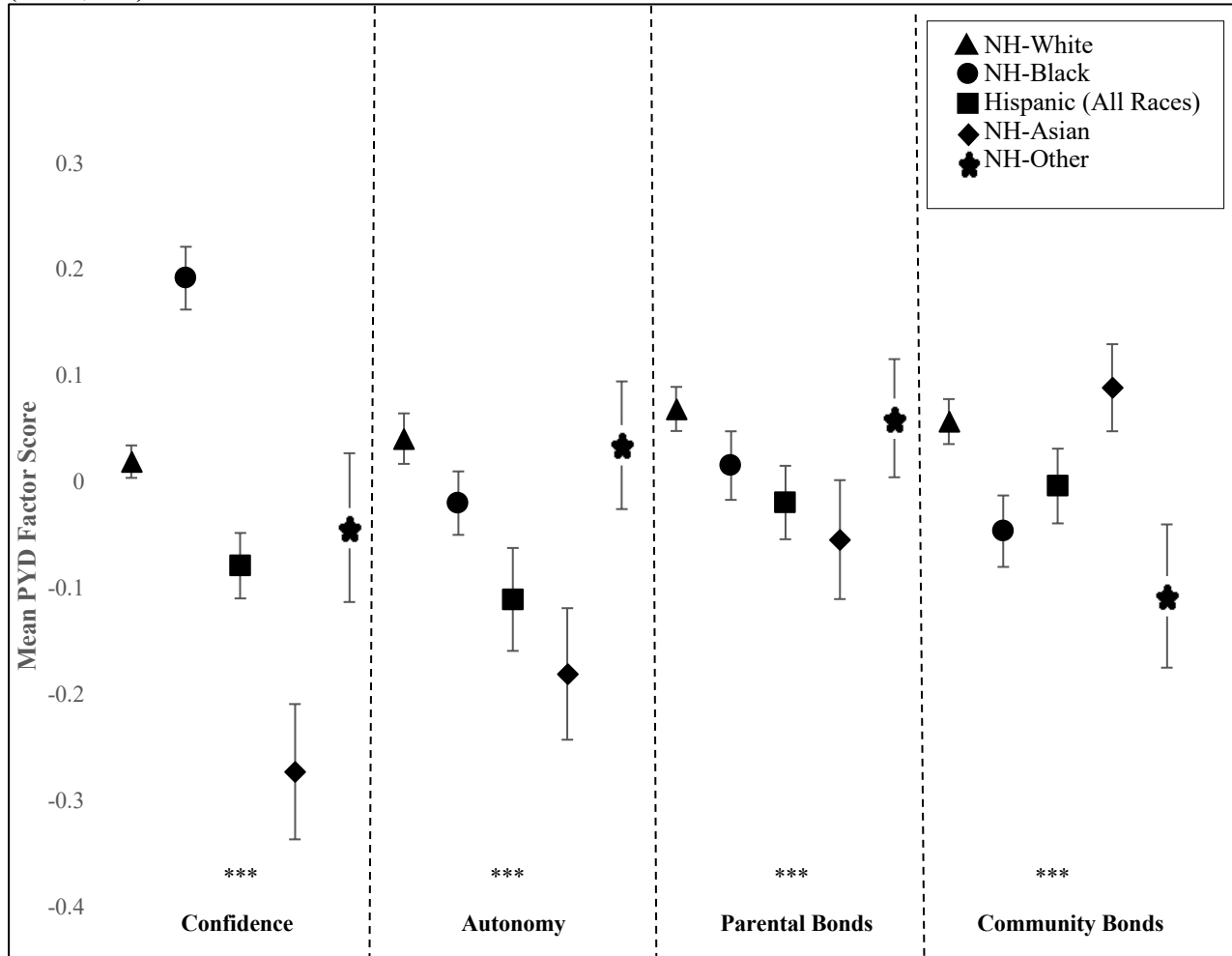
Figure 2. Mean values and standard errors of positive youth development factor scores by biological sex in Wave I of the National Longitudinal Study of Adolescent to Adult Health (n=17,533).



***p<.001; **p<.01; * p<.05.

P-values indicate two-sample t-tests of significant differences in PYD by biological sex.

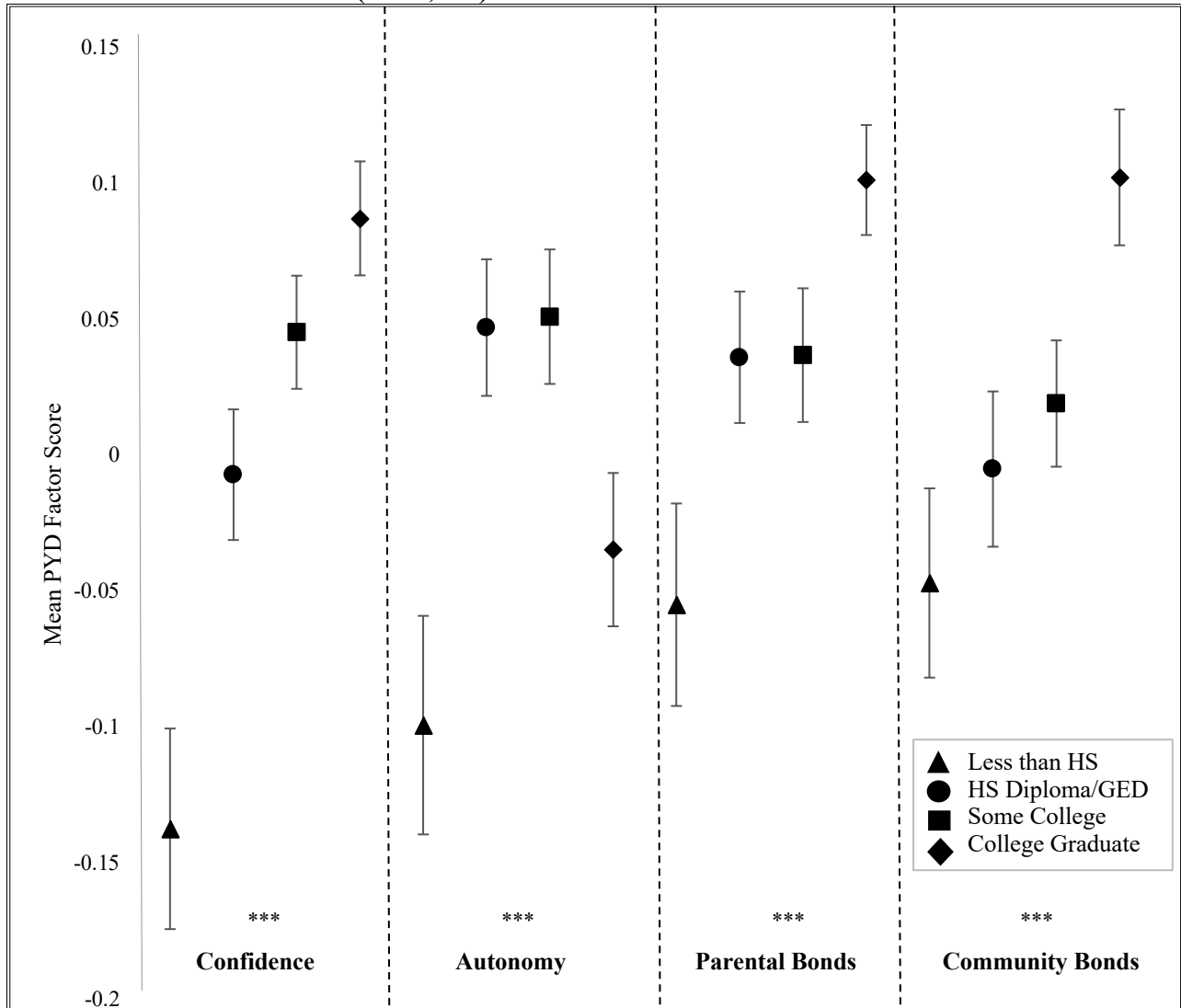
Figure 3. Mean values and standard errors of positive youth development factor scores by race/ethnicity in Wave I of the National Longitudinal Study of Adolescent to Adult Health (n=17,533).



***p<.001; **p<.01; * p<.05. NH=Non-Hispanic.

P-values indicate overall significant differences in PYD across race/ethnicity groups resulting from a one-way analysis of variance (ANOVA).

Figure 4. Mean values and standard errors of positive youth development factor scores by highest parental education attainment in Wave I of the National Longitudinal Study of Adolescent to Adult Health (n=17,533).



***p<.001; **p<.01; * p<.05.

P-values indicate overall significant differences in PYD across highest parental education attainment groups resulting from a one-way analysis of variance (ANOVA).

CHAPTER 4: IMPLICATIONS OF POSITIVE YOUTH DEVELOPMENT FOR HOLISTIC SEXUAL HEALTH IN EMERGING ADULTHOOD

Introduction

Previous research on emerging adult sexuality has largely focused on narrow aspects of sexual health, primarily investigating the adolescent determinants of adverse sexual health consequences. However, individuals and couples experience a range positive sexual health outcomes, such as physical pleasure and romantic relationship intimacy, which also define their sexual health. Acknowledging its multidimensional nature, recent definitions of “sexual health” have expanded to incorporate these more positive dimensions of sexuality and a variety of sexual behaviors and experiences in addition to the standard, risk-focused, outcomes. For instance, in 2006, the World Health Organization defined sexual health as “a state of physical, emotional, mental, and social well-being in relation to sexuality” not only free of adverse outcomes, but with the “possibility of having pleasurable and safe sexual experiences...”⁹ Likewise, Fortenberry (2013) describes a framework of sexual health consisting of various behaviors and functions that are influenced by and influence experiences of sexual pleasure, choice, knowledge, and rights.⁸ These definitions include often overlooked components of sexual health, such as experiences of physical and emotional satisfaction or pleasure stemming from various sexual behaviors and intimate experiences.¹³ Taken together, these definitions acknowledge that sexual health is holistic in nature and not one-dimensional; in fact, sexual health encompasses an assortment of behaviors, attitudes, and outcomes that reflect both positive and negative sexual health experiences across individual and interpersonal domains.⁸⁻¹⁰

Despite the expanding definitions of sexual health and the inclusion of outcomes like pleasure and relationship satisfaction as positive and vital aspects, few studies have examined the prevalence of and contributors to holistic sexual health among emerging adults. Emerging adulthood is a life period of increased independence and social acceptability of sexual relationships.³⁴ By their early 20s, a majority of emerging adults in the U.S. have had vaginal intercourse³ and are engaged in a variety of sexual behaviors within different types of relationships.^{15,18,19} These trends in sexual experiences among emerging adults might have important implications for health and well-being that are different from other segments of the population. It is unclear, however, how much and in what ways emerging adults experience these holistic outcomes on a population level, as well as which adolescent experiences and characteristics influence these holistic sexual health outcomes in emerging adulthood. Thus, scholars must continue to explore the developmental factors that enhance holistic sexual health for individuals during this life period, and not just the factors that reduce risk of adverse sexual and reproductive health outcomes, so as to inform sexual health promotion interventions geared toward building skills for healthy relationships and articulating desires for sexual pleasure.

Previous Research on Holistic Sexual Health in Emerging Adulthood

Aspects of holistic sexual health such as sexual enjoyment and positive relationship experiences are important outcomes, but questions assessing these experiences rarely appear on national surveys. Most of the studies to-date are qualitative explorations describing pleasurable sexual health experiences among young adults. The few quantitative studies examining national trends in these outcomes are limited in that they largely rely on smaller, non-representative samples, typically of university students enrolled in psychology courses.^{112,113} There are few U.S. population-based data sources available that survey emerging adults in the general population, and as a distinct age-group, about their sexual pleasure and positive relationship experiences,

aside from three large datasets: the 1992 National Health and Social Life Survey (NHSLs), the 2001 and 2008 waves of the National Longitudinal Study of Adolescent to Adult Health (Add Health), and the 2009 National Survey of Sexual Health and Behavior (NSSHB).¹⁷⁹ The NHSLs dataset contains information on a variety of sexual practices and their appeal, including sexual satisfaction and sexual fantasies gathered from interviews and self-administered questionnaires with a national probability sample of 3,432 U.S. men and women ages 18-59.¹⁸⁰ The NSSHB (2009 -2018), a more contemporary study, is a multi-wave, cross-sectional Internet survey of over 20,000 people ages 14-102, with each wave containing information on sexual activities and sexual satisfaction experiences for approximately 2,000-5,000 individuals.¹⁸¹ Recently, other nationally representative web-based data sources of U.S. women's pleasurable experiences have also emerged, including the OMGYes Sexual Pleasure Report: Women and Touch (2015-2015).¹⁸² This GfK KnowledgePanel ® study asked a nationally representative sample of more than 1,000 women ages 18-94 about their sexual behaviors, preferences, and experiences with orgasms via a confidential survey.¹⁸²

The relatively small number of studies on the prevalence of or contributors to pleasure-related sexual health outcomes primarily focus on orgasm frequency as the primary index of sexual enjoyment, however some do also consider other emotional or social satisfaction related to sex. These studies largely find that a majority of emerging adults experience sexual enjoyment and emotional satisfaction, and usually males report more pleasure than females. For instance, according to the NHSLs sample of approximately 3,400 adults aged 18-59 from the early 1990s (28% of males and 30% of females were between ages 18-29), males on average experienced more orgasms, and gained more physical and emotional satisfaction from sex in a current relationship compared to females.¹⁸³ Similarly using data from the 2001 wave of the Add Health study, Galinsky and Sonenstein (2013) found that among a subsample of other-sex, current

partners in relationships longer than three months, males reported almost double the number of orgasms compared to females (approximately 86% of males vs. 47% of females reported having an orgasm most or all of the time with their partners), but both sexes reported similarly high subjective relationship commitment.²⁶

The 2010 NSSHB asked 1,931 U.S. adults ages 18 to 59 about their most recent sexual experience (approximately 25% between ages 18-29), finding that 91% of men in the sample (all ages) said they climaxed during their last sexual encounter, compared with 64% of women.¹⁸⁴ Lastly, Herbenick and colleagues found lower rates of orgasm frequency for women: among 1,055 women aged 18-94 (20% of the sample were between ages 18-29) participating in the OMGYes Sexual Pleasure Report: Women and Touch Study, 29% had an orgasm at least 75 percent of the time without clitoral stimulation, but 43% had an orgasm at least 75 percent of the time with clitoral stimulation.¹⁸² These studies give an indication of the outcomes and experiences that are components of the U.S. emerging adult holistic sexual health experience, in particular positive and pleasurable sex, and also suggest that men and women might experience sexual health in different ways. Unfortunately, the factors preceding and associated with these subjective sexual health outcomes have been rarely studied.

In sum, the number of studies and potential national data sources that allow investigations of whether and how much emerging adults experience multidimensional aspects of sexual health, and potential adolescent contributors to health, are limited. Aside from Add Health, none of the above listed data sources allows the prospective study of potential adolescent characteristics and experiences that might be related to their future sexual health outcomes. Population-based benchmarks of sexual health outcomes among emerging adults in the U.S. are helpful for researchers, clinicians, and educators in understanding changes in sexual health trends for emerging adults over time, as well as the possible adolescent antecedents of holistic sexual

health for diverse groups. It is vital to explore which and in what ways positive adolescent developmental factors—the psychosocial characteristics and external factors— could enrich or undermine sexual health throughout the life course.

Adolescent Contributors to Holistic Sexual Health

The positive youth development (PYD) perspective provides a conceptual model for identifying such potential adolescent experiences, qualities, and attitudes across multiple social domains that could potentially contribute to future holistic sexual health in emerging adulthood. The PYD perspective represents the comprehensive interdisciplinary research and programmatic efforts that propose that healthy human development across the life course is best promoted by opportunities for adolescents to develop and strengthen key developmental assets at individual, interpersonal, and community levels.⁷⁸ Adolescents possessing these prosocial assets (e.g., self-esteem) and with access to protective resources within their environments (e.g., caring adult mentors) are better-equipped to succeed in various aspects of life,⁷³ potentially including holistic sexual health. Instead of focusing on reducing deficits and problem behaviors, PYD programs create opportunities for adolescents to enhance their strengths through activities used to promote a positive self-concept and prosocial connections, among other interrelated outcomes. These programmatic objectives serve to function as “mediating influences” of change that allow youth to gain a positive self-concept, competence, and character, and subsequently enhance well-being and preparation for adulthood, including their increasingly relevant sexual and romantic relationships.^{67, p.S76}

The developmental constructs defined in various PYD frameworks reflect different aspects of an adolescent’s psychosocial status and life,^{76,78,79} and are applicable to sexual health, as PYD experiences may strengthen the valued behaviors and qualities that contribute to positive social functioning in sexual relationships.^{90,94,95} Studies have found evidence of a positive

association between various adolescent PYD characteristics, including parent-child communication and achievement aspirations, for sexual health outcomes in adolescence such as reduced risk of unintended pregnancy⁹⁷ and STIs.¹⁰⁹ There is limited, but some evidence of the benefits of factors like family connectedness and confidence for more positive sexual health outcomes like sexual self-efficacy¹⁰⁷ and parent-adolescent communication about sex³⁷ in adolescence. Additionally, previous research finds high parental involvement¹¹¹ and the presence of adult mentors⁹¹ are each associated with higher romantic relationship satisfaction in young adulthood. While PYD constructs have largely been applied to studies of risk reduction in adolescence, more work is needed to explore the impact of PYD on comprehensive well-being, including positive, holistic sexual health outcomes and whether the benefits of PYD extend into emerging adulthood.

Limitations of Research on PYD and Sexual Health

Few past studies have prospectively explored the connection between PYD and holistic sexual health outcomes among emerging adults as a distinct age-group, using nationally representative samples. Thus far, research that has focused on holistic sexual health outcomes in emerging adulthood has largely relied on convenience samples that lack generalizability^{37,112} or samples of college students.^{112,113} Most of the current literature also examines cross-sectional associations^{25,26} and therefore does not allow the exploration of emerging adulthood experiences relative to the adolescent experiences that precede them. Lastly, some studies only incorporate single indicators of sexual health,^{25,37,114} primarily focusing on orgasm frequency as the sole descriptor of positive sexual health experiences, or single indicators of PYD,¹¹⁵ which neglects the acknowledgement that sexual health encompasses and is impacted by multidimensional experiences. Though there is evidence that PYD is protective against engagement in risk behaviors and adverse sexual health outcomes, it is unknown if and in what ways healthy

development shows similar positive associations with long-term holistic components of sexual health.

Current Study

This study addresses each of the limitations noted above. To examine the association between PYD and holistic sexual health in emerging adulthood, I use a diverse, U.S. population-based sample that has been prospectively followed from adolescence into young adulthood. I explore the longitudinal, long-term associations of youth development experiences for seven different sexual health outcomes representing physical, emotional, and social aspects of sexual health among emerging adults. The outcomes include enjoyment of performing oral sex, receiving oral sex, and orgasm frequency, as well as reciprocated love for partner, relationship quality, unintended pregnancy, and past year STIs.

As adolescent developmental assets and connections provide skills necessary to navigate and enrich romantic relationships, I hypothesized that PYD will be positively associated with enjoyment of performing and receiving oral sex, orgasm frequency, reciprocated love between partners, and relationship quality, and negatively associated with unintended pregnancy and past-year STIs. Based on persistent societal sexual scripts that commend males for pursuing and enjoying their sexual desires while criticizing females for the same,^{21,22,27,30} I hypothesized that the magnitude of the associations between PYD and positive sexual health will be stronger for males than females for physical-pleasure outcomes including enjoyment of oral sex and orgasm frequency. Additionally, because females tend to place high value on emotional connections and intimacy in sexual and romantic relationships,³¹ I hypothesized that the magnitude of the associations between PYD and love for partner or relationship quality will be stronger for females than males.

Methods

Data

Analyses were based on in-home data from Waves I and III of the National Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is a probability-based, nationally representative survey of 20,745 U.S. adolescents enrolled in grades 7 through 12 in the 1994-1995 school year (wave I; see Harris et al.,¹⁸⁵ for more detail). Add Health to-date has completed one in-school and four in-home waves of interviews. At Wave I, a resident parent (usually the mother) also completed a self-administered questionnaire. Wave III interviews (n=15,197) were completed in 2001-02, when sample members were aged 18-26 (emerging adulthood). Wave IV follow-up interviews occurred in 2008 when sample respondents were 24-32 years old (n=15,701). Though no outcomes were taken from Wave IV in this chapter, some control variables (i.e., experiences of coerced and physically-forced sex, and age at first sexual experience) are only asked at this wave and those retrospective reports were used. Response rates exceeded 75% at all waves. Add Health procedures were approved by the University of North Carolina, Chapel Hill, Institutional Review Board. Present analyses were deemed exempt from review.

At Wave III, respondents were asked to list all romantic and pregnancy relationships since 1995 in chronological order, starting with the most recent. For each relationship listed, they indicated if that relationship had included sex, defined as vaginal intercourse, oral intercourse, or anal intercourse, and if they were still in that relationship. Further details about the relationship, romantic partner, and sexual behaviors were provided for select relationships. During original Add Health data collection, relationships were selected based on certain criteria, leading to three different “relationships in detail” samples. The entire pool of sexual relationships includes what is called “the Morris sample” (n=36,128 sexual relationships reported among Wave III

respondents), the second is the “Udry sample” of the two most important relationships (n=20,878 relationships reported among Wave III respondents), and lastly the special subsample, the “Couples sample” (n=4,326 flagged relationships among Wave III respondents). Participants were randomly selected for inclusion in the “Couples sample” if they met three criteria: being in a current relationship with their most recent sexual partner, the relationship had lasted at least 3 months, and the partner was of the opposite sex and older than age 18. (Note: Not all relationships meeting these criteria were included in the “Couples sample.”)

Though there is overlap in the three “relationships in detail” samples, respondents answered different sets of questions depending on the sample they were selected into, resulting in seven different versions of the Wave III in-home questionnaire items pertaining to relationship characteristics. For example, only respondents with relationships flagged for inclusion in the “Couples sample” received detailed questions about orgasm frequency and relationship quality for their current relationships. Appendix C provides a description of the different selection criteria for each “relationships in detail” sample, the number of eligible relationships for each sample, and which holistic sexual health survey items were assessed in each sample. Though respondents across the samples often reported on multiple different relationships (n=36,128 total relationships included at Wave III), for this study, I selected sexual health information and relationship characteristics pertaining to the current or most recent “sexual or romantic relationship” only (n=12,283 current or most recent relationships). The analyses also only included current or most recent relationships with other-sex partners (95%), based on a relationship-specific report of the sex of the current or most recent partner at Wave III.

Study Samples

Two different study samples were used; samples were based on respondents’ appearance in different “relationships in detail” samples at Wave III and missing data in regard to seven

positive sexual health outcomes (liking to perform oral sex, liking to receive oral sex, reciprocated love for partner, orgasm frequency, romantic relationship quality, unintended pregnancy, and past 12-month STI; see Appendix C). The main difference between the samples is that the second, smaller sample examined two additional outcomes among emerging adults. **Sample 1** was restricted to respondents participating in Waves I and III (n=15,197), with a valid sampling weight (n=14,322), reporting on one current or most recent sexual and romantic relationship in detail (n=12,283) with an other-sex partner (n=12,017), and with non-missing data on enjoyment of oral sex, reciprocated love for partner, unintended pregnancy, and past 12-month STI outcome variables, and all covariates. This yielded an analytical sample of 10,916 male and female emerging adult respondents aged 18-26 in a current or most recent sexual relationship.

Approximately 10% of eligible respondents for Sample 1 at Wave III were excluded because of missing data; most missing data occurred as a result of the selection into different “relationships in detail samples” where respondents were not asked certain survey questions by design. Respondents without complete data on all sexual health outcomes and other covariates (thus excluded from analyses) were less likely to live in a two-parent household (approximately 32% vs. 55%, $p < 0.001$), were more likely to have a parent with less than a high school diploma (approximately 22% vs. 12%, $p < 0.001$), and were a year older on average (16.5 years vs. 15.4 years, $p < 0.001$) compared to respondents with complete data on all study indicators at Wave III.

A separate subsample of respondents flagged for the “Couples sample” completed other “relationships in detail” survey items including questions regarding the additional two holistic sexual health outcomes, orgasm frequency and romantic relationship quality. **Sample 2** comprised respondents reporting on sexual and romantic relationships with other-sex partners in regard to all seven positive sexual health items (n=3,833 eligible respondents who received all

relevant survey items), and who were not missing data on each positive sexual health outcome and covariates, yielding a final sample of 3,253 male and female emerging adult respondents. Eligible respondents with missing data were slightly more likely to be non-Hispanic black than respondents included in Sample 2 (approximately 20% vs. 13%, $p=.002$). Respondents with missing data were also more likely to be in a dating or pregnancy relationship compared to Sample 2 respondents with non-missing data (approximately 53% vs. 37%, $p=.002$). Lastly, eligible respondents with missing data were less likely to have ever engaged in oral sex compared to respondents included in Sample 2 (approximately 92% vs. 79%, $p<.001$).

Measures

Holistic Sexual Health. I examined seven sexual health outcomes that combined reflect multidimensional physical, emotional, and social aspects of sexuality and relationships. At the Wave III in-home interview, sexual health information was collected via laptop computers and computer-assisted self-interviewing (CASI) technology. The private nature of CASI technology helps limit social desirability bias, and thus improves accuracy of reports on sensitive information.¹⁸⁶ Respondents were asked whether they and/or their partner had ever engaged in fellatio (male receptive oral sex) or cunnilingus (female receptive oral sex). For respondents who answered in the affirmative to either or both questions, two additional questions measured the degree to which they liked to receive and perform oral sexual stimulation. **Enjoyment of receiving oral sex** was assessed by the question, “How much do/did you like for your partner to perform oral sex on you?” **Enjoyment of performing oral sex** was assessed by the question, “How much do/did you like to perform oral sex on your partner?” Each question used a five-point Likert scale, ranging from “like very much” to “dislike very much.” Final response categories included like very much/somewhat; dislike/neither like nor dislike (referent); and never experienced with partner.

An indicator of emotional aspects of sexual health included perceived **reciprocated love for partner**. Respondents were asked “how much do you love [partner]?” and “how much do you think [partner] loves you?”, with answer choices including “a lot,” “somewhat,” “a little” or “not at all.” A categorical variable describing reciprocated love for a partner in the current relationship, as perceived by the respondent, was created with the following categories: both partners love each other a lot, neither partner loves the other a lot (referent), respondent loves the partner more, or partner loves the respondent more.

Holistic sexual health also encompasses reduced risk of unintended pregnancy and sexually transmitted infections. A complete pregnancy history was collected during the Wave III in-home interview. For each reported pregnancy, respondents noted whether the pregnancy was intended (“Please think back to the time just before partner/you became pregnant. Did you want to have a child then?”). **Unintended pregnancy** was dichotomized as ever had an unintended pregnancy/never had an unintended pregnancy. **Past 12-month STI diagnosis** was dichotomized as being told by a doctor or nurse that you had one of 9 different STIs including chlamydia, gonorrhea, syphilis, genital herpes, genital warts, human papilloma virus (HPV), trichomoniasis, HIV/AIDS, and other.

Two additional outcomes, orgasm frequency and relationship quality, were assessed among Sample 2 members. **Orgasm frequency** is a common measure of sexual satisfaction²⁵ and was assessed by the question, “When you and your partner have sexual relations, how often do you have an orgasm--that is, climax or come?” Response options include “most of the time/every time,” “more than half of the time,” “about half the time,” “less than half the time,” and “never/hardly ever.” Orgasm frequency was categorized as most of the time/every time, half to more than half the time (referent), and less than half the time for both male and female respondents. The type of “sexual relations” was not specified in the survey question, however

“sexual relations” was defined as encompassing vaginal, oral-genital, and anal sex in a prior section of the Wave III in-home interview.

Relationship quality, representing positive social aspects of sexual relationships, was assessed by respondent ratings of his/her commitment, closeness, expectations of permanency, and satisfaction with the relationship. Because each variable was moderately to highly correlated with one another ($r=0.52-0.68$), a composite measure of overall relationship quality was constructed by summing these four items. Summary scores ranged from 0-5.5 units, where higher values indicated better relationship quality (Sample 2 males: mean=4.75, standard deviation=0.93; Sample 2 females: mean=4.89, standard deviation=0.82). High Cronbach’s alpha scores indicated internal consistency of the summed items for both males and females (alpha=0.82). Scores of relationship quality using these indicators in the Add Health data have been used in previous studies and also exhibit high reliability.^{26,187}

Main predictor: Positive Youth Development. I conducted exploratory factor analysis to determine how 76 different Wave I Add Health survey items loaded together on distinct factors representing PYD. I use four emergent dimensions of PYD with eigenvalues above 1: confidence, autonomy, parental bonds, and community bonds. Four standardized factor scores (relative to all males and females) were used individually as predictors in all models.⁴

Covariates. Models controlled for sexual relationship-specific characteristics including **relationship type** (married, cohabiting, or dating), **relationship duration** in years from the start of the *sexual* relationship, whether partners lived together, and whether there were **children present in the household** (1=at least one child under age 12 present, 0=otherwise). Because past

⁴ PYD factor scores were developed using the entire Wave I sample with complete data (n=16,777). Separate factor scores were created for respondents in Wave I (n=16,777) and respondents in both Waves I and III (n=14,322); sensitivity analysis was performed and distributions and eigenvalues of the factor scores were very similar.

relationships may be more likely to be rated of lower quality, I controlled for whether the **relationship was current**. (Current relationship was not a covariate in Sample 2 models because all relationships were current.) Lastly, relationship-specific measures of both perpetration and victimization of **sexual insistence** were assessed based on the following questions, “How often (in the past year) have you insisted on or made your partner have sexual relations with you when he/she didn’t want to?” and “How often (in the past year) has your partner insisted on or made you have sexual relations with him/her when you didn’t want to?” Sexual insistence was dichotomized (1=one or more experiences of sexual insistence, either perpetration or victimization; 0= never experienced sexual insistence).

Additionally, as sexual self-schemas evolve throughout adolescence and over time, individuals often become more comfortable and less reserved in exploring their sexualities.³⁹ Accordingly, individuals have varying opportunities for sexual activity that can influence expectations for and perceptions of sexual health outcomes in emerging adulthood. **Age at first sexual experience** measures the age at which sexual experience of any type (vaginal, oral, or anal) first occurred, in whole years as reported retrospectively at the Wave IV in-home interview. **Ever engaged in oral sex** (either performing or receiving oral sex) was also reported retrospectively at Wave IV. An individual’s opportunities and/or comfortability with engaging in sex during adolescence could also be influenced by their perceptions of their mothers’ attitudes toward their engaging in sexual activity, which could also impact subsequent sexual health in emerging adulthood.^{188,189} **Perceived maternal attitudes toward sexual activity** are represented by a summary score of 3 items based on adolescent reports (at Wave I): whether their mother would approve of their having sex, would approve of their having sex with a steady partner, and whether their mother would be upset about their having sex at all. Each item was measured on a 5-point Likert scale, ranging from strongly agree to strongly disagree. Items were coded and

added such that higher values indicate greater perceived maternal approval of sexual activity in adolescence (range: 3-15; Cronbach's alpha, 0.95).

As experiences of sexual victimization can negatively affect self-identity and relationships with romantic partners¹⁹⁰ and sexual satisfaction in young adulthood,¹⁹¹ I also controlled for **childhood sexual abuse** prior to age 18 ("Did a parent or other adult caregiver touch you in a sexual way, force you to touch him or her in a sexual way, or force you to have sexual relations?"), dichotomized as never/one or more times before age 18. **Coerced or physically forced sex** (ever "forced, in a nonphysical way, to have any type of sexual activity against your will?" or ever "physically forced to have sexual intercourse against your will?") was dichotomized as never/one or more times experienced coerced or physically-forced sex. To avoid issues of temporality, measures were restricted to events that first occurred before age 18. All sexual victimization variables were assessed retrospectively at the Wave IV in-home interview. Due to small cell sizes, childhood sexual abuse and coerced or physically forced sex were not included as covariates in multivariate models for Sample 2.

Models also control for individual characteristics in emerging adulthood including **race/ethnicity**, based on self-report: non-Hispanic white (referent), Hispanic (any race), non-Hispanic black, non-Hispanic Asian/Pacific Islander, and other. Socioeconomic status of family of origin is based on highest **parental education attainment** as reported by the parent at Wave I and substituted with adolescent report at Wave I if missing (less than high school, high school graduate, some college, and college graduate [referent]). **Family structure** is categorized as living with two biological parents (referent), other two parent household, single parent, and all other structures. **Currently in school** at the Wave III interview is dichotomized as currently enrolled in school, job training, or vocational education program or not. **Age** at Wave III was treated as a continuous variable.

Lastly, in previous research, high self-esteem has been positively correlated with experiencing orgasms, enjoying various sexual activities, as well as expression of intimacy in relationships in emerging adulthood.^{25,26} **Self-esteem** in emerging adulthood was measured with a composite score consisting of four items from Rosenberg's Self-Esteem Scale,¹⁹² all measured on a 5-point Likert scale ranging from strongly agree to strongly disagree: you have many good qualities; you have a lot to be proud of; you like yourself just the way you are; you feel you are doing things just about right (range=1-5; Cronbach's alpha=0.78).

Analysis

After examining descriptive statistics (Pearson Chi-square test for categorical variables and 2-sample t-tests for continuous variables) and bivariate associations (crude regression models), sexual health as predicted by PYD was estimated by regressing each positive sexual health outcome on the PYD factor scores, controlling for all individual and relationship covariates, and according to the coding scheme of the outcome variable. Specifically, I ran multinomial logistic regression models for categorical sexual health outcome variables (i.e., enjoyment of performing oral sex, enjoyment of receiving oral sex, reciprocated love for partner, and orgasm frequency), binomial logistic regression for dichotomous outcome variables (i.e., unintended pregnancy, past 12-month STIs), and ordinary least squares (OLS) regression for continuous outcomes (i.e., relationship quality). All variables were entered simultaneously in each model.

Due to gendered sexual scripts, males and females may place different importance on certain aspects of positive sexual health, for example physical pleasure for men and emotional intimacy for women, particularly within a heterosexual context.^{21,22} Thus, I stratified each model by biological sex to derive sex-specific estimates. Analyses were conducted in STATA, version 14.2, using survey commands to adjust for Add Health's complex survey design. Sampling

weights were applied to yield national population estimates.

Results

Sample 1 Characteristics

Table 5 presents the distributions of sexual health, PYD, and other demographic and relationship characteristics by biological sex. Males and females had slightly different sexual health profiles: A larger proportion of males reported liking to perform oral sex very much/somewhat on their partners compared to their female counterparts (approximately 60% vs 54%), whereas 20% of females reported disliking or neither like/dislike performing oral sex compared to only 10% of males ($p < .001$). A majority of both males and females reported liking to receive oral sex very much/somewhat (76% and 73%, respectively, $p < .001$). Interestingly, more respondents were less likely to perform oral sex than to receive it. Almost a third of males and over a quarter of females reported never performing oral sex on their partners (approximately 30% and 26%, $p < .001$, respectively). This is compared to approximately 21% of males and 20% of females reporting never receiving oral sex from their partners ($p < .001$). Females on average were more likely to perceive that both partners love each other a lot (reciprocated love) compared to males (76% vs. 66%, $p < .001$). Over a quarter (28%) of the female respondents reported an unintended pregnancy in emerging adulthood compared to 17% of male respondents ($p < .001$). Likewise, 13% of female respondents reported diagnosis of a past-year STI, whereas only 4% of males reported a past-year STI ($p < .001$).

Compared to males, females had lower mean scores on the PYD factors, except for the autonomy factor. There were statistically significant differences in the distributions of the confidence, parental bonds, and community bonds factor scores by biological sex. Males reported higher confidence in adolescence compared to females (mean=.06, standard deviation [SD]=.91 and mean=-.04, SD=1.04, $p < .001$, respectively). Males also reported higher

community bonds in adolescence than females (mean=.05, SD=.98 and mean=.01, SD=1.02, $p=.009$, respectively). Females reported lower parental bonds in adolescence than males (mean=-.04, SD=1.06 and mean=.13, SD=.87, $p<.001$, respectively), however female reports were more variable.

Sample 2 Characteristics

A subset of the Add Health sample in current relationships received questions on orgasm frequency and relationship satisfaction (Sample 2). These patterns of results are consistent with the results presented for Sample 1. Table 14 presents demographic characteristics, by biological sex, for Sample 2 respondents. Similar to Sample 1, a larger proportion of males reported liking to perform oral sex very much/somewhat on their partners compared to their female counterparts (approximately 72% vs 61%, $p<.001$). Over a fifth of females reported disliking or neither liking/disliking performing oral sex (about 22%) compared to only 10% of males ($p<.001$). Compared to performing oral sex, larger proportions of males and females both reported liking to receive oral sex very much/somewhat (approximately 84% and 79%, respectively, $p<.001$). Females and males in Sample 2 were also on average more likely to perceive that both partners love each other a lot, or reciprocated love (approximately 82% and 85%, respectively, $p<.001$).

Almost one-third (31%) of the female respondents in Sample 2 reported an unintended pregnancy in emerging adulthood compared to 21% of male respondents ($p<.001$). Likewise, 10% of female respondents reported diagnosis of a past-year STI, whereas only 4% of males reported a past-year STI diagnosis ($p<.001$). The proportion of males who reported having an orgasm most of the time or every time they had sex in their relationship was significantly larger than the proportion of females reporting the same (approximately 86% of males compared to less than half of females, 49%, $p<.001$). In fact, 15% of females reported having an orgasm less than half the time compared to just 3% of males ($p<.001$). Lastly, relationship quality scores were

similar between males and females in Sample 2 (mean=4.76, SD=.93 and mean=4.88, SD=1.02, $p=.013$, respectively).

As found among Sample 1, females in Sample 2 had lower mean scores on the PYD factors, however the only statistically significant difference in mean scores by biological sex was among the parental bonds factor. Females reported lower parental bonds in adolescence than males on average, but had slightly more variable reports (mean= -.09, SD=1.06 and mean=.09, SD=.92, $p<.001$, respectively). Though not statistically different at the 0.05 level, males reported higher confidence in adolescence (mean=.01, SD=.98 and mean=-.10, SD=1.06, $p=.10$, respectively), higher autonomy (mean=.04, SD=.93 and mean=.01, SD=.99, $p=.407$, respectively), and higher community bonds compared to females (mean=.06, SD=1.02 and mean=-.003, SD=1.03, $p=.572$, respectively).

Differences in Characteristics by Sample

Respondents in Sample 2, where the relationships were all current and were slightly longer on average, reported more endorsement of pleasure- and emotional-related sexual health outcomes and more unintended pregnancies, than respondents in Sample 1, which represented both current and most recent relationships with other-sex partners. For example, more male and female respondents in Sample 2 reported liking to receive oral sex very much/somewhat than in Sample 1. Also, more respondents in Sample 2, especially males, reported reciprocated love (that both partners love each other a lot) compared to Sample 1. Distributions of the PYD characteristics were largely similar, however males and females in Sample 1 reported slightly more confidence in adolescence than respondents in Sample 2. Females in Sample 1 also reported stronger parental bonds than females in Sample 2.

Distributions of the demographic and relationships characteristics were very similar between Sample 1 and Sample 2, aside from relationship type and duration, and sexual insistence

in the relationship. By nature of the sample construction, respondents in Sample 2 were more likely to be married or in a cohabiting relationship compared to respondents in Sample 1. Sample 2 relationships were also slightly longer on average. Lastly, Sample 1 also had more than double the proportion of males who experienced sexual insistence in their current or most recent relationships compared to Sample 2.

PYD and Holistic Sexual Health: Sample 1

I examined five sexual health outcomes among Sample 1 emerging adults. Bivariate analyses yielded several significant associations for males and females (Table 6 for males, Table 7 for females), but most became non-significant when control variables were added. (Summary of results presented in Tables 8 and 9 for males and females, respectively. Full results are presented in Tables 10-11 for males and Tables 12-13 for females.) After controlling for all individual, relationship, and previous sexual experiences, among males, there was only one significant association between these PYD indicators and sexual health in emerging adulthood: the factor parental bonds in adolescence was associated with increased reciprocity of love (both partners loving each other a lot) in emerging adulthood (compared to neither partner loving each other a lot, relative risk ratio [RRR]=1.22; 95% confidence interval [CI]=1.01-1.47).

Among females in Sample 1, parental bonds also emerged as important: stronger parental connections were associated with increased enjoyment of receiving oral sex from partners (like receiving oral sex very much: RRR=1.26; 95% CI=1.07-1.48), compared to reporting disliking or neither liking/disliking receiving oral sex from their partner. Stronger parental bonds were also associated with increased reciprocity of love between partners or both partners loving each other a lot (RRR=1.24; 95% CI=1.06-1.46) and decreased likelihood of unintended pregnancy among females (odds ratio [OR]=0.87; 95% CI=0.77-0.99). More autonomy in adolescence was associated with increased enjoyment of receiving oral sex from partners in emerging adulthood

(RRR=1.22; 95% CI= 1.02-1.45). Unexpectedly, higher confidence for females in adolescence was associated with reduced likelihood of both partners loving each other a lot (RRR=0.82; 95% CI=0.70-0.96).

PYD and Holistic Sexual Health: Sample 2

I examined the associations between PYD and seven sexual health outcomes among Sample 2 emerging adults. Bivariate analyses are presented in Table 15 (males) and Table 16 (females). There were significant associations between parental bonds, community bonds, and sexual health among males and females, with many associations retaining significance in multivariate models. Summary statistics for all significant associations between PYD and sexual health in Sample 2 are presented in Tables 17 (males) and 18 (females), with full results presented in Tables 19-21 (males) and Tables 22-24 (females). After controlling for all individual and relationship characteristics, males with higher parental bonds factor scores were more likely to report reciprocated loved compared to neither partner loving each other a lot (RRR=1.23; 95% CI=1.09-1.37). The community bonds factor also showed significant associations with two sexual health outcomes for males. The factor higher community bonds in adolescence was associated with increased likelihood of reporting loving their partner more compared to neither partner loving each other a lot (RRR=2.72; 95% CI=1.43-5.16). Community bonds in adolescence were also associated with increased relationship quality among males in Sample 2 (beta coefficient [β]=0.12; 95% CI=0.04-0.23).

Among females in Sample 2, the parental bonds factor was associated with increased likelihood of liking to receive oral sex from their partner compared to disliking to receive oral sex (RRR=1.38; 95% CI=1.08-1.75). The parental bonds factor was also associated with an increased likelihood of never had received oral sex from their partner compared to disliking receiving oral sex (RRR=1.35; 95% CI=1.01-1.81). Parental bonds were also associated with

both partners loving each other a lot, compared to neither parent loving each other a lot (RRR=1.32; 95% CI=1.05-1.67). Parental bonds were protective against unintended pregnancy for females (OR=0.88; 95% CI=0.73-0.98). Similar to males in Sample 2, the factor community bonds was associated with interpersonal sexual health outcomes: Higher community bonds in adolescence were associated with increased likelihood of both partners loving each other a lot compared to neither partner loving the other a lot (RRR=1.32; 95% CI=1.05-1.67) and with higher romantic relationship quality ($\beta=0.05$; 95% CI=0.001-0.10).

Discussion

The goals of the current study were to document holistic sexual health experiences among a nationally representative sample of youth followed into adulthood, and to explore the potential adolescent developmental factors that are related to these sexual health outcomes in emerging adulthood. This study fills a gap in the literature as little previous attention has been given to understanding the prevalence of and developmental contributors to positive sexual health outcomes among emerging adults, including oral sex enjoyment and emotional qualities of relationships.

Holistic Sexual Health among Emerging Adults

In this study, most male and female emerging adults reported liking to receive and perform oral sex in their relationships “very much” (though slightly more females than males reported disliking these activities), as well as perceiving reciprocated love between both partners. Among the smaller sample of emerging adults in current relationships longer than 3 months, most also reported having an orgasm most of the time and high relationship quality. These findings are consistent with the few studies investigating pleasure- and emotion-related sexual health outcomes among emerging adults, with males typically reporting more physical pleasure than females.^{18,25,26,193} For example, using data from Wave III of the Add Health study, Kaestle

(2009) examined pleasure experiences of different behaviors and found that among heterosexual emerging adults in a current sexual relationship, a greater proportion of females compared to males had engaged in sexual activities they disliked (12% vs. 3%), and females were more likely than males to report repeated participation in these activities (odds 3.7).¹⁹³ On the other hand, about 85% of the sample reported strong relationship intimacy and both partners loving each other a lot, with similar percentages among males and females.¹⁹³

Beyond Add Health, few contemporary studies of the patterns of pleasure- and emotion-related sexual health outcomes among emerging adults, especially in regard to sexual activities such as oral sex, exist for comparison.^{18,25} Data from the early 1990s suggest that males and females report high rates of physical and emotional satisfaction from sexual experiences.¹⁸³ One recent study also found similar pleasure-ratings of oral sex experiences among a national sample of Canadian university students.¹¹³ These studies and the current research all suggest that the majority of emerging adults in the U.S. and Canada have positive sexual experiences. However, there is a need for more national data sources and continued investigations on whether, how much, and in what ways emerging adults experience multidimensional physical, emotional, mental, and social aspects of sexual health. There is also further need to explore if there are differences in holistic sexual health experiences by other demographic characteristics in addition to biological sex (i.e., race/ethnicity, sexual orientation, SES) and the potential adolescent precursors to health.

PYD and Holistic Sexual Health

Previous longitudinal examinations of the adolescent development factors that contribute to these patterns of emerging adult sexual health are sparse. Thus, the current study contributes to the growing evidence of the implications of PYD for long-term holistic well-being and for sexual well-being. I found that parental bonds in adolescence are especially important for diverse

aspects of sexual health in emerging adulthood, particularly for females. Results indicate that strong bonds with parents are associated with increased reciprocity of love between partners in emerging adulthood for both males and females, and with increased enjoyment of receiving oral sex and reduced risk of unintended pregnancy among females in emerging adulthood. I also found that autonomy in regard to household and family decisions is related to increased enjoyment of receiving oral sex among females. The smaller subsample of emerging adults in a current relationship had a very similar pattern of results for associations between parental bonds and sexual health. Community bonds were also related to increased enjoyment of receiving oral sex among females, and increased perceived reciprocity and relationship quality among both males and females in emerging adulthood.

Findings from this study support hypotheses about the associations between PYD and sexual health in emerging adulthood and extend the large research base on the importance of parental bonds, beyond the standard sexual and reproductive health outcomes typically evaluated. I found that strong parental bonds are not only protective against unintended pregnancy, but are also related to positive sexual health and relationship experiences later in life. Adolescents learn to regulate emotions and function positively in social interactions through social relationships, the most prominent being between parents/caregivers and their children.¹⁹⁴ As such, patterns of parent-child attachment often serve as models for patterns of attachment that occur in future relationships.¹⁹⁵ While I was unable to test this connection directly, high-quality bonds to parents might be associated with holistic sexual health because growing up in homes where parents offer reciprocal love and acceptance, while modeling healthy behaviors, could increase opportunities for youth to build and practice positive skills that are then used in their intimate relationships later in adult life.¹⁹⁵ These general capabilities could encompass

communicating needs, listening, and assuming joint responsibility for health (in the case of future romantic relationships—contraception and pleasurable sex, among other outcomes).⁷²

Autonomy in adolescence might be associated with increased enjoyment of receiving oral sex for females in emerging adulthood for similar reasons. Families in which youth are supported in exercising autonomy could provide a structure in which adolescents acquire and practice important competencies such as positive self-regulation and agency while making every-day decisions.^{127,129,196} These adolescents may be better able to identify and articulate their own desires and personal goals for themselves in their future relationships. Associations among autonomy in household decisions, parental bonds, and future sexual health suggest that family contexts—specifically—are central influences on psychosocial and sexual well-being in emerging adulthood as they often offer the primary, almost daily opportunities for demonstrating values and behaviors, as well as positive interpersonal skill-building.

Community bonds emerged as an additional predictor for emotional and social aspects of sexual health in emerging adulthood among Sample 2 members. Though family context remains a prominent influence throughout life, as individuals age, the interpersonal influences of peers, romantic partners, and other adults become increasingly important and interconnected.¹⁹⁷ Adolescents engage in a variety of settings outside the home—schools, churches, community groups—and are exposed to numerous templates for healthy (or unhealthy) relationship functioning.¹⁹⁷ Associations with higher community bonds, as found here, may reflect more prosocial attachment to conventional institutions in adolescence,⁷⁹ and thus even more opportunities for adolescents to observe and practice interpersonal and emotional regulation abilities^{73,197} that could be applied in their future relationships.

Other dimensions of PYD in this study, including autonomy and confidence for males, were unrelated to holistic sexual health in emerging adulthood in adjusted models, or in the one

case of confidence among females in Sample 1, had a counter-intuitive association with emotional aspects of sexual health. The lack of consistent associations for these dimensions was unexpected. One reason for the lack of associations may be inadequate measurement of these PYD constructs; alternatively, these PYD dimensions may simply not be relevant to the particular aspects of sexuality examined in this study, though this seems improbable considering the importance of assets like autonomy and a positive self-concept for sexual agency and expression.^{98,101} Further, more associations between the PYD assets examined here and future sexual health emerged for females compared to males, which suggests these PYD indicators might be more relevant for holistic sexual health for females (or better-measured), and other indicators, aside from parental and community bonds, might better explain the antecedents of holistic sexual health for males.

Biological Sex, PYD and Sexual Health

The hypothesis that associations between PYD and holistic sexual health and physical-pleasure outcomes would be stronger for males was not supported, and in fact PYD emerged as a consistent predictor of enjoyment of receiving oral sex among females, but did not predict pleasure-related sexual health outcome for males. It is possible that these intra- and inter-personal developmental assets are more beneficial for young women in overcoming barriers to achieving/expressing sexual satisfaction because they often face more constraints in sexual expression in comparison to young men whose sexual activities are encouraged, or even celebrated.^{21,22,27,30} Using validated frameworks of youth development, future research should explore if other indicators of PYD (e.g., caring/empathy, competence, civic engagement) are also related to long-term holistic sexual health in emerging adulthood, especially for males.

Likewise, the hypothesis that stronger associations between PYD and emotional or intimate sexual health outcomes would be evident for females compared to males³¹ was not

supported. While there were similar patterns of associations between PYD and sexual health, for example, between parental bonds and reciprocated love between partners (in both study samples) and community bonds and relationship quality (in Sample 2), the magnitude of associations was similar between females and males. Parental and community bonds were simply relevant for emotional qualities of future relationships, regardless of biological sex, which underscores the importance of healthy development in these family, school, and faith-based conventional contexts.

Comparisons between Study Samples

The use of two study samples and their corresponding results offers a consistent story of the implications of PYD for holistic sexual health among emerging adults, but through different lenses. As an artifact of the Add Health study design, respondents receiving unique survey questions in the “Couples sample” (and consequently those largely making up Sample 2) were in current, longer, and perhaps more committed relationships than respondents in the larger Sample 1, a population-based sample of both current and most recent U.S. emerging adult relationships with other-sex partners. Respondents in Sample 2 were more likely to be female and in married and cohabiting relationships, however the two samples were similar by race, parental education attainment, school enrollment status, and age, allowing both sets of results to complement each other.

The experience of and antecedents to positive sexual health outcomes could be a function of the type of relationship, status, and duration, which might explain why Sample 2 members reported more positive sexual health outcomes (i.e., more enjoyment of oral sex) and more significant associations between PYD and sexual health in longitudinal models compared to Sample 1 members. Respondents likely rate current relationships higher than past relationships on indicators of holistic sexual health, particularly relationship quality or reciprocated love.

However for the most part, the direction and magnitude of the point estimates for each outcome were consistent between the two samples; only the significance levels varied. The findings from both samples help describe potential developmental antecedents related to understudied holistic sexual health outcomes and add to the research base on healthy sex and relationships of various types and levels of commitment among emerging adults.

Study Implications

All together, the results of this study provide support for the extended influence of certain adolescent development experiences on sexual health outcomes into emerging adulthood. Early ties and early experiences have lasting effects on psychosocial well-being, thus adolescence is a key period to strengthen protective factors that prepare individuals to take control of their health and relationships throughout life. By identifying the specific critical precursors to long-term positive sexual health, youth-serving professionals might create effective youth development opportunities that empower youth to effectively use positive interpersonal skills in their relationships. Activities should assist youth in developing the capacity to articulate their own desires (including abstaining from sex), make healthy decisions, and practice healthy negotiation for contraception and safe sex.⁷² Such skills could then be placed into practice and strengthened in their future relationships in emerging adulthood and beyond. Results in this study suggest that programs could increase parent engagement as potential key avenues by which youth could practice these skills, for example, by incorporating parent-child take home discussion questions and activities. Additionally, increasing community connectedness with prosocial peers and adults could also be a strategy to enhance positive skill-building within a safe and supportive setting, skills that could then be utilized in future relationships. Lastly, the Sample 2 findings illustrate the potential benefits of lasting relationships for sexual and emotional satisfaction. It could be that within committed relationships, individuals are more able to apply the PYD assets, though I

could not test this possibility directly. However, promotional tools aimed at improving sexual health outcomes could describe the potential sex-positive outcomes one might experience in committed relationships, in addition to the common risk-reduction messages.

Limitations

Results of this study should be considered in the context of certain limitations. First, emerging adult respondents at Wave III reported on their current or most recent relationship, which may not necessarily reflect their complete or typical sexual health status throughout adolescence and emerging adulthood. Likewise, the sexual health outcomes explored here are limited in that they do not evaluate other common sexual experiences as potentially physically, emotionally, and socially stimulating. Activities such as kissing, cuddling, or mutual touching are important to couples' sexual lives and considerable dimensions of sexual health, especially for women who, in comparison to men, are often more likely to emphasize intimacy as vital to a sexual relationship.³² Additionally, it is unclear if and to what degree respondents value each sexual experience as a vital component of sexual health (for example, the importance of enjoying performing oral sex for overall sexual health or relationship satisfaction). Unfortunately, these additional aspects of sexuality were not assessed in the Add Health survey at Wave III, however the current positive sexual health outcomes explored in this study represent a set of outcomes that has not widely been explored using large, diverse samples of U.S. emerging adults.

A further limitation of the study is the restriction of the analyses to individuals who report detailed relationship information with other-sex partners, as only respondents in select other-sex relationships received certain relationship questions at Wave III. Positive sexual health experiences may differ for sexual minority individuals; future work should explore the critical antecedents to positive sexuality and sexual relationships among same-sex partners. Lastly, some data come from retrospective reports (e.g., unintended pregnancy), therefore certain variables

may not accurately reflect experiences in emerging adulthood. Despite these limitations, the current study utilizes prospective, longitudinal, and U.S. population-based data to address gaps in our understanding of how PYD experiences are related to often overlooked components of sexual health.

Conclusions

This study examined the potential adolescent development factors associated with normative physical, emotional, and social sexual health outcomes among a national sample of diverse emerging adults. In all, the results provide supporting evidence of the enduring impact of positive family and youth development experiences for holistic sexual well-being in emerging adulthood, including enjoyment of oral sex, relationship intimacy, and avoiding unintended pregnancy. Results of this study suggest that positive parental bonds, family contexts, and attachment to community prosocial institutions, might be key contributors to these multidimensional aspects of sexual health in emerging adulthood, a finding that expands the range of long-term, well-being indicators linked to positive parental and interpersonal relationships. Continued research on the ways in which elements of PYD protect against or enhance multidimensional aspects of sexual health in emerging adulthood using longitudinal and nationally representative data is needed to inform sexual health promotion efforts.

Table 5. Demographic, relationship, and behavioral characteristics, by biological sex, Sample 1: The National Longitudinal Study of Adolescent to Adult Health, Wave III (n=10,916).

<i>Characteristic</i>	Male (n=4,974)		Female (n=5,942)		p-value*
	%	(n)	%	(n)	
<i>Sexual Health Outcomes</i>					
Enjoyment of performing oral sex					
Like very much/somewhat	60.0	(2,661)	54.2	(2,831)	p <.001
Dislike/Neither like nor dislike	9.7	(436)	20.0	(1,138)	
Never experienced with partner	30.3	(1,426)	25.8	(1,494)	
Enjoyment of receiving oral sex					
Like very much/somewhat	75.7	(3,365)	73.2	(3,921)	p <.001
Dislike/Neither like nor dislike	3.2	(147)	6.9	(436)	
Never experienced with partner	21.1	(1,011)	19.9	(1,106)	
Reciprocated love for partner					
Both partners love each other a lot	65.9	(2,920)	75.8	(4,080)	p <.001
Respondent loves the partner more	5.4	(254)	6.2	(347)	
Partner loves respondent more	8.3	(394)	4.0	(247)	
Neither partner loves each other a lot	20.4	(955)	13.9	(789)	
Unintended pregnancy					
Yes	16.8	(778)	28.2	(1,652)	p <.001
No	83.2	(3,745)	71.7	(3,811)	
Past 12-month STI					
Yes	3.7	(173)	9.6	(517)	p <.001
No	96.3	(4,350)	90.4	(4,946)	
<i>Positive Youth Development Indicators ^a</i>					
Confidence factor score (Mean (SD))	.057	(0.91)	-.042	(1.04)	p <.001
Autonomy factor score (Mean (SD))	.025	(0.97)	.012	(0.99)	p=.113
Parental bonds factor score (Mean (SD))	.125	(0.87)	-.042	(1.06)	p <.001
Community bonds factor score (Mean (SD))	.054	(0.98)	.010	(1.02)	p=.009
<i>Individual Characteristics</i>					
Race/ethnicity					
Non-Hispanic White	66.2	(2,248)	67.7	(2,975)	p =.481
Non-Hispanic Black	14.9	(873)	15.1	(1,169)	
Hispanic (all races)	12.9	(767)	1.8	(817)	

Non-Hispanic Asian	3.7 (329)	3.7 (350)	
Non-Hispanic Other-race	3.0 (126)	2.8 (152)	
Parental education attainment			
Less than high school	11.1 (524)	11.2 (686)	p =.427
High school graduate/GED	26.4 (1,102)	28.5 (1,398)	
Some college	30.4 (1,135)	29.5 (1,562)	
College graduate or more	32.1 (1,488)	30.9 (1,738)	
Family of origin structure			
Two biological parents	57.0 (2,465)	55.2 (2,855)	p=.579
One biological parent + one stepparent	16.5 (839)	17.1 (992)	
Single parent	21.2 (1,010)	22.3 (1,267)	
Other family structure	5.3 (209)	5.5 (349)	
Urbanicity			
Urban	52.7 (2,462)	51.0 (2,941)	p=.248
Rural	47.3 (2,025)	49.0 (2,475)	
Age in years (Mean (SD))^b	22.0 (1.88)	21.7 (1.81)	p <.001
Currently in school			
Yes	32.1 (1,481)	38.3 (2,189)	p <.001
No	67.9 (3,037)	61.7 (3,272)	
Self-esteem in emerging adulthood (Mean (SD))^c	1.72 (0.56)	1.82 (0.57)	p <.001
<i>Relationship Characteristics</i>			
Current relationship			
Yes	70.9 (3,168)	81.2 (4,377)	p <.001
No	29.1 (1,306)	18.9 (1,059)	
Relationship type			
Married	16.6 (775)	23.4 (1,273)	p <.001
Cohabiting	28.7 (1,220)	29.8 (1,595)	
Dating	54.7 (2,528)	46.8 (2,631)	
Relationship duration in years (Mean (SD))^d	2.2 (2.10)	2.7 (2.21)	p <.001
Children present in household			
Yes	25.9 (1,206)	40.1 (2,247)	p <.001
No	74.1 (3,317)	59.9 (3,216)	
Sexual insistence in relationship			
Yes	8.6 (420)	9.6 (569)	p=.277
No	91.4 (4,086)	90.5 (4,877)	
<i>Previous Sexual Experiences</i>			

Age at first sexual experience (Mean (SD))^e	16.0 (2.68)	16.1 (2.36)	p=.026
Wave I maternal attitudes towards adolescent sex (Mean (SD))^f	6.67 (3.10)	5.44 (2.89)	p <.001
Ever engaged in oral sex			
Yes	91.2 (3,381)	85.8 (4,093)	p <.001
No	8.8 (350)	14.2 (752)	
Childhood sexual abuse before age 18			
Yes	2.1 (86)	7.2 (360)	p <.001
No	97.9 (3,665)	92.8 (4,507)	
Coerced or forced sex before age 18			
Yes	2.3 (105)	13.2 (642)	p <.001
No	97.7 (4,418)	86.8 (4,821)	

Percentages and means are weights to reflect Add Health sample design (Ns are unweighted). Column percentages may not add to 100% owing to rounding and weighting.

* p-values indicate Pearson chi²-test [categorical variables] or 2 sample t-test [continuous variables] of significant differences in study characteristics and outcomes by biological sex.

^a Confidence factor score range: -5.39 – 2.69 units. Autonomy factor score range: -3.17 – 1.01 units. Parental factor score range: -5.56 – 0.86 units. Community factor score range: -3.73 – 1.96 units.

^b Age range at Wave 3: 18 - 26 years-old

^c Self-esteem at Wave 3 range: 1 - 5 units

^d Relationship duration: .003 - 24.3 years

^e Age at first sex range: 0 – 26 years-old

^f Maternal attitudes toward sexual activity range: 1 - 15 units

Table 6. Bivariate associations between positive youth development and sexual health outcomes, males in Sample 1: The National Longitudinal Study of Adolescent to Adult Health, Wave III (n=4,523).

<i>Characteristic</i> (Reference category)	Enjoyment of performing oral sex with partner (Dislike or neither like/dislike performing oral sex)				Enjoyment of receiving oral sex from partner (Dislike or neither like/dislike receiving oral sex)					
	Like performing oral sex		Never performed oral sex with partner		Like receiving oral sex		Never received oral sex from partner			
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)		
Positive Youth Development Factor Scores										
Confidence	0.97	(0.80, 1.62)	0.94	(0.79, 1.12)	0.91	(0.67, 1.22)	0.88	(0.65, 1.20)		
Autonomy	1.13	(1.00, 1.29)	0.96	(0.83, 1.10)	1.20	(0.97, 1.48)	1.02	(0.82, 1.26)		
Parental bonds	1.07	(0.92, 1.24)	1.13	(0.95, 1.34)	1.11	(0.86, 1.42)	1.12	(0.86, 1.45)		
Community bonds	1.08	(0.91, 1.28)	1.06	(0.88, 1.27)	1.38	(1.07, 1.78)	1.44	(1.13, 1.84)		
<i>Characteristic</i> (Reference category)	Reciprocated love with partner (Neither partner loves each other a lot)						Lifetime unintended pregnancy		Past 12-month STI diagnosis	
	Both partners love each other a lot		Respondent loves partner more		Partner loves respondent more					
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Positive Youth Development Factor Scores										
Confidence	0.94	(0.83, 1.08)	0.84	(0.69, 1.02)	0.89	(0.72, 1.11)	0.95	(0.83, 1.10)	0.94	(0.72, 1.23)
Autonomy	1.04	(0.93, 1.17)	0.95	(0.78, 1.16)	1.06	(0.90, 1.24)	1.05	(0.93, 1.17)	0.98	(0.81, 1.49)
Parental bonds	1.04	(1.02, 1.16)	0.88	(0.70, 1.10)	1.03	(0.85, 1.25)	0.97	(0.86, 1.09)	0.96	(0.74, 1.24)
Community bonds	1.02	(0.91, 1.14)	1.03	(0.82, 1.30)	1.05	(0.88, 1.25)	0.94	(0.83, 1.06)	1.01	(0.80, 1.27)

RRR=relative risk ratio; OR= odds ratio; CI= confidence interval

*Bolded values are significant at p<0.05 level.

Table 7. Bivariate associations between positive youth development and sexual health outcomes, females in Sample 1: The National Longitudinal Study of Adolescent to Adult Health, Wave III (n=5,942).

<i>Characteristic</i> (Reference category)	Enjoyment of performing oral sex with partner (Dislike or neither like/dislike performing oral sex)				Enjoyment of receiving oral sex from partner (Dislike or neither like/dislike receiving oral sex)			
	Like performing oral sex		Never performed oral sex with partner		Like receiving oral sex		Never received oral sex from partner	
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)
Positive Youth Development Factor Scores								
Confidence	1.04	(0.94, 1.16)	1.09	(0.96, 1.23)	1.06	(0.92, 1.23)	1.07	(0.89, 1.28)
Autonomy	0.99	(0.90, 1.10)	0.84	(0.76, 0.93)	1.34	(1.15, 1.56)	1.08	(0.92, 1.27)
Parental bonds	1.02	(0.92, 1.12)	0.98	(0.88, 1.08)	1.12	(0.97, 1.30)	1.14	(0.99, 1.30)
Community bonds	1.03	(0.93, 1.11)	0.97	(0.88, 1.08)	1.11	(0.95, 1.29)	1.09	(0.92, 1.29)

<i>Characteristic</i> (Reference category)	Reciprocated love with partner (Neither partner loves each other a lot)						Lifetime unintended pregnancy		Past 12-month STI diagnosis	
	Both partners love each other a lot		Respondent loves partner more		Partner loves respondent more					
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Positive Youth Development Factor Scores										
Confidence	0.93	(0.83, 1.05)	0.98	(0.82, 1.17)	0.98	(0.78, 1.23)	0.99	(0.90, 1.08)	0.96	(0.86, 1.07)
Autonomy	1.09	(0.98, 1.22)	0.92	(0.78, 1.08)	1.04	(0.86, 1.26)	1.14	(1.04, 1.26)	0.99	(0.88, 1.10)
Parental bonds	1.06	(0.96, 1.17)	0.87	(0.76, 1.04)	0.91	(0.76, 1.09)	0.82	(0.75, 0.89)	0.93	(0.84, 1.03)
Community bonds	1.01	(0.92, 1.12)	0.91	(0.78, 1.07)	1.05	(0.86, 1.29)	0.87	(0.80, 0.95)	0.79	(0.70, 0.89)

RRR=relative risk ratio; OR= odds ratio; CI= confidence interval

*Bolded values are significant at p<0.05 level.

Table 8. Summary of statistically significant results from multinomial and logistic regressions modeling multivariate associations between positive youth development and sexual health outcomes, males in Sample 1 (n=4,523).

PYD Factor Score	Enjoyment of performing oral sex (RRR) ^a	Enjoyment of receiving oral sex (RRR) ^b	Reciprocated love (RRR) ^c	Unintended pregnancy (OR)	Past 12-month STI (OR)
Confidence					
Autonomy					
Parental bonds			↑ Both partners love each other a lot		
Community bonds					

^a Reference category is dislike or neither like/dislike performing oral sex.

^b Reference category is dislike or neither like/dislike receiving oral sex.

^c Reference category is neither partner loves each other a lot.

Blank spaces represent non-significant associations. Downward arrows indicate lower odds (or relative risk) for every one-unit increase in the factor score; upward arrows indicate greater odds (or relative risk) for every one-unit increase in the factor score.

Models control for individual characteristics: race, highest parental education attainment, family of origin structure, urbanicity age at Wave 3, currently in school, self-esteem at Wave 3; relationship characteristics: relationship status, relationship type, children present in household, sexual insistence in relationship; previous sexual experiences: age at first sexual experience, perceptions of maternal attitudes towards adolescent sex, ever engaged in oral sex, childhood sexual abuse, coerced or forced sex before age 18.

Table 9. Summary of statistically significant results from multinomial and logistic regressions modeling multivariate associations between positive youth development and sexual health outcomes, females in Sample 1 (n=5,942).

PYD Factor Score	Enjoyment of performing oral sex (RRR) ^a	Enjoyment of receiving oral sex (RRR) ^b	Reciprocated love (RRR) ^c	Unintended pregnancy (OR)	Past 12-month STI (OR)
Confidence			↓ Both partners love each other a lot		
Autonomy		↑ Like receiving oral sex from partner			
Parental bonds		↑ Like receiving oral sex from partner	↑ Both partners love each other a lot	↓ Unintended pregnancy	
Community bonds					

^a Reference category is dislike or neither like/dislike performing oral sex.

^b Reference category is dislike or neither like/dislike receiving oral sex.

^c Reference category is neither partner loves each other a lot.

Blank spaces represent non-significant associations. Downward arrows indicate lower odds (or relative risk) for every one-unit increase in the factor score; upward arrows indicate greater odds (or relative risk) for every one-unit increase in the factor score.

Models control for individual characteristics: race, highest parental education attainment, family of origin structure, urbanicity age at Wave 3, currently in school, self-esteem at Wave 3; relationship characteristics: relationship status, relationship type, children present in household, sexual insistence in relationship; previous sexual experiences: age at first sexual experience, perceptions of maternal attitudes towards adolescent sex, ever engaged in oral sex, childhood sexual abuse, coerced or forced sex before age 18.

Table 10. Multivariate associations between positive youth development and sexual health outcomes, Sample 1 emerging adult males (ages 18-26) in Wave III of the National Longitudinal Study of Adolescent to Adult Health (n=4,974).

<i>Characteristic</i> (Reference category)	Enjoyment of performing oral sex with partner (Dislike or neither like/dislike performing oral sex)				Enjoyment of receiving oral sex from partner (Dislike or neither like/dislike receiving oral sex)			
	Like performing oral sex		Never performed oral sex with partner		Like receiving oral sex		Never received oral sex from partner	
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)
Positive Youth Development Factor Scores								
Confidence	1.09	(0.88, 1.34)	0.93	(0.76, 1.14)	0.99	(0.69, 1.42)	0.90	(0.61, 1.31)
Autonomy	1.08	(0.93, 1.26)	1.02	(0.84, 1.24)	1.24	(0.92, 1.66)	1.16	(0.87, 1.55)
Parental bonds	1.16	(0.97, 1.39)	1.15	(0.91, 1.46)	1.19	(0.89, 1.60)	1.04	(0.76, 1.43)
Community bonds	1.10	(0.90, 1.35)	1.11	(0.87, 1.42)	1.30	(0.91, 1.83)	1.35	(0.94, 1.93)
Race/ethnicity (NH-White)								
Non-Hispanic Black	0.61	(0.36, 1.69)	2.06	(1.20, 3.53)	0.40	(0.20, 0.82)	1.50	(0.26, 3.30)
Hispanic (all races)	1.05	(0.66, 1.04)	1.62	(0.90, 2.90)	0.42	(0.20, 0.89)	0.63	(0.25, 1.55)
Non-Hispanic Asian	1.13	(0.53, 2.39)	0.86	(0.37, 2.00)	1.56	(0.40, 3.92)	1.76	(0.42, 2.42)
Non-Hispanic Other-race	1.51	(0.57, 3.98)	1.72	(0.58, 5.20)	1.29	(0.07, 1.92)	0.63	(0.15, 2.73)
Parental education attainment (College graduate or more)								
Less than high school	1.15	(0.57, 2.32)	1.56	(0.71, 3.46)	0.82	(0.27, 2.50)	1.81	(0.56, 5.88)
High school graduate/GED	0.95	(0.63, 1.44)	0.77	(0.46, 1.17)	0.80	(0.34, 1.89)	0.78	(0.29, 2.12)
Some college	1.04	(0.70, 1.54)	0.81	(0.51, 1.28)	0.62	(0.32, 1.20)	0.50	(0.23, 1.06)
Family of origin structure (Two biological parents)								
One biological parent + one stepparent	0.83	(0.57, 1.20)	0.77	(0.46, 1.30)	0.70	(0.32, 1.51)	0.71	(0.30, 1.69)
Single parent	0.98	(0.61, 1.59)	1.02	(0.57, 1.81)	0.78	(0.33, 1.81)	0.72	(0.29, 1.78)
Other family structure	0.34	(0.11, 1.06)	0.82	(0.30, 2.24)	1.08	(0.34, 3.46)	2.27	(0.71, 4.31)
Urban place of origin	0.89	(0.65, 1.23)	0.68	(0.45, 1.02)	1.32	(0.72, 2.42)	0.82	(0.48, 1.58)
Age in years	1.09	(0.95, 1.08)	1.08	(0.91, 1.27)	0.94	(0.78, 1.14)	0.97	(0.78, 1.21)
Currently in school	0.77	(0.54, 1.08)	0.62	(0.38, 1.02)	0.86	(0.43, 1.71)	0.75	(0.38, 1.49)
Self-esteem in emerging adulthood	0.76	(0.54, 1.84)	0.85	(0.58, 1.23)	1.40	(0.79, 2.50)	1.37	(0.73, 2.56)
Current relationship	1.19	(0.77, 1.00)	0.51	(0.32, 0.79)	2.02	(1.04, 3.92)	1.12	(0.58, 2.19)
Relationship type (Dating/pregnancy)								

Married	0.90	(0.55, 1.45)	0.65	(0.33, 1.26)	1.09	(0.42, 2.78)	1.13	(0.40, 3.14)
Cohabiting	0.98	(0.62, 1.56)	1.78	(0.99, 3.18)	1.61	(0.77, 3.33)	2.75	(1.17, 6.28)
Relationship duration	1.00	(0.99, 1.01)	0.98	(0.98, 1.01)	1.01	(0.99, 1.02)	1.00	(0.99, 1.01)
Children present in household	1.36	(0.85, 2.19)	2.32	(1.35, 3.99)	1.07	(0.52, 2.21)	1.71	(0.84, 3.51)
Sexual insistence in relationship	0.84	(0.44, 1.63)	0.71	(0.35, 1.44)	0.56	(0.27, 1.17)	0.34	(0.15, 0.78)
Age at first sexual experience	0.96	(0.89, 1.03)	0.96	(0.88, 1.04)	1.12	(1.04, 1.20)	1.14	(1.05, 1.24)
Wave I maternal attitudes towards adolescent sex	1.04	(0.96, 1.23)	1.00	(0.91, 1.09)	1.02	(0.91, 1.15)	0.97	(0.85, 1.10)
Ever engaged in oral sex	2.21	(0.87, 5.59)	0.74	(0.25, 2.21)	6.14	(2.09, 8.02)	1.87	(0.55, 4.36)
Childhood sexual abuse	3.27	(0.58, 8.28)	5.69	(0.96, 13.7)	1.52	(0.97, 6.26)	4.03	(0.94, 7.26)
Coerced or forced sex before age 18	4.66	(1.18, 8.46)	5.04	(1.24, 10.5)	0.90	(0.22, 3.67)	1.69	(0.35, 8.20)

RRR=relative risk ratio; CI= confidence interval

*Bolted values are significant at p<0.05 level.

Table 11. Multivariate associations between positive youth development and sexual health outcomes continued, Sample 1 emerging adult males (ages 18-26) in Wave III of the National Longitudinal Study of Adolescent to Adult Health (n=4,974).

<i>Characteristic (Reference category)</i>	Reciprocated love with partner (Neither partner loves each other a lot)						Lifetime unintended pregnancy		Past 12-month STI diagnosis	
	Both partners love each other a lot		Respondent loves partner more		Partner loves respondent more		OR	(95% CI)	OR	(95% CI)
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Positive Youth Development Factor Scores										
Confidence	0.93	(0.76, 1.13)	0.75	(0.56, 1.00)	0.84	(0.63, 1.11)	1.10	(0.91, 1.32)	0.89	(0.64, 1.24)
Autonomy	0.91	(0.79, 1.04)	1.25	(0.87, 1.79)	1.00	(0.82, 1.21)	0.95	(0.78, 1.13)	0.89	(0.66, 1.21)
Parental bonds	1.22	(1.01, 1.47)	1.03	(0.73, 1.47)	1.23	(0.96, 1.57)	1.00	(0.84, 1.18)	1.12	(0.77, 1.62)
Community bonds	1.03	(0.87, 1.22)	1.26	(0.88, 1.81)	1.11	(0.87, 1.43)	1.01	(0.85, 1.20)	1.07	(0.78, 1.47)
Race/ethnicity (NH-White)										
Non-Hispanic Black	0.60	(0.37, 0.99)	0.62	(0.28, 1.36)	0.91	(0.50, 1.65)	1.20	(0.77, 1.87)	2.05	(0.22, 1.91)
Hispanic (all races)	0.92	(0.58, 1.48)	1.09	(0.50, 2.35)	1.17	(0.57, 2.41)	1.01	(0.65, 1.60)	0.64	(0.91, 4.59)
Non-Hispanic Asian	1.32	(0.63, 2.78)	1.09	(0.26, 4.62)	2.44	(0.72, 8.32)	1.04	(0.51, 2.13)	1.00	(0.99, 1.01)
Non-Hispanic Other-race	0.80	(0.37, 1.72)	1.14	(0.27, 4.80)	0.70	(0.13, 3.94)	1.50	(0.60, 3.76)	0.49	(0.07, 3.33)
Parental education attainment (College graduate or more)										
Less than high school	0.73	(0.43, 1.26)	1.18	(0.48, 2.87)	0.81	(0.33, 1.99)	1.16	(0.65, 2.05)	0.40	(0.13, 1.20)
High school graduate/GED	1.20	(0.78, 1.84)	0.98	(0.41, 2.34)	1.05	(0.53, 2.08)	0.94	(0.64, 1.38)	0.29	(0.13, 0.68)
Some college	1.11	(0.74, 1.65)	1.26	(0.58, 2.72)	0.62	(0.35, 1.10)	0.91	(0.60, 1.39)	0.35	(0.17, 0.69)
Family of origin structure (Two biological parents)										
One biological parent + one stepparent	1.02	(0.65, 1.61)	0.61	(0.28, 1.35)	0.76	(0.39, 1.47)	0.78	(0.52, 1.17)	2.06	(0.97, 4.34)
Single parent	1.19	(0.75, 1.86)	0.89	(0.46, 1.74)	1.21	(0.61, 2.38)	1.18	(0.79, 1.75)	2.51	(1.23, 5.14)
Other family structure	0.80	(0.23, 2.84)	0.77	(0.21, 2.86)	1.61	(0.40, 6.52)	1.50	(0.69, 3.25)	1.76	(0.41, 7.62)
Urban place of origin	1.35	(0.98, 1.86)	1.42	(0.81, 2.47)	1.63	(0.96, 2.76)	1.35	(0.98, 1.88)	1.35	(0.76, 2.38)
Age in years	0.96	(0.84, 1.08)	0.93	(0.76, 1.13)	1.04	(0.57, 1.25)	1.02	(0.89, 1.15)	0.93	(0.78, 1.13)
Currently in school	1.47	(1.05, 2.06)	1.43	(0.70, 2.91)	1.36	(0.82, 2.25)	0.98	(0.68, 1.42)	0.93	(0.42, 2.06)
Self-esteem in emerging adulthood	0.70	(0.54, 0.91)	1.19	(0.67, 2.16)	1.09	(0.77, 1.55)	1.42	(1.08, 1.85)	1.71	(1.06, 2.75)
Current relationship	3.91	(2.75, 5.56)	0.42	(0.25, 0.73)	1.84	(1.10, 3.07)	1.99	(1.22, 3.26)	1.43	(0.71, 2.88)

Relationship type <i>(Dating/pregnancy)</i>										
Married	7.89	(6.44, 9.71)	5.44	(2.54, 11.9)	4.15	(1.26, 13.71)	1.65	(0.94, 2.92)	1.32	(0.48, 3.63)
Cohabiting	3.71	(2.26, 6.10)	5.50	(2.40, 11.3)	2.26	(1.15, 4.43)	1.76	(1.13, 2.76)	1.90	(0.81, 4.47)
Relationship duration	1.02	(1.00, 1.04)	1.02	(0.99, 1.04)	1.02	(0.99, 1.04)	1.01	(1.00, 1.01)	1.00	(0.99, 1.02)
Children present in household	0.73	(0.46, 1.16)	0.77	(0.35, 1.70)	0.65	(0.35, 1.19)	3.04	(2.19, 4.22)	1.52	(0.75, 3.09)
Sexual insistence in relationship	1.11	(0.57, 2.18)	1.72	(0.67, 4.41)	2.04	(0.90, 4.60)	1.39	(0.81, 2.38)	2.97	(1.22, 7.23)
Age at first sexual experience	1.07	(1.00, 1.14)	0.96	(0.86, 1.06)	1.02	(0.94, 1.11)	0.90	(0.86, 0.95)	0.98	(0.90, 1.06)
Wave I maternal attitudes towards adolescent sex	1.02	(0.94, 1.10)	1.02	(0.88, 1.17)	1.01	(0.92, 1.12)	1.02	(0.95, 1.10)	1.13	(1.04, 1.23)
Ever engaged in oral sex	1.29	(0.61, 2.72)	0.28	(0.11, 0.71)	1.65	(0.53, 2.79)	2.50	(0.73, 8.56)	0.85	(0.26, 2.77)
Childhood sexual abuse	0.65	(0.25, 1.68)	0.65	(0.13, 3.19)	0.55	(0.11, 2.66)	0.61	(0.23, 1.62)	0.63	(0.14, 2.92)
Coerced or forced sex before age 18	1.34	(0.45, 4.01)	0.67	(0.14, 3.23)	1.22	(0.25, 6.02)	1.76	(0.81, 3.88)	4.21	(1.68, 10.56)

RRR=relative risk ratio; OR= odds ratio; CI= confidence interval

*Bolded values are significant at p<0.05 level.

Table 12. Multivariate associations between positive youth development and sexual health outcomes, Sample 1 emerging adult females (ages 18-26) in Wave III of the National Longitudinal Study of Adolescent to Adult Health (n=5,942).

<i>Characteristic (Reference category)</i>	Enjoyment of performing oral sex with partner (Dislike or neither like/dislike performing oral sex)				Enjoyment of receiving oral sex from partner (Dislike or neither like/dislike receiving oral sex)			
	Like performing oral sex		Never performed oral sex with partner		Like receiving oral sex		Never received oral sex from partner	
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)
Positive Youth Development Factor Scores								
Confidence	1.05	(0.92, 1.19)	1.03	(0.86, 1.24)	1.04	(0.89, 1.22)	1.03	(0.83, 1.29)
Autonomy	0.89	(0.80, 1.01)	0.95	(0.81, 1.10)	1.22	(1.02, 1.45)	1.10	(0.90, 1.34)
Parental bonds	1.05	(0.93, 1.18)	0.87	(0.74, 1.02)	1.26	(1.07, 1.48)	1.04	(0.86, 1.27)
Community bonds	1.03	(0.92, 1.14)	0.99	(0.86, 1.14)	1.10	(0.91, 1.31)	1.21	(1.00, 1.47)
Race/ethnicity (NH-White)								
Non-Hispanic Black	0.88	(0.63, 1.22)	2.95	(1.94, 4.49)	1.01	(0.67, 1.53)	1.80	(1.10, 2.96)
Hispanic (all races)	1.16	(0.75, 1.77)	2.18	(1.40, 3.39)	0.93	(0.51, 1.70)	1.78	(0.91, 3.48)
Non-Hispanic Asian	0.72	(0.38, 1.37)	1.19	(0.53, 2.69)	0.77	(0.35, 1.70)	0.82	(0.28, 2.40)
Non-Hispanic Other-race	0.80	(0.43, 1.47)	1.18	(0.42, 3.29)	0.99	(0.39, 2.51)	2.09	(0.81, 6.12)
Parental education attainment (College graduate or more)								
Less than high school	1.12	(0.69, 1.81)	2.14	(1.23, 3.73)	1.06	(0.52, 2.16)	1.98	(0.93, 4.22)
High school graduate/GED	0.88	(0.64, 1.21)	1.75	(1.67, 2.64)	1.35	(0.85, 2.15)	2.12	(1.26, 3.58)
Some college	0.70	(0.50, 0.98)	0.94	(0.62, 1.42)	1.27	(0.81, 1.99)	1.18	(0.67, 2.06)
Family of origin structure (Two biological parents)								
One biological parent + one stepparent	0.73	(0.53, 0.99)	1.04	(0.69, 1.55)	1.11	(0.69, 1.77)	1.27	(0.73, 2.21)
Single parent	1.28	(0.92, 1.76)	1.47	(1.01, 2.15)	1.00	(0.61, 1.62)	1.06	(0.61, 1.85)
Other family structure	0.57	(0.32, 1.02)	0.82	(0.36, 1.89)	1.14	(0.44, 2.97)	0.98	(0.31, 3.09)
Urban place of origin	0.81	(0.63, 1.03)	0.70	(0.52, 0.96)	0.68	(0.49, 0.93)	0.74	(0.51, 1.09)
Age in years	1.10	(1.01, 1.22)	0.92	(0.81, 1.03)	1.23	(1.00, 1.28)	1.01	(0.86, 1.18)
Currently in school	0.91	(0.71, 1.17)	0.72	(0.52, 1.01)	0.64	(0.45, 0.92)	0.44	(0.29, 0.67)
Self-esteem in emerging adulthood	0.81	(0.65, 0.99)	0.66	(0.51, 0.86)	0.55	(0.40, 0.75)	0.47	(0.33, 0.66)
Current relationship	2.04	(1.39, 3.01)	0.61	(0.42, 0.90)	2.03	(1.30, 3.14)	1.03	(0.64, 1.66)
Relationship type (Dating/pregnancy)								
Married	0.90	(0.62, 1.32)	0.95	(0.55, 1.63)	0.69	(0.44, 1.52)	0.97	(1.22, 1.74)

Cohabiting	1.18	(0.89, 1.57)	1.82	(0.98, 0.99)	0.99	(0.64, 1.09)	1.95	(0.54, 3.12)
Relationship duration	1.00	(0.99, 1.01)	0.98	(0.97, 0.99)	0.99	(0.99, 1.00)	0.98	(0.97, 0.99)
Children present in household	0.73	(0.55, 0.96)	1.29	(0.96, 1.73)	0.59	(0.41, 0.84)	0.71	(0.45, 1.10)
Sexual insistence in relationship	0.60	(0.43, 0.83)	0.25	(0.16, 0.41)	0.64	(0.39, 1.06)	0.27	(0.13, 0.54)
Age at first sexual experience	0.99	(0.93, 1.06)	1.04	(0.96, 1.12)	0.89	(0.83, 0.96)	0.89	(0.82, 0.97)
Wave I maternal attitudes towards adolescent sex	1.04	(0.97, 1.11)	1.03	(0.96, 1.11)	1.01	(0.94, 1.08)	1.03	(0.95, 1.12)
Ever engaged in oral sex	1.76	(1.06, 2.93)	0.26	(0.16, 0.43)	2.23	(1.31, 3.79)	0.48	(0.27, 0.83)
Childhood sexual abuse	1.56	(0.99, 2.46)	1.25	(0.67, 2.31)	2.04	(0.91, 4.57)	2.06	(0.84, 5.04)
Coerced or forced sex before age 18	1.11	(0.76, 1.61)	0.97	(0.65, 1.46)	1.05	(0.62, 1.76)	1.05	(0.58, 1.91)

RRR=relative risk ratio; CI= confidence interval

*Bolded values are significant at p<0.05 level.

Table 13. Multivariate associations between positive youth development and sexual health outcomes, Sample 1 emerging adult females (ages 18-26) in Wave III of the National Longitudinal Study of Adolescent to Adult Health (n=5,942).

<i>Characteristic (Reference category)</i>	Reciprocated love with partner (Neither partner loves each other a lot)						Lifetime unintended pregnancy		Past 12-month STI diagnosis	
	Both partners love each other a lot		Respondent loves partner more		Partner loves respondent more		OR	(95% CI)	OR	(95% CI)
	RR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)				
Positive Youth Development Factor Scores										
Confidence	0.82	(0.70, 0.96)	0.83	(0.67, 1.03)	0.87	(0.65, 1.16)	1.00	(0.89, 1.14)	0.93	(0.79, 1.08)
Autonomy	0.91	(0.76, 1.08)	0.98	(0.79, 1.21)	0.93	(0.71, 1.20)	1.14	(1.00, 1.29)	0.97	(0.85, 1.11)
Parental bonds	1.26	(1.08, 1.46)	1.03	(0.83, 1.27)	1.02	(0.82, 1.29)	0.89	(0.79, 0.99)	0.98	(0.83, 1.16)
Community bonds	1.15	(0.99, 1.33)	1.07	(0.86, 1.33)	1.08	(0.84, 1.38)	0.99	(0.89, 1.10)	0.87	(0.73, 1.03)
Race/ethnicity (NH-White)										
Non-Hispanic Black	1.23	(0.58, 1.52)	0.97	(0.47, 1.99)	0.84	(0.50, 3.25)	1.36	(0.89, 2.06)	3.66	(1.09, 2.75)
Hispanic (all races)	0.94	(0.73, 1.73)	1.61	(0.89, 2.94)	1.27	(0.37, 1.93)	1.82	(1.29, 2.57)	1.73	(2.58, 5.21)
Non-Hispanic Asian	1.11	(0.49, 2.50)	0.63	(0.17, 2.31)	1.27	(0.45, 3.56)	1.39	(0.78, 2.48)	0.94	(0.29, 3.08)
Non-Hispanic Other-race	0.95	(0.32, 2.79)	0.36	(0.06, 2.10)	0.76	(0.12, 4.62)	1.45	(0.65, 3.22)	2.30	(0.99, 5.30)
Parental education attainment (College graduate or more)										
Less than high school	0.49	(0.29, 0.83)	0.95	(0.41, 2.20)	0.58	(0.20, 1.70)	0.88	(0.58, 1.33)	0.40	(0.27, 0.84)
High school graduate/GED	0.86	(0.58, 1.27)	1.15	(0.67, 1.97)	0.81	(0.42, 1.59)	1.02	(0.73, 1.42)	0.62	(0.41, 0.96)
Some college	0.82	(0.56, 1.19)	0.82	(0.44, 1.53)	1.61	(0.91, 2.84)	1.17	(0.85, 1.59)	0.90	(0.61, 1.32)
Family of origin structure (Two biological parents)										
One biological parent + one stepparent	1.20	(0.79, 1.82)	0.92	(0.49, 1.72)	0.78	(0.38, 1.63)	1.13	(0.83, 1.53)	1.06	(0.74, 1.52)
Single parent	1.22	(0.84, 1.77)	1.25	(0.65, 2.41)	1.58	(0.76, 3.30)	1.40	(1.02, 1.92)	1.28	(0.79, 2.09)
Other family structure	1.31	(0.49, 3.50)	1.48	(0.44, 5.03)	1.92	(0.49, 7.48)	2.47	(1.45, 4.20)	1.70	(0.78, 3.69)
Urban place of origin	0.78	(0.56, 1.08)	1.04	(0.65, 1.67)	0.73	(0.42, 1.28)	1.11	(0.87, 1.53)	1.23	(0.88, 1.73)
Age in years	0.99	(0.88, 1.12)	0.81	(0.67, 0.98)	1.04	(0.86, 1.26)	1.00	(0.91, 1.11)	0.89	(0.79, 1.01)
Currently in school	1.10	(0.81, 1.51)	1.26	(0.73, 2.18)	1.06	(0.64, 1.76)	0.71	(0.54, 0.94)	0.71	(0.49, 1.04)
Self-esteem in emerging adulthood	0.68	(0.51, 0.90)	1.27	(0.85, 1.90)	0.65	(0.42, 1.00)	1.31	(1.04, 1.66)	1.00	(0.76, 1.33)
Current relationship	4.60	(3.25, 6.52)	0.91	(0.57, 1.45)	1.45	(0.84, 2.52)	1.11	(0.87, 1.43)	1.20	(0.81, 1.77)
Relationship type (Dating/pregnancy)										

Married	5.30	(2.61, 10.8)	1.22	(0.49, 3.04)	1.61	(0.98, 3.14)	1.14	(0.78, 1.69)	1.09	(0.66, 1.80)
Cohabiting	4.08	(2.75, 6.05)	1.86	(1.06, 3.27)	1.75	(0.60, 4.31)	2.05	(1.51, 2.79)	1.46	(1.05, 2.02)
Relationship duration	1.03	(1.02, 1.04)	1.05	(1.03, 1.06)	1.03	(1.01, 1.05)	1.00	(0.99, 1.00)	0.99	(0.98, 0.99)
Children present in household	0.77	(0.54, 1.11)	1.18	(0.72, 1.95)	0.99	(0.58, 1.71)	7.73	(5.93, 10.1)	0.81	(0.57, 1.17)
Sexual insistance in relationship	0.65	(0.38, 1.13)	1.28	(0.65, 2.51)	2.33	(1.16, 4.66)	1.33	(0.84, 2.12)	1.95	(1.26, 3.01)
Age at first sexual experience	1.04	(0.96, 1.12)	1.19	(0.72, 1.95)	1.06	(0.93, 1.21)	0.88	(0.83, 0.94)	0.84	(0.77, 0.91)
Wave I maternal attitudes towards adolescent sex	0.99	(0.92, 1.06)	1.00	(0.91, 1.10)	1.04	(0.92, 1.17)	1.01	(0.96, 1.07)	1.07	(0.98, 1.15)
Ever engaged in oral sex	1.16	(0.75, 1.79)	1.27	(0.63, 2.57)	1.12	(0.52, 2.39)	1.15	(0.78, 1.69)	1.40	(0.88, 2.24)
Childhood sexual abuse	0.76	(0.42, 1.37)	1.50	(0.72, 3.15)	0.94	(0.30, 2.95)	0.74	(0.45, 1.21)	1.40	(0.84, 2.32)
Coerced or forced sex before age 18	0.74	(0.46, 1.19)	1.98	(1.05, 3.73)	1.16	(0.54, 2.47)	0.99	(0.68, 1.44)	1.16	(0.80, 1.70)

RRR=relative risk ratio; OR= odds ratio; CI= confidence interval

*Boded values are significant at p<0.05 level.

Table 14. Demographic, relationship, and behavioral characteristics, by biological sex, Sample 2: The National Longitudinal Study of Adolescent to Adult Health, Wave III (n=3,253).

<i>Characteristic</i>	Male (n=1,347)		Female (n=1,906)		p-value*
	%	(n)	%	(n)	
<i>Sexual Health Outcomes</i>					
Enjoyment of performing oral sex					
Like very much/somewhat	71.6	(966)	60.9	(1,129)	p <.001
Dislike/Neither like nor dislike	10.0	(129)	21.9	(425)	
Never experienced with partner	18.4	(252)	17.2	(352)	
Enjoyment of receiving oral sex					
Like very much/somewhat	83.6	(1,479)	78.7	(1,479)	p <.001
Dislike/Neither like nor dislike	1.7	(27)	7.0	(152)	
Never experienced with partner	14.7	(216)	14.3	(275)	
Reciprocated love for partner					
Both partners love each other a lot	81.9	(1,089)	84.4	(1,614)	p <.001
Respondent loves the partner more	3.2	(49)	4.8	(95)	
Partner loves respondent more	7.1	(93)	2.7	(53)	
Neither partner loves each other a lot	7.8	(116)	8.1	(144)	
Unintended pregnancy					
Yes	20.7	(284)	30.8	(614)	p <.001
No	79.3	(1,063)	69.2	(1,292)	
Past 12-month STI					
Yes	3.7	(51)	9.6	(181)	p <.001
No	96.3	(1,296)	90.4	(1,725)	
Orgasm Frequency					
Most of the time/every time	85.9	(1,129)	48.6	(929)	p <.001
Half to more than half the time	10.6	(164)	36.4	(672)	
Less than half the time	3.4	(54)	15.1	(305)	
Relationship Quality (Mean (SD))^a	4.76	(0.93)	4.88	(0.83)	p=.013
<i>Positive Youth Development Indicators^b</i>					
Confidence factor score (Mean (SD))	.012	(0.98)	-.098	(1.06)	p=.099
Autonomy factor score (Mean (SD))	.040	(0.93)	.009	(0.99)	p=.407
Parental bonds factor score (Mean (SD))	.094	(0.92)	-.091	(1.06)	p <.001
Community bonds factor score (Mean (SD))	.060	(1.02)	-.003	(1.03)	p=.572

Individual Characteristics**Race/ethnicity**

Non-Hispanic White	70.0 (760)	68.8 (1,071)	p =.062
Non-Hispanic Black	10.8 (210)	14.6 (366)	
Hispanic (all races)	12.1 (241)	10.2 (287)	
Non-Hispanic Asian	3.7 (96)	3.9 (133)	
Non-Hispanic Other-race	3.4 (40)	2.5 (49)	

Parental education attainment

Less than high school	11.2 (174)	11.4 (217)	p =.150
High school graduate/GED	25.8 (313)	30.4 (579)	
Some college	33.2 (449)	29.2 (557)	
College graduate or more	29.7 (411)	29.0 (553)	

Family of origin structure

Two biological parents	55.3 (730)	54.8 (1,002)	p =.701
One biological parent + one stepparent	18.2 (262)	16.7 (346)	
Single parent	22.2 (307)	23.5 (452)	
Other family structure	4.4 (48)	5.0 (106)	

Urbanicity

Urban	54.4 (733)	50.4 (961)	p =.074
Rural	45.6 (614)	49.6 (945)	

Age in years (Mean (SD))^c

	22.3 (1.68)	22.0 (1.75)	p <.001
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Currently in school

Yes	29.1 (407)	35.4 (703)	p =0.10
No	70.9 (940)	64.6 (1,203)	

Self-esteem in emerging adulthood (Mean (SD))^d

	1.70 (0.56)	1.82 (0.56)	p <.001
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Relationship Characteristics**Relationship type**

Married	24.5 (347)	28.1 (539)	p =.160
Cohabiting	33.7 (445)	33.6 (637)	
Dating	41.9 (555)	38.3 (730)	

Relationship duration in years (Mean (SD))^e

	2.6 (2.06)	2.9 (2.28)	p <.001
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Children present in household

Yes	31.9 (419)	40.1 (789)	p <.001
No	68.1 (928)	59.9 (1,117)	

Sexual insistence in relationship

Yes	3.7 (50)	14.0 (189)	p <.001
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No	96.3 (1,297)	86.0 (1,158)	
Previous Sexual Experiences			
Age at first sexual experience (Mean (SD))^f	16.0 (2.68)	16.0 (2.35)	p=.804
Wave I maternal attitudes towards adolescent sex (Mean (SD))^g	6.89 (3.09)	5.52 (2.85)	p <.001
Ever engaged in oral sex			
Yes	95.0 (67)	89.3 (144)	p <.001
No	5.0 (1,280)	10.7 (1,203)	

Percentages and means are weights to reflect Add Health sample design (Ns are unweighted). Column percentages may not add to 100% owing to rounding and weighting.

* p-values indicate Pearson chi²-test [categorical variables] or 2 sample t-test [continuous variables] of significant differences in study characteristics and outcomes by biological sex.

^a Relationship quality range: 1 – 5.5 units

^b Confidence factor score range: -5.39 – 2.69 units. Autonomy factor score range: -3.17 – 1.01 units. Parental factor score range: -5.56 – 0.86 units. Community factor score range: -3.73 – 1.96 units.

^c Age range at Wave 3: 18 - 26 years-old

^d Self-esteem at Wave 3 range: 1 - 5 units

^e Relationship duration: .33 – 12.4 years

^f Age at first sex range: 0 – 26 years-old

^g Maternal attitudes toward sexual activity range: 1 - 15 units

Table 15. Bivariate associations between positive youth development and sexual health outcomes, males in Sample 2: The National Longitudinal Study of Adolescent to Adult Health, Wave III (n=1,347).

<i>Characteristic</i> (Reference category)	Enjoyment of performing oral sex with partner (Dislike or neither like/dislike performing oral sex)				Enjoyment of receiving oral sex from partner (Dislike or neither like/dislike receiving oral sex)					
	Like performing oral sex		Never performed oral sex with partner		Like receiving oral sex		Never received oral sex from partner			
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)		
Positive Youth Development Factor Scores										
Confidence	1.01	(0.73, 1.40)	1.01	(0.77, 1.59)	0.51	(0.20, 1.31)	0.59	(0.22, 1.57)		
Autonomy	1.19	(0.91, 1.54)	1.03	(0.75, 1.42)	1.15	(0.68, 1.95)	0.89	(0.52, 1.51)		
Parental bonds	1.09	(0.83, 1.43)	1.20	(0.85, 1.69)	1.73	(1.03, 2.91)	1.77	(1.03, 3.07)		
Community bonds	1.26	(0.96, 1.65)	0.95	(0.67, 1.35)	1.57	(0.66, 3.71)	1.57	(0.64, 3.83)		
<i>Characteristic</i> (Reference category)	Reciprocated love with partner (Neither partner loves each other a lot)						Lifetime unintended pregnancy		Past 12-month STI diagnosis	
	Both partners love each other a lot		Respondent loves partner more		Partner loves respondent more					
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Positive Youth Development Factor Scores										
Confidence	1.08	(0.77, 1.52)	0.75	(0.42, 1.33)	0.91	(0.60, 1.38)	0.95	(0.78, 1.67)	1.14	(0.67, 1.93)
Autonomy	0.94	(0.68, 1.30)	0.81	(0.47, 1.38)	0.98	(0.65, 1.47)	1.07	(0.86, 1.33)	0.94	(0.62, 1.42)
Parental bonds	1.01	(0.74, 1.38)	0.93	(0.51, 1.69)	1.15	(0.75, 1.74)	0.98	(0.80, 1.19)	0.81	(0.54, 1.21)
Community bonds	1.22	(0.91, 1.63)	2.04	(0.97, 4.29)	1.22	(0.83, 1.81)	0.98	(0.81, 1.18)	0.74	(0.46, 1.19)
<i>Characteristic</i> (Reference category)	Orgasm Frequency (Half to more than half the time)				Relationship Quality					
	Most of the time/Every time		Less than half the time							
	RRR	(95% CI)	RRR	(95% CI)	β		(95% CI)			
Positive Youth Development Factor Scores										
Confidence	1.04	(0.83, 1.30)	1.33	(0.81, 2.18)	0.01		(-0.07, 0.08)			
Autonomy	1.05	(0.83, 1.32)	1.36	(0.81, 2.30)	-0.02		(-0.09, 0.05)			
Parental bonds	0.97	(0.74, 1.29)	1.05	(0.67, 1.55)	0.05		(-0.05, 0.15)			
Community bonds	1.08	(0.86, 1.35)	1.07	(0.54, 2.11)	0.10		(0.02, 0.17)			

RRR=relative risk ratio; OR= odds ratio; β= beta coefficient; CI= confidence interval

*Bolded values are significant at p<0.05 level.

Table 16. Bivariate associations between positive youth development and sexual health outcomes, females in Sample 2: The National Longitudinal Study of Adolescent to Adult Health, Wave III (n=1,906).

<i>Characteristic</i> (Reference category)	Enjoyment of performing oral sex with partner (Dislike or neither like/dislike performing oral sex)				Enjoyment of receiving oral sex from partner (Dislike or neither like/dislike receiving oral sex)					
	Like performing oral sex		Never performed oral sex with partner		Like receiving oral sex		Never received oral sex from partner			
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)		
Positive Youth Development Factor Scores										
Confidence	1.01	(0.86, 1.17)	1.02	(0.81, 1.28)	1.07	(0.83, 1.37)	1.03	(0.74, 1.42)		
Autonomy	1.04	(0.90, 1.20)	0.97	(0.81, 1.17)	1.24	(0.97, 1.57)	1.00	(0.77, 1.30)		
Parental bonds	1.00	(0.89, 1.14)	0.90	(0.75, 1.09)	1.28	(1.01, 1.64)	1.25	(0.92, 1.69)		
Community bonds	1.10	(0.96, 1.27)	1.05	(0.86, 1.29)	0.90	(0.71, 1.15)	0.91	(0.71, 1.16)		
<i>Characteristic</i> (Reference category)	Reciprocated love with partner (Neither partner loves each other a lot)						Lifetime unintended pregnancy		Past 12-month STI diagnosis	
	Both partners love each other a lot		Respondent loves partner more		Partner loves respondent more		OR	(95% CI)	OR	(95% CI)
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)				
Positive Youth Development Factor Scores										
Confidence	0.94	(0.74, 1.20)	0.89	(0.63, 1.25)	0.91	(0.54, 1.53)	0.97	(0.82, 1.14)	0.90	(0.73, 1.11)
Autonomy	0.99	(0.76, 1.28)	1.00	(0.69, 1.45)	1.22	(0.73, 2.05)	1.20	(0.99, 1.46)	1.22	(0.94, 1.57)
Parental bonds	1.17	(1.00, 1.37)	1.02	(0.78, 1.35)	1.01	(0.69, 1.47)	0.85	(0.74, 0.98)	0.96	(0.81, 1.14)
Community bonds	1.16	(1.02, 1.38)	1.06	(0.79, 1.42)	0.94	(0.65, 1.35)	0.90	(0.78, 1.04)	0.86	(0.70, 1.05)
<i>Characteristic</i> (Reference category)	Orgasm Frequency (Half to more than half the time)				Relationship Quality					
	Most of the time/Every time		Less than half the time		β		(95% CI)			
	RRR	(95% CI)	RRR	(95% CI)						
Positive Youth Development Factor Scores										
Confidence	1.00	(0.82, 1.21)	1.10	(0.95, 1.26)	-0.02	(-0.06, 0.02)				
Autonomy	0.74	(0.62, 0.89)	0.96	(0.82, 1.14)	-0.02	(-0.07, 0.04)				
Parental bonds	0.99	(0.82, 1.19)	0.93	(0.80, 1.07)	0.07	(0.02, 0.12)				
Community bonds	0.92	(0.75, 1.12)	1.01	(0.88, 1.16)	0.05	(0.01, 0.10)				

RRR=relative risk ratio; OR= odds ratio; β = beta coefficient; CI= confidence interval

*Bolded values are significant at p<0.05 level.

Table 17. Summary of statistically significant results from multinomial and logistic regressions modeling multivariate associations between positive youth development and sexual health outcomes, males in Sample 2 (n=1,347).

PYD Factor Score	Enjoyment of performing oral sex (RRR) ^a	Enjoyment of receiving oral sex (RRR) ^b	Reciprocated love (RRR) ^c	Unintended pregnancy (OR)	Past 12-month STI (OR)	Orgasm Frequency	Relationship Quality
Confidence							
Autonomy							
Parental bonds			↑ Both partners love each other a lot				
Community bonds			↑ Respondent loves partner more				↑ Relationship Quality

^a Reference category is dislike or neither like/dislike performing oral sex.

^b Reference category is dislike or neither like/dislike receiving oral sex.

^c Reference category is neither partner loves each other a lot.

Blank spaces represent non-significant associations. Downward arrows indicate lower odds (or relative risk) for every one-unit increase in the factor score; upward arrows indicate greater odds (or relative risk) for every one-unit increase in the factor score.

Models control for individual characteristics: race, highest parental education attainment, family of origin structure, urbanicity age at Wave 3, currently in school, self-esteem at Wave 3; relationship characteristics: relationship type, children present in household, sexual insistence in relationship; previous sexual experiences: age at first sexual experience, perceptions of maternal attitudes towards adolescent sex, ever engaged in oral sex.

Table 18. Summary of statistically significant results from multinomial and logistic regressions modeling multivariate associations between positive youth development and sexual health outcomes, females in Sample 2 (n=1,906).

PYD Factor Score	Enjoyment of performing oral sex (RRR) ^a	Enjoyment of receiving oral sex (RRR) ^b	Reciprocated love (RRR) ^c	Unintended pregnancy (OR)	Past 12-month STI (OR)	Orgasm Frequency	Relationship Quality
Confidence							
Autonomy							
Parental bonds		↑ Like receiving oral sex from partner ↑ Never received oral sex from partner	↑ Both partners love each other a lot	↓ Unintended pregnancy			
Community bonds			↑ Both partners love each other a lot				↑ Relationship Quality

^a Reference category is dislike or neither like/dislike performing oral sex.

^b Reference category is dislike or neither like/dislike receiving oral sex.

^c Reference category is neither partner loves each other a lot.

Blank spaces represent non-significant associations. Downward arrows indicate lower odds (or relative risk) for every one-unit increase in the factor score; upward arrows indicate greater odds (or relative risk) for every one-unit increase in the factor score.

Models control for individual characteristics: race, highest parental education attainment, family of origin structure, urbanicity age at Wave 3, currently in school, self-esteem at Wave 3; relationship characteristics: relationship type, children present in household, sexual insistence in relationship; previous sexual experiences: age at first sexual experience, perceptions of maternal attitudes towards adolescent sex, ever engaged in oral sex.

Table 19. Multivariate associations between positive youth development and sexual health outcomes, Sample 2 emerging adult males (ages 18-26) in Wave III of the National Longitudinal Study of Adolescent to Adult Health (n=1,347).

<i>Characteristic (Reference category)</i>	Enjoyment of performing oral sex with partner (Dislike or neither like/dislike performing oral sex)				Enjoyment of receiving oral sex from partner (Dislike or neither like/dislike receiving oral sex)			
	Like performing oral sex		Never performed oral sex with partner		Like receiving oral sex		Never received oral sex from partner	
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)
Positive Youth Development Factor Scores								
Confidence	1.15	(0.84, 1.58)	1.27	(0.90, 1.79)	0.46	(0.19, 1.10)	0.55	(0.23, 1.32)
Autonomy	1.11	(0.80, 1.53)	1.20	(0.79, 1.83)	0.73	(0.34, 1.59)	0.63	(0.29, 1.37)
Parental bonds	1.30	(0.91, 1.87)	1.54	(0.98, 2.42)	1.93	(0.17, 2.23)	1.06	(0.21, 2.56)
Community bonds	1.29	(0.93, 1.79)	0.96	(0.60, 1.52)	1.69	(0.71, 3.98)	1.70	(0.69, 4.20)
Race/ethnicity (NH-White)								
Non-Hispanic Black	1.04	(0.36, 3.00)	2.17	(1.56, 4.75)	0.03	(0.003, 0.23)	0.10	(0.01, 0.94)
Hispanic (all races)	1.03	(0.46, 2.31)	1.39	(0.51, 3.75)	0.02	(0.001, 0.94)	0.03	(0.001, 0.71)
Non-Hispanic Asian	1.99	(0.68, 5.82)	1.37	(0.38, 4.92)	0.01	(0.001, 0.10)	0.01	(0.001, 0.10)
Non-Hispanic Other-race	1.18	(0.27, 5.17)	1.11	(0.15, 3.41)	0.02	(0.003, 0.36)	0.02	(0.001, 0.36)
Parental education attainment (College graduate or more)								
Less than high school	0.92	(0.31, 2.77)	2.30	(0.79, 6.66)	1.68	(0.31, 3.33)	--	--
High school graduate/GED	1.02	(0.50, 2.09)	0.73	(0.27, 1.95)	2.63	(0.21, 3.32)	2.96	(0.22, 4.94)
Some college	1.93	(0.97, 3.81)	1.46	(0.63, 3.41)	0.37	(0.56, 2.35)	0.52	(0.07, 3.79)
Family of origin structure (Two biological parents)								
One biological parent + one stepparent	1.46	(0.72, 2.98)	1.61	(0.69, 3.80)	0.12	(0.02, 0.71)	0.11	(0.02, 0.63)
Single parent	1.10	(0.57, 2.10)	0.81	(0.36, 1.80)	0.04	(0.001, 0.41)	0.02	(0.001, 0.22)
Other family structure	0.55	(0.09, 3.29)	0.24	(0.01, 2.00)	--	--	--	--
Urban place of origin	0.59	(0.32, 1.10)	0.54	(0.26, 1.13)	0.34	(0.03, 4.17)	0.35	(0.03, 4.29)
Age in years	1.03	(0.85, 1.24)	0.96	(0.73, 1.26)	0.69	(0.39, 1.23)	0.74	(0.40, 1.34)
Currently in school	0.62	(0.35, 1.10)	0.39	(0.17, 0.88)	1.46	(0.15, 2.43)	0.59	(0.05, 6.65)
Self-esteem in emerging adulthood	0.85	(0.49, 1.47)	1.40	(0.74, 2.62)	1.11	(0.34, 3.62)	1.57	(0.42, 5.85)
Relationship type (Dating/pregnancy)								
Married	1.06	(0.48, 2.31)	0.91	(0.34, 2.40)	2.52	(1.85, 4.34)	1.69	(0.28, 2.56)
Cohabiting	1.06	(0.47, 2.40)	2.24	(0.85, 5.90)	1.81	(0.85, 4.77)	1.90	(0.21, 5.22)

Relationship duration	1.00	(0.99, 1.01)	1.00	(0.98, 1.02)	1.08	(1.02, 1.14)	1.06	(0.99, 1.12)
Children present in household	0.90	(0.48, 1.70)	1.68	(0.65, 4.40)	0.35	(0.05, 2.22)	0.74	(0.11, 5.04)
Sexual insistence in relationship	0.90	(0.30, 2.69)	1.00	(0.26, 3.84)	0.63	(0.07, 5.35)	0.61	(0.07, 5.13)
Age at first sexual experience	0.96	(0.93, 1.27)	0.95	(0.82, 1.09)	0.90	(0.73, 1.11)	0.90	(0.72, 1.14)
Wave I maternal attitudes towards adolescent sex	1.09	(0.93, 1.28)	1.07	(0.90, 1.28)	1.69	(0.94, 3.04)	1.50	(0.83, 2.70)
Ever engaged in oral sex	2.26	(0.70, 7.28)	0.80	(0.20, 2.26)	0.77	(0.12, 2.77)	0.13	(0.02, 6.41)

RRR=relative risk ratio; CI= confidence interval

*Boded values are significant at p<0.05 level.

-- Cell sizes too small to report point estimates.

Small cell sizes exist among for Non-Hispanic Asian, Non-Hispanic other-race, and single parent family of origin structure variables.

Table 20. Multivariate associations between positive youth development and sexual health outcomes continued, Sample 2 emerging adult males (ages 18-26) in Wave III of the National Longitudinal Study of Adolescent to Adult Health (n=1,347).

<i>Characteristic (Reference category)</i>	Reciprocated love with partner (Neither partner loves each other a lot)						Lifetime unintended pregnancy		Past 12-month STI diagnosis	
	Both partners love each other a lot		Respondent loves partner more		Partner loves respondent more		OR	(95% CI)	OR	(95% CI)
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)				
Positive Youth Development Factor Scores										
Confidence	1.02	(0.76, 1.38)	0.60	(0.34, 1.06)	0.91	(0.62, 1.35)	0.96	(0.71, 1.31)	1.09	(0.73, 1.60)
Autonomy	0.81	(0.54, 1.24)	1.06	(0.51, 2.19)	0.75	(0.47, 1.20)	1.26	(0.94, 1.69)	0.86	(0.47, 1.56)
Parental bonds	1.23	(1.09, 1.37)	1.12	(0.61, 2.04)	1.26	(0.85, 1.89)	1.12	(0.81, 1.56)	0.66	(0.36, 1.21)
Community bonds	1.19	(0.88, 1.59)	2.72	(1.43, 5.16)	1.20	(0.78, 1.84)	0.98	(0.76, 1.26)	0.75	(0.43, 1.29)
Race/ethnicity (NH-White)										
Non-Hispanic Black	1.04	(0.38, 2.81)	1.94	(0.22, 3.70)	0.65	(0.24, 1.77)	1.04	(0.47, 2.29)	4.14	(1.03, 8.61)
Hispanic (all races)	0.49	(0.22, 1.08)	0.89	(0.34, 2.12)	1.14	(0.27, 4.86)	1.67	(0.82, 3.38)	0.73	(0.15, 3.65)
Non-Hispanic Asian	4.29	(0.53, 7.95)	1.83	(0.88, 3.79)	2.64	(0.69, 4.34)	1.56	(0.58, 4.16)	--	--
Non-Hispanic Other-race	0.15	(0.05, 0.44)	0.17	(0.12, 2.17)	0.06	(0.01, 0.73)	1.24	(0.28, 5.42)	0.08	(0.001, 2.00)
Parental education attainment (College graduate or more)										
Less than high school	0.55	(0.19, 1.60)	1.30	(0.20, 3.24)	1.05	(0.30, 3.64)	1.34	(0.54, 3.34)	0.01	(0.001, 0.08)
High school graduate/GED	0.46	(0.21, 1.03)	0.57	(0.11, 3.01)	0.57	(0.20, 1.63)	1.04	(0.52, 2.08)	0.47	(0.13, 1.67)
Some college	0.88	(0.38, 2.07)	0.71	(0.12, 4.35)	0.82	(0.30, 2.21)	1.34	(0.69, 2.60)	0.29	(0.09, 0.96)
Family of origin structure (Two biological parents)										
One biological parent + one stepparent	1.05	(0.50, 2.21)	0.52	(0.12, 2.27)	1.10	(0.40, 3.08)	0.79	(0.39, 1.60)	0.91	(0.18, 4.62)
Single parent	1.77	(0.79, 3.96)	3.76	(0.79, 7.83)	1.68	(0.48, 5.85)	1.42	(0.75, 2.68)	1.39	(0.60, 3.27)
Other family structure	--	--	--	--	--	--	1.58	(0.31, 7.92)	--	--
Urban place of origin	0.41	(0.16, 1.00)	0.49	(0.12, 1.95)	0.46	(0.16, 1.29)	0.96	(0.57, 1.60)	3.98	(1.06, 6.49)
Age in years	1.04	(0.85, 1.28)	0.84	(0.58, 1.22)	1.32	(0.99, 1.76)	0.85	(0.68, 1.05)	0.97	(0.62, 1.51)
Currently in school	2.09	(1.04, 4.19)	2.88	(0.83, 4.98)	3.08	(1.04, 7.10)	1.05	(0.62, 1.79)	2.61	(0.92, 7.45)
Self-esteem in emerging adulthood	0.55	(0.35, 0.87)	1.05	(0.36, 3.10)	0.53	(0.26, 1.09)	1.27	(0.80, 2.01)	1.82	(0.72, 4.55)

Relationship type <i>(Dating/pregnancy)</i>										
Married	4.66	(1.18, 8.49)	5.92	(0.84, 10.9)	1.19	(0.19, 3.19)	0.58	(0.33, 1.00)	0.21	(0.05, 0.96)
Cohabiting	0.39	(0.21, 0.74)	0.23	(0.06, 0.81)	0.70	(0.29, 1.67)	0.57	(0.29, 1.10)	0.15	(0.04, 0.55)
Relationship duration	1.03	(0.99, 1.06)	1.04	(1.01, 1.08)	1.01	(0.97, 1.04)	1.00	(0.99, 1.02)	0.99	(0.97, 1.01)
Children present in household	1.35	(0.55, 3.34)	0.57	(0.14, 2.39)	1.47	(0.48, 4.53)	3.57	(1.70, 6.69)	1.43	(0.46, 4.47)
Sexual insistence in relationship	--	--	--	--	--	--	2.30	(1.05, 5.04)	4.05	(2.71, 6.72)
Age at first sexual experience	1.09	(1.01, 1.16)	0.95	(0.83, 1.08)	1.09	(0.94, 1.23)	0.89	(0.82, 0.97)	0.90	(0.75, 1.07)
Wave I maternal attitudes towards adolescent sex	1.12	(1.01, 1.24)	1.09	(0.90, 1.34)	1.11	(0.96, 1.29)	0.99	(0.90, 1.09)	1.06	(0.88, 1.28)
Ever engaged in oral sex	0.38	(0.05, 3.18)	0.19	(0.02, 2.21)	2.63	(0.48, 4.21)	2.16	(0.18, 4.96)	1.21	(0.63, 3.19)

RRR=relative risk ratio; OR= odds ratio; CI= confidence interval

*Bolded values are significant at p<0.05 level.

-- Cell sizes too small to report point estimates.

Small cell sizes exist among for Non-Hispanic Asian, Non-Hispanic other-race, and less than high school parental education variables.

Table 21. Multivariate associations between positive youth development and sexual health outcomes continued, Sample 2 emerging adult males (ages 18-26) in Wave III of the National Longitudinal Study of Adolescent to Adult Health (n=1,347).

<i>Characteristic (Reference category)</i>	Orgasm Frequency <i>(Half to more than half the time)</i>				Relationship Quality	
	<i>Most of the time/Every time</i>		<i>Less than half the time</i>		β	(95% CI)
	RRR	(95% CI)	RRR	(95% CI)		
Positive Youth Development Factor Scores						
Confidence	0.89	(0.61, 1.28)	0.90	(0.54, 1.48)	-0.04	(-0.13, 0.05)
Autonomy	0.86	(0.61, 1.22)	1.40	(0.62, 3.14)	-0.01	(-0.09, 0.07)
Parental bonds	0.86	(0.62, 1.19)	0.91	(0.49, 1.71)	0.08	(-0.02, 0.19)
Community bonds	1.11	(0.78, 1.59)	1.54	(0.71, 3.32)	0.12	(0.04, 0.21)
Race/ethnicity (NH-White)						
Non-Hispanic Black	0.61	(0.23, 1.31)	1.12	(0.32, 4.00)	-0.22	(-0.47, 0.03)
Hispanic (all races)	0.55	(0.20, 1.91)	1.76	(0.28, 4.21)	-0.32	(-0.25, 0.48)
Non-Hispanic Asian	0.52	(0.19, 1.38)	0.02	(0.001, 0.18)	0.08	(-0.16, 0.34)
Non-Hispanic Other-race	1.03	(0.18, 6.08)	0.69	(0.04, 2.22)	-0.05	(-0.47, 0.38)
Parental education attainment (College graduate or more)						
Less than high school	1.04	(0.30, 3.62)	4.81	(0.96, 8.17)	0.11	(-0.25, 0.48)
High school graduate/GED	2.32	(0.92, 5.85)	2.13	(0.49, 4.22)	0.14	(-0.06, 0.34)
Some college	0.75	(0.37, 1.52)	0.61	(0.16, 2.29)	0.14	(-0.06, 0.33)
Family of origin structure (Two biological parents)						
One biological parent + one stepparent	2.77	(0.98, 7.83)	1.83	(0.30, 5.26)	-0.09	(-0.29, 0.11)
Single parent	1.93	(0.87, 4.30)	2.66	(0.57, 5.49)	-0.03	(-0.26, 0.20)
Other family structure	--	--	2.48	(0.31, 4.06)	0.21	(-0.20, 0.62)
Urban place of origin	1.31	(0.70, 2.48)	1.27	(0.39, 4.16)	-0.02	(-0.20, 0.14)
Age in years	0.81	(0.63, 1.04)	0.87	(0.61, 1.23)	-0.11	(-0.16, -0.06)
Currently in school	0.81	(0.36, 1.81)	0.72	(0.21, 2.51)	-0.19	(-0.37, 0.004)
Self-esteem in emerging adulthood	0.99	(0.61, 1.60)	1.66	(0.88, 3.15)	-0.29	(-0.43, -0.15)
Relationship type (Dating/pregnancy)						
Married	2.00	(0.76, 5.27)	1.42	(0.32, 6.36)	-0.37	(-0.57, -0.17)
Cohabiting	0.49	(0.19, 1.23)	0.51	(0.13, 2.04)	0.29	(0.11, 0.47)

Relationship duration	0.99	(0.98, 1.01)	1.01	(0.99, 1.03)	0.01	(-0.01, 0.10)
Children present in household	0.36	(0.17, 0.75)	0.17	(0.05, 0.64)	-0.05	(-0.21, 0.11)
Sexual insistence in relationship	0.41	(0.17, 0.97)	0.19	(0.04, 0.91)	-0.34	(-0.64, -0.04)
Age at first sexual experience	1.01	(0.91, 1.12)	1.12	(0.93, 1.36)	0.04	(0.02, 0.07)
Wave I maternal attitudes towards adolescent sex	1.17	(1.02, 1.34)	1.02	(0.82, 1.26)	0.02	(-0.01, 0.06)
Ever engaged in oral sex	1.07	(0.23, 5.07)	0.55	(0.09, 3.29)	-0.23	(-0.47, 0.01)

RRR=relative risk ratio; OR= odds ratio; CI= confidence interval

*Boded values are significant at p<0.05 level.

-- Cell sizes too small to report point estimates.

Small cell sizes exist among for Non-Hispanic Asian and Non-Hispanic other-race variables.

Table 22. Multivariate associations between positive youth development and sexual health outcomes, Sample 2 emerging adult females (ages 18-26) in Wave III of the National Longitudinal Study of Adolescent to Adult Health (n=1,906).

<i>Characteristic (Reference category)</i>	<i>Enjoyment of performing oral sex with partner (Dislike or neither like/dislike performing oral sex)</i>				<i>Enjoyment of receiving oral sex from partner (Dislike or neither like/dislike receiving oral sex)</i>			
	Like performing oral sex		Never performed oral sex with partner		Like receiving oral sex		Never received oral sex from partner	
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)
Positive Youth Development Factor Scores								
Confidence	0.99	(0.82, 1.21)	0.85	(0.65, 1.13)	1.07	(0.80, 1.42)	0.93	(0.65, 1.33)
Autonomy	0.97	(0.80, 1.16)	1.15	(0.87, 1.51)	1.14	(0.85, 1.54)	0.96	(0.67, 1.37)
Parental bonds	1.03	(0.87, 1.22)	0.85	(0.63, 1.13)	1.38	(1.08, 1.75)	1.35	(1.01, 1.81)
Community bonds	1.11	(0.94, 1.31)	1.06	(0.83, 1.36)	0.83	(0.61, 1.14)	0.80	(0.57, 1.10)
Race/ethnicity (NH-White)								
Non-Hispanic Black	0.66	(0.40, 1.09)	4.26	(2.94, 8.25)	0.66	(0.32, 1.36)	2.87	(1.07, 5.69)
Hispanic (all races)	2.17	(1.20, 3.90)	4.70	(2.14, 8.53)	1.09	(0.52, 2.29)	2.73	(1.10, 6.81)
Non-Hispanic Asian	0.57	(0.22, 1.46)	1.57	(0.51, 4.84)	0.56	(0.15, 2.08)	0.77	(0.17, 3.52)
Non-Hispanic Other-race	0.77	(0.28, 2.10)	2.40	(0.51, 4.30)	0.45	(0.09, 2.24)	1.16	(0.14, 2.70)
Parental education attainment (College graduate or more)								
Less than high school	1.51	(0.73, 3.12)	3.84	(1.57, 9.42)	1.14	(0.33, 3.90)	2.31	(0.61, 4.69)
High school graduate/GED	0.95	(0.53, 1.36)	1.87	(0.88, 3.98)	1.19	(0.58, 2.44)	0.99	(0.39, 2.53)
Some college	0.77	(0.48, 1.25)	1.10	(0.54, 2.26)	1.20	(0.62, 2.35)	0.73	(0.32, 1.64)
Family of origin structure (Two biological parents)								
One biological parent + one stepparent	0.65	(0.38, 1.12)	0.84	(0.37, 1.88)	1.68	(0.68, 4.12)	2.86	(0.89, 4.13)
Single parent	1.30	(0.81, 2.10)	1.69	(0.85, 3.33)	1.21	(0.52, 2.81)	1.49	(0.54, 4.11)
Other family structure	1.01	(0.39, 2.63)	1.76	(0.40, 4.75)	0.91	(0.27, 3.03)	1.32	(0.25, 3.14)
Urban place of origin	0.81	(0.56, 1.17)	0.51	(0.31, 0.83)	0.52	(0.32, 0.85)	0.55	(0.28, 1.08)
Age in years	1.07	(0.93, 1.23)	0.86	(0.72, 1.04)	1.10	(0.91, 1.34)	0.94	(0.73, 1.21)
Currently in school	0.64	(0.43, 0.95)	0.30	(0.18, 0.51)	0.61	(0.33, 1.10)	0.24	(0.12, 0.49)
Self-esteem in emerging adulthood	0.88	(0.64, 1.21)	0.58	(0.35, 0.98)	0.60	(0.34, 1.07)	0.31	(0.16, 0.61)
Relationship type (Dating/pregnancy)								
Married	0.85	(0.51, 1.41)	1.06	(0.50, 2.25)	0.41	(0.19, 0.87)	0.61	(0.23, 1.60)
Cohabiting	1.64	(1.04, 2.57)	4.18	(2.23, 7.85)	0.99	(0.49, 2.02)	2.14	(0.91, 5.07)
Relationship duration	0.99	(0.98, 1.00)	0.99	(0.97, 1.01)	0.99	(0.98, 1.01)	0.98	(0.97, 0.99)

Children present in household	0.70	(0.44, 1.10)	0.98	(0.57, 1.66)	0.79	(0.47, 1.35)	0.74	(0.35, 1.59)
Sexual insistence in relationship	0.43	(0.26, 0.72)	0.06	(0.02, 0.17)	0.64	(0.32, 1.27)	0.06	(0.02, 0.20)
Age at first sexual experience	0.98	(0.90, 1.07)	1.05	(0.92, 1.21)	0.94	(0.83, 1.07)	0.97	(0.82, 1.13)
Wave I maternal attitudes towards adolescent sex	1.06	(0.97, 1.16)	1.08	(0.96, 1.22)	1.01	(0.91, 1.12)	1.04	(0.89, 1.21)
Ever engaged in oral sex	1.39	(0.69, 2.81)	0.25	(0.12, 0.50)	2.07	(0.83, 5.14)	0.44	(0.17, 1.15)

RRR=relative risk ratio; CI= confidence interval

*Boded values are significant at p<0.05 level.

-- Cell sizes too small to report point estimates.

Table 23. Multivariate associations between positive youth development and sexual health outcomes continued, Sample 2 emerging adult females (ages 18-26) in Wave III of the National Longitudinal Study of Adolescent to Adult Health (n=1,906).

<i>Characteristic (Reference category)</i>	Reciprocated love with partner (Neither partner loves each other a lot)						Lifetime unintended pregnancy		Past 12-month STI diagnosis	
	Both partners love each other a lot		Respondent loves partner more		Partner loves respondent more		OR	(95% CI)	OR	(95% CI)
	RRR	(95% CI)	RRR	(95% CI)	RRR	(95% CI)				
Positive Youth Development Factor Scores										
Confidence	0.91	(0.71, 1.18)	0.90	(0.65, 1.24)	0.94	(0.50, 1.77)	1.01	(0.83, 1.23)	0.81	(0.62, 1.04)
Autonomy	0.98	(0.72, 1.35)	1.08	(0.72, 1.62)	1.24	(0.65, 2.36)	1.25	(0.99, 1.53)	1.17	(0.88, 1.55)
Parental bonds	1.21	(1.01, 1.46)	1.09	(0.74, 1.60)	0.98	(0.68, 1.42)	0.88	(0.73, 0.98)	0.96	(0.79, 1.17)
Community bonds	1.32	(1.05, 1.67)	1.31	(0.91, 1.88)	1.06	(0.63, 1.78)	1.02	(0.85, 1.23)	0.95	(0.74, 1.22)
Race/ethnicity (NH-White)										
Non-Hispanic Black	0.78	(0.39, 1.58)	0.95	(0.32, 2.83)	1.16	(0.25, 6.59)	1.53	(0.66, 2.12)	5.40	(2.87, 10.2)
Hispanic (all races)	0.92	(0.42, 2.01)	0.56	(0.13, 2.41)	1.29	(0.32, 4.21)	1.18	(0.89, 2.63)	0.91	(0.32, 2.62)
Non-Hispanic Asian	1.56	(0.32, 3.53)	0.57	(0.07, 4.79)	2.77	(0.31, 4.71)	1.27	(0.45, 3.59)	1.10	(0.49, 3.02)
Non-Hispanic Other-race	--	--	1.08	(0.36, 3.29)	2.56	(0.59, 4.16)	1.86	(0.68, 5.05)	4.28	(1.33, 8.79)
Parental education attainment (College graduate or more)										
Less than high school	0.33	(0.12, 0.90)	0.77	(0.18, 3.38)	0.25	(0.04, 1.78)	0.96	(0.51, 1.80)	0.27	(0.10, 0.72)
High school graduate/GED	0.51	(0.27, 0.96)	0.59	(0.19, 1.82)	0.63	(0.20, 1.99)	1.12	(0.75, 1.68)	1.08	(0.53, 2.20)
Some college	0.46	(0.23, 0.94)	0.55	(0.14, 2.14)	1.32	(0.40, 4.40)	1.45	(0.89, 2.37)	1.17	(0.65, 2.11)
Family of origin structure (Two biological parents)										
One biological parent + one stepparent	1.71	(0.65, 4.51)	0.78	(0.20, 2.94)	1.16	(0.19, 7.04)	1.10	(0.67, 1.81)	1.21	(0.56, 2.64)
Single parent	1.15	(0.57, 2.30)	0.94	(0.31, 2.88)	2.07	(0.55, 7.75)	1.72	(0.99, 2.97)	0.95	(0.49, 1.84)
Other family structure	1.53	(0.16, 3.49)	0.28	(0.01, 5.19)	3.40	(0.30, 6.88)	2.24	(1.27, 4.31)	0.68	(0.11, 4.18)
Urban place of origin	0.62	(0.34, 1.14)	1.23	(0.51, 2.97)	0.59	(0.22, 1.55)	0.98	(0.68, 1.40)	1.06	(0.63, 1.78)
Age in years	0.96	(0.78, 1.17)	0.90	(0.60, 1.35)	1.29	(0.80, 2.08)	1.04	(0.92, 1.17)	1.10	(0.90, 1.34)
Currently in school	0.78	(0.49, 1.25)	1.50	(0.66, 3.41)	0.73	(0.27, 1.96)	0.66	(0.44, 0.97)	0.80	(0.43, 1.46)
Self-esteem in emerging adulthood	0.61	(0.35, 1.08)	1.56	(0.72, 3.35)	0.99	(0.35, 2.78)	1.28	(0.88, 1.85)	0.99	(0.57, 1.72)
Relationship type (Dating/pregnancy)										

Married	1.23	(0.30, 5.01)	0.32	(0.05, 2.01)	1.02	(0.13, 3.98)	0.75	(0.49, 1.14)	0.73	(0.33, 1.59)
Cohabiting	0.19	(0.08, 0.42)	0.18	(0.05, 0.63)	0.56	(0.16, 1.98)	0.63	(0.39, 1.00)	0.70	(0.42, 1.14)
Relationship duration	1.02	(1.01, 1.03)	1.04	(1.02, 1.06)	1.02	(1.01, 1.03)	1.00	(0.99, 1.01)	0.98	(0.97, 0.99)
Children present in household	0.84	(0.47, 1.50)	4.12	(1.64, 10.4)	0.64	(0.21, 1.97)	3.63	(1.94, 5.76)	0.80	(0.46, 1.40)
Sexual insistence in relationship	0.42	(0.17, 1.01)	1.27	(0.35, 4.53)	2.97	(0.79, 5.21)	0.67	(0.34, 1.33)	2.55	(1.22, 5.32)
Age at first sexual experience	0.97	(0.85, 1.12)	1.17	(0.93, 1.46)	0.88	(0.69, 1.13)	0.84	(0.77, 0.92)	0.78	(0.69, 0.89)
Wave I maternal attitudes towards adolescent sex	0.97	(0.87, 1.10)	0.95	(0.78, 1.16)	1.01	(0.81, 1.26)	1.00	(0.93, 1.08)	1.08	(0.96, 1.20)
Ever engaged in oral sex	0.91	(0.40, 2.06)	1.12	(0.35, 3.57)	1.21	(0.26, 5.63)	0.89	(0.46, 1.70)	1.54	(0.71, 3.35)

RRR=relative risk ratio; OR= odds ratio; CI= confidence interval

*Boded values are significant at p<0.05 level.

-- Cell sizes too small to report point estimates.

Table 24. Multivariate associations between positive youth development and sexual health outcomes continued, Sample 2 emerging adult females (ages 18-26) in Wave III of the National Longitudinal Study of Adolescent to Adult Health (n=1,906).

<i>Characteristic</i> (Reference category)	Orgasm Frequency (Half to more than half the time)				Relationship Quality	
	Most of the time/Every time		Less than half the time		β	(95% CI)
	RRR	(95% CI)	RRR	(95% CI)		
Positive Youth Development Factor Scores						
Confidence	1.07	(0.91, 1.25)	0.97	(0.77, 1.23)	-0.02	(-0.07, 0.03)
Autonomy	0.93	(0.79, 1.10)	0.80	(0.63, 1.03)	-0.02	(-0.07, 0.04)
Parental bonds	0.92	(0.78, 1.08)	0.99	(0.79, 1.24)	0.04	(-0.10, 0.10)
Community bonds	1.03	(0.88, 1.20)	0.84	(0.66, 1.07)	0.05	(0.001, 0.10)
Race/ethnicity (NH-White)						
Non-Hispanic Black	0.88	(0.56, 1.57)	1.59	(0.82, 3.10)	-0.28	(-0.43, -0.12)
Hispanic (all races)	0.94	(0.54, 1.43)	0.67	(0.26, 1.71)	-0.22	(-0.41, -0.03)
Non-Hispanic Asian	1.24	(0.58, 2.66)	2.11	(0.88, 5.05)	0.11	(-0.08, 0.30)
Non-Hispanic Other-race	2.16	(0.72, 6.52)	1.02	(0.21, 5.06)	0.03	(-0.29, 0.30)
Parental education attainment (College graduate or more)						
Less than high school	0.96	(0.47, 1.93)	0.72	(0.28, 1.82)	-0.07	(-0.29, 0.14)
High school graduate/GED	0.83	(0.53, 1.30)	0.91	(0.44, 1.86)	0.03	(-0.12, 0.18)
Some college	0.89	(0.58, 1.37)	0.60	(0.32, 1.12)	-0.14	(-0.28, 0.01)
Family of origin structure (Two biological parents)						
One biological parent + one stepparent	0.96	(0.62, 1.50)	1.10	(0.59, 2.03)	0.20	(0.07, 0.34)
Single parent	1.33	(0.89, 2.01)	1.14	(0.61, 2.13)	0.09	(-0.05, 0.22)
Other family structure	1.90	(0.64, 5.59)	0.84	(0.12, 5.89)	-0.03	(-0.37, 0.30)
Urban place of origin	0.78	(0.56, 1.10)	1.10	(0.69, 1.73)	-0.04	(-0.15, 0.07)
Age in years	1.04	(0.93, 1.17)	0.93	(0.77, 1.12)	-0.04	(-0.08, 0.01)
Currently in school	0.96	(0.70, 1.32)	1.14	(0.72, 1.82)	-0.02	(-0.11, 0.07)
Self-esteem in emerging adulthood	0.81	(0.60, 1.08)	1.33	(0.93, 1.91)	-0.25	(-0.35, -0.15)
Relationship type (Dating/pregnancy)						
Married	1.08	(0.68, 1.70)	1.98	(1.06, 3.68)	0.18	(0.04, 0.32)
Cohabiting	0.84	(0.57, 1.24)	1.47	(0.79, 2.72)	-0.34	(-0.48, -0.20)
Relationship duration	0.99	(0.98, 1.02)	0.99	(0.98, 1.01)	0.001	(-0.001, 0.003)
Children present in household	1.02	(0.69, 1.50)	1.13	(0.70, 1.83)	0.03	(-0.08, 0.13)

Sexual insistence in relationship	0.82	(0.46, 1.47)	2.78	(1.34, 5.79)	-0.39	(-0.67, -0.11)
Age at first sexual experience	0.96	(0.89, 1.04)	1.12	(1.01, 1.25)	0.01	(-0.01, 0.04)
Wave I maternal attitudes towards adolescent sex	1.01	(0.93, 1.10)	1.03	(0.92, 1.15)	-0.02	(-0.04, 0.01)
Ever engaged in oral sex	1.10	(0.60, 2.03)	0.89	(0.46, 1.74)	-0.12	(-0.30, 0.06)

RRR=relative risk ratio; OR= odds ratio; CI= confidence interval

*Bolded values are significant at p<0.05 level.

-- Cell sizes too small to report point estimates.

CHAPTER 5: CONCLUSIONS AND IMPLICATIONS FOR PUBLIC HEALTH

Overview of Study

The first purpose of this dissertation was to evaluate and describe elements of healthy youth development as modeled by a general framework of positive youth development (PYD), derived from indicators aligning with the Five Cs model of PYD in a nationally representative sample of U.S. adolescents (Paper 1). The second purpose of this dissertation was to examine the long-term implications of PYD for seven different sexual health outcomes representing holistic physical, emotional, and social aspects of sexual health among emerging adults (Paper 2). Few studies have explored the potential adolescent contributors that might influence the experience of positive sexual health outcomes, in addition to adverse outcomes, in emerging adulthood, a period of increased independence and typically greater social acceptability of sexual exploration. Thus, the overall goal of this dissertation was to contribute to the research base on adolescent healthy development—in all realms—by examining neglected aspects of long-term sexual health. I incorporated two macrosystem theoretical propositions—developmental systems theory and life course theory—to explain how multilevel factors might combine to impact sexual health development over time. Three other inter- and intra-personal level theories—social cognitive theory, attachment theory, and identity formation theory—were used to describe how adolescents’ personal qualities and microlevel opportunities and contexts might influence or undermine development, through observations, attachment, and skill-building practices. This chapter summarizes the results and conclusions of each paper, as well as the future research directions and implications of the entire study for public health practice, including sexual health education.

Paper 1: Key Results and Implications

Positive Youth Development as a Framework to Study Health

In this dissertation, PYD served as an organizing framework for the exploration of select adolescent assets and experiences that could potentially impact future health outcomes, including holistic sexual health. First emerging in the early 1990s, the interdisciplinary PYD approach to research and programming provided a new approach for addressing the growing prevalence of risky and problem behaviors among adolescents in the U.S.⁷⁵ Diverging from research that dominated most of the 20th century, healthy adolescent development was conceptualized as not only an avoidance of risky behaviors, but more importantly, the fostering of positive psychosocial skills and resources, which enable adolescents to successfully adjust to their changing roles and relationships during the transition to adulthood.⁷⁷ Youth-serving programs in community and school settings adopted new strategies: professionals focused less on reducing deficits and problem behaviors among youth, and instead created opportunities for adolescents to develop and enhance their strengths (e.g., self-determination, resiliency, socioemotional functioning) via activities such as mentoring or community volunteer work.

The PYD perspective has roots in developmental systems theory, which represents a macrolevel conceptualization of healthy development as influenced by a number of mutually-interacting factors comprising an individual and their environment.¹²⁸ Thus, PYD experiences seek to promote developmental assets via supportive, empowering programs, opportunities, activities, and/or prosocial adult and peer relationships in family, school, and community settings. These experiences help youth to gain confidence, competence, and connections (characteristics of healthy development), and subsequently the tools needed to enhance their own well-being, prepare for adulthood, and make positive contributions to their families and communities.^{67,85,150,198} The PYD strength-based approach in which programs enhance select

protective factors in different societal domains was often found to be more successful for achieving healthy outcomes, such as reduced drug use and unprotected sex, compared to programs that only address risk factors.^{85,97,116}

With these promising benefits, there is increasing interest among scholars and practitioners on the nature of PYD measurement and the application of a framework to a variety of outcomes in a variety of settings. However, since its introduction nearly three decades ago and billions of dollars in federal funding supporting PYD approaches,^{79,95,199} there have been few consistent—and well-tested—measures or models of PYD to guide this work. More evidence on the measurement and utility of constructs of positive development for different youth populations is important for future research and program implementation and evaluation. Establishment of standardized measures would allow us to identify which developmental assets (e.g., self-confidence, academic achievement) and multilevel settings (e.g., family, classrooms, and churches) define PYD and how these elements impact numerous components of development and health over time. When exploring these associations at a population-level and for longitudinal outcomes, scholars can test the ability of the PYD constructs to predict health and determine if the model continues to be a useful framework for public health practice and policy. Programs in turn, especially those implemented in resource-limited settings, could use validated models of PYD to promote and evaluate positive development among diverse groups of youth participants by indicating the qualities and contexts to focus on to achieve their programmatic outcomes.

To add to our understanding of the measurement and relevancy of PYD, Paper 1 contributes to the cumulative evidence about which individual and contextual features might be important for youth to better position them for healthy sex and romance in the future, a vital component of overall health. By utilizing a framework of PYD, I acknowledge that young people

develop in intertwined contexts (such as families, schools, and communities) that should be examined together to study their collective impact on health. Though a handful of specific models exist,¹³³ the Five Cs model of PYD offers one of the most clear and parsimonious frameworks for incorporating the vital multilevel positive attributes fostered across these settings that may define healthy psychosocial development. The Five Cs model of PYD also has the most evidence to-date on the structural stability and predictive validity of its constructs for development and health,^{81,136,146,147,149,150} but gaps remain in our understanding of whether or how racial/ethnic or SES backgrounds are related to the aspects and characteristics hypothesized in the model.

Unfortunately, this study was unable to confirm the Five Cs model of PYD using Add Health data, including deriving a factor solution with acceptable model fit and exploring the relevancy of the constructs for different groups. Reasons for this likely include poor measurement of some of the constructs postulated to be important facets of healthy development (particularly “caring,” “character,” and “competence”).⁷⁹ Therefore more work is needed to create more reliable and valid assessments of the Five Cs, specifically, for various settings and groups of youth using nationally representative data. Despite these measurement challenges, Paper 1 described elements of PYD, including confidence, autonomy, parental bonds, and community bonds that emerged among this sample of youth. These findings align with developmental systems theory and indicate that healthy development might be characterized by mutually-interacting assets and resources at both the individual and contextual levels.¹²⁸

Paper 1 also explored differences in these four PYD assets by sociodemographic characteristics. I found that different population subgroups of youth report varying degrees or perceptions of the positive characteristics proposed by PYD, with the highest average scores of these four constructs for males, non-Hispanic white youth, and youth whose parents had college

degrees, compared to females, racial/ethnic minorities, and lower-SES youth, respectively. In the U.S., there is a rapidly growing minority youth population, and disparities in adverse sexual health outcomes exist for ethnic minorities²⁰⁰ and low-income populations.²⁰¹ Also, certain populations (i.e., racial minorities, low income youth, and girls) have more limited access to positive development opportunities due to a persistent history of economic and social disadvantage in this country. Given these inequities found across studies and replicated here, we need a better understanding of how PYD experiences have the capability to help enhance well-being and development for adolescents of diverse groups. However, it is challenging to reconcile results across studies because measurement of PYD characteristics, and which characteristics are considered, varies. Thus, as described previously, the research base could benefit from clear and consistent definitions of PYD, with a consensus on potential survey questions that reflect a common core of PYD constructs. Population-based data with accurate and standardized measures of PYD could allow scholars to compare healthy development and psychosocial well-being across youth groups and across time and thereby identify groups that might need more and better-targeted resources.

One method for combatting the lack of consistency in PYD measurement is to begin collecting uniform data, perhaps by adding validated measures of PYD to existing surveys of youth for future data collection. National surveys that are formally administered to large populations of youth, like the Youth Risk Behavior Surveillance System (YRBSS) developed by the Centers for Disease Control and Prevention (CDC) and administered every two years to youth in high schools and some middle schools in most states throughout the country, could incorporate culturally-appropriate PYD indicators to explore healthy development, and any gaps, among youth in various settings. Additionally, to help improve the consistency of PYD measurement across studies, there should be a convening of resources, via an online repository of

sorts, where interdisciplinary researchers could access national data used to evaluate and describe the structure and psychometric properties of various constructs of PYD for different youth populations. Data repositories like the Inter-University Consortium for Political and Social Research (ICPSR) currently exist, but could benefit from the inclusion of additional national data sources that measure PYD explicitly. With more accurate and validated frameworks, empirical studies could apply PYD to a host of health outcomes to better-understand the conditions and qualities that foster healthy human development over time. Further, developing accurate measures of PYD is also useful for interventions, as it is a crucial first step in program planning, especially for developing logic models that describe how the program operates and measures impact.

Paper 2: Key Results and Implications

Challenges to the Study of Holistic Sexual Health

In addition to exploring the many diverse factors contributing to general healthy development, scholars have also acknowledged the comprehensive nature of sexual health, the diverse outcomes that constitute sexual health, and the importance of sexual health for human development and overall well-being throughout life.⁸⁻¹¹ Yet, the vast majority of research continues to explore associations between PYD and changes in risky behaviors and adverse sexual health outcomes only. To fill this gap, the first aim of Paper 2 was to describe the sexual health status of a population-based sample of emerging adults (as indexed by a set of holistic, often understudied, sexual health outcomes). The second aim of Paper 2 was to examine the adolescent antecedents to holistic sexual health status for these emerging adults. In general, I found that emerging adults report primarily positive sexual health experiences. Most male and female emerging adults like to perform and receive oral sex in their romantic relationships “very much” (though slightly more females than males reported disliking these activities, particularly

performing oral sex), and also report high reciprocated love between both partners. Among the smaller sample of emerging adults in current relationships longer than 3 months, most also reported having an orgasm most of the time (again more males than females) and high relationship quality. Emerging adults also experienced adverse sexual health outcomes. For both samples, about one-fifth ever had an unintended pregnancy and less than 10 percent reported an STI diagnosis in the past year, with more females than males reporting both outcomes.

Paper 2 then examined the potential long-term benefits of PYD (these specific interrelated assets at multiple levels) for the sexual health of emerging adults involved in different relationship types. I found that the presence of these developmental assets among adolescents predicted enhanced sexual well-being and protected against adverse sexual health outcomes in emerging adulthood. Specifically, strong parental bonds were associated with increased reciprocity of love between partners, and with increased enjoyment of receiving oral sex and reduced risk of unintended pregnancy (among females only) in emerging adulthood. I also found that autonomy in regard to household and family decisions was associated with increased enjoyment of receiving oral sex among females. Among the smaller subsample of emerging adults in a current relationship lasting more than 3 months, community bonds were also related to increased enjoyment of receiving oral sex among females, and increased love for partner and relationship quality among both males and females in emerging adulthood.

Of the four youth development indicators explored in this study, parental bonds had the most consistent and significant associations with emerging adult sexual health. These results suggest that parent-child relationships are key influences on psychosocial health. Families where caregivers support and promote emotional attachment might function as a solid structural base in which adolescents acquire and practice important competencies like emotional regulation and communication. It is also not surprising that attachment to prosocial institutions in the

community were associated with future qualities of romantic relationships in this study, particularly emotional aspects. High-quality social bonds across institutions (family, school, faith-based, community) are essential components of healthy development. The results found in this study lend support for social cognitive theory, which posits that influential social environments, such as positive parental and community bonds, create spaces for youth to observe and learn positive, effective interpersonal skills, and for adults to reinforce ideal behaviors by providing support and rewards for prosocial achievements.¹²³ The results also support attachment theory¹²⁵ which suggests that adolescents transform these interactions into working prototypes of healthy relationships and apply or perform these characteristics in their romantic relationships. Though measurement of PYD was less than ideal in this study, these findings are consistent with previous research on the benefits of high-quality parental relationships and attachment to prosocial institutions, and adds to the youth development field by applying this key developmental asset to lesser-acknowledged aspects of holistic sexual health.

Future Directions and Implications

National Data on Holistic Sexual Health Outcomes

Taken together, the current research explored whether positive adolescent social contexts and skills influence sexual health development and the potential for safe, enjoyable sex and relationships among emerging adults—often overlooked aspects of well-being. Due to its longitudinal nature, Add Health is one of the few population-based datasets in which the influence of adolescent experiences can be tested on future holistic sexual health outcomes. Therefore the data provide a unique opportunity to examine, prospectively, potential developmental contributors to sexual health in emerging adulthood for a large, nationally representative sample of adolescents. Though there have been hundreds of studies published on adolescent and young adult sexual behavior using Add Health data, most assess sexuality in

terms of risk factors associated with negative sexual health outcomes only (e.g., unintended pregnancies, STIs, sexual coercion). By contrast, there exists a dearth of studies examining components of positive sexual health development, including subjective and objective indicators of sexual pleasure, intimacy, and relationship satisfaction. This study utilized the extensive sexual health indicators available in Add Health to examine positive sexual health outcomes in addition to the commonly investigated negative outcomes.

Other national data sources that allow for examining the prevalence and experiences of holistic sexual health among emerging adults are scarce, which provides a challenge to researchers who want to more accurately describe sexuality in the contexts of both positive and negative outcomes, aligning with recent comprehensive definitions of sexual health.^{8,9} Sexual enjoyment and positive relationship experiences, among other positive outcomes, are important aspects of sexual health, but questions assessing these experiences rarely appear on national surveys. Out of the 18 large-scale U.S. nationally representative datasets that survey adolescents and adults on sexual health and behaviors, only 5 datasets measure aspects of sexual pleasure and relationship/sexual satisfaction and only 3 of those examine these experiences for emerging adults: the 2010 National Survey of Sexual Health and Behavior, the 1992 National Health and Social Life Survey and Add Health in 2001 and 2008.¹⁷⁹ Internet-based surveys have recently emerged such as the OMGYES Sexual Pleasure Report: Women and Touch (n=1,055 women)¹⁸² and a “Love and Sex” NBC News Survey (n=52,588 men and women),²⁰² but these sources have limitations in their sampling design and the outcomes and populations they examine. More data are needed. Population-based benchmarks of holistic sexual outcomes among emerging adults in the U.S. are helpful for researchers, clinicians, and educators in understanding changes in the meanings of “sexuality” and the corresponding sexual health trends overtime, the possible antecedents of holistic health for diverse groups, and the influence of external factors on these

trends in sexual health outcomes so that health might be enriched for all groups. Paper 2 examined potential avenues of intervention, for instance, by identifying which factors of youth development might influence future sexual health and relationships.

PYD and Sexual Education

Sexual health is a major component of overall health, and has a bidirectional impact on other life experiences.³⁸ Under the paradigm that sexuality is a normal, expected part of being human,¹ this research has the potential to add to public health efforts that work to enhance the lives and the futures of our nation's youth. Findings from this dissertation suggest that adolescents with opportunities for autonomy in decision-making and interpersonal proficiencies as a result of close bonds with parents and attachment to conventional institutions have enhanced potential to experience long-term healthy sex and relationships. In other words, analyses indicate that PYD—important for outcomes like academic achievement and mental health^{73,85}—is also important for holistic sexual health, and that adolescent experiences have long-term implications for health in adulthood. Therefore, fostering behavior and contexts that enhance PYD can support many aspects of overall health. If these particular developmental assets are related to sexual health in emerging adulthood, then parents/caregivers and youth-serving adults can be intentional in creating settings for youth to practice and utilize these lasting health-promoting skills. For instance, numerous scholars contend that PYD interventions should involve opportunities for adults to develop ongoing, supportive and close relationships with young people that help create an open, family-like atmosphere conducive to fostering strengths.^{79,80,85,97}

Though some find it an uncomfortable topic, adolescents are sexual beings and we must enable them with the skills and resources to develop into sexually healthy adults, engaged in fewer risks and achieving positive outcomes. Two widely-accepted sets of recommendations, the National Sexuality Education Standards and the Guidelines for Comprehensive Sexuality

Education, help provide direction on the topics and learning objectives that constitute effective sexual health education. The National Sexuality Education Standards for K-12th graders (2012) acknowledge the importance of positive sexuality as a component of sexual education curricula, including age-appropriate guidance for youth on how to “successfully navigate changing relationships among families, peers, and partners.”^{70, p.50} According to the standards, by the 12th grade adolescents should have skills in knowing healthy ways to express affection in relationships, as well as knowing what constitutes sexual consent and the role of consent in sexual decision-making.⁷⁰

The Sexuality Information and Education Council of the United States (SIECUS, 2004), a leading organization that helped create the national standards, also developed guidelines for comprehensive sexuality education that include similar components.²⁰³ These guidelines list several “life behaviors of a sexually healthy adult,” that serve as positive outcomes of effective sexual health education, which largely align with outcomes that characterize PYD.²⁰³ Examples of these life behaviors include the ability to identify and live according to personal values, practicing effective decision-making skills, and engaging in effective interpersonal communication. Imagine if across the country, sexual education programs actually and effectively provided these evidence-based lessons for students? These adolescents, especially those without positive and nurturing home or community environments, would have prime opportunities to learn and practice key health-promoting relationship competencies to be utilized in their current and future relationships.

Unfortunately, though these standards and guidelines for sexuality education exist, many programs across the U.S. have an abstinence-only focus, or an exclusive focus on preventing STIs and unplanned pregnancy,^{65,66} often delivering heteronormative and sexist messages and failing to convey the notion that healthy sexuality also encompasses cooperative and mutually-

satisfying experiences. These programs limit opportunities to discuss critical aspects of sexual health that are relevant for adolescents' current and future relationships in emerging adulthood. On the other hand, a sex-positive sexual education program that combines PYD elements could provide several potential benefits. PYD experiences provide opportunities for youth to enhance long-lasting capabilities—even if they are not skills directly related to sexual health—through prosocial interactions with adults and peers and varied competency-building undertakings.⁹⁷

Formal sexual education in school and community settings is a primary opportunity to reach large populations of youth and promote holistic sexual health by incorporating more of these youth development principles, including a focus on building confidence and independence, as well as healthy connections with trusted adults. Aligning with the national standards and guidelines for sexual education,^{70,203} youth in these settings would be provided with an inclusive education that discusses maintaining equally respectful and satisfying relationships with honest communication and expression of intimacy as important components of health relationships.⁶¹ Programs could also facilitate take-home activities that encourage parental engagement, particularly parent-adolescent communication about sexual health topics. In all, programs that educate beyond risk avoidance or reduction and incorporate PYD elements that strengthen adolescents' existing developmental qualities and foster supportive connections could be more effective in promoting sexual health than typical sexual education in the U.S. Integrating PYD into existing modes of sexual education could help youth better adjust to the pubertal and social transitions during adolescence, including changing peer and romantic relationships, within a supportive setting.⁹⁵ PYD could also foster positive expectations for the future and increase adolescents' efficacy or confidence in actually applying their sexual health knowledge and skills gained in sex education programs.⁹⁵

Continued research is needed to evaluate PYD frameworks and apply them to holistic sexual health outcomes as a method for determining and prioritizing the adolescent features across multiple socializations that are key to sexual health development. At the very least, because sexual health is a major component of overall health,^{38,47} the significant findings on the longitudinal associations between youth development characteristics and sexual health in emerging adulthood found here can be used to create and champion advocacy tools for promoting the potential wide-spread benefits of PYD. For example, many youth-serving professionals and/or funders have a keen interest in programs that focus on enhancing important developmental assets among youth, such as autonomy or strong parent-child bonds, as opposed to reducing problem behaviors, to enhance development and subsequent holistic well-being.

Conclusion

This dissertation assessed understudied positive sexual health outcomes and the potential for PYD to shape a variety of health outcomes in emerging adulthood. Youth development opportunities work to enhance key capabilities that prepare adolescents for the challenges of the transition to adulthood, including engaging in healthy sexual relationships throughout life. Empirical approaches that identify adolescent protective factors in multiple social domains can enhance our understanding of human sexual health development. This dissertation examined behaviors and experiences (and the directions of associations) that more comprehensively categorize development of holistic aspects of healthy sexual relationships, addressing a major gap in the literature. Thus, this research helped to identify the developmental strengths that promote long-term sexual health, and also those that might be lacking for some youth, all to inform scaled-up public health efforts so that all individuals might achieve optimal sexual health.

APPENDIX A: INDICATORS OF POSITIVE YOUTH DEVELOPMENT

Table 25. Definitions of the Five Cs of Positive Youth Development (PYD) Framework.

“C”	Definition*
Connectedness	Positive bonds with people and institutions that are reflected in exchanges between the individual and his or her peers, family, school, and community in which both parties contribute to the relationship.
Competence	Positive view of one’s actions in specific areas, including social, academic, cognitive, health, and vocational. Social competence refers to interpersonal skills (such as conflict resolution). Cognitive competence refers to cognitive abilities (e.g., decision making). Academic competence refers to school performance as shown, in part, by school grades, attendance, and test scores. Health competence involves using nutrition, exercise, and rest to keep oneself fit. Vocational competence involves work habits and explorations of career choices.
Confidence	An internal sense of overall positive self-worth and self-efficacy.
Character	Respect for societal and cultural norms, possession of standards for correct behaviors, a sense of right and wrong (morality), spirituality, and integrity.
Caring	A sense of sympathy and empathy for others.

Definitions from: (Zarrett & Lerner, 2008; Roth & Brooks-Gunn, 2003; Lerner et al., 2005)^{74,80,81}

Table 26. Potential Indicators of the Five Cs of PYD available at Wave I of the National Longitudinal Study of Adolescent to Adult Health (Add Health).

Indicator	Survey Question/Item in Add Health	Response Options*
CONNECTEDNESS		
Quality of relationship with mother**	<ul style="list-style-type: none"> • How close do you feel to your mother/adoptive mother/stepmother/foster mother/etc.? • How much do you think she cares about you? 	1 Not at all 2 Very little 3 Somewhat 4 Quite a bit 5 Very much 6 Refused 7 Legitimate skip 8 Don’t know 9 Not applicable
	<ul style="list-style-type: none"> • Most of the time, your mother is warm and loving toward you. • You are satisfied with the way your mother and you communicate with each other. • Overall, you are satisfied with your relationship with your mother. 	1 Strongly agree 2 Agree 3 Neither agree nor disagree 4 Disagree 5 Strongly disagree 6 Refused 7 Legitimate skip 8 Don’t know 9 Not applicable
Quality of relationship with father**	<ul style="list-style-type: none"> • How close do you feel to your father/adoptive father/stepfather/foster father/etc.? • How much do you think he cares about you? 	1 Not at all 2 Very little 3 Somewhat 4 Quite a bit 5 Very much

		6 Refused 7 Legitimate skip 8 Don't know 9 Not applicable
	<ul style="list-style-type: none"> • Most of the time, your father is warm and loving toward you. • You are satisfied with the way your father and you communicate with each other. • Overall, you are satisfied with your relationship with your father. 	1 Strongly agree 2 Agree 3 Neither agree nor disagree 4 Disagree 5 Strongly disagree 6 Refused 7 Legitimate skip 8 Don't know 9 Not applicable
Family connectedness	<ul style="list-style-type: none"> • How much do you feel that your parents care about you? • How much do you feel that people in your family understand you? • How much do you feel that you and your family have fun together? • How much do you feel that your family pays attention to you? 	1 Not at all 2 Very little 3 Somewhat 4 Quite a bit 5 Very much 6 Refused 7 Legitimate skip 8 Don't know
Peer connectedness	<ul style="list-style-type: none"> • How much do you feel your friends care about you? 	1 Not at all 2 Very little 3 Somewhat 4 Quite a bit 5 Very much 6 Refused 7 Legitimate skip 8 Don't know
	<ul style="list-style-type: none"> • You feel socially accepted. 	1 Strongly agree 2 Agree 3 Neither agree nor disagree 4 Disagree 5 Strongly disagree 6 Refused 7 Legitimate skip 8 Don't know 9 Not applicable
	<ul style="list-style-type: none"> • During the past week, how many times did you just hang out with friends? 	0 Not at all 1 One or two times 2 Three or four times 3 Five or more times 6 Refused 8 Don't know
Positive adult bonds	<ul style="list-style-type: none"> • How much do you feel that adults care about you? • How much do you feel that your teachers care about you? 	1 Not at all 2 Very little 3 Somewhat 4 Quite a bit 5 Very much 6 Refused 7 Legitimate skip 8 Don't know
School attachment	<ul style="list-style-type: none"> • Feel close to people at school • Feel like a part of school • Happy to be at school 	1 Strongly agree 2 Agree

	<ul style="list-style-type: none"> • Feel safe at school 	3 Neither agree nor disagree 4 Disagree 5 Strongly disagree 6 Refused 7 Legitimate skip 8 Don't know
Neighborhood connectedness	<ul style="list-style-type: none"> • On the whole, how happy are you with living in your neighborhood? 	1 Not at all 2 Very little 3 Somewhat 4 Quite a bit 5 Very much 6 Refused 8 Don't know
	<ul style="list-style-type: none"> • If, for any reason, you had to move from here to some other neighborhood, how happy or unhappy would you be? 	1 Very unhappy 2 A little unhappy 3 Wouldn't make any difference 4 A little happy 5 Very happy 6 Refused 8 Don't know
	<ul style="list-style-type: none"> • In the past month, you have stopped on the street to talk with someone who lives in your neighborhood. • People in your neighborhood look out for each other. • You know most of the people in your neighborhood. 	1 True 2 False 6 Refused 8 Don't know 9 Not applicable
	<ul style="list-style-type: none"> • Do you usually feel safe in your neighborhood? 	0 No 1 Yes 6 Refused 8 Don't know
Community connectedness	<ul style="list-style-type: none"> • In the past 12 months, how often did you attend religious services? **** • Many churches, synagogues, and other places of worship have special activities for teenagers—such as youth groups, Bible classes, or choir. In the past 12 months, how often did you attend such youth activities? **** 	1 Once a week or more 2 Once a month or more, but less than once a week 3 Less than once a month 4 Never 5 Refused 7 Legitimate skip 8 Don't know 9 Not applicable
	<ul style="list-style-type: none"> • In the last 4 weeks, did you work—for pay—for anyone outside your home? 	0 No 1 Yes 6 Refused 8 Don't know
COMPETENCE		
Perception of ability	<ul style="list-style-type: none"> • When you get what you want, it's usually because you worked hard for it. 	1 Strongly agree 2 Agree 3 Neither agree nor disagree 4 Disagree 5 Strongly disagree 6 Refused 7 Legitimate skip 8 Don't know

	<ul style="list-style-type: none"> How often was the following true during the past week? You felt that you were just as good as other people. 	0 Never or rarely 1 Sometimes 2 A lot of the time 3 Most of the time or all of the time 6 Refused 8 Don't know
Expectation for achievement—vocational competence	<ul style="list-style-type: none"> On a scale of 1 to 5, where 1 is low and 5 is high, how likely is it that you will go to college? 	1 2 3 4 5 6 Refused 8 Don't know 9 Not applicable
Perception of intelligence	<ul style="list-style-type: none"> Compared with other people your age, how intelligent are you? 	1 Moderately below average 2 Slightly below average 3 About average 4 Slightly above average 5 Moderately above average 6 Extremely above average 96 Refused 98 Don't know
Problem solving	<ul style="list-style-type: none"> When you have problem to solve, one of the first things you do is get as many facts about the problem as possible. When you are attempting to find a solution to a problem, you usually try to think of as many different ways to approach the problem as possible. When making decisions, you generally use a systematic method for judging and comparing alternatives. After carrying out a solution to a problem, you usually try to think about what went right and what went wrong. 	1 Strongly agree 2 Agree 3 Neither agree nor disagree 4 Disagree 5 Strongly disagree 6 Refused 7 Legitimate skip 8 Don't know 9 Not applicable
Academic competence	<ul style="list-style-type: none"> Have you ever skipped a grade? 	0 No 1 Yes 6 Refused 8 Don't know 9 Not applicable
Health competence	<ul style="list-style-type: none"> You have a lot of energy. You seldom get sick. When you do get sick, you get better quickly. You are physically fit. 	1 Strongly agree 2 Agree 3 Neither Agree nor disagree 4 Disagree 5 Strongly disagree 6 Refused 8 Don't know 9 Not applicable
CONFIDENCE		
Self-esteem	<ul style="list-style-type: none"> You have a lot to be proud of You like yourself just the way you are 	1 Strongly agree 2 Agree

	<ul style="list-style-type: none"> You feel like you are doing everything just about right. You feel loved and wanted. You are well coordinated 	3 Neither Agree nor disagree 4 Disagree 5 Strongly disagree 6 Refused 8 Don't know 9 Not applicable
Autonomy	Do your parents let you make your own decisions about: <ul style="list-style-type: none"> The time you must be home on weeknights? The people you hang around with? What you wear? How much television you watch? Which television programs you watch? What time you go to bed on week nights/ What you eat? 	0 No 1 Yes 6 Refused 7 Legitimate skip 8 Don't know 9 Not applicable
CHARACTER		
Delinquency scale ***	In the past 12 months, how often did you: <ul style="list-style-type: none"> Paint graffiti or signs on someone else's property or in a public place Deliberately damage property that didn't belong to you Lie to your parents about where you had been or whom you were with Take something from a store without paying for it Get into a serious physical fight Hurt someone badly enough to need bandages or care from a doctor Run away from home Drive a car without its owner's permission Steal something worth more than \$50 Go into a house or building to steal something Use or threaten to use a weapon to get something from someone Sell marijuana or other drugs Steal something worth less than \$50 Take part in a fight where a group of your friends was against another group Act loud, rowdy, or unruly in a public place? 	0 Never 1 One or two times 2 Three or four times 3 Five or more times 6 Refused 8 Don't know 9 Not applicable
Perceived personal qualities	<ul style="list-style-type: none"> You have a lot of good qualities. 	1 Strongly agree 2 Agree 3 Neither Agree nor disagree 4 Disagree 5 Strongly disagree 6 Refused 8 Don't know
Spirituality****	<ul style="list-style-type: none"> How important is religion to you? 	1 Very important 2 Fairly important 3 Fairly unimportant 4 Not important at all 6 Refused 7 Legitimate skip 8 Don't know
CARING		
Criticism/conflict	<ul style="list-style-type: none"> You never criticize other people. 	1 Strongly agree

-
- You never argue with anyone.

2 Agree
3 Neither Agree nor disagree
4 Disagree
5 Strongly disagree
6 Refused
8 Don't know
9 Not applicable

*"Refused", "Don't know", "Legitimate skip", and "Not applicable" responses were set to missing.

** Each quality of relationship with parents indicator was assessed separately for residential mother/maternal figure and residential father/paternal figure, taking the higher of the two scores in households with both parents present, or the score reported in reference to the residential mother- or father-figure present in single-parent households.

*** Delinquency scale represented achieving societal expectations for appropriate behavior and was reverse coded.

**** n=2,256 respondents reported "no religion" and were coded as 0 on all religion variables, indicating lack of importance of religion or no religious services/youth activities involvement.

APPENDIX B: POSITIVE YOUTH DEVELOPMENT MEASUREMENT MODEL PATTERN MATRIX

Table 27. Positive youth development factor loadings, best solution complete pattern matrix: Wave I of The National Longitudinal Study of Adolescent to Adult Health (n=17,553).

Add Health Survey Item	Factor Loading			
	Confidence	Autonomy	Parental Bonds	Community Bonds
<i>Do you agree or disagree with the following statement:</i>				
You have a lot to be proud of.	.732	.014	-.234	.010
You like yourself just the way you are.	.639	-.009	-.198	.062
You feel like you are doing everything just about right.	.588	.008	-.151	.042
You feel loved and wanted.	.820	.006	-.016	.094
You are well coordinated.	.504	.023	-.237	.055
You have a lot of energy.	.488	-.007	-.134	.095
When you get sick, you get better quickly.	.396	.016	-.127	.044
You are physically fit.	.532	.003	-.270	.062
You feel socially accepted.	.642	.287	-.198	.055
You have a lot of good qualities.	.798	.032	-.376	.072
<i>Do your parents let you make your own decisions about:</i>				
The people you hang around with?	-.001	.614	-.001	-.074
What time you go to bed?	-.040	.452	-.063	-.117
What you wear?	.029	.572	-.018	-.077
How much television you watch?	-.006	.502	-.011	-.123
Which television programs you watch?	.001	.465	.001	-.243
What you eat?	-.024	.397	-.034	-.067
How close do you feel to your mother/father? ^a	.293	-.025	.680	.073
How much do you think she/he cares about you? ^a	.351	.017	.504	.056
<i>Do you agree or disagree with the following statement:</i>				
Most of the time, your mother/father is warm and loving toward you. ^a	.266	.020	.702	.103
You are satisfied with the way your mother/father and you communicate with each other. ^a	.232	.023	.851	.084
Overall, you are satisfied with your relationship with your mother/father. ^a		.022	.899	.078
How much do you feel that your teachers care about you?	.299	-.011	.018	.401
<i>How strongly do you agree or disagree with the following statements?</i>				
Feel close to people at school.	.314	-.001	-.123	.413
Feel like a part of school.	.304	.015	-.147	.500
Happy to be at school.	.345	-.014	-.111	.404
In the past 12 months, how often did you attend religious services? ^b	.040	.047	.107	.713

APPENDIX C: ADD HEALTH WAVE III RELATIONSHIPS IN DETAIL SAMPLES

Table 28. Wave III “Relationships in Detail” Sample Description: The National Longitudinal Study of Adolescent to Adult Health (2001-2002).

Sample	Selection criteria	Total Number of Eligible Relationships (n)
Morris sample (MM)^a	Most recent sexual relationship	36,128
Udry sample (JRU)^b	Two most important relationships	20,878
Couples sample (CP)^c	Current, Opposite sex partners, Partner 18 or older Relationship duration \geq 3 months	4,236

^a All sexual relationships were selected for the Morris sample questions. Due to a programming error during data collection, some relationships that were sexual in nature were not selected for these questions.

^b The Udry sample consists of the two most important relationships reported on by the respondent with the statement, “*From the list of relationships below, please select the one that is most important to you by using the arrow keys to highlight it a pressing Enter. If you have trouble defining the “most important,” think of it as describing the relationship whose end would be most painful for you or which you would be happiest to continue.*” Two relationships were flagged for each respondent; where there were only one or two relationship(s) reported, that/those relationship(s) were selected for the Udry sample questions.

^c The Couples sample was a purposive, quota sample (also including n=1,507 partners) designed to collect information on 1/3 married, 1/3 cohabiting, and 1/3 dating partners. Wave III respondents were randomly selected for participation in the Couples sample questions if meeting selection criteria. More respondents answered these survey items than were included in the final Couples sample that met the quota for specific types of relationships.

Table 29. Sample sizes of the seven versions of the Wave III Section 19, “Relationships in Detail” Questionnaire in the National Longitudinal Study of Adolescent to Adult Health.

Sample combinations ^a	Number of relationships
1. CP/MM/JRU	3,907
2. CP/MM	93
3. CP/JRU	204
4. MM/JRU	14,756
5. CP only	32
6. MM only	17,372
7. JRU only	2,011

^a Though there is overlap in the samples, respondents answered different sets of questions depending on the sample they were selected into and which of the seven versions of Wave III the respondent received.

Table 30. Indicators of Sexual Health from Wave III of the National Longitudinal Study of Adolescent to Adult Health (ages 18-26).

Sexual Health^a	Outcome	Survey Question/Item	Response Options	Eligible “Relationships in Detail” Samples
Physical	Orgasm Frequency	When you and <PARTNER> (have/had) sexual relations, how often do you have an orgasm—that is, climax or come?	0 Never/hardly ever 1 Less than half the time 2 About half the time 3 More than half the time 4 Most of the time/every time 5 Question not asked of this respondent 6 Refused 8 Don’t know 9 Not applicable . Missing	CP/MM/JRU CP/MM CP/JRU CP only
Physical, Emotional	Liking to perform oral sex Liking to receive oral sex ^b	How much (do/did) you like to perform oral sex on <PARTNER>? How much (do/did) you like for <PARTNER> to perform oral sex on you?	1 Like very much 2 Like somewhat 3 Neither like nor dislike 4 Dislike somewhat 5 Dislike very much 95 Question not asked of this respondent 96 Refused 97 Legitimate skip 98 Don’t know 99 Not applicable . Missing	CP/MM/JRU CP/MM CP/JRU MM/JRU CP only JRU only
Social	Relationship commitment	How committed are you to your relationship with <PARTNER>?	1 Completely committed 2 Very committed 3 Moderately committed 4 Somewhat committed 5 Not at all committed 96 Question not asked of this respondent 96 Refused 98 Don’t know 99 Not applicable . Missing	CP/MM/JRU CP/MM CP/JRU CP only
Social, Emotional	Relationship closeness	Select the picture, by entering the number under the picture, which best illustrates how close you feel to <PARTNER>.	1 Picture 1 2 Picture 2 3 Picture 3 4 Picture 4 5 Picture 5 6 Picture 6 7 Picture 7	CP/MM/JRU CP/MM CP/JRU CP only

Sexual Health ^a	Outcome	Survey Question/Item	Response Options	Eligible “Relationships in Detail” Samples
		Pictures consist of two circles with varying degrees of overlap to indicate closeness. There are a total of 7 pictures, and the higher number represents more overlap in the two circles, indicating closeness.	96 Question not asked of this respondent 96 Refused 98 Don’t know 99 Not applicable . Missing	
Social, Mental	Expectations of relationship permanency	How likely is it that your relationship with <PARTNER> will be permanent?	1 Almost certain 2 A good chance 3 A 50-50 chance 4 Some chance, but probably not 5 Almost no chance 96 Question not asked of this respondent 96 Refused 98 Don’t know 99 Not applicable . Missing	CP/MM/JRU CP/MM CP/JRU CP only
Social	Relationship satisfaction	In general, how satisfied are you with your relationship with <PARTNER>?	1 Very satisfied 2 Somewhat satisfied 3 Neither dissatisfied or satisfied 4 Somewhat dissatisfied 5 Very dissatisfied 96 Question not asked of this respondent 96 Refused 98 Don’t know 99 Not applicable . Missing	CP/MM/JRU CP/MM CP/JRU CP only
Emotional	Love for partner	How much do you love <PARTNER>?	0 A lot 1 Somewhat 2 A little 3 Not at all	CP/MM/JRU CP/MM CP/JRU MM/JRU
	Love from partner	How much do you think <PARTNER> loves you?	5 Question not asked of this respondent 6 Refused 8 Don’t know 9 Not applicable . Missing	CP only JRU only
Physical	Unintended Pregnancy	Please think back to the time just before	0 No 1 Yes	CP/MM/JRU CP/MM

Sexual Health ^a	Outcome	Survey Question/Item	Response Options	Eligible “Relationships in Detail” Samples
		PARTNER/YOU became pregnant. Did you want to have a child then?	6 Refused 8 Don’t know 9 Not applicable . Missing	CP/JRU MM/JRU CP only JRU only
Physical	Past 12-Month STI Diagnoses	In the past 12 months, have you been told by a doctor or nurse that you had the following sexually transmitted disease? (9 different diseases listed)	0 No 1 Yes 6 Refused 8 Don’t know 9 Not applicable . Missing	CP/MM/JRU CP/MM CP/JRU MM/JRU CP only JRU only

^a Indicators of holistic, positive sexual health reflect components of the World Health Organization (WHO) Definition of Sexual Health: “Sexual health is a state of **physical, emotional, mental and social well-being in relation to sexuality**; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to **sexuality and sexual relationships**, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence.”

^b Due to a programming error during data collection, a third of the sample did not answer the analogous survey question about “liking vaginal sex.” Additionally, less than 20% of the sample engaged in anal sex and answered analogous “liking to perform anal sex” or “liking partner to perform anal sex” questions. Due to these data limitations, I excluded these two indicators from the analysis.

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