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Successful Transitions to Adulthood for Adolescents with Histories of Homelessness and Running Away: Relationships, Experiences, and Resources Associated with Positive Outcomes

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2010

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An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Behavioral Sciences and Health Education
2015

Abstract

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Background: About 1.6 million youth are homeless in the United States each year. Experiencing homelessness can have lasting physical, psychological, and social consequences, particularly for youth. Homeless youth certainly face difficult circumstances, but many receive support from friends, family, teachers, and social services. According to the Risk Amplification and Abatement Model (RAAM), these positive socialization experiences can ameliorate some of the risks associated with homelessness.

Objective: Based on RAAM and the Positive Youth Development (PYD) framework and using data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), this study aimed to identify factors that promote positive adult outcomes for individuals who ran away or were homeless during adolescence.

Methods: Running away, homelessness, and positive socialization experiences in the context of interpersonal relationships, formal institutions, and mental health care were measured at Wave 1 (7^{th}-12^{th} grade) and Wave 3 (age 18-28) of the Add Health study. Outcomes indicative of a successful transition to adulthood were measured at Wave 4 (age 24-34). Linear and logistic regression were used to examine relationships between running away/homelessness and adult outcomes; relationships between positive socialization and adult outcomes; and potential moderation of the relationships between running away/homelessness and outcomes by positive socialization experiences.

Results: Controlling for background characteristics, individuals who ran away had lower subjective wellbeing, fewer close friends, lower relationship functioning, lower income, and lower odds of voting when they reached adulthood as compared to their peers. Controlling for background characteristics, homelessness only predicted lower income. Positive relationships with friends, parents, and other adults; connections to school, work, and volunteering; and health insurance and counseling all predicted positive outcomes. There were no significant interactions. Once positive socialization variables were included, running away was no longer significantly associated with outcomes and the effect of homelessness on income was reduced.

Conclusion: Runaway and homeless experiences are associated with fewer positive outcomes in adulthood. Opportunities for PYD are associated with more positive outcomes in adulthood. Positive experiences did not moderate the relationships between running away/homelessness and outcomes; instead, they might act as mediators. PYD is an important framework for prevention and intervention efforts.

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Acknowledgments

I would first like to thank my thesis committee for sharing their time and expertise with me over the past year. Dr. Windle, thank you for helping me translate my broad interests and ideas into a feasible research study and for offering guidance and encouragement throughout this process. Dr. Cummings, thank you for providing thoughtful feedback on each draft and helping me improve the quality and clarity of my work. Dr. Sales, thank you for fostering my interest in Positive Youth Development and instilling the importance of a developmental perspective for adolescent health. I would also like to thank my family and friends for their constant love and support throughout the past two years. Finally, I am grateful for the opportunity I had to volunteer with the National Runaway Safeline from 2010-13, as it was that experience that sparked my interest in this topic and steered me toward the field of public health.

This project uses data from the National Longitudinal Survey of Adolescent to Adult Health (Add Health) and would not have been possible without the dedicated efforts of many people who designed and conducted the study, prepared informational materials, and made a wealth of valuable data available to the public. Add Health is directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health website (http://www.cpc.unc.edu/addhealth). No direct support was received from grant P01-HD31921 for this analysis.

Table of Contents

Introduction

Each year in the United States, an estimated 1.6 million youth are on their own without a safe, consistent place to stay (1). Family conflict, abuse, financial struggles, and mental health and substance use problems are commonly cited reasons for young people becoming homeless (1-3). Youth who have been in foster care or who identify as LGBTQ are also vastly overrepresented among homeless youth (1, 4). Homelessness is a major public health concern, especially for youth, because it disconnects them from conventional support systems during an important period of development (2). Homeless youth experience a host of negative outcomes including poor health, mental illness, substance abuse, risky sexual behavior, criminal activity or victimization, and low school attendance or dropping out (1, 2, 5). Mortality rates are over 10 times higher for homeless youth than the general population (3, 6).

Most research to date has focused on these risk factors and negative outcomes, approaching the issue of youth homelessness from a problem-based perspective (3). Yet, most youth who experience homelessness do not remain homeless. A study of 249 homeless youth in Detroit found that after four and a half years, youth were experiencing fewer stressful life events and less conflict with family, and 93% were no longer homeless (1). Homeless youth certainly face many challenges, but many also receive support from family, friends, teachers, and social services (7, 8). Programs for homeless youth often provide case management, counseling, health care, job training, and education (9). Recently, researchers and service providers have adopted a more strengths-based approach to working with homeless youth, acknowledging youths' capacity for resilience and trying to understand what factors protect against negative outcomes (3, 10).

In 2009, a group of researchers from the U.S. and Australia took this focus on resilience a step further by asking, "Can positive socialization experiences help to explain *positive* outcomes for homeless adolescents?" They proposed the Risk Amplification and Abatement Model (RAAM) as a way to explain homeless youths' experiences (11). According to RAAM, homeless youth typically face difficult circumstances before becoming homeless, and these difficulties

already put youth at risk for adverse outcomes. What youth experience once they become homeless can either amplify or reduce these risks. These positive and negative socialization experiences occur in multiple contexts: family and peer relationships, social services, and formal institutions. The researchers tested their model and found that youth who had good relationships with their mothers and connections to prosocial peers had higher odds of attaining stable housing after two years. Despite the researchers' original question, RAAM has not been used to study positive outcomes beyond housing status.

RAAM is the most comprehensive theoretical model developed specifically for youth experiencing homelessness. Positive Youth Development (PYD), a general framework applicable to all youth, provides useful insight into the types of socialization experiences that promote successful transitions into adulthood. PYD gained traction beginning in the 1990s with growing recognition in the field that healthy adolescent development involves more than avoiding problem behaviors. Opportunities to develop personal and social assets help to prepare youth for adulthood. In particular, youth need opportunities to build the 6 "C's": competence (skills in specific areas), confidence (general self-esteem and self-efficacy), connection (supportive relationships with peers, adults, and social institutions), character (sense of morality), compassion (empathy), and contribution (drive to enhance the wellbeing of others and the community) (12).

RAAM and PYD provided the theoretical foundation for this study. The purpose of the study was to identify factors that promote positive adult outcomes for individuals who ran away or were homeless during adolescence. I hypothesized that former runaway and homeless youth would be less likely to experience positive outcomes indicative of a successful transition to adulthood, including overall subjective physical and emotional wellbeing, positive relationships with friends and partners, educational and career advancement, and prosocial involvement in the community. However, I also hypothesized that positive socialization experiences (or opportunities for positive youth development) in the context of interpersonal relationships, engagement with formal institutions, and mental health care would be associated with better

outcomes, abating risk and reducing some of the disparities between those who had runaway or been homeless and those who had not.

Departing from the common problem-based perspective on youth homelessness, I sought to emphasize youths' resilience and offer a more hopeful and empowering vision of youth succeeding despite difficult circumstances. Ultimately, the goal of identifying relationships, resources, and experiences associated with positive outcomes is to inform the development of interventions and services for youth that promote successful transitions out of homelessness and into adulthood.

Literature Review

Youth Homelessness in the United States

Population. Estimates of the number of the homeless youth in the U.S. vary widely based on how "homeless" and "youth" are defined and the sampling strategies and estimation techniques that are employed. Widely cited studies from the late 1990s suggested that 1.6-1.7 million youth experience homelessness each year. Another study estimated that 15% of youth will be homeless at least once before they turn 18 (1). Though the exact prevalence is unknown, most researchers agree that the number of homeless youth is large, at least a million, and likely increasing (3).

Most unaccompanied homeless youth are age 13 or older. Findings regarding the distribution of gender and race/ethnicity among homeless youth have not been consistent across studies. Using nationally representative data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), Benoit-Bryan reported that more girls than boys had ever run away from home (9.9% vs. 6.7%). She also found that African American youth were less likely to have ever run away from home compared to White youth, while Hispanic, American Indian, and Asian youth were more likely to have run. Youth born outside the U.S. were less likely to have run away from home than those born in the U.S. (6.2% vs. 9.6%) (13). A disproportionately high number of homeless youth identify as lesbian, gay, bisexual, transgender, queer, or questioning (LGBTQ), with estimates ranging from 15% to over 50% (4).

Risk factors. Risk factors for youth homelessness are numerous and complex, and multiple contributing factors are typically at play when a young person becomes homeless. Many homeless youth are from low-income communities and poor or working class, single-parent or blended-family households. The families of homeless youth move more frequently than their peers' families, so youth homelessness often exists within the context of a larger pattern of residential instability (1). Frequent moves, along with subsequent school transitions, can

disconnect youth from social networks. Among Canadian high school students, dissatisfaction with perceived social support was associated with thinking about running away (14).

Many studies have documented relationships between youth homelessness and family dysfunction, conflict, and abuse (3). Data from a school-based substance abuse prevention program in South Dakota indicated that low parental support reported in 9th grade predicted past year runaway experience reported in 10th-11th grade (15). Among participants in the Add Health study, verbal, physical, and sexual abuse were all related to the likelihood of having ever run away from home (13). About a third of homeless youth report experiencing sexual abuse and over half report experiencing physical abuse before leaving home (2). Family conflict, abuse, and rejection may be especially prominent issues for LGBTQ youth. Over a third of homeless LGBTQ youth experienced physical abuse from a family member after coming out (4).

A large proportion of homeless youth have been in foster care or another institutional setting, with estimates across studies ranging from 21% to 53%. Youth who "age out" of the foster care system are at especially high risk for homelessness (1). In the Add Health study, over 30% of youth who had lived in foster homes reported running away, compared to 8.1% of youth who had never been in foster care (13). Homeless youth also have considerable involvement with the juvenile justice system. At a large youth shelter in New York City, 30% of youth had been detained or incarcerated. Furthermore, research suggests that youth currently in the juvenile justice system are at higher risk than other youth for becoming homeless (1).

Youth also cite mental health and substance use problems as reasons for their homelessness. Lifetime prevalence of mental illness is two times higher among homeless youth than their housed peers, with two-thirds meeting diagnostic criteria for at least one disorder, including oppositional defiant disorder, conduct disorder, attention deficit hyperactivity disorder, major depression, bipolar disorder, post-traumatic stress disorder, and schizophrenia (2). Psychological and behavioral problems could lead to conflict with family, trouble at school, or involvement with the legal system, all of which are associated with higher risk for homelessness.

Family members' struggles with mental illness or substance abuse could also contribute to youth homelessness by straining relationships, limiting financial resources, or prompting abuse or neglect (1).

Impact of Youth Homelessness

Adolescence is a time of rapid social, psychological, physical, and neurological development. Decision-making and emotional regulation capacities are not fully developed until the mid-twenties. The environment to which youth are exposed during this critical time of development has a powerful influence on their short- and long-term health and wellbeing. Homelessness is therefore a particularly important public health issue for youth. Homelessness exposes youth to a variety of environmental stressors and potentially disconnects them from the support, guidance, and supervision of caring adults and conventional social institutions (2).

Physical and mental health. Homeless youth generally have poorer health and participate in more risky behaviors than their peers. They initiate sex at a younger age (around 12- to 13-years-old on average), engage in more unprotected sex, and have multiple partners. Some homeless youth participate in survival sex, trading sex for money, food, shelter, or other necessities. Risk for pregnancy and sexually transmitted infections is therefore especially high among homeless youth. The prevalence of HIV is between three and 30 times higher among homeless youth than other youth (1, 2). Homeless youth experience disproportionately high levels of physical and sexual violence (1). A study using data from the National Longitudinal Survey of Youth (NLSY97) found that turbulent life experiences like homelessness were associated with cumulative exposure to violence, including victimization, threats, perceived safety, and witnessing violence (16). Violence likely contributes to high rates of injury in this population; homeless youth experience more traumatic brain injuries than other youth (2).

Lack of resources, inadequate nutrition, and living on the street or in crowded shelters put youth at risk for infectious diseases, asthma, pneumonia, skin problems, dental problems, and diabetes. Cognitive impairments in areas such as problem solving and attention have been

associated with child abuse, poverty, food insecurity, and homelessness. Studies have shown that cognitive functioning improves for homeless adults once they obtain stable housing, but in general, stress has more permanent effects on children's cognitive development than adults'. Psychological distress is common among homeless youth with two-thirds of these youth meeting the diagnostic criteria for at least one mental illness. Mental health problems often co-occur with substance use, and between 70% and 90% of homeless adolescents report using at least one substance. Suicidality is also alarmingly common with various studies reporting that between one-quarter and two-thirds of homeless youth have attempted suicide (2). A prospective cohort study of 1013 homeless youth in Montreal from 1995-2001 reported an annual death rate of about 1% with suicide as the leading cause of death. The standardized mortality ratio in this study was 11.4 (17). Other studies estimating mortality among homeless youth have reported rates 10 to 40 times higher than the general population (3, 6).

Social support. Youth who are currently homeless or have a history of homelessness experience less social support and social connectedness than their peers (18-20). Even compared with youth who have a history of institutional care without homelessness, they report lower levels of family and friend support (21). The size of youths' support networks declines with the amount of time spent away from home (22). Some homeless youth are completely isolated from any support network. One-fourth of homeless youth in a Washington, D.C., study named no one with whom they spent time (23). In a Midwestern study, 14% named no one in their emotional networks and 21% named no one in their instrumental networks (22).

While many young people continue to live with their parents or rely on them for financial support after turning 18, homeless youth often have to navigate the transition to adulthood with limited adult support (24). Homelessness can disconnect youth from their social networks and traditional youth settings like family, school, and community organizations. This disconnection increases exposure to risk and decreases access to supportive adults, positive peers, and opportunities for development (2, 25, 26). The longer youth are away from home, the more their

networks come to revolve around other homeless peers or friends met on the street, who are more likely to be engaging in risky behaviors. Becoming more entrenched in a network of homeless peers influences youths' own risk behaviors and is associated with more drug use and less condom use (23, 26-31).

Education and work. Homelessness is associated with a variety of known risk factors for low academic achievement, including frequent school changes, low attendance, low socioeconomic status (SES), and parental mental health and substance use problems (2, 5). In a statewide survey of approximately half a million 9th and 11th graders in California, homeless youth reported significantly lower grades than youth in single-parent or two-parent families (32). A study of 4th-12th grade students in New York City found that compared with low-income housed youth, homeless youth changed schools more often and had less positive school experiences. They were also more likely to repeat a grade (about half of homeless students had repeated a grade at least once), which has been identified as one of the strongest predictors of dropping out (5). Of 60 18- to 21-year-old youth interviewed at a shelter in Philadelphia, 43.3% had dropped out of high school and another 6.7% had dropped out but later completed a GED (33).

Still, homeless youth recognize the value of education and often have high expectations for themselves. Of the homeless youth interviewed in New York City, 96% said that education was very important and 85% planned to pursue additional education or training beyond high school (5). The importance of education may be highlighted for homeless youth, who often experience difficulties finding work to support themselves. Discussing what hindered his efforts to get off the streets, a 23-year-old male in Vancouver said, "Lack of life skills and experiences plus I have little formal education. It is hard to get a job and get out of homelessness especially being a young offender" (8). Another study in Canada, which included 51 formerly homeless 16- to 25-year-olds, found that 82% of youth were unemployed (6).

Long-term outcomes. Drawing from life course perspectives and stress proliferation theory, Boynton-Jarrett, Hair, and Zuckerman proposed that turbulent life transitions during adolescence could have long-term health consequences (16). They suggested that as one stressful situation or traumatic event triggers additional stressors, risk accumulates and compounds. Using data from the NLSY97, they created an index of turbulence based on experiences of homelessness, changes in family structure, number of schools attended, and number of address changes. Participants were ages 12 to 14 at baseline and turbulence was measured over the subsequent five to six years. Turbulence was significantly associated with lower odds of graduating from high school, higher odds of participating in risky health behaviors, and lower overall mental health scores at ages 18 to 20 (16). Similarly, data from a school-based substance abuse prevention program in South Dakota indicated that past year runaway experience in 10th-11th grade predicted drug dependence and depressive symptoms at age 21 (15).

Stablein and Appleton suggested that because homelessness places youth on "pathways that reinforce and perpetuate, rather than resolve" the difficulties they face early in life, youth may miss out on important events, like education, employment, and marriage, and the health benefits these "traditional" milestones incur (34). They used data collected from the children of women enrolled in the original National Longitudinal Survey of Youth (NLSY79) when they were ages 15 to 25 to examine incidence of health problems in the years following reported episodes of homelessness. After adjusting for demographic variables and early life risk factors, homelessness was significantly associated with higher odds of developing asthma or a condition limiting the ability to work, as well as lower overall self-rated health. Educational attainment mediated the relationship between homelessness and incidence of asthma while depression and drug use mediated the relationship between homelessness and incidence of health-limiting conditions. Homelessness had a direct relationship with overall self-rated health (34).

Benoit-Bryan used Add Health data to examine the effects of running away during adolescence on health, economic, and justice system outcomes in young adulthood (when

participants were ages 24 to 34) (13). Compared with other young adults, those who had run away during adolescence rated their overall general health lower and were more likely to smoke, use marijuana, have a sexually transmitted infection, be limited in their physical activity, and contemplate or attempt suicide. Those who said they had ever run away were half as likely to have a high school diploma or GED and had lower educational attainment overall: 34.6% of non-runaways had a college degree or higher compared to 13.7% of former runaways. On average, those who had run away made $8823 less than their peers per year and were more likely to have someone in their household receiving public assistance. They were twice as likely to sell drugs and 2.7 times more likely to be arrested; over one-quarter of former runaways had been arrested compared to 11.7% of non-runaways (13).

The potential for homelessness during adolescence to affect later health and wellbeing is evident, yet few studies have examined long-term outcomes for formerly homeless youth. Follow-up periods for existing longitudinal studies often only extend through youths' early 20s. Benoit-Bryan's study was unique in this regard in that it included longer-range outcomes (13). Anecdotal evidence from service providers indicates that youth follow a range of trajectories once they enter adulthood: some become chronically homeless; some are incarcerated; some move in and out of homelessness because they are unable to obtain stable housing; and some maintain stable housing and go on to lead happy, healthy, successful lives. The proportions of homeless youth who follow these paths and what factors influence adult outcomes remains largely unknown (3).

Health and Social Services

Homeless youth services. Through the Runaway and Homeless Youth Act and the Runaway, Homeless, and Missing Children Protection Act, the U.S. government sponsors three types of programs for homeless youth: basic centers to provide emergency shelter for youth under 18; independent living programs for older youth, ages 16 to 21, who have been in foster care; and street outreach programs to meet youth where they are, provide basic necessities, and facilitate

engagement in services. Not all homeless youth services receive funding through these programs, but those that do are required to focus on family reunification (9).

Community-based programs for homeless youth consist mostly of shelters and drop-in centers. There is some indication that use of these types of services is associated with at least short-term reduction in behavioral, psychological, school, and employment problems (9). Among youth receiving emergency shelter and crisis services in four Midwestern states, positive changes were observed in runaway behavior, sexual behavior, family relationships, school behavior, employment, and self-esteem six weeks after discharge (1). Further evaluations tracking long-term outcomes are needed. In some studies, the positive effects of these services seemed to dissipate over time (9). While there are likely successful programs and services currently being utilized, these models are often not studied or disseminated in a systematic fashion (3).

Transitional or independent living programs offer practical support, help homeless youth develop life skills, and encourage (or often require) participation in school, training, or work. While rigorous evaluation of these programs is often lacking, they may promote more positive housing, employment, and education outcomes (24). For example, at a transitional living program in Long Island, 90% of youth served in 2005 practiced independent living skills and were in school, training, or employed. At discharge, 87% moved into an appropriate setting for independent living (35). At another program in Denver, 48-65% of youth returned to their families, moved into their own apartment, or moved into permanent supportive housing after discharge (1). With funding limitations, transitional living programs only reach about 4000 youth, a tiny fraction of all the youth who experience homelessness (24).

Health care. Given the mental and physical health risks homeless youth face, access to adequate health care services is crucial. A study in San Francisco found that of the 185 youth surveyed, 50% had used medical services in the past three months (36). Research with youth experiencing housing issues after aging out of foster care indicated that 88% could access medical care. In contrast, although 70% had clinically significant mental health or substance use

problems, only 21% received psychological services (1). Of 556 youth recruited from shelters, drop-in centers, or the street in four Midwestern states, 80% had seen a mental health professional at least once before or after leaving home (37). However, it is important to note that many youth do not continue on with services after the initial appointment (1).

Although conclusive information about patterns of access and utilization is not available, it is clear that not all youth receive the care they need. Barriers include cost, lack of insurance, lack of identification or other necessary documentation, inadequate transportation, few available services, inconvenient hours, long waitlists, complicated systems to navigate, poor coordination of services, fear of discriminatory treatment, and youth not believing they have a problem (2). In addition, male sex, minority race/ethnicity, lower SES, more family transitions, and rejection or abuse from a caretaker are associated with lower likelihood of seeing a mental health professional prior to leaving home (37).

On the other hand, support and information from friends, family, and other homeless youth, services tailored specifically to homeless youth, and services that are readily accessible encourage utilization (2). Female sex, shelter use, higher levels of social support, and experiences of abuse or victimization are associated with greater likelihood of seeing a mental health professional after leaving home (37). Qualitative research with homeless youth about their experiences with health and social services emphasizes the importance of considering the specific needs, desires, and context of each youth and building relationships characterized by caring, trust, confidentiality, and understanding (9).

Geographic Context

There is evidence that the experiences of homeless youth may differ by geographic location (2, 38). Still, services for homeless youth are fairly uniform across the country and thus may not be meeting youths' needs (38). More research on geographic variations is needed in order to provide effective services.

Rural homelessness. Because homelessness is often framed as an urban problem, few studies have focused on rural homelessness. Even though service providers indicate that a substantial number of homeless youth in urban locations are originally from more rural areas, researchers have not often examined differences by geographic origin. Interventions for homeless youth in rural areas often have to rely on models created for urban settings (39). There is no consensus on to what extent rural homelessness differs from urban homelessness, but infrastructure differences in rural and urban settings suggest that the particular experiences of homeless individuals in rural areas deserve more research (40).

Estimating the prevalence of youth homelessness in rural areas is especially difficult. The experience of youth in rural areas may not match prevailing images of homelessness, and definitions of homelessness may vary based on location. For example, the U.S. Department of Housing and Urban Development considers living in condemned housing to meet the criteria for homelessness; however, what is officially deemed fit for human habitation depends on local government practices. Counts of homeless individuals in urban areas are usually done through homeless service providers, but these services may be lacking in rural areas. Many times, estimates of homelessness in rural areas are based on extrapolations from rates reported in urban areas. Regardless, youth are often specifically excluded from official enumerations of the homeless population (40).

A study using data from the NLSY97 reported that significantly more 15- to 17-year-olds in urban areas had ever run away than youth of the same age in rural areas (15.6% vs. 12.5%) (41). However, findings from the Youth Risk Behavior Surveillance System indicate that homelessness is as common among rural youth as it is among urban youth. Prevalence estimates were 8.3% in metropolitan statistical areas with central cities, 6.8% in metropolitan statistical areas without central cities, and 8.4% in non-metropolitan areas (40). A 1995-96 study of 602 homeless adolescents in four Midwestern states employed a narrower definition of rural (very

small town with population less than 2500 or farm/country), and rural youth comprised 7% of the sample.

Culture and social institutions. Williams used data from the NLSY97 to examine juvenile delinquency and criminal behavior in the context of urbanicity/rurality (41). Overall, self-reported rates for most delinquent acts were similar between urban and rural youth, but she proposed that different social control mechanisms might be at work in each setting. Urban youth were more likely to be suspended or arrested while informal controls like family might have been more influential for rural youth. Running away was a highly gendered phenomenon in rural areas, with 12- to 14-year-old males almost twice as likely to have run away as their female counterparts, yet in urban areas there was no significant gender difference.

Cultural values associated with rural areas might affect the experiences of homeless youth as well. Strong community ties and lifelong relationships with service providers could be important sources of support for rural youth. An emphasis on individualism and reluctance to accept outside assistance could promote self-reliant coping and resilience, or it could prevent youth from seeking needed services (40). More conservative ideals and less diversity could make some youth, particularly those who identify as LGBTQ, feel isolated or rejected (42).

Access to resources. In 2004, 48 of the 50 poorest counties in the U.S. were in rural areas. The odds of being poor are 1.2-2.3 times higher for people living in non-metropolitan areas than those in metropolitan areas. Yet, efforts to alleviate poverty may be less effective in rural areas due to housing quality, transportation issues, physical and social isolation, stigma associated with receiving government assistance, and shortage of health care providers and facilities. Compared to renters in urban areas, rural renters are more likely to live in substandard housing and pay a larger percentage of their income toward housing (40). Housing options might be limited for young people in rural areas, especially if they are "well-known for the wrong reasons" in a small community. Lack of transportation limits opportunities for work, recreation, and spending time with friends or family and contributes to feelings of isolation (42).

Shortages of health professionals and high staff turnover at human service agencies are common in rural areas (42). Less than half of rural counties in the U.S. have facilities offering outpatient mental health services for children and adolescents, and only a third have specialized programs for children and adolescents with severe emotional disturbance (43). It is estimated that that 9% of all people experiencing homelessness in the U.S. are in rural areas, but only 5% of targeted assistance for homelessness is directed to rural communities. Outreach services, in particular, which play a critical role in meeting the basic needs of homeless youth and connecting them to additional resources, are less common in rural areas (40). Research indicates that rural youth who run away at an earlier age or have a history of physical abuse use more deviant subsistence strategies, yet age at first run and abuse history are not related to subsistence strategies for youth from other areas. Relying on deviant subsistence strategies might reflect a lack of necessary services for youth in rural areas (44).

Lack of resources may prompt homeless youth from rural areas to move in search of better services and opportunities. A study of homeless youth in four Midwestern states reported that three-quarters of youth from rural communities were interviewed at shelters in metropolitan areas. Moving can mean leaving familiarity, sense of community, and social support systems. Frequent traveling has been associated with negative outcomes among homeless youth. Those who had lived in multiple states in the past year had fewer relatives and people attending school in their social networks and more ties to people who were homeless and engaged in risky behaviors. The number of these ties was, in turn, associated with youths' own risky behaviors (45).

Prevention and Intervention

Few interventions for homeless youth have been formally and rigorously evaluated (1). Two recent reviews found only 11 or 12 articles reporting outcomes of intervention studies for homeless youth (9, 46). Most of these studies have been focused on specific issues, like HIV or substance use, rather than considering the wide variety of issues that homeless youth face. These

single-issue interventions have not been particularly effective in reducing negative health behaviors and have rarely addressed broader outcomes like wellbeing or quality of life (2). Additionally, intervention research has focused on outcomes over process, so little is known about the exact mechanisms through which change might occur (9).

Problem-based approach. Many studies and interventions with homeless youth lack a specific theoretical framework and approach the issue instead from a problem-based perspective, emphasizing needs, deficits, and negative outcomes (2, 38). Kidd notes in a historical review of the literature that individual deficits have been the dominant lens through which youth homelessness has been understood throughout history. The focus was broadened somewhat in the 1980s and 1990s, with rising interest in family abuse and dysfunction, but macro-social factors only entered the prevailing discourse in the context of large economic or cultural changes (i.e., the Great Depression and the counterculture movement of the 1960s and 1970s) (3).

Kidd argues that our current understanding of youth homelessness has returned to a focus on individual responsibility, reflected in the de facto criminalization of homelessness (e.g., laws prohibiting panhandling, loitering, or providing free meals in public spaces), interventions focused on specific problem behaviors, and the lack of attention given to social factors or multi-causal explanations (3). Framing youth homelessness in terms of individual vulnerabilities rather than as a product of interactions between individuals and their environment offers limited guidance for policy or prevention (1). As targeted, problem-focused interventions have thus far been generally ineffective, a more holistic approach may be needed (2).

The effects of a problem-based approach to youth homelessness extend beyond the validity of research studies and the success of intervention programs. A focus on problems and deficits stigmatizes youth who experience homelessness and offers little hope or empowerment (47). Whether implicitly or explicitly, youth are often blamed or held responsible for their homelessness, or alternatively, viewed as passive victims of parental abuse, mental illness, or

other factors beyond their control. Each of these views affects how society responds to youth and the images youths have of themselves (3).

Strengths-based approach. Recent research on youth homelessness has departed from the problem-based approach and adopted a strengths-based resiliency framework (3). The aim of research with a focus on resilience is to understand what factors help high-risk populations not only survive, but thrive, in the face of challenges. As Resnick writes, "the resiliency paradigm seeks to identify protective, nurturing factors in the lives of those who would otherwise be expected to be characterized by a variety of adverse outcomes" and "a low probability of growing into responsible, high-functioning adulthood" (48). Thus, resilience – positive adaptation in the face of adversity – is not a static individual trait but rather a process. Understanding factors that promote resilience offers useful information for developing interventions (10). Moreover, taking a more empowering approach could facilitate greater utilization of services, as youth say they want providers to treat them with respect and empathy and to encourage a sense of control, autonomy, and self-efficacy (47).

A strengths-based perspective recognizes the personal strengths and informal resources that youth have and demonstrates a belief in youths' abilities to make changes in their lives. Most youth are not chronically homeless or destined for chronic homelessness in the future. The majority of homeless and runaway youth who called the National Runaway Switchboard (NRS) over a five-year period from 2000-05 had been away from home for a week or less (58%) and had not crossed state lines (57%). About 46% of NRS callers were calling from a friend's or relative's home, and about 17% were calling from a shelter or police station, indicating they already had some contact with informal and formal resources (49). Based on a probability sample of 249 homeless youth in Detroit, after 4.5 years, 93% were no longer homeless: 34% were living on their own, 33% with parents, and 21% with friends or relatives. At follow-up, youth were experiencing less conflict with family and fewer stressful life events (1).

Helpful Resources for Homeless Youth

With the recent shift to a more strengths-based perspective, studies have begun to identify helpful resources that are often already available to homeless youth. Some of these are internal resources, including personal qualities, skills, and coping strategies. External resources include family, social support, school, work, and clinical services.

Personal strengths. In interviews, youth identified determination, motivation, taking responsibility, and dreams and hope for the future as helpful when trying to leave the street (8). Based on focus group discussions with homeless youth in the Southwest, Bender argues that the skills youth develop to survive on the street are also important and useful for exiting homelessness and thriving in mainstream society. In their descriptions of their lives while homeless, youth exhibited responsibility, aspirations, maturity, positive attitude, trust, coping skills, problem solving, organization, observational skills, and interpersonal skills (47). Surviving on the street also often requires that youth develop entrepreneurial skills to make money, through both legal (e.g., selling items they make) and illegal (e.g., drug dealing) means (50).

Family. Despite strained relationships, youth often maintain contact with family members and rely on them for support (51). Among 150 homeless youth recruited from drop-in centers in California, 80% reported that they were still in contact with their parents (10). A set of studies in Los Angeles found that on average, youth had three to four relatives in their network, representing about 18% of their social ties. Family members were the most frequently cited sources of both emotional and tangible support (20, 50).

Connections to family members seem to be protective in multiple domains. Youth participated in less risky sex and drug use when they had a family member in their social network (52, 53). Parental support was associated with fewer externalizing problems, and after controlling for age, gender, ethnicity, and parental maltreatment, family connectedness explained 23% of the variance in psychological distress (10, 20). Support from family was identified by youth in several studies as a critical factor in helping them transition from the street to more stable housing

(7, 8, 51). Improvements over time in family communication, trust, and maternal support were especially important (11, 51). Among youth aging out of foster care in three Midwestern states, feeling very close to at least one family member decreased the odds of homelessness by about 80% (1).

Social support. In addition to family members, homeless youth also receive support from friends, acquaintances, romantic partners, informal mentors, and professionals. A study in Los Angeles found that about 43% of youths' social network ties provided emotional or tangible support (27, 54). Homeless youth with high levels of social support have lower depression symptoms and participate in fewer risk behaviors (55-63). Among formerly homeless 16-25-year-olds in Canada, integration into the community through activities and sense of belonging was related to hope, mental health, and quality of life (6). A pilot intervention in Alberta focused on increasing social support for homeless youth by providing them with access to peer and professional mentors, support groups, transportation, meals, and recreation activities. After 20 weeks, participants reported improved mental health, increased self-efficacy, more active support seeking, decreased loneliness, decreased substance use, and larger social networks (64).

Formerly homeless 18-25-year-olds in Georgia and North Carolina were interviewed about what helped them navigate difficulties during adolescence. Family, friends, and professionals assisted these young people by showing care, warmth, and understanding; setting boundaries and holding them accountable; offering concrete assistance, such as money, food, transportation, or a place to stay; and providing professional services, including shelter, therapy, and residential treatment (7). Homeless youth who participated in focus groups in Ontario emphasized the importance of long-lasting relationships with people who made them feel cared about and accepted, to whom they could go when they were ready to make changes (65). Among youth in Vancouver who had been in and out of homelessness, 60% named support from friends and family as an important helping factor when they were trying to leave the street, and 60% said support from community agencies and institutions was helpful (8).

For adolescents, support from caring adults is especially important. Positive relationships with adults serve a protective role for at-risk adolescents, as a lack of supportive adult connections is related to poor academic, behavioral, and psychosocial outcomes (66). Mentoring programs have had positive effects on educational outcomes, employment, and delinquent behavior during the transition to adulthood, although few of these programs have been evaluated with homeless youth (66, 67). For homeless youth, having an adult in a position of authority as a member of their social network was associated with fewer experiences of unwanted unprotected sex (68). Adult support also moderated the relationships between risk factors, including truancy, gang involvement, and partner abuse, and homeless youths' substance use (69). Among 18- to 21-year-old youth at a shelter in Philadelphia, those who had received their high school diploma could typically identify a supportive adult at school, like a teacher or guidance counselor, who had helped them (33).

School. Education prepares youth for better job opportunities and increases their earning power. Homeless youth value education and recognize that a lack of education would limit their future prospects (33). School offers benefits beyond career development as well. Positive perceptions of school climate, which encompasses relationships with students and teachers, belonging, connectedness, safety, disciplinary style, and available resources, are associated with stronger academic performance, fewer behavioral problems at school, less mental distress, and higher life satisfaction (32).

In a statewide survey in California comparing the effects of school climate for youth from different family structures, the relationship between positive school climate and academic outcomes was strongest for homeless youth. Higher school climate scores reduced the achievement gap between homeless youth and their peers (32). For homeless youth at drop-in centers in California, school connectedness was a protective factor that explained 28% of the variance in psychological distress (10). School can also be protective by connecting youth to more prosocial influences (1). As one homeless young woman at a shelter in Philadelphia said,

"School keeps me out of trouble too" (33). Studies in Los Angeles indicated that more ties to people attending school were associated with less sexual risk, HIV risk, and heavy drinking (70-72).

Work. Employment is especially important for homeless youth, who may have less financial support from family and lower education levels. Working can link homeless youth to the community, promote personal development and self-sufficiency, and provide a foundation of financial security and job skills to help youth in the future (50). Youth in Vancouver who had been in and out of homelessness were interviewed about what helped and hindered their efforts to get off the street; 70% said participating in constructive activities, like working, job training, or volunteering, was helpful for them because it kept them busy and motivated (8). In a longitudinal study of 30 homeless youth in Ireland, 14 out of the 17 who had exited homelessness at 12- to 18-month follow-up had continued or re-engaged in education or training programs (51). Participation in Job Corps, the largest residential vocational training and education program for at-risk youth ages 16 to 24, has been associated with independent living at 48-month follow-up. Compared to a control group, Job Corps participants were more likely to report being heads of household and less likely to be living with parents (1).

Two pilot studies focused on integrating vocational training and clinical services have demonstrated promising initial results. For the Social Enterprise Intervention, a group of 12 homeless youth received vocational and small business skills training and worked together to create a social enterprise, designing and selling hats. The intervention was hosted at a drop-in center where mental health services were available. Initial results indicate improvements in life satisfaction, support from peers and family, and depression over nine months. An intervention based on the Individual Placement and Support model involved coordinated services with a career counselor, case manager, and mental health professional; proactive assistance in helping youth find jobs that fit their needs and preferences; and continued support once youth were working.

Initial results indicate that youth in the program were more likely to have ever worked, to have worked for a longer period of time, and to still be working at 10-month follow-up (50).

Theoretical Background

In keeping with the movement toward a strengths-based approach to youth homelessness, this study draws from the Risk Amplification and Abatement Model (RAAM) proposed by Milburn and colleagues (11). RAAM adapts the problem-focused Risk Amplification Model (RAM) to incorporate protective factors and an ecological perspective (73). Because RAAM provides little guidance for identifying important positive outcomes, this study relies on a Positive Youth Development framework to conceptualize what a successful transition out of homelessness entails.

Risk Amplification Model (RAM). Whitbeck and colleagues formulated RAM in 1999 based on life course developmental theory and social interaction theory (73). Prior to this, theoretical models to structure research on the experiences of homeless youth had been scarce (74). According to RAM, the majority of homeless youth leave troubled homes where they learned aggressive interaction styles. These early life experiences serve as "training" for further antisocial behavior and set youth on negative developmental trajectories. These youth are more likely to have deviant peers and engage in risky behaviors and are, as a result, exposed to additional negative social environments. Thus, risks stemming from dysfunctional home environments are compounded by risks youth face on the street.

Whitbeck and colleagues tested RAM with a sample of homeless youth in the Midwest and found that deviant peers, deviant subsistence strategies, substance use, and risky sexual behaviors amplified the effects of family abuse on later victimization in both males and females; for young women, the effects on depression symptoms were amplified as well (73). Since it was proposed, RAM has been used as to examine the effects of home- and street-based risk factors on sexual victimization, sexual onset, and alcohol use (75-77).

Risk Amplification and Abatement Model (RAAM). By 2009, RAM was still the best model to describe youth homelessness, but its major limitation was its focus on negative developmental and socialization processes and negative outcomes. Because RAM ignored potential positive socialization experiences, it was not an ideal model for explaining how some youth successfully transition out of homelessness. Motivated by the question, "Can positive socialization experiences help to explain positive outcomes for homeless adolescents?" Milburn and colleagues proposed RAAM in 2009. According to RAAM, negative socialization experiences can amplify risk but positive socialization experiences can abate risk. Milburn and colleagues consciously incorporated an ecological perspective into their expanded version of the model (11). Acknowledging that positive and negative social influences work at multiple levels, RAAM focuses on the roles family, peers, social services, and formal institutions play in amplifying and abating risks (11).

To test RAAM, Milburn and colleagues followed a sample of newly homeless adolescents in Los Angeles for two years and examined factors associated with exiting homelessness. The likelihood of youth living with family or in their own apartment at two-year follow-up was related to level of support from mother, school attendance, and increases in either of these factors over the course of two years. The likelihood of youth maintaining stable housing from three-month to two-year follow-up was related to support from mother, support from father, school attendance, number of friends in school, number of friends who get along with their families, and increases in mother's support or school attendance. Shelter use, on the other hand, was associated with a lower likelihood of youth exiting homelessness or maintaining stable housing. After controlling for all variables, level of support from mother, increase in mother's support, and number of friends who get along with their families remained significant (11).

In 2012, Alemagno, Stephens, and Shaffer-King used RAAM as a framework to study homelessness among incarcerated youth in Ohio. Family problems, lack of family support, peer problems, and school problems were associated with increased odds of having ever experienced

homelessness. Medical or mental health treatment was not associated with homelessness; however, the authors did not consider need for vs. receipt of treatment (78). The outcome of interest for both of these studies was homeless status. Although RAAM was inspired by a desire to explain positive outcomes for homeless youth, the model has yet to be applied to outcomes beyond housing.

Positive Youth Development (PYD). PYD grew out of the recognition that avoidance of problem behaviors alone did not constitute successful transition to adulthood and that intervention efforts should focus not just on negative behaviors and outcomes, but also on promoting social, emotional, cognitive, and behavioral development. Promoting positive development has the secondary benefit of preventing problem behaviors and negative outcomes (48, 79). Research has shown, for example, that goal setting, decision making, and self-reliant coping skills are associated with less drug use, risky sex, and delinquency (55). Successful PYD programs in general are characterized by physical and psychological safety, clear and consistent structure, supportive relationships, feeling of belonging, opportunities for self-efficacy and mattering, skill-building, positive social norms, and integration of family, school, and community. Evaluations of two PYD programs in an alternative high school and a foster care setting found that staff-youth relationships with mutual trust, communication, and respect, as well as opportunities for responsibility-taking and identity development were associated with improved academic and social competencies and positive identity growth (25).

The U.S. Department of Health and Human Services has identified PYD as one of the main theoretical frameworks that should guide work with runaway and homeless youth (80). Key characteristics of PYD programs were used to inform a study on satisfaction with services at six homeless youth agencies in a Midwestern metropolitan area. Youths' perceptions of the agencies in terms of appropriate structure, belonging, staff relationships, support for efficacy, and positive social norms predicted satisfaction (25). PYD was used to guide the development of an intervention for sexually exploited, former runaway girls in Minnesota. The program focused on

rebuilding positive family relationships, increasing connection to school, and improving self-esteem. It included home visits from a nurse, health care services, case management, an empowerment group, metal health screening, promotion of self-care skills and goal-setting, and opportunities to participate in extracurricular activities. At 6- and 12-month follow-up, changes were evident in all positive and negative outcome measures (family, school, self-esteem, substance use, sexual risk, and suicide) (81).

According to the U.S. Department of Health, Education, and Welfare, fundamental aspects of healthy adolescent development include: participating as citizens, household members, workers, and responsible members of society; interacting with peers and gaining a sense of belonging; reflecting and discovering self; articulating one's own value system; experimenting with identities, ideas, and roles; having a sense of accountability in relationships with others; and enjoying life (48). A number of important social achievements are key to the transition from adolescence to adulthood, including gaining employment, completing postsecondary education or training related to career goals, and developing independent living skills and resources (82). Most broadly, healthy development should encompass the basic psychosocial human needs of belonging, responsibility, sense of personal involvement, challenge, satisfaction, comradeship, love, pleasure, confidence, and security (48).

Purpose of the Study

Youth homelessness is a major public health concern in the U.S. based on the sheer number of youth affected as well as the potential for long-term consequences. Given the importance of social environment during adolescent development, youth may be especially impacted by homelessness. The conceptual model for this study, shown in Figure 1, illustrates potential developmental trajectories for youth who experience homelessness. These youth are typically expected to struggle during the transition to adulthood and have poor long-term outcomes. According to RAAM, however, positive socialization experiences at multiple levels, including interactions with individuals, formal institutions, and social services, can abate risks

associated with homelessness. Moreover, these experiences can offer opportunities for positive youth development, which are crucial for a successful transition to adulthood.

Most research on youth homelessness to date has focused on risks and short-term negative outcomes. Long-term outcomes and factors that affect transition to adulthood following episodes of homelessness are not well understood. This study departs from the problem-based approach to explore resilience among young people with a history of running away or homelessness. Prior research on youth homelessness has rarely considered the role of location, so I examine potential differences by the geographic contexts in which youth live as adolescents and adults. The goal of the study is to identify factors that promote positive adult outcomes for individuals who experienced running away or homelessness during adolescence. Specifically, three hypotheses guide this study:

Hypothesis 1: Respondents who ran away or were homeless during adolescence are less likely to report positive outcomes as adults, including subjective wellbeing, positive relationships, educational and career advancement, and prosocial involvement in their communities.

Hypothesis 2: Positive socialization experiences related to interpersonal relationships, engagement with formal institutions, and availability of mental health care during adolescence and the transition to adulthood are associated with positive outcomes in adulthood.

Hypothesis 3: Positive socialization experiences moderate the relationships between adolescent running away/homelessness and adult outcomes: outcomes for runaway/homeless youth are more similar to outcomes for non-runaway/homeless youth when they have positive socialization experiences during adolescence and the transition to adulthood.

Methods

Participants

The National Longitudinal Study of Adolescent to Adult Health (Add Health) is a longitudinal study of a nationally representative sample of U.S. adolescents who were in grades 7-12 at baseline in 1994-95. The sample was followed for three subsequent waves of data collection in 1996, 2001-02, and 2007-08. Data for this study come from Waves 1, 3, and 4.

High schools in the U.S. (i.e., schools with an 11th grade and at least 30 students) were stratified by region, urbanicity, school size, school type, grade span, and racial composition at Wave 1. Eighty high schools were randomly selected. A feeder middle school for each of these high schools (i.e., school with a 7th grade whose graduates attended the corresponding high school) was also included. After an in-school survey, a sample of 27,000 adolescents was selected for in-home interviews and a total of 20,745 completed the interview. All Wave 1 in-home interview participants who could be located were eligible for Wave 3 and 4 interviews. A total of 15,197 participants completed in-home interviews at Wave 3 when they were between 18 and 28 years old. A total of 15,701 participants completed in-home interviews at Wave 4 when they were between 24 and 34 years old.

Add Health public-use datasets are available for download through the Inter-University Consortium for Political and Social Research's Data Sharing for Demographic Research website. These datasets do not contain any identifying information or links to any identifiers. Furthermore, to ensure participants' confidentiality and protect against deductive disclosure, the publicly available datasets do not include all participants. Approximately one-half of the original core sample was selected at random for inclusion (N = 6504 at Wave 1; N = 4882 at Wave 3; N = 5114 at Wave 4).

Procedures

Wave 1 in-home interviews were conducted between April and December 1995, Wave 3 in-home interviews between August 2001 and April 2002, and Wave 4 in-home interviews

between January 2008 and February 2009. Responses were entered directly into laptop computers; interviewers administered the less sensitive questions while more sensitive portions of the interview were self-administered. Participants gave written informed consent prior to each interview. The University of North Carolina School of Public Health Institutional Review Board provided ethical oversight for the Add Health study. The Emory University Institutional Review Board determined that separate review of the current study was not required, as secondary analysis of de-identified data does not meet the definition of human subjects research.

Measures

Demographics and background characteristics. Biological sex and age, calculated as the difference between the date of the interview and the participant's birthdate, were recorded at each Wave. Participants reported self-identified race, ethnicity, and place of birth (in U.S. vs. abroad) at Wave 1. Childhood SES was measured by two variables at Wave 1: highest education level achieved by parents/caretakers and total family income in the previous year. At Wave 3, participants indicated if they had experienced physical abuse, sexual abuse, or neglect from a parent/caregiver prior to 6th grade. These items were combined into a single dichotomous variable for history of child abuse. Items about experiences living in foster or group homes were combined into one dichotomous variable for history of out-of-home care. Self-defined sexual orientation at Wave 3 was recoded into a dichotomous variable (100% heterosexual/straight vs. attracted to people of one's own gender or not attracted to either men or women). Geographic context was operationalized two ways. During Waves 1 and 4, interviewers indicated if the area immediately surrounding each participant's home was rural, suburban, or urban. Select variables based on geocoded data were also available for Wave 1, including a dichotomous item for urbanicity (census block group in completely urbanized area vs. census block group with portion of population living in rural areas).

Runaway and homeless experiences. Prior runaway experience was measured by one item from the Wave 1 interview: "During the past 12 months, how often did you run away from

home?" Responses were recoded to form a dichotomous variable (did not run away vs. ran away at least once in past 12 months). Prior homeless experience was measured by one dichotomous item from the Wave 3 interview: "Have you ever been homeless for a week or longer - that is, you slept in a place where people weren't meant to sleep, or slept in a homeless shelter, or didn't have a regular residence in which to sleep?"

Positive socialization experiences. Data from Waves 1 and 3 were used to assess potential positive socialization experiences occurring in the context of interpersonal relationships (friends, parents/caregivers, mentors), formal institutions (school, work), and social services (mental health care). Positive socialization measures are described below. Further details regarding items, response options, scoring, and coding for all variables can be found in the codebook (see Appendix A).

Interpersonal relationships. At Wave 1, participants were asked how much they thought their friends cared about them on a scale of 1 (not at all) to 5 (very much). Responses were recoded into a dichotomous variable (care very much vs. less than very much). Participants also answered a variety of questions about their parents (or the mother/father figures with whom they lived) at Wave 1. Scales were constructed for quality of relationship with mother ($\alpha = 0.86$) and quality of relationship with father ($\alpha = 0.90$), including items about warmth, closeness, and satisfaction with the relationship. Prior Add Health studies employed similar scales (83-85). One factor from the Add Health parent involvement scale, shared communication, was used to measure communication with parents (86, 87). The eight shared communication items (four for mother, four for father) asked if participants had talked with their parents in the past four weeks about topics related to school and personal life ($\alpha = 0.71$). At Wave 3, participants were asked if a non-parental adult had made an important difference in their life since age 14 and what type of relationship they had with this person (e.g., grandparent, teacher, employer). A categorical mentor variable was created with relationship types collapsed into seven categories and no mentor as the reference group.

Formal institutions. A scale measuring school connectedness was constructed from five items in the Wave 1 interview ($\alpha = 0.77$). This scale has been widely used and demonstrated good psychometric properties across diverse sociocultural groups (88). Items asked participants to indicate how much they agreed or disagreed with positive statements about the school environment (e.g., "You feel like you are a part of your school") and people at school (e.g., "The teachers at your school treat students fairly"). Work experience was assessed at Wave 3 based on participants' responses to questions about volunteer experience and employment. Participants were asked if they had regularly participated in volunteer or community service work during adolescence, and if so, whether their participation was voluntary or required by their parents, school, or religious group. (Very few participants reported court-mandated service so it was not included.) Two dichotomous variables were created for participation vs. no participation in voluntary service and required service. Age at which participants had their first paying job (at least 10 hours/week for nine weeks) was used as a continuous variable.

Mental health care. As a proxy measure of access to mental health care, participants were asked at Waves 1 and 3 if they had health insurance coverage for the past 12 months. Utilization of mental health services was measured at Waves 1 and 3 by asking if participants had received psychological or emotional counseling in the past year. Access and utilization were considered in conjunction with concurrent mental health need. The feelings scale, a brief version of the Center for Epidemiological Studies Depression (CES-D) screener, which asked about depression symptoms in the past week, was administered at Waves 1 and 3 ($\alpha = 0.79$-0.81). Total scores on the feelings scale were calculated as the sum of nine items (range 0-27) and converted to their equivalent on the full 20-item CES-D (i.e., multiplied by 20/9). Scores were classified as indicative of depression based on the established cut-off of 16 and above (89, 90). Suicidality was measured via two dichotomous variables (seriously thought about suicide in past 12 months, attempted suicide in the past 12 months) at Waves 1 and 3. Based on the feelings scale and

suicide items, a single dichotomous mental distress item was created for each Wave (current depression symptoms and/or past-year suicidality vs. no depression symptoms or suicidality).

Adult outcomes. Data from Wave 4 were used to assess outcomes indicative of healthy development and successful transition to adulthood. A subjective wellbeing scale was constructed based on four items ($\alpha = 0.72$). Higher scores indicate better perceived health, positive affect, and coping, which have all been identified as aspects of subjective wellbeing (91, 92). Participants reported how many close friends they had (none, 1 to 2, 3 to 5, 6 to 9, 10 or more), with close friends defined as "people whom you feel at ease with, can talk to about private matters, and can call on for help." They also answered a series of questions about their relationship with their current or most recent romantic partner. Four of these items (e.g., "We enjoy doing even ordinary, day-to-day things together") comprised a positive relationship functioning scale ($\alpha = 0.87$). This was a condensed version of scales used in prior Add Health studies, focused on items related to positive functioning that were applicable to relationships of varying lengths and levels of commitment (e.g., satisfaction with handling of finances was excluded) (84, 93).

Participants reported the highest level of education they had achieved to date, which was recoded into a dichotomous variable (any post-secondary education or training vs. high school or less), and their total yearly household income. Reflecting on their current or most recent primary job, participants indicated how satisfied they were with the job as a whole and how the job fit with their career goals. A dichotomous variable was created for job quality (satisfied with job and in a position related to long-term career or work goals vs. not). Two items were used as indicators of active participation in and contributions to society: whether or not participants had spent time on volunteer or community service work in the past year, and whether or not they always voted in local and statewide elections.

Analysis

Data management and analysis was conducted in IBM SPSS Statistics 22. Wave 1, 3, and 4 public-use datasets were merged, variables recoded, and scales constructed. To account for the

Add Health study's sampling procedures, cluster and sampling weights were entered as design variables in the SPSS Complex Samples analysis plan. The cluster variable accounts for selection of participants within schools. Sampling weights, equal to the inverse of the probability of selection, adjust for nonresponse, oversampling of specific populations, and post-stratification, allowing nationally representative estimates to be made. A strata variable was not included because it is not available in the public-use datasets; however, its omission only minimally affects standard errors. Although schools were selected without replacement, on the basis of large sample theory estimations were made under the assumption of sampling with replacement (94).

The frequencies of running away and homelessness were calculated and the variables were cross-tabulated to determine if they should be analyzed together or as separate groups. Frequencies and descriptive statistics were then calculated for demographic and background variables within the total sample and runaway and homeless subpopulations. Chi-square tests and simple logistic regression were conducted to examine bivariate relationships between each demographic/background variable and running away/homelessness.

Hypothesis 1: Respondents who ran away or were homeless during adolescence are less likely to report positive outcomes as adults, including subjective wellbeing, positive relationships, educational and career advancement, and prosocial involvement in their community.

Frequencies and descriptive statistics were calculated for adult outcome variables within the total sample and runaway and homeless subpopulations. Simple linear or logistic regression was conducted to examine bivariate relationships between running away/homelessness and each outcome variable. Ordinal outcome variables (close friendships and income) were treated as continuous because the study hypotheses involved understanding overall relative relationships (i.e., better or worse outcome). Multiple linear or logistic regression was conducted to examine relationships between running away/homelessness and each outcome while controlling for

demographic and background variables. Subsequent analyses focused on those outcomes that were significantly associated with running away and/or homelessness in the multivariable models.

Hypothesis 2: Positive socialization experiences related to interpersonal relationships, engagement with formal institutions, and availability of mental health care during adolescence and the transition to adulthood are associated with positive outcomes in adulthood.

Frequencies and descriptive statistics were calculated for positive socialization variables within the total sample. Correlations cannot be computed directly within Complex Samples, so correlations between pairs of socialization variables were approximated. For every pair of variables, two regressions were run (e.g., relationship with mom as predictor of parent communication, parent communication as predictor of relationship with mom) and the square root of the higher R^2 was used as an estimate of r.

Simple linear or logistic regression was conducted to examine bivariate relationships between each socialization variable and each outcome. Categories within the mental health care variables were compared by testing differences between means (for continuous outcomes) or calculating odds ratios (for dichotomous outcomes). Socialization variables that were significantly associated with each outcome were then entered into multiple linear or logistic regression models by domain (i.e., interpersonal relationships, formal institutions, and mental health care) with demographic and background variables. Based on these models, socialization variables related to each outcome were identified to be used in further analyses.

Hypothesis 3: Positive socialization experiences moderate the relationships between adolescent running away/homelessness and adult outcomes: outcomes for runaway/homeless youth are more similar to outcomes for non-runaway/homeless youth when they have positive socialization experiences during adolescence and the transition to adulthood.

Two-way interaction terms were created for combinations of runaway/homeless with each socialization variable. For outcomes associated with geographic context, three-way interaction terms were created for runaway/homeless, geography, and each socialization variable. Deviation scores for continuous variables, calculated as the difference between an individual's score and the mean score, were used in place of raw scores in interaction terms. Interaction terms were entered into multiple linear or logistic regression models by domain with runaway/homeless, demographic, background, and socialization variables.

A final model was constructed for each outcome combining runaway/homeless, demographic and background variables, significant positive socialization variables, and significant interactions from all domains.

Results

Data were available for 6504 participants from Wave 1 of the Add Health study. Of these participants, 4882 completed interviews as Wave 3 and 5114 completed interviews at Wave 4; 4208 participants completed all three interviews. The mean age of participants was 15.5 at Wave 1, 21.8 at Wave 3, and 28.4 at Wave 4. After adjusting based on sampling weights, males and females were equally represented, and 75% of youth identified as white, 17% as black or African American, 11% Hispanic or Latino, 4% as American Indian or Native American, 3% as Asian or Pacific Islander, and 7% as other. Other demographic and background characteristics for the full sample are shown in Table 1.

Runaway and Homeless Experiences

At Wave 1, 411 participants reported running away at least once in the past year. Taking the sampling procedures into consideration, an estimated 8.5% of all 7^{th} through 12^{th} grade students in the U.S. ran away in 1994-95. At Wave 3, 158 participants reported ever being homeless for a week or more, which translates to 3.9% of the total 7^{th} through 12^{th} grade student population. Running away and homelessness were significantly related ($\chi^2 = 43.03$, $p < 0.001$), but a minority of participants had experienced both (N = 37, 0.8% of total population). Thus, running away and homelessness were analyzed separately.

Demographic and background characteristics for youth with runaway experiences are shown in Table 2. The mean age of youth who reported running away was 15.8, and the odds of having run away in the past year increased with age (OR = 1.14 (1.06, 1.22)). Youth who lived in urbanized areas had higher odds of running away than those who lived in partially or entirely rural areas (OR = 1.43 (1.12, 1.83)). The odds of running away were almost twice as high for sexual minority youth compared with youth who identified as straight (OR = 1.91 (1.30, 2.80)), more than twice as high for those who experienced abuse or neglect (OR = 2.27 (1.66, 3.09)), and more than three times higher for those who had lived in a foster or group home (OR = 3.36 (2.11,

5.37)). If youth had at least one parent with an advanced degree, the odds of running away were about half as high (OR = 0.55 (0.31, 0.98)).

Demographic and background characteristics for youth with homeless experiences are shown in Table 3. The average yearly family income for youth who had experienced homelessness was about $9,000 less than the average family income for youth in general; odds of lifetime homelessness decreased as family income increased (OR = 0.92 (0.84, 0.99)). The odds of homelessness were more than three times higher for sexual minority youth compared with youth who identified as straight (OR = 3.10 (2.00, 4.79)), more than three and a half times higher for those who experienced abuse or neglect (OR = 3.69 (2.33, 5.83)), and more than six times higher for those who had lived in a foster or group home (OR = 6.20 (3.77, 10.20)). Neither running away nor homelessness was significantly associated with sex, race/ethnicity, or country of birth.

Positive Socialization

Positive socialization experiences for the total youth population are shown in Table 4. On average, youth reported high quality relationships with their mother and father figures (4.27 and 4.11 out of 5, respectively), endorsed about half of the parent communication items, and had moderately high school connectedness (3.71 out of 5). About 43% thought their friends cared about them very much, 75% identified a mentor figure, 30% regularly participated in voluntary community service, and 8% regularly participated in community service required by their parents, school, or church. About a third reported mental distress at Wave 1, and about a fifth reported mental distress at Wave 3, the majority of whom at both Waves had insurance but did not receive counseling. Correlations between socialization variables were generally low. The highest correlation was between relationship with mother and relationship with father (r = 0.50; Table 5).

Adult Outcomes

Runaway experience. Outcomes for all youth and for those with runaway experiences are shown in Tables 6 and 7. Those who reported running away at Wave 1 fared significantly

worse at Wave 4 for all outcome variables except participation in volunteer activities. Compared to those without runaway experiences, those who ran away scored almost a full point lower on subjective wellbeing (B = -0.94, scale range 0-15) and significantly lower on relationship functioning (B = -0.21, scale range 1-5). They also reported fewer close friendships: 76% of those without runaway experiences had 3 or more close friends at Wave 4, compared to 67% of those who ran away. Compared to those who did not run, fewer individuals who ran away had any post-secondary education or training at Wave 4 (73% vs. 63%). Those who ran away were about half as likely to be working in a position that offered both job satisfaction and a good fit with their career goals (OR = 0.54 (0.40, 0.73)), and they earned about $10,000 less per year than those who did not run away. About one-fourth of those without runaway experiences said they always voted in local and statewide elections, compared to 18% of those who had run away. After controlling for demographic and background variables, running away still predicted significantly worse outcomes for all variables except post-secondary education and job quality. See Appendix B for complete results of multivariate analyses.

Homeless experience. Outcomes for those with homeless experiences are shown in Table 8. Individuals who by Wave 3 had ever experienced homelessness fared significantly worse at Wave 4 for all outcomes except close friendships and voting. Compared to those without homeless experiences, those who had been homeless scored significantly lower on subjective wellbeing (B = -0.76, scale range 0-15) and relationship functioning (B = -0.21, scale range 1-5). Compared to those who had not been homeless, fewer individuals with homeless experiences had any post-secondary education or training (73% vs. 61%). Those who had been homeless were about half as likely to be working in a position that offered both job satisfaction and a good fit with their career goals (OR = 0.46 (0.29, 0.75)), and they earned about $18,000 less per year than those who had not been homeless. A smaller portion of those with homeless experiences than those without had volunteered or participated in community service during the past year (37% vs. 26%). After controlling for demographic and background variables, homelessness was still

significantly related to lower income, but relationships with subjective wellbeing, relationship functioning, post-secondary education, job quality, and volunteering were no longer significant. See Appendix B for complete results of multivariate analyses.

Interpersonal relationships and formal institutions. All of the positive socialization variables in the interpersonal and formal domains, reported at Waves 1 and 3, were associated with better outcomes at Wave 4 (see Table 9). After controlling for demographic/background factors and other socialization variables within the same domain, each socialization experience except relationship with father still had a unique effect on at least two of the five outcomes (subjective wellbeing, close friendships, relationship functioning, income, and voting). School connectedness and voluntary service were uniquely associated with the most outcomes: higher levels of school connectedness predicted all outcomes except voting, and participation in voluntary service predicted all outcomes except relationship functioning.

Mental health care access. To examine the role of mental health care access, insured participants with mental distress, uninsured participants with mental distress, and insured participants without mental distress were compared. As shown in Table 10, insured participants without mental distress had the most favorable outcomes at Wave 4, uninsured participants with mental distress had the least favorable outcomes, and insured participants with mental distress generally fell in between. Comparing participants experiencing mental distress at Wave 1 who had insurance to those experiencing distress who did not have insurance, insured individuals reported significantly more close friendships ($F = 7.41$, $p = 0.02$) and higher income ($F = 13.07$, $p = 0.001$) as adults.

Comparing participants experiencing mental distress at Wave 3 who had insurance to those experiencing distress who did not have insurance, insured individuals fared significantly better as adults in terms of subjective wellbeing ($F = 12.84$, $p = 0.001$), close friendships ($F = 11.76$, $p = 0.002$), relationship functioning ($F = 5.94$, $p = 0.05$), and income ($F = 7.10$, $p = 0.03$). The odds of voting at Wave 4 were equal for participants who were insured at Wave 3, regardless

of mental distress status (OR = 1.00 (0.76, 1.31)). Participants who were uninsured and experiencing mental distress at Wave 3 had lower odds of voting than insured individuals not experiencing distress (OR = 0.80 (0.66, 0.96)). See Appendix C for detailed results.

Mental health care utilization. To examine the role of mental health care utilization, mentally distressed participants who received counseling, mentally distressed participants who did not receive counseling, and participants without mental distress were compared. As shown in Table 11, individuals without mental distress had the best outcomes at Wave 4. For individuals with mental distress, it varied whether those who received counseling or those who did not receive counseling had more favorable outcomes. Compared to individuals without mental distress, those with mental distress who did not receive counseling had significantly worse outcomes across all variables. Individuals experiencing mental distress who received counseling, however, did not differ significantly from those without mental distress in terms of close friendships (Wave 1: $F = 2.78$, $p = 0.20$; Wave 3: $F = 1.15$, $p = 0.57$) or voting (Wave 1: OR = 0.77 (0.59, 1.00); Wave 3: OR = 0.92 (0.60, 1.40)). On the other hand, compared to individuals experiencing distress at Wave 3 who did not receive counseling, those with distress who received counseling had lower income ($F = 5.00$, $p = 0.05$) at Wave 4. See Appendix C for detailed results.

Interactions with runaway and homeless experiences. Of the possible two-way and three-way interactions explored, none was significant for subjective wellbeing, close friendships, relationship functioning, income, or voting.

Final models. A final model including runaway or homeless experience, demographic and background characteristics, and positive socialization variables was constructed for each outcome (see Tables 12-16). These models accounted for 11% of the variance in subjective wellbeing, 9% of the variance in close friendships, 5% of the variance in relationship functioning, 12% of the variance in income, and 2% of the variance in voting. Runaway and homeless experience were no longer significant predictors of most outcomes when entered in the same models as demographic and socialization variables. The relationship between homelessness and

income was an exception: those who had experienced homelessness earned about $10,000 less per year than those who had not been homeless (B = -0.40, p = 0.001).

Table 17 summarizes the significant predictors in the final models. With the exception of relationship with father and mental health care utilization, all of the proposed socialization variables were associated with positive outcomes. Relationship with father was not uniquely related to any of the outcomes, and those who received counseling at Wave 3 had significantly lower incomes at Wave 4. The demographic and socialization variables associated with the most outcomes were parent education level (five outcomes), participation in voluntary community service (four outcomes), and school connectedness (four outcomes). Having a teacher, guidance counselor, or coach as a mentor and mental health care access were each associated with three outcomes. Living in a foster or group home, friend support, relationship with mom, parent communication, participating in required community service, and working at an earlier age were each related to two outcomes.

Discussion

In this study, I explored youths' transition to adulthood following episodes of running away or homelessness from a strengths-based perspective. Guided by the Risk Amplification and Abatement Model (RAAM), I proposed that positive socialization experiences in multiple domains, including interpersonal relationships, formal institutions, and mental health care, would ameliorate the long-term negative effects of running away and homelessness. I expected that, by promoting positive youth development (PYD), these experiences would encourage more resilient developmental trajectories and lessen the impact of running away and homelessness on various indicators of successful transition to adulthood. Based on the PYD framework, I defined subjective wellbeing, close relationships, educational attainment, career advancement, and prosocial involvement as indicators of healthy development into adulthood.

I conducted secondary analysis of publicly available data from the National Longitudinal Study of Adolescent to Adult Health (Add Health). Data on runaway, homeless, and positive socialization experiences during adolescence and the transition to adulthood were drawn from Wave 1 (mean age 15.5) and Wave 3 (mean age 21.8) interviews. Outcome data were drawn from Wave 4 interviews (mean age 28.4).

Based on estimates from Add Health's nationally representative sample, 8.5% of adolescents had run away at least once in the prior year, and by young adulthood 3.9% had experienced an episode of homelessness that lasted a week or more. In accordance with the existing literature, lower SES, foster care, abuse, and sexual orientation were associated with higher odds of running away and homelessness. Interestingly, lower parent education level predicted running away whereas lower family income was associated with homelessness. Additional demographics factors related to running away were age and geography: older adolescents and those who lived in urbanized areas were more likely to have run away in past year.

Hypothesis 1: Respondents who ran away or were homeless during adolescence are less likely to report positive outcomes as adults, including subjective wellbeing, positive relationships, educational and career advancement, and prosocial involvement in their communities.

Results from this study supported Hypothesis 1, as most outcomes were negatively associated with running away and homelessness. Those with runaway or homeless experiences reported lower subjective wellbeing, relationship functioning, and income. They had lower odds of completing post-secondary education or training and lower odds of working in a position that offered both job satisfaction and fit with long-term career goals. In addition, those with runaway experiences reported fewer close friendships and were less likely to vote in every local and statewide election. Those with homeless experiences were less likely to have spent any time participating in volunteer work or community service in the past year.

However, some of the association between runaway and homeless experiences and later outcomes was accounted for by demographic and background characteristics. When age, sexual minority status, parent education, abuse, foster care, and urbanicity were taken into consideration, the effect size of most of the relationships between runaway and outcome variables decreased, and the relationships with post-secondary education and job quality were no longer significant. When sexual minority status, family income, abuse, and foster care were taken into consideration, those who had experienced homelessness still had lower income, but the relationships with other outcomes were no longer significant.

Hypothesis 2: Positive socialization experiences related to interpersonal relationships, engagement with formal institutions, and availability of mental health care during adolescence and the transition to adulthood are associated with positive outcomes in adulthood.

Results from this study supported Hypothesis 2, as all but one of the proposed positive socialization experiences were associated with positive outcomes in adulthood, even when

controlling for demographic and background characteristics and other socialization variables within the same domain. In the interpersonal domain, a high level of perceived support from friends during adolescence was associated with more close friendships and better relationship functioning. A strong relationship with a mother figure during adolescence was associated with higher subjective wellbeing, better relationship functioning, and increased odds of voting. Communication with parents during adolescence was associated with higher subjective wellbeing, more close friendships, and higher income. Having a teacher, guidance counselor, or coach as a mentor was associated with higher subjective wellbeing, better relationship functioning, and higher income. Relationship with father was not uniquely associated with outcomes.

In regards to engagement with formal institutions, feeling more connected to one's school during adolescence was positively associated with higher subjective wellbeing, more close friendships, better relationship functioning, and higher income. Participating in voluntary community service on a regular basis during adolescence was associated with higher subjective wellbeing, more close friendships, higher income, and more frequent voting. When community service was required by parents, school, or a religious group, it was associated with the same outcomes as voluntary service, except those who participated in required service did not demonstrate any difference in subjective wellbeing. Having a formal, paying job at an earlier age was associated with more close friendships and higher income.

Individuals who experienced mental distress during adolescence or the transition to adulthood were less likely to have positive outcomes as adults. However, this gap narrowed to a certain extent when youth had access to and utilized mental health care services. Comparing individuals experiencing mental distress during adolescence who had insurance to those experiencing distress who did not have insurance, insured individuals reported significantly more close friendships and higher income as adults. Having insurance was also a significant factor among those with mental distress during the transition to adulthood, as insured individuals fared

better as adults in terms of subjective wellbeing, close friendships, relationship functioning, and income. Those experiencing mental distress during the transition to adulthood were just as likely to become frequent voters as those without mental distress *if* they had health insurance. Those who experienced mental distress during adolescence or the transition to adulthood were just as likely to become frequent voters and had a similar number of close friendships as those who did not experience mental distress *if* they received counseling. However, among individuals experiencing mental distress during the transition to adulthood, those who did not receive counseling had higher income than those who did.

The components of PYD are often summarized as the 5 "C's": competence (skills within specific domains), confidence (overall self-esteem), connection (positive relationships with people and institutions), character (respect for rules and sense of morality), and caring/compassion (empathy) (12). These concepts can be used to identify potential mechanisms through which positive socialization variables affect outcomes. For example, positive relationships with friends, parents, and mentors could provide support, build youths' social skills, and foster character both indirectly (e.g., modeling, positive social norms) and directly (e.g., establishing rules, discussing values). School, volunteering, and work could provide a sense of connection with institutions, cultivate knowledge and skills, demand responsibility, and facilitate community engagement. Mental health services like counseling could help youth learn coping skills, build self-worth, and practice compassion toward themselves and others.

Hypothesis 3: Positive socialization experiences moderate the relationships between adolescent running away/homelessness and adult outcomes: outcomes for runaway/homeless youth are more similar to outcomes for non-runaway/homeless youth when they have positive socialization experiences during adolescence and the transition to adulthood.

Study results did not support Hypothesis 3, as no significant interactions between running away or homelessness and positive socialization experiences were found. Though I found no

evidence for moderation, it is possible that positive socialization experiences play a mediating role in the relationships between running away, homelessness, and adult outcomes. In most of the final models, after accounting for socialization experiences, runaway and homeless were no longer significantly related to outcomes. Even in the case of homelessness and income, for which there was a significant negative association, the effect size was reduced. This suggests that at least some of the connection between runaway and homeless experiences and adult outcomes can be explained by opportunities for positive development. By disconnecting youth from conventional support systems, running away and homelessness might impede the formation or continuation of relationships and experiences that promote positive outcomes. It might also be the case that youth without adequate support and resources are more likely to run away or become homeless. Due to the broad timeframes for many of the measures used in this study, I cannot establish a specific timeline of events or address causality, but future research should explore potential mediation pathways.

Implications for Policy and Practice

Developmental scientists have postulated that experiences of homelessness during adolescence can have lasting consequences for health and wellbeing (16, 34). In this study, former runaway and homeless youth had less favorable outcomes than their peers 12 (or more) years after running away and five (or more) years after experiencing homelessness. Efforts to prevent homelessness and early intervention with runaway and homeless youth should be a priority.

The findings of this study support the call for a more holistic approach to adolescent health focused on total development rather than single problems. Most of the positive socialization experiences examined in this study were significantly related to multiple outcomes. Accordingly, these factors should be considered as promising targets for intervention with the potential for broad impact. Experiences related to interpersonal relationships, engagement with formal

institutions, and access to mental health care all contributed to positive adult outcomes, highlighting the importance of a socio-ecological perspective.

Of all of the positive socialization experiences, voluntary participation in community service and school connectedness during adolescence were linked to the most outcomes. Youth who volunteered of their own accord had higher subjective wellbeing, more close friendships, higher income, and higher odds of being regular voters when they reached adulthood. Community service still promoted better outcomes in terms of friendships and income when participation was required rather than voluntary, but the effect sizes were smaller. The importance of community service supports the inclusion of contribution as the "sixth C" of PYD. Lerner, et al., defined contribution as participation in activities to enhance wellbeing of self, family, community, and society. They emphasized that contribution has both behavioral and ideological components, i.e., not only participating in a service-oriented activity, but doing so with a sense of civic duty or moral purpose (12). This might explain why community service is more impactful when youth choose to participate.

Youth who felt more connected to their schools had higher subjective wellbeing, better relationship functioning, more close friendships, and higher income when they reached adulthood. Relationships with school personnel were also beneficial. The only category of mentors consistently associated with positive adult outcomes included those adults whom youth would typically meet in a school context: teachers, guidance counselors, and coaches. Youth who said that a teacher, guidance counselor, or coach had an important positive influence on their lives had higher subjective wellbeing, better relationship functioning, and higher income as adults.

Talking with parents about matters related to school and personal life was associated with more close friendships and higher income in adulthood. Interestingly, communication with parents and quality of relationships with parents predicted different outcomes. Youth who had a closer, more nurturing relationship with their mothers during adolescence scored higher on subjective wellbeing and relationship functioning during adulthood. A high level of perceived

support from friends, formal employment at a younger age, and mental health care access (i.e., health insurance coverage for those experiencing mental distress) were also associated with more positive adult outcomes.

Overall, opportunities for PYD were similarly beneficial for former runaway/homeless youth and youth who had not run away or been homeless. Although there was no indication that positive socialization experiences were *more* important or impactful for runaway and homeless youth than they were for other youth, they still provide useful targets for intervention. Based on this study, there are a variety of potential sources of support for youth, including friends, parents, other adults, school, work, volunteering, and social services. This is particularly helpful for work with runaway and homeless youth because it provides multiple points of access for youth who may be disconnected from one or more of these support systems. Access to positive relationships, experiences, and resources may, in fact, partially explain the difference in outcomes between youth who have run away or been homeless and youth who have not. For most outcomes, once these positive socialization factors were taken into consideration, the associations with runaway and homeless experience were no longer significant.

As frequently reported, youth who had been in foster care and those who had experienced abuse were more likely to run away and experience homelessness. Based on the results of this study, foster care and abuse were associated with less favorable long-term outcomes even after taking the effects of running away and homelessness into account. SES during adolescence also had pervasive long-term effects. In this study, parent education was the only factor that was significantly associated with every outcome after controlling for all other variables. Based on these disparities, interventions could be targeted to populations that most need them.

Strengths and Limitations

This study has several unique strengths. Because data were drawn from a large, nationally representative sample of students, results from this study reasonably represent all youth who were middle or high school students in the U.S. in 1994-95. I included variables from

multiple time points during youths' development and measured outcomes many years after episodes of running away or homelessness. Few studies have tracked the experiences of runaway and homeless youth for so long. Furthermore, existing longitudinal studies on youths' transitions out of homelessness have focused largely on housing status. I took a strengths-based approach, concentrating on positive experiences and outcomes. This approach emphasizes youths' capacity for resilience and aligns with the recent movement toward PYD as a promising strategy for work with runaway and homeless youth (3, 12, 80). The outcomes of interest in this study encompass aspects of successful transitions out of homelessness beyond housing stability.

This study was theory-driven: I utilized established models of youth development, one specific to runaway and homeless youth (RAAM) and one applicable to youth general (PYD). RAAM and PYD informed the conceptualization of this study, the formulation of hypotheses, the selection of measures, and the interpretation of results. RAAM posits that socializing influences act within multiple "levels of social organization," including peers, family, formal institutions, and social services (11). By adopting this socio-ecological perspective, I identified factors at multiple levels that promote positive outcomes.

Several limitations of this study should also be acknowledged. The sample was nationally representative, but it was almost certainly not representative of all youth who run away or experience homelessness. The sampling frame was constructed based on school rosters and Wave 1 interviews occurred at school and at home. Youth who were disconnected from school or their families were less likely to be included in the original sample. Very few participants were currently homeless when interviewed at subsequent waves. Loss to follow-up was presumably greater among individuals who experienced chronic or repeated episodes of homelessness. By focusing on past rather than current episodes of running away and homelessness, this study selected for runaway and homeless youth who were able to transition out of homelessness. Such a sample was relevant for the purpose of the study, but findings might not be generalizable to youth with more severe experiences. Considering the sample limitations, differences in outcomes

between runaway/homeless youth and non-runaway/homeless youth are likely larger than the results of this study indicate.

The Add Health interviews provided a wealth of data, but because the items were not originally written for the purposes of this study, the validity of some of the measures could be questioned. There was likely some misclassification of participants in terms of runaway and homeless status. Youth were considered to have runaway experience if they reported a runaway episode in the year prior to Wave 1 interviews; runaway episodes before or after this one-year period were not captured. Any bias introduced by including former runaway youth in the non-runaway category would likely be toward the null, meaning the actual differences between runaway and non-runaway youth would be larger than those observed in this study. Classification of homeless experience, on the other hand, was based on participants' reports of homeless episodes during their lifetime. The focus of this study is unaccompanied homeless adolescents, but some participants' experiences with homelessness might have been earlier in their lives and/or in the company of their families. It is uncertain how this might have biased results without knowing how individuals who experience homelessness earlier vs. later in their development or alone vs. with family are similar to and different from each other.

Possible confounding factors might not have been considered in analyses, meaning the associations observed could be driven by other unmeasured variables. For instance, though SES at Wave 1 was included, I did not use measures of SES from Wave 3. Employment status and income at Wave 3 could account for some of the relationships attributed to insurance coverage during the transition to adulthood. Types of insurance (public vs. private) and actual mental health benefits offered by each plan were also not captured by the access variables. Variations in types or severity of mental health problems might have affected both utilization of counseling services and outcomes. I used a simplified indicator of mental distress, which encompassed only presence vs. absence of past-week depression symptoms and/or past-year suicidality.

Furthermore, other mental health treatment options (e.g., medication, support groups) were not considered due to insufficient data.

Using the publicly available Add Health data rather than the complete study data limited sample size, particularly for less common experiences like homelessness, making it more difficult to detect significant relationships. Causality cannot be determined because the timeframes for some measures are broad and overlapping. For example, participants reported whether or not they participated in community service at any time between ages 12 and 18; volunteer experience could have preceded or followed a reported episode of running away. The use of self-report might have introduced social desirability or recall bias; however, I do not have reason to suspect that errors in reporting differed systematically based on runaway or homeless experience.

Directions for Future Research

The results of this study suggest that opportunities for PYD might mediate the relationships between runaway and homeless experiences and positive adult outcomes. Future research should explore these pathways using a study design and measures that clearly indicate temporal relationships. More detailed items about runaway and homeless episodes that specify timing, frequency, duration, and location (e.g., on the street vs. shelter vs. with friends) would be useful. Measures of positive socialization experiences should be refined as well. In particular, more direct measures of mental health care access and utilization are needed. Effects in mixed directions and lack of significant results for mental health care utilization could have been due in part to issues with operationalization.

A deeper investigation of geographic context is also needed. Based on the census block group variable included in the Add Health public-use dataset, urbanicity was related to running away. The interviewer report was not significant, although the relationship appeared to be in the same direction, with running away and homelessness more common among urban than rural youth. I only tested interactions between urbanicity and running away for subjective wellbeing because urbanicity itself was not related to the other outcomes. However, as Williams suggested,

different factors could contribute to similar outcomes in urban vs. rural areas (41). It would be worthwhile to test the relationships between geographic context and socialization variables and then identify possible interactions between geographic context and running away/homelessness related to these socialization experiences. Future studies should also look beyond just urbanicity and rurality to explore variations by region, state, or city. Data on the specific locations where youth live would make it possible to explore the effects of local laws and policies (e.g., funding for after-school programs, juvenile justice diversion) and the availability and quality of nearby resources (e.g., mental health facilities, youth shelters, schools).

The final models in this study did not account for most of the variance in outcomes so additional factors should be explored. Drawing from PYD, I intentionally focused on positive experiences and outcomes in this study. As outlined in RAAM, a comprehensive approach will require consideration of both positive and negative socialization experiences, successful and problematic outcomes, and risk abatement and amplification. Other strategies could also be used to identify factors that predict good outcomes for runaway and homeless youth. The Add Health data were nationally representative but not representative of all runaway and homeless youth. A longitudinal study of a more representative group of runaway and homeless youth could be conducted and comparisons made within those groups to see what differentiates individuals who are doing well from those who are struggling. Systematic evaluations of runaway and homeless youth programs and longer-term follow-up with youth after they leave services would also be beneficial.

References

1. Toro PA, Dworsky A, Fowler PJ, editors. Homeless youth in the United States: Recent research findings and intervention approaches. National symposium on homelessness research; 2007.

2. Edidin JP, Ganim Z, Hunter SJ, Karnik NS. The mental and physical health of homeless youth: A literature review. Child Psychiatry Hum Dev. 2012;43(3):354-75. doi: 10.1007/s10578-011-0270-1. PubMed PMID: 2012-10850-003. PMID: 22120422. First Author & Affiliation: Edidin, Jennifer P.

3. Kidd S. Invited commentary: seeking a coherent strategy in our response to homeless and street-involved youth: a historical review and suggested future directions. J Youth Adolesc. 2012;41(5):533-43. Epub 2012/02/04. doi: 10.1007/s10964-012-9743-1. PubMed PMID: 22302217.

4. Ray N. Lesbian, Gay, Bisexual and Transgender Youth: An epidemic of homelessness. New York: National Gay and Lesbian Task Force Policy Institute and the National Coalition for the Homeless. 2006.

5. Rafferty Y, Shinn M, Weitzman BC. Academic achievement among formerly homeless adolescents and their continuously housed peers. J Sch Psychol. 2004;42(3):179-99.

6. Kidd SA, Karabanow J, Hughes J, Frederick T. Brief report: Youth pathways out of homelessness—Preliminary findings. J Adolesc. 2013;36(6):1035-7. doi: 10.1016/j.adolescence.2013.08.009. PubMed PMID: 2013-39869-004. PMID: 24215950. First Author & Affiliation: Kidd, Sean A.

7. Kurtz PD, Lindsey EW, Jarvis S, Nackerud L. How runaway and homeless youth navigate troubled waters: The role of formal and informal helpers. Child & Adolescent Social Work Journal. 2000;17(5):381-402. doi: 10.1023/A:1007507131236. PubMed PMID: 2000-02905-004. First Author & Affiliation: Kurtz, P. David.

8. Brown TL, Amundson NE. Youth experience of trying to get off the street: What has helped and hindered. Canadian Journal of Counselling and Psychotherapy. 2010;44(2):100-14. PubMed PMID: 2010-23078-002. First Author & Affiliation: Brown, Tracy L.

9. Slesnick N, Dashora P, Letcher A, Erdem G, Serovich J. A review of services and interventions for runaway and homeless youth: Moving forward. Children and Youth Services Review. 2009;31(7):732-42. doi: 10.1016/j.childyouth.2009.01.006. PubMed PMID: 2009-08167-005. PMID: 20161294. First Author & Affiliation: Slesnick, Natasha.

10. Dang MT. Social connectedness and self-esteem: Predictors of resilience in mental health among maltreated homeless youth. Issues Ment Health Nurs. 2014;35(3):212-9. doi: 10.3109/01612840.2013.860647. PubMed PMID: 2014-08571-009. PMID: 24597587. First Author & Affiliation: Dang, Michelle T.

11. Milburn NG, Rice E, Rotheram-Borus MJ, Mallett S, Rosenthal D, Batterham P, et al. Adolescents exiting homelessness over two years: The risk amplification and abatement model. Journal of Research on Adolescence. 2009;19(4):762-85. doi: 10.1111/j.1532-7795.2009.00610.x. PubMed PMID: 2009-22461-009. First Author & Affiliation: Milburn, Norweeta G.

12. Lerner RM, Lerner JV, Almerigi JB, Theokas C, Phelps E, Gestsdottir S, et al. Positive Youth Development, Participation in community youth development programs, and community contributions of fifth-grade adolescents findings from the first wave Of the 4-H study of Positive Youth Development. The Journal of Early Adolescence. 2005;25(1):17-71.

13. Benoit-Bryan J. The Runaway Youth Longitudinal Study. Retrieved from National Runaway Switchboard: http://www.1800runaway.org/assets/1/7/NRS_Longtitudinal_study_report-_FINAL.pdf; 2011.

14. de Man AF. Predictors of adolescent running away behavior. Social Behavior and Personality. 2000;28(3):261-8. doi: 10.2224/sbp.2000.28.3.261. PubMed PMID: 2000-03184-005. First Author & Affiliation: de Man, A. F.

15. Tucker JS, Edelen MO, Ellickson PL, Klein DJ. Running away from home: A longitudinal study of adolescent risk factors and young adult outcomes. Journal of Youth and Adolescence. 2011;40(5):507-18. doi: 10.1007/s10964-010-9571-0. PubMed PMID: 2011-07512-001. PMID: 20640881. First Author & Affiliation: Tucker, Joan S.

16. Boynton-Jarrett R, Hair E, Zuckerman B. Turbulent times: effects of turbulence and violence exposure in adolescence on high school completion, health risk behavior, and mental health in young adulthood. Soc Sci Med. 2013;95:77-86. Epub 2012/10/16. doi: 10.1016/j.socscimed.2012.09.007. PubMed PMID: 23063217.

17. Roy É, Haley N, Leclerc P, Sochanski B, Boudreau J-F, Boivin J-F. Mortality in a cohort of street youth in Montreal. JAMA. 2004;292(5):569-74.

18. Kennedy AC. Homelessness, violence exposure, and school participation among urban adolescent mothers. J Community Psychol. 2007;35(5):639-54. doi: 10.1002/jcop.20169. PubMed PMID: 2008-13601-006. First Author & Affiliation: Kennedy, Angie C.

19. McCay E, Quesnel S, Langley J, Beanlands H, Cooper L, Blidner R, et al. A relationship- based intervention to improve social connectedness in street- involved youth: A pilot study. J Child Adolesc Psychiatr Nurs. 2011;24(4):208-15. doi: 10.1111/j.1744-6171.2011.00301.x. PubMed PMID: 2011-25507-003. PMID: 22044568. First Author & Affiliation: McCay, Elizabeth.

20. Votta E, Farrell S. Predictors of psychological adjustment among homeless and housed female youth. Journal of the Canadian Academy of Child and Adolescent Psychiatry / Journal de l'Académie canadienne de psychiatrie de l'enfant et de l'adolescent. 2009;18(2):126-32. PubMed PMID: 2009-08046-006. PMID: 19495433. First Author & Affiliation: Votta, Elizabeth.

21. Tavecchio LWC, Thomeer MAE. Attachment, social network, and homelessness in young people. Social Behavior and Personality. 1999;27(3):247-62. doi: 10.2224/sbp.1999.27.3.247. PubMed PMID: 1999-08231-003. First Author & Affiliation: Tavecchio, Louis W. C.

22. Falci CD, Whitbeck LB, Hoyt DR, Rose T. Predictors of change in self-reported social networks among homeless young people. Journal of Research on Adolescence. 2011;21(4):827-41. PubMed PMID: 2011-27278-009. PMID: 22121332. First Author & Affiliation: Falci, Christina D.

23. Ennett ST, Bailey SL, Federman EB. Social network characteristics associated with risky behaviors among runaway and homeless youth. J Health Soc Behav. 1999;40(1):63-78. doi: 10.2307/2676379. PubMed PMID: 1999-13095-004. PMID: 10331322. First Author & Affiliation: Ennett, Susan T.

24. Dworsky A. Supporting Homeless Youth During the Transition to Adulthood: Housing-Based Independent Living Programs. Part of a special issue: Supporting Youth in the Transition to Adulthood. 2010;17(2):17-20. PubMed PMID: 508154476.

25. Heinze HJ, Hernandez Jozefowicz DM, Toro PA. Taking the youth perspective: Assessment of program characteristics that promote positive development in homeless and at-risk youth. Children and Youth Services Review. 2010;32(10):1365-72. doi: 10.1016/j.childyouth.2010.06.004. PubMed PMID: 2010-17145-012. First Author & Affiliation: Heinze, Hillary J.

26. Rice E, Stein JA, Milburn N. Countervailing social network influences on problem behaviors among homeless youth. J Adolesc. 2008;31(5):625-39. doi: 10.1016/j.adolescence.2007.10.008. PubMed PMID: 2008-12387-006. PMID: 18076981. First Author & Affiliation: Rice, Eric.

27. de la Haye K, Green HD, Jr., Kennedy DP, Zhou A, Golinelli D, Wenzel SL, et al. Who is supporting homeless youth? Predictors of support in personal networks. Journal of Research on Adolescence. 2012;22(4):604-16. doi: 10.1111/j.1532-7795.2012.00806.x. PubMed PMID: 2012-30905-003. PMID: 23204810. First Author & Affiliation: de la Haye, Kayla.

28. Green HD, Jr., de la Haye K, Tucker JS, Golinelli D. Shared risk: Who engages in substance use with American homeless youth? Addiction. 2013;108(9):1618-24. doi:

10.1111/add.12177. PubMed PMID: 2013-29836-017. PMID: 23600596. First Author & Affiliation: Green, Harold D. Jr.

29. Rice E, Barman-Adhikari A, Milburn NG, Monro W. Position-specific HIV risk in a large network of homeless youths. Am J Public Health. 2012;102(1):141-7. doi: 10.2105/AJPH.2011.300295. PubMed PMID: 2012-00571-022. PMID: 22095350. First Author & Affiliation: Rice, Eric.

30. Rice E, Milburn NG, Rotheram-Borus MJ, Mallett S, Rosenthal D. The Effects of Peer Group Network Properties on Drug Use Among Homeless Youth. Am Behav Sci. 2005;48(8):1102-23. doi: 10.1177/0002764204274194. PubMed PMID: 2005-02988-008. First Author & Affiliation: Rice, Eric.

31. Johnson KD, Whitbeck LB, Hoyt DR. Substance abuse disorders among homeless and runaway adolescents. Journal of Drug Issues. 2005;35(4):799-816. PubMed PMID: 2005-16634-007. PMID: 21533015. First Author & Affiliation: Johnson, Kurt D.

32. O'Malley M, Voight A, Renshaw TL, Eklund K. School Climate, Family Structure, and Academic Achievement: A Study of Moderation Effects. Sch Psychol Q. 2014. PubMed PMID: 2014-33170-001.

33. Carr P, Napolitano L, Power J, Power K, editors. I want to Be Making It and Going to School: Risk, Resilience and the Educational Experiences of Homeless Youth2006 2006 Annual Meeting, Montreal.

34. Stablein T, Appleton AA. A longitudinal examination of adolescent and young adult homeless experience, life course transitions, and health. Emerging Adulthood. 2013;1(4):305-13. PubMed PMID: 2014-16933-006.

35. Giffords ED, Alonso C, Bell R. A transitional living program for homeless adolescents: A case study. Child & Youth Care Forum. 2007;36(4):141-51. PubMed PMID: 2008-00111-002.

36. Carlson JL, Sugano E, Millstein SG, Auerswald CL. Service utilization and the life cycle of youth homelessness. J Adolesc Health. 2006;38(5):624-7.

37. Berdahl TA, Hoyt DR, Whitbeck LB. Predictors of first mental health service utilization among homeless and runaway adolescents. J Adolesc Health. 2005;37(2):145-54. doi: 10.1016/j.jadohealth.2004.08.030. PubMed PMID: 2005-08626-009. PMID: 16026724. First Author & Affiliation: Berdahl, Terceira A.

38. Bender K, Thompson SJ, Pollio DE, Sterzing PR. Comparison of Social Estrangement Among Youth Who Are Accessing Homeless Services in St. Louis, Missouri and Austin, Texas. J Hum Behav Soc Environ. 2010;20(3):361-78.

39. Skott-Myhre HA, Raby R, Nikolaou J, editors. Towards a delivery system of services for rural homeless youth: A literature review and case study. Child & Youth Care Forum; 2008: Springer.

40. Robertson M, Harris N, Noftsinger R, Fischer P, editors. Rural Homelessness. National Symposium on Homelessness Research; 2007.

41. Williams LS. City kids and country cousins: Rural and urban youths, deviance, and labor market ties. In: Michael RT, editor. Social awakening: Adolescent behavior as adulthood approaches. New York, NY, US: Russell Sage Foundation; 2001. p. 379-413.

42. Housing A. Developing models of good practice in meeting the needs of homeless young people in rural areas. 2005.

43. Cummings JR, Wen H, Druss BG. Improving access to mental health services for youth in the United States. JAMA. 2013;309(6):553-4.

44. Thrane LE, Hoyt DR, Whitbeck LB, Yoder KA. Impact of family abuse on running away, deviance, and street victimization among homeless rural and urban youth. Child Abuse Negl. 2006;30(10):1117-28.

45. Martino SC, Tucker JS, Ryan G, Wenzel SL, Golinelli D, Munjas B. Increased substance use and risky sexual behavior among migratory homeless youth: Exploring the role of social network composition. Journal of Youth and Adolescence. 2011;40(12):1634-48. doi:

10.1007/s10964-011-9646-6. PubMed PMID: 2011-25955-007. PMID: 21400037. First Author & Affiliation: Martino, Steven C.

46. Altena AM, Brilleslijper-Kater SN, Wolf JLM. Effective interventions for homeless youth: A systematic review. Am J Prev Med. 2010;38(6):637-45. doi: 10.1016/j.amepre.2010.02.017. PubMed PMID: 2010-10518-009. First Author & Affiliation: Altena, Astrid M.

47. Bender K, Thompson SJ, McManus H, Lantry J, Flynn PM. Capacity for Survival: Exploring Strengths of Homeless Street Youth. Child & Youth Care Forum. 2007;36(1):25-42. PubMed PMID: 19915687.

48. Resnick MD. Protective factors, resiliency, and healthy youth development. Adolesc Med State Art Rev. 2000;11(1):157-64.

49. Molino AC, editor Characteristics of Help-Seeking Street Youth and Non-Street Youth. National Symposium on Homelessness Research; 2007.

50. Ferguson KM. Using the Social Enterprise Intervention (SEI) and Individual Placement and Support (IPS) models to improve employment and clinical outcomes of homeless youth with mental illness. Social Work in Mental Health. 2013;11(5):473-95. PubMed PMID: 2013-31040-006.

51. Mayock P, Corr ML, O'Sullivan E. Homeless young people, families and change: Family support as a facilitator to exiting homelessness. Child & Family Social Work. 2011;16(4):391-401. doi: 10.1111/j.1365-2206.2010.00753.x. PubMed PMID: 2011-24305-003. First Author & Affiliation: Mayock, Paula.

52. Tyler KA. Social network characteristics and risky sexual and drug related behaviors among homeless young adults. Soc Sci Res. 2008;37(2):673-85. doi: 10.1016/j.ssresearch.2007.09.004. PubMed PMID: 2008-06190-012. PMID: 19069065. First Author & Affiliation: Tyler, Kimberly A.

53. Valente AM, Auerswald CL. Gender differences in sexual risk and sexually transmitted infections correlate with gender differences in social networks among San Francisco homeless youth. J Adolesc Health. 2013;53(4):486-91. doi: 10.1016/j.jadohealth.2013.05.016. PubMed PMID: 2013-25900-001. PMID: 23871131. First Author & Affiliation: Valente, Annie M.

54. Wenzel S, Holloway I, Golinelli D, Ewing B, Bowman R, Tucker J. Social networks of homeless youth in emerging adulthood. Journal of Youth and Adolescence. 2012;41(5):561-71. doi: 10.1007/s10964-011-9709-8. PubMed PMID: 2012-09915-003. PMID: 21863378. First Author & Affiliation: Wenzel, Suzanne.

55. Lightfoot M, Stein JA, Tevendale H, Preston K. Protective factors associated with fewer multiple problem behaviors among homeless/runaway youth. J Clin Child Adolesc Psychol. 2011;40(6):878-89. doi: 10.1080/15374416.2011.614581. PubMed PMID: 2011-24755-012. PMID: 22023279. First Author & Affiliation: Lightfoot, Marguerita.

56. MacKellar DA, Valleroy LA, Hoffmann JP, Glebatis D, LaLota M, McFarland W, et al. Gender differences in sexual behaviors and factors associated with nonuse of condoms among homeless and runaway youths. AIDS Educ Prev. 2000;12(6):477-91. PubMed PMID: 2001-14314-001. PMID: 11220501. First Author & Affiliation: MacKellar, Duncan A.

57. Rew L, Fouladi RT, Yockey RD. Sexual health practices of homeless youth. J Nurs Scholarsh. 2002;34(2):139-45. doi: 10.1111/j.1547-5069.2002.00139.x. PubMed PMID: 2002-01834-004. PMID: 12078538. First Author & Affiliation: Rew, Lynn.

58. Taylor-Seehafer M, Johnson R, Rew L, Fouladi RT, Land L, Abel E. Attachment and Sexual Health Behaviors in Homeless Youth. J Spec Pediatr Nurs. 2007;12(1):37-48. doi: 10.1111/j.1744-6155.2007.00087.x. PubMed PMID: 2007-00722-004. PMID: 17233666. First Author & Affiliation: Taylor-Seehafer, Margaret.

59. Rice E, Kurzban S, Ray D. Homeless but connected: The role of heterogeneous social network ties and social networking technology in the mental health outcomes of street-living

adolescents. Community Ment Health J. 2012;48(6):692-8. doi: 10.1007/s10597-011-9462-1. PubMed PMID: 2012-29480-003. PMID: 22075769. First Author & Affiliation: Rice, Eric.

60. Rice E, Milburn NG, Monro W. Social networking technology, social network composition, and reductions in substance use among homeless adolescents. Prevention Science. 2011;12(1):80-8. doi: 10.1007/s11121-010-0191-4. PubMed PMID: 2011-03851-008. PMID: 21194011. First Author & Affiliation: Rice, Eric.

61. Bao W-n, Whitbeck LB, Hoyt DR. Abuse, support, and depression among homeless and runaway adolescents. J Health Soc Behav. 2000;41(4):408-20. doi: 10.2307/2676294. PubMed PMID: 2001-10007-003. PMID: 11198565. First Author & Affiliation: Bao, Wan-ning.

62. Rosario M, Schrimshaw EW, Hunter J. Homelessness among lesbian, gay, and bisexual youth: Implications for subsequent internalizing and externalizing symptoms. Journal of Youth and Adolescence. 2012;41(5):544-60. doi: 10.1007/s10964-011-9681-3. PubMed PMID: 2012-09915-002. PMID: 21656284. First Author & Affiliation: Rosario, Margaret.

63. Unger JB, Kipke MD, Simon TR, Johnson CJ, Montgomery SB, Iverson E. Stress, coping, and social support among homeless youth. Journal of Adolescent Research. 1998;13(2):134-57. doi: 10.1177/0743554898132003. PubMed PMID: 1998-01285-001. First Author & Affiliation: Unger, Jennifer B.

64. Stewart M, Reutter L, Letourneau N, Makwarimba E. A support intervention to promote health and coping among homeless youths. CJNR: Canadian Journal of Nursing Research. 2009;41(2):55-77. PubMed PMID: 2009-09403-003. PMID: 19650513. First Author & Affiliation: Stewart, Miriam.

65. Gharabaghi K, Stuart C. Voices from the periphery: Prospects and challenges for the homeless youth service sector. Children and Youth Services Review. 2010;32(12):1683-9.

66. Bartle-Haring S, Slesnick N, Collins J, Erdem G, Buettner C. The utility of mentoring homeless adolescents: a pilot study. The American Journal Of Drug And Alcohol Abuse. 2012;38(4):350-8. doi: 10.3109/00952990.2011.643985. PubMed PMID: 22242619.

67. Hadley AM, Mbwana K, Hair EC, Child T. What Works for Older Youth during the Transition to Adulthood: Lessons from Experimental Evaluations of Programs and Interventions. Fact Sheet. Publication #2010-05. Child Trends, 2010.

68. Kennedy DP, Tucker JS, Green HD, Jr., Golinelli D, Ewing B. Unprotected sex of homeless youth: Results from a multilevel dyadic analysis of individual, social network, and relationship factors. AIDS Behav. 2012;16(7):2015-32. doi: 10.1007/s10461-012-0195-0. PubMed PMID: 2012-26687-036. PMID: 22610421. First Author & Affiliation: Kennedy, David P.

69. Ferguson KM, Xie B. Adult support and substance use among homeless youths who attend high school. Child & Youth Care Forum. 2012;41(5):427-45. doi: 10.1007/s10566-012-9175-9. PubMed PMID: 2012-24710-001. First Author & Affiliation: Ferguson, Kristin M.

70. Rice E, Milburn NG, Rotheram-Borus MJ. Pro-social and problematic social network influences on HIV/AIDS risk behaviours among newly homeless youth in Los Angeles. AIDS Care. 2007;19(5):697-704. doi: 10.1080/09540120601087038. PubMed PMID: 2007-08703-017. PMID: 17505933. First Author & Affiliation: Rice, E.

71. Tucker JS, Hu J, Golinelli D, Kennedy DP, Green HD, Wenzel SL. Social network and individual correlates of sexual risk behavior among homeless young men who have sex with men. J Adolesc Health. 2012. doi: 10.1016/j.jadohealth.2012.01.015. PubMed PMID: 2012-07056-001. Publication Status: Online First Posting. First Author & Affiliation: Tucker, Joan S.. Other Journal Titles: Journal of Adolescent Health Care. Release Date: 20120319. Publication Type: Journal, (0100).

72. Wenzel SL, Hsu H-T, Zhou A, Tucker JS. Are social network correlates of heavy drinking similar among Black homeless youth and White homeless youth? Journal of studies on alcohol and drugs. 2012;73(6):885-9. PubMed PMID: 2012-34733-003. PMID: 23036205. First Author & Affiliation: Wenzel, Suzanne L.

73. Whitbeck LB, Hoyt DR, Yoder KA. A risk-amplification model of victimization and depressive symptoms among runaway and homeless adolescents. Am J Community Psychol. 1999;27(2):273-96. doi: 10.1023/A:1022891802943. PubMed PMID: 1999-03227-008. PMID: 10425702. First Author & Affiliation: Whitbeck, Les B.

74. Paradise M, Cauce AM. Home street home: The interpersonal dimensions of adolescent homelessness. Analyses of Social Issues and Public Policy (ASAP). 2002;2(1):223-38. PubMed PMID: 2004-11051-020.

75. McMorris BJ, Tyler KA, Whitbeck LB, Hoyt DR. Familial and 'on-the-street' risk factors associated with alcohol use among homeless and runaway adolescents. J Stud Alcohol. 2002;63(1):34-43. PubMed PMID: 2002-13004-004.

76. Thrane LE, Chen X. Impact of running away on girls' sexual onset. J Adolesc Health. 2010;46(1):32-6.

77. Tyler KA, Hoyt DR, Whitbeck LB. The effects of early sexual abuse on later sexual victimization among female homeless and runaway adolescents. Journal of Interpersonal Violence. 2000;15(3):235-50. doi: 10.1177/088626000015003001. PubMed PMID: 2000-13955-001. First Author & Affiliation: Tyler, Kimberly A.

78. Alemagno SA, Stephens PC, Shaffer-King P. Characteristics of Incarcerated Youth Reporting Homelessness. OJJDP.

79. Catalano RF, Berglund ML, Ryan JA, Lonczak HS, Hawkins JD. Positive youth development in the United States: research findings on evaluations of positive youth development programs. Prevention & Treatment. 2002;5(1):15a.

80. U.S. Department of Health and Human Services. Promising strategies to end youth homelessness: Report to congress. Washington, DC: US Department of Health and Human Services; Administration for Children and Families. 2007.

81. Saewyc EM, Edinburgh LD. Restoring healthy developmental trajectories for sexually exploited young runaway girls: Fostering protective factors and reducing risk behaviors. J

Adolesc Health. 2010;46(2):180-8. doi: 10.1016/j.jadohealth.2009.06.010. PubMed PMID: 2009-14579-001. PMID: 20113924. First Author & Affiliation: Saewyc, Elizabeth M.

82. Haber MG, Toro PA. Homelessness among families, children, and adolescents: An ecological-developmental perspective. Clin Child Fam Psychol Rev. 2004;7(3):123-64. doi: 10.1023/B:CCFP.0000045124.09503.f1. PubMed PMID: 2004-20062-001. PMID: 15645705. First Author & Affiliation: Haber, Mason G.

83. Bynum MS, Kotchick BA. Mother-adolescent relationship quality and autonomy as predictors of psychosocial adjustment among African American adolescents. Journal of child and family studies. 2006;15(5):528-41.

84. Johnson MD, Galambos NL. Paths to intimate relationship quality from parent–adolescent relations and mental health. Journal of Marriage and Family. 2014;76(1):145-60.

85. Malcolm S. Understanding Casual Sex in Emerging Adulthood: The Role of Mother-Adolescent Attachment, Relationship Expectations and Sexually Transmitted Infections. 2012.

86. Goncy EA, van Dulmen MH. Fathers do make a difference: Parental involvement and adolescent alcohol use. Fathering: A Journal of Theory, Research, and Practice about Men as Fathers. 2010;8(1):93-108.

87. Hawkins DN, Amato PR, King V. Parent- Adolescent Involvement: The Relative Influence of Parent Gender and Residence. Journal of Marriage and Family. 2006;68(1):125-36.

88. Furlong MJ, O'brennan LM, You S. Psychometric properties of the Add Health School Connectedness Scale for 18 sociocultural groups. Psychol Sch. 2011;48(10):986-97.

89. Radloff LS. The CES-D scale a self-report depression scale for research in the general population. Appl Psychol Meas. 1977;1(3):385-401.

90. Sands E. Linking depressed earnings to adolescent depression. Undergraduate Economic Review. 2008;4(1):10.

91. Bartels M. Genetics of Wellbeing and Its Components Satisfaction with Life, Happiness, and Quality of Life: A Review and Meta-analysis of Heritability Studies. Behav Genet. 2015;45(2):137-56.

92. Diener E, Suh EM, Lucas RE, Smith HL. Subjective well-being: Three decades of progress. Psychol Bull. 1999;125(2):276.

93. Drake AS. Examining the relevance of parent-adolescent relationships in the romantic relationship quality of young adults: Kansas State University; 2013.

94. Chen P, Tabor J, Chantala K. Guidelines for analyzing Add Health data. 2012.

Table 1
Demographic and Background Characteristics of Total Sample

	Estimated population mean/percent (S.E.)	Unweighted count/total N
Age (Wave 1)	15.5 (0.1)	5111
Age (Wave 3)	21.8 (0.1)	4208
Age (Wave 4)	28.4 (0.1)	5111
Female	49.5% (1.0%)	2760/5113
Sexual minority	9.3% (0.7%)	403/4164
Race/ethnicity		
American Indian or Native American	3.6% (0.4%)	182/5098
Asian or Pacific Islander	3.0% (0.6%)	182/5098
Black or African American	16.5% (2.3%)	1249/5098
Hispanic or Latino	11.1% (1.7%)	532/5100
White	75.1% (2.5%)	3456/5098
Other race	6.5% (1.0%)	316/5098
Born outside U.S.	4.9% (0.8%)	250/5111
Family income	$46,690 ($1,923)	3940
Parent education level		
Less than high school	11.2% (1.1%)	518/4864
High school/GED	32.3% (1.4%)	1457/4864
Some college/vocational training	20.9% (0.8%)	1021/4864
College degree	23.3% (1.1%)	1188/4864
More than college	12.3% (1.2%)	680/4864
Childhood abuse/neglect	11.3% (0.6%)	420/4019
Lived in foster/group home	3.6% (0.4%)	145/4199
Geography (Wave 1 contextual data)		
Urban census block group	51.6% (4.1%)	2532/5053
Geography (Wave 1 interviewer report)		
Rural	29.0% (2.6%)	1461/4897
Suburban	39.5% (2.7%)	1855/4897
Urban	31.5% (2.5%)	1581/4897
Geography (Wave 4 interviewer report)		
Rural	22.4% (2.1%)	1008/4424
Suburban	44.1% (1.6%)	1937/4424
Urban	33.5% (1.8%)	1479/4424

Table 2
Demographic and Background Characteristics of Participants with Runaway Experiences

	Estimated subpopulation mean/percent (S.E.)	Unweighted count/total N	Runaway vs. non-runaway OR (95% CI)
Age	15.8 (0.1)	411	1.14 (1.06, 1.22)
Female	52.7% (3.5%)	235/411	1.15 (0.86, 1.52)
Sexual minority	15.5% (2.5%)	52/316	1.91 (1.30, 2.80)
Race/ethnicity			
American Indian or Native American	5.1% (1.2%)	23/408	0.97 (0.68, 1.39)
Asian or Pacific Islander	3.7% (1.3%)	19/408	0.92 (0.73, 1.15)
Black or African American	17.0% (2.9%)	89/408	1.04 (0.81, 1.34)
Hispanic or Latino	10.8% (2.3%)	50/410	1.51 (0.91, 2.49)
White	73.5% (3.3%)	280/408	1.26 (0.76, 2.09)
Other race	6.8% (1.6%)	31/408	1.05 (0.67, 1.64)
Born outside U.S.	3.4% (1.3%)	15/411	0.67 (0.34, 1.31)
Family income	$41,713 ($2,636)	307	0.96 (0.92, 1.01)
Parent education level			
Less than high school	13.2% (2.1%)	47/382	ref.
High school/GED	37.7% (2.8%)	138/382	0.98 (0.67, 1.44)
Some college/vocational training	21.1% (2.3%)	88/382	0.84 (0.56, 1.26)
College degree	19.6% (2.1%)	77/382	0.68 (0.46, 1.02)
More than college	8.5% (2.2%)	32/382	0.55 (0.31, 0.98)
Childhood abuse/neglect	20.8% (2.5%)	59/298	2.27 (1.66, 3.09)
Lived in foster/group home	9.6% (1.9%)	32/320	3.36 (2.11, 5.37)
Geography (Wave 1 urban census block group)	59.6% (5.0%)	226/402	1.43 (1.12, 1.83)
Geography (Wave 1 interviewer report)			
Rural	25.0% (3.4%)	101/393	0.80 (0.60, 1.06)
Suburban	41.6% (4.0%)	157/393	1.10 (0.86, 1.41)
Urban	33.5% (3.7%)	135/393	1.10 (0.86, 1.41)
Geography (Wave 4 interviewer report)			
Rural	19.9% (3.0%)	75/358	0.85 (0.61, 1.18)
Suburban	43.4% (3.2%)	154/358	0.97 (0.76, 1.24)
Urban	36.7% (3.3%)	129/358	1.17 (0.91, 1.50)

Table 3
Demographic and Background Characteristics of Participants with Homeless Experiences

	Estimated subpopulation mean/percent (S.E.)	Unweighted count/total N	Homeless vs. non-homeless OR (95% CI)
Age	22.0 (0.2)	158	1.09 (0.97, 1.21)
Female	44.2% (4.2%)	80/158	0.75 (0.53, 1.06)
Sexual minority	23.0% (3.4%)	38/158	3.10 (2.00, 4.79)
Race/ethnicity			
American Indian or Native American	6.4% (2.0%)	13/157	1.84 (0.95, 3.54)
Asian or Pacific Islander	3.3% (1.4%)	6/157	1.02 (0.43, 2.41)
Black or African American	16.2% (3.6%)	39/157	1.03 (0.68, 1.57)
Hispanic or Latino	13.3% (3.0%)	20/157	1.32 (0.76, 2.28)
White	75.0% (4.4%)	107/157	0.96 (0.65, 1.42)
Other race	8.4% (2.5%)	12/157	1.40 (0.71, 2.76)
Born outside U.S.	3.4% (1.9%)	6/157	0.74 (0.24, 2.30)
Family income	$37,707 ($3,318)	128	0.92 (0.84, 0.99)
Parent education level			
Less than high school	12.1% (3.3%)	17/147	ref.
High school/GED	36.4% (4.9%)	53/147	1.03 (0.51, 2.06)
Some college/vocational training	22.1% (3.4%)	34/147	0.97 (0.51, 1.86)
College degree	19.6% (3.7%)	31/147	0.73 (0.37, 1.47)
More than college	9.7% (4.0%)	12/147	0.68 (0.25, 1.85)
Childhood abuse/neglect	29.9% (4.6%)	41/146	3.69 (2.33, 5.83)
Lived in foster/group home	16.4% (3.1%)	31/158	6.20 (3.77, 10.20)
Geography (Wave 1 urban census block group)	57.2% (6.5%)	82/157	1.32 (0.89, 1.94)
Geography (Wave 1 interviewer report)			
Rural	27.1% (5.1%)	47/146	0.88 (0.55, 1.41)
Suburban	34.3% (5.0%)	51/146	0.80 (0.52, 1.23)
Urban	38.7% (5.8%)	48/146	1.41 (0.90, 2.19)
Geography (Wave 4 interviewer report)			
Rural	16.6% (4.0%)	25/134	0.66 (0.39, 1.14)
Suburban	46.2% (4.6%)	58/134	1.12 (0.77, 1.62)
Urban	37.2% (4.2%)	51/134	1.18 (0.83, 1.67)

Table 4
Positive Socialization Experiences for Total Sample

	Estimated population mean/percent (S.E.)	Unweighted count/total N
Interpersonal relationships		
Friend support	42.7% (0.8%)	2198/5095
Relationship with mom	4.27 (0.02)	4849
Relationship with dad	4.11 (0.02)	3634
Parent communication	0.45 (0.01)	5014
Mentor		
Sibling	10.7% (0.6%)	437/4195
Grandparent/aunt/uncle	16.1% (0.8%)	682/4195
Teacher/guidance counselor/coach	18.2% (0.7%)	776/4195
Employer/co-worker	5.5% (0.4%)	227/4195
Religious leader	3.0% (0.3%)	136/4195
Friend/neighbor/friend's parent	17.4% (0.7%)	727/4195
Other	3.8% (0.3%)	172/4195
No mentor	25.3% (1.1%)	1038/4195
Formal institutions		
School connectedness	3.71 (0.02)	5019
Voluntary community service	30.0% (1.0%)	1616/5114
Required community service	7.8% (0.6%)	418/5114
Age at first job	16.20 (0.06)	3963
Mental health care		
Access (Wave 1)		
Mental distress + health insurance	25.7% (0.9%)	1193/4487
Mental distress + no health insurance	6.8% (0.6%)	306/4487
No mental distress + health insurance	56.0% (1.2%)	2492/4487
No mental distress + no health insurance	11.5% (0.8%)	496/4487
Utilization (Wave 1)		
Mental distress + counseling	7.1% (0.5%)	364/5097
Mental distress + no counseling	25.7% (0.8%)	1352/5097
No mental distress	67.2% (0.9%)	3381/5097
Access (Wave 3)		
Mental distress + health insurance	12.1% (0.6%)	506/4164
Mental distress + no health insurance	9.7% (0.5%)	404/4164
No mental distress + health insurance	50.4% (1.3%)	2170/4164
No mental distress + no health insurance	27.7% (1.1%)	1084/4164
Utilization (Wave 3)		
Mental distress + counseling	4.1% (0.4%)	158/4186
Mental distress + no counseling	17.9% (0.8%)	758/4186
No mental distress	78.0% (0.9%)	3270/4186

Table 5
Correlations Between Positive Socialization Variables

Interpersonal relationships

	Friend support	Relationship with mom	Relationship with dad	Parent communication	Mentor
Friend support		r = 0.11	r = 0.15	r = 0.14	r = 0.07
Relationship with mom	r = 0.13		r = 0.50	r = 0.19	r = 0.07
Relationship with dad	r = 0.18	r = 0.50		r = 0.18	r = 0.08
Parent communication	r = 0.16	r = 0.19	r = 0.18		r = 0.06
Mentor	r = 0.05	r = 0.07	r = 0.08	r = 0.06	

Formal institutions

	School connectedness	Voluntary community service	Required community service	Age at first job
School connectedness		r = 0.13	r = 0.06	r = 0.03
Voluntary community service	r = 0.11		r = 0.04	r = 0.00
Required community service	r = 0.04	r = 0.03		r = 0.00
Age at first job	r = 0.03	r = 0.00	r = 0.00	

Mental health care

	Insurance (Wave 1)	Counseling (Wave 1)	Insurance (Wave 3)	Counseling (Wave 3)
Insurance (Wave 1)		r = 0.00		
Counseling (Wave 1)	r = 0.00			
Insurance (Wave 3)				r = 0.08
Counseling (Wave 3)			r = 0.06	

Table 6
Adult Outcomes for Total Sample

	Estimated population mean/percent (S.E.)	Unweighted count/total N
Subjective wellbeing	11.0 (0.1)	5111
Close friendships		
none	3% (0.3%)	145/5066
1 or 2	21.9% (1.0%)	1121/5066
3 to 5	45.5% (0.8%)	2319/5066
6 to 9	16.8% (0.8%)	861/5066
10 or more	12.7% (0.6%)	620/5066
Relationship functioning	4.1 (0.02)	4953
Post-secondary education	73.3% (1.6%)	3879/5113
Job quality	76.6% (0.9%)	2766/3589
Income		
$0-24,999	17.5% (1.0%)	834/4761
$25,000-49,999	28.6% (0.9%)	1352/4761
$50,000-74,999	24.1% (0.8%)	1154/4761
$75,000-99,999	15.1% (0.6%)	698/4761
$100,000+	14.7% (0.9%)	723/4761
Volunteering	35.9% (1.2%)	1873/5077
Voting	23.3% (0.9%)	1293/5074

Table 7
Adult Outcomes for Participants with Runaway Experiences

	Estimated subpopulation mean/percent (S.E.)	Unweighted count/total N	Association between running away and outcome
Subjective wellbeing	10.1 (0.2)	410	B = -0.94 ***
Close friendships			B = -0.24 ***
none	6.4% (1.3%)	23/406	
1 or 2	26.6% (2.7%)	107/406	
3 to 5	44.5% (3.3%)	182/406	
6 to 9	13.1% (1.7%)	58/406	
10 or more	9.3% (1.7%)	36/406	
Relationship functioning	4.0 (0.1)	399	B = -0.21 ***
Post-secondary education	63.2% (3.4%)	270/411	OR = 0.58 (0.45, 0.75)
Job quality	65.3% (3.2%)	182/277	OR = 0.54 (0.40, 0.73)
Income			B = -0.39 ***
$0-24,999	26.6% (2.3%)	96/368	
$25,000-49,999	30.4% (3.2%)	113/368	
$50,000-74,999	22.7% (2.5%)	81/368	
$75,000-99,999	12.1% (2.0%)	43/368	
$100,000+	8.2% (1.6%)	35/368	
Volunteering	32% (3.0%)	127/403	OR = 0.83 (0.64, 1.06)
Voting	18.3% (2.1%)	84/403	OR = 0.72 (0.54, 0.94)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8
Adult Outcomes for Participants with Homeless Experiences

	Estimated subpopulation mean/percent (S.E.)	Unweighted count/total N	Association between homelessness and outcome
Subjective wellbeing	10.2 (0.3)	158	B = -0.76 **
Close friendships			B = -0.18
none	6.1% (2.0%)	11/156	
1 or 2	28.6% (4.1%)	42/156	
3 to 5	40.3% (4.1%)	65/156	
6 to 9	10.0% (2.6%)	17/156	
10 or more	15.0% (2.8%)	21/156	
Relationship functioning	4.0 (0.1)	155	B = -0.21 *
Post-secondary education	61.1% (4.6%)	100/158	OR = 0.51 (0.36, 0.72)
Job quality	61.5% (5.5%)	66/105	OR = 0.46 (0.29, 0.75)
Income			B = -0.73 ***
$0-24,999	35.0% (4.1%)	49/146	
$25,000-49,999	35.5% (4.5%)	54/146	
$50,000-74,999	16.0% (3.7%)	24/146	
$75,000-99,999	9.5% (3.3%)	11/146	
$100,000+	3.9% (1.7%)	8/146	
Volunteering	25.7% (3.9%)	44/157	OR = 0.59 (0.40, 0.88)
Voting	22.6% (3.5%)	36/158	OR = 0.94 (0.63, 1.40)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9

Bivariate Relationships Between Positive Socialization Experiences During Adolescence and Transition to Adulthood and Adult Outcomes

	Subjective wellbeing	Close friendships	Relationship functioning
Interpersonal relationships			
Friend support	B = 0.43 ***	B = 0.21 *** ^	B = 0.15 *** ^
Relationship with mom	B = 0.49 *** ^	B = 0.12 ***	B = 0.19 *** ^
Relationship with dad	B = 0.37 ***	B = 0.09 ***	B = 0.12 ***
Parent communication	B = 0.50 ** ^	B = 0.31 *** ^	B = 0.20 ***
Mentor			
Sibling	B = 0.39 *	B = 0.32 ***	B = 0.09
Grandparent/aunt/uncle	B = 0.30	B = 0.15 *	B = 0.06
Teacher/guidance counselor/coach	B = 0.92 *** ^	B = 0.27 ***	B = 0.17 *** ^
Employer/co-worker	B = 0.62 **	B = 0.35 ***	B = 0.10
Religious leader	B = 0.87 **	B = 0.21	B = 0.14
Friend/neighbor/friend's parent	B = 0.39 **	B = 0.27 ***	B = 0.07
Other	B = -0.11	B = 0.24 *	B = -0.20 *
No mentor	ref.	ref.	ref.
Formal institutions			
School connectedness	B = 0.63 *** ^	B = 0.19 *** ^	B = 0.13 *** ^
Voluntary community service	B = 0.61 *** ^	B = 0.25 *** ^	B = 0.12 ***
Required community service	B = 0.14	B = 0.17 *** ^	B = 0.03
Age at first job	B = -0.04	B = -0.05 *** ^	B = 0.00

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

^ remains significant in model with demographics and other socialization factors within domain

Table 9 (cont.)
Bivariate Relationships Between Positive Socialization Experiences During Adolescence and Transition to Adulthood and Adult Outcomes

	Income	Voting
Interpersonal relationships		
Friend support	B = 0.18 ***	OR = 1.32 (1.13, 1.55)
Relationship with mom	B = 0.07 *	OR = 1.15 (1.02, 1.28) ^
Relationship with dad	B = 0.06	OR = 1.16 (1.03, 1.30)
Parent communication	B = 0.39 *** ^	OR = 1.87 (1.46, 2.38)
Mentor		
Sibling	B = 0.27 *	OR = 1.30 (0.96, 1.76)
Grandparent/aunt/uncle	B = 0.02	OR = 1.35 (1.04, 1.77)
Teacher/guidance counselor/coach	B = 0.36 *** ^	OR = 1.56 (1.24, 1.96)
Employer/co-worker	B = 0.31 *	OR = 1.29 (0.86, 1.95)
Religious leader	B = 0.15	OR = 1.85 (1.21, 2.84)
Friend/neighbor/friend's parent	B = 0.07	OR = 0.98 (0.73, 1.32)
Other	B = 0.27 *	OR = 1.40 (0.92, 2.12)
No mentor	ref.	ref.
Formal institutions		
School connectedness	B = 0.20 *** ^	OR = 1.06 (0.96, 1.17)
Voluntary community service	B = 0.34 *** ^	OR = 1.53 (1.30, 1.82) ^
Required community service	B = 0.35 *** ^	OR = 1.43 (1.15, 1.78) ^
Age at first job	B = -0.06 *** ^	OR = 1.00 (0.96, 1.04)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
^ remains significant in model with demographics and other socialization factors within domain

Table 10
Adult Outcomes for Participants Based on Mental Health Care Access During Adolescence and Transition to Adulthood

Mental health care access (Wave 1)	Mental distress		No mental distress
	Health insurance	No health insurance	Health insurance
Subjective wellbeing *mean (S.E.)*	10.22 (0.10)	9.94 (0.17)	11.41 (0.07)
Close friendships	3.07 (0.04) [a]	2.88 (0.06)	3.27 (0.03)
Relationship functioning	4.07 (.04)	3.95 (0.06)	4.23 (0.02)
Income	2.65 (0.06) [a]	2.37 (0.07)	2.98 (0.04)
Voting *percent (S.E.)*	22.1% (1.5%)	20.1% (2.4%)	25.2% (1.2%)

Mental health care access (Wave 3)	Mental distress		No mental distress
	Health insurance	No health insurance	Health insurance
Subjective wellbeing *mean (S.E.)*	10.23 (0.13) [a]	9.45 (0.16)	11.49 (0.07)
Close friendships	3.15 (0.06) [a]	2.88 (0.06)	3.29 (0.03)
Relationship functioning	4.03 (0.05) [a]	3.85 (0.06)	4.23 (0.02)
Income	2.56 (0.08) [a]	2.30 (0.08)	3.11 (0.04)
Voting *percent (S.E.)*	22.4% (2.2%) [b]	17.2% (2.1%)	27.3% (1.3%)

[a] significantly higher than mental distress + no insurance

[b] not significantly different from no mental distress + insurance

Note: mental distress + no insurance significantly lower than no mental distress + insurance for all outcomes except voting for wave 1 access

Table 11
Adult Outcomes for Participants Based on Mental Health Care Utilization During Adolescence and Transition to Adulthood

Mental health care utilization (Wave 1)

	Mental distress		No mental distress
	Counseling	No counseling	
Subjective wellbeing *mean (S.E.)*	9.81 (0.16)	10.20 (0.09)	11.37 (0.06)
Close friendships *mean (S.E.)*	3.09 (0.06) [c]	2.99 (0.04)	3.21 (0.03)
Relationship functioning *mean (S.E.)*	4.01 (0.05)	4.03 (0.03)	4.21 (0.02)
Income *mean (S.E.)*	2.45 (0.08)	2.61 (0.06)	2.93 (0.04)
Voting *percent (S.E.)*	24.3% (2.3%) [c]	20.4% (1.5%)	24.4% (1.1%)

Mental health care utilization (Wave 3)

	Mental distress		No mental distress
	Counseling	No counseling	
Subjective wellbeing *mean (S.E.)*	9.99 (0.24)	9.86 (0.11)	11.29 (0.06)
Close friendships *mean (S.E.)*	3.10 (0.09) [c]	3.00 (0.05)	3.20 (0.03)
Relationship functioning *mean (S.E.)*	4.05 (0.08)	3.92 (0.04)	4.21 (0.02)
Income *mean (S.E.)*	2.21 (0.12) [b]	2.49 (0.07)	2.93 (0.04)
Voting *percent (S.E.)*	23.1% (3.7%) [c]	19.1 (1.7%)	24.6% (1.1%)

[a] significantly higher than mental distress + no counseling

[b] significantly lower than mental distress + no counseling

[c] not significantly different from no mental distress

Note: mental distress + counseling significantly lower than no mental distress for all outcomes

Table 12
Final Model for Subjective Wellbeing

Overall model	$F = 17.10$, $p < 0.001$, $R^2 = 0.11$
Intercept	B = 8.76 ***
Runaway	B = -0.40
Sexual minority	B = -0.40 *
Parent education	
Less than high school	ref.
High school/GED	B = 0.16
Some college/vocational training	B = 0.33
College degree	B = 0.67 **
More than college	B = 0.85 ***
Lived in foster/group home	B = -0.68 *
Residence in urbanized area	B = -0.17
Relationship with mom	B = 0.25 **
Parent communication	B = 0.09
Mentor	
Sibling	B = 0.27
Grandparent/aunt/uncle	B = 0.24
Teacher/guidance counselor/coach	B = 0.63 ***
Employer/co-worker	B = 0.39 *
Religious leader	B = 0.33
Friend/neighbor/friend's parent	B = 0.32 *
Other	B = 0.02
No mentor	ref.
School connectedness	B = 0.26 **
Voluntary community service	B = 0.27 **
Mental health care access (Wave 3)	
Mental distress + insurance	B = -1.09 ***
Mental distress + no insurance	B = -1.53 ***
No mental distress + no insurance	B = -0.29 *
No mental distress + insurance	ref.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 13
Final Model for Close Friendships

Overall model	$F = 10.58$, $p < 0.001$, $R^2 = 0.09$
Intercept	B = 3.15 ***
Runaway	B = -0.10
Parent education	
Less than high school	ref.
High school/GED	B = 0.11
Some college/vocational training	B = 0.17 *
College degree	B = 0.29 **
More than college	B = 0.38 ***
Childhood abuse/neglect	B = -0.11
Friend support	B = 0.12 *
Parent communication	B = 0.16 *
School connectedness	B = 0.09 *
Voluntary community service	B = 0.15 ***
Required community service	B = 0.13 *
Age at first job	B = -0.03 **
Mental health care access (Wave 1)	
Mental distress + insurance	B = -0.09
Mental distress + no insurance	B = -0.16 *
No mental distress + no insurance	B = -0.11
No mental distress + insurance	ref.
Mental health care utilization (Wave 1)	
Mental distress + counseling	B = 0.13
Mental distress + no counseling	B = 0.00
No mental distress	ref.
Mental health care access (Wave 3)	
Mental distress + insurance	B = -0.06
Mental distress + no insurance	B = -0.07 **
No mental distress + no insurance	B = -0.05 **
No mental distress + insurance	ref.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 14
Final Model for Relationship Functioning

Overall model	$F = 7.64$, $p < 0.001$, $R^2 = 0.05$
Intercept	B = 3.27 ***
Runaway	B = -0.14
Parent education	
Less than high school	ref.
High school/GED	B = 0.06
Some college/vocational training	B = 0.05
College degree	B = 0.11
More than college	B = 0.14 *
Childhood abuse/neglect	B = -0.14 *
Friend support	B = 0.08 **
Relationship with mom	B = 0.14 *
Mentor	
Sibling	B = 0.11
Grandparent/aunt/uncle	B = 0.04
Teacher/guidance counselor/coach	B = 0.14 *
Employer/co-worker	B = 0.06
Religious leader	B = 0.10
Friend/neighbor/friend's parent	B = 0.07
Other	B = -0.13
No mentor	ref.
School connectedness	B = 0.06 *
Mental health care access (Wave 3)	
Mental distress + insurance	B = -0.11 *
Mental distress + no insurance	B = -0.20 *
No mental distress + no insurance	B = -0.02
No mental distress + insurance	ref.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 15
Final Models for Income

Overall model	$F = 9.83$, $p < 0.001$, $R^2 = 0.12$	$F = 12.63$, $p < 0.001$, $R^2 = 0.12$
Intercept	B = 2.24 ***	B = 3.34 ***
Runaway	B = -0.11	
Homeless		B = -0.40 **
Age	B = 0.06 **	
Parent education		
Less than high school	ref.	
High school/GED	B = 0.12	
Some college/vocational training	B = 0.22 *	
College degree	B = 0.37 **	
More than college	B = 0.52 ***	
Family income		B = 0.003 **
Childhood abuse/neglect	B = -0.13	B = -0.14
Lived in foster/group home	B = -0.30 *	B = -0.29
Parent communication	B = 0.26 **	B = 0.28 **
Mentor		
Sibling	B = 0.10	B = 0.07
Grandparent/aunt/uncle	B = -0.04	B = -0.01
Teacher/guidance counselor/coach	B = 0.18 *	B = 0.21 *
Employer/co-worker	B = 0.02	B = 0.04
Religious leader	B = -0.18	B = -0.15
Friend/neighbor/friend's parent	B = -0.10	B = -0.09
Other	B = 0.25 *	B = 0.32 *
No mentor	ref.	ref.
School connectedness	B = 0.07 *	B = 0.05
Voluntary community service	B = 0.16 **	B = 0.20 ***
Required community service	B = 0.25 *	B = 0.22 *
Age at first job	B = -0.04 *	B = -0.05 *
Mental health care access (Wave 1)		
Mental distress + insurance	B = -0.12	B = -0.12
Mental distress + no insurance	B = -0.29 **	B = -0.31 **
No mental distress + no insurance	B = -0.11	B = -0.12
No mental distress + insurance	ref.	ref.
Mental health care access (Wave 3)		
Mental distress + insurance	B = -0.41 ***	B = -0.43 ***
Mental distress + no insurance	B = -0.41 ***	B = -0.49 ***
No mental distress + no insurance	B = -0.32 ***	B = -0.35 ***
No mental distress + insurance	ref.	ref.
Mental health care utilization (Wave 3)		
Mental distress + counseling	B = -0.44 **	B = -0.44 **
Mental distress + no counseling	B = 0.00	B = 0.00
No mental distress	ref.	ref.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 16
Final Model for Voting

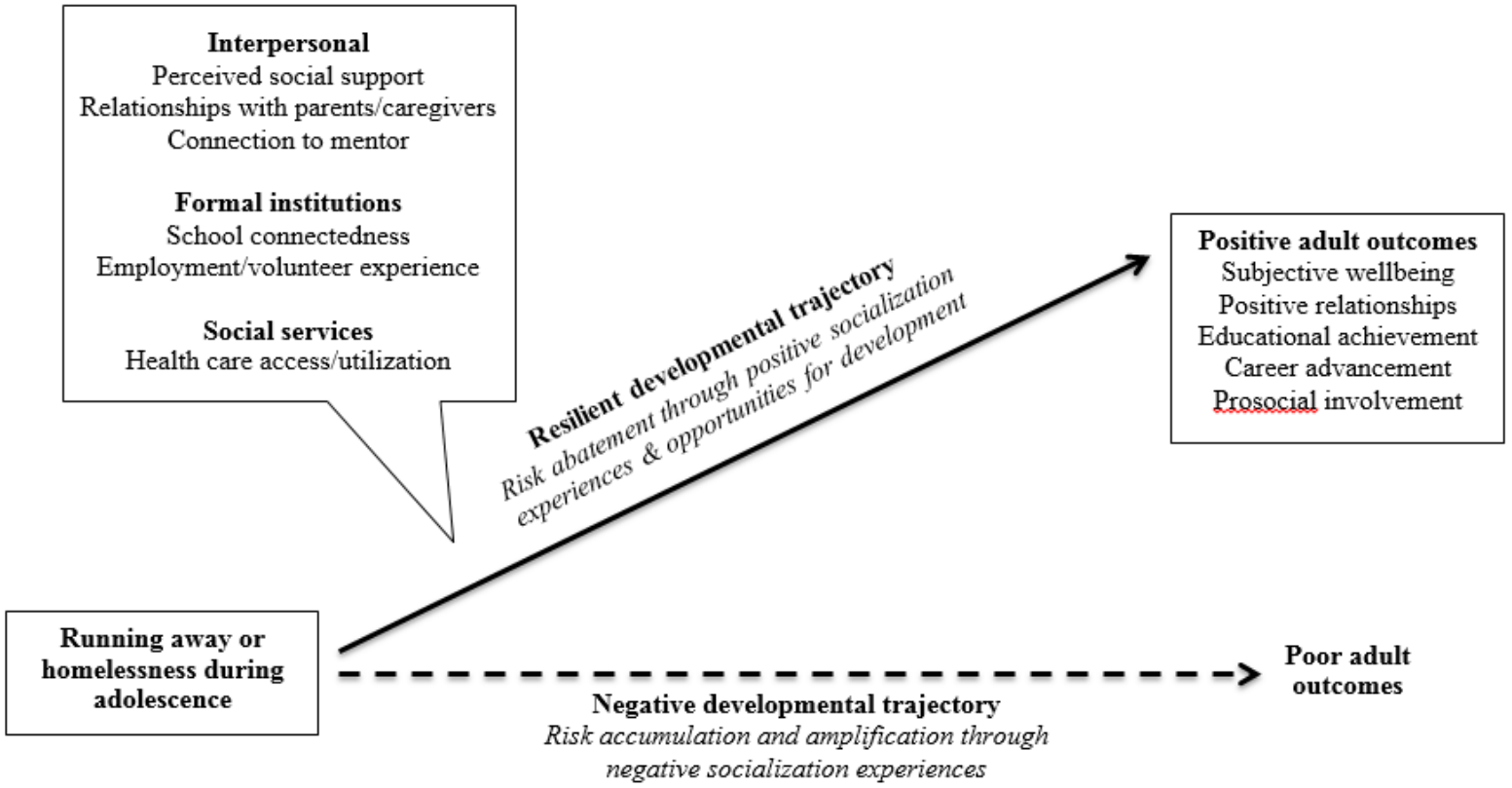
Overall model	$F = 3.60$, $p < 0.001$, $R^2 = 0.02$
Intercept	B = -1.96, $p < 0.001$
Runaway	Exp(B) = 0.80 (0.56, 1.13)
Parent education	
Less than high school	ref.
High school/GED	Exp(B) = 1.24 (0.90, 1.71)
Some college/vocational training	Exp(B) = 1.39 (1.02, 1.89)
College degree	Exp(B) = 1.55 (1.13, 2.12)
More than college	Exp(B) = 1.68 (1.18, 2.41)
Relationship with mom	Exp(B) = 1.12 (0.98, 1.27)
Voluntary community service	Exp(B) = 1.38 (1.16, 1.64)
Required community service	Exp(B) = 1.26 (1.00, 1.60)
Mental health care utilization (Wave 1)	
Mental distress + counseling	Exp(B) = 1.28 (0.89, 1.83)
Mental distress + no counseling	Exp(B) = 0.94 (0.76, 1.16)
No mental distress	ref.
Mental health care access (Wave 3)	
Mental distress + insurance	Exp(B) = 0.90 (0.67, 1.19)
Mental distress + no insurance	Exp(B) = 0.70 (0.49, 1.00)
No mental distress + no insurance	Exp(B) = 0.79 (0.63, 0.98)
No mental distress + insurance	ref.

Table 17
Summary Table for Final Models

	Subjective wellbeing	Close friendships	Relationship functioning	Income	Voting
Runaway					
Homeless				X	
Age				*	
Sexual minority	X				
Parent education	*	*	*	*	*
Family income				*	
Childhood abuse/neglect			X		
Lived in foster/group home	X			X	
Residence in urban area					
Friend support		*	*		
Relationship with mom	*		*		
Relationship with dad					
Parent communication		*		*	
Mentor					
Sibling					
Grandparent/aunt/uncle					
Teacher/guidance counselor/coach	*		*	*	
Employer/co-worker	*				
Religious leader					
Friend/neighbor/friend's parent	*				
Other				*	
School connectedness	*	*	*	*	
Voluntary service	*	*		*	*
Required service		*		*	
Began working at younger age		*		*	
Mental health care					
Access (Wave 1)				*	
Utilization (Wave 1)					
Access (Wave 3)		*	*		
Utilization (Wave 3)				X	

* associated with better outcomes in final model
X associated with worse outcomes in final model

Figure 1
Conceptual model based on Risk Amplification and Abatement Model and Positive Youth Development



Appendix A: *Codebook*

	Item(s)	Response Options	Scoring/Coding	Wave(s)
Background and Demographic				
Age	Date of birth	month, day, year	calculated age = date interview completed - DOB	
	Date interview completed	month, day, year		1, 3, 4
Sex	Biological sex	male / female	0 = male, 1 = female	1
Sexual orientation	Please choose the description that best fits how you think about yourself.	100% heterosexual (straight) / Mostly heterosexual/somewhat attracted to people of own sex / Bisexual-attracted to men and women equally / Mostly homosexual/somewhat attracted to opposite sex / 100% homosexual (gay) / Not sexually attracted to males or females	0 = 100% straight, 1 = attracted to people of own sex or not attracted to men or women	3
Race/ethnicity	Are you of Hispanic or Latino origin?	yes / no	0 = did not select, 1 = selected race/ethnicity option	1
	What is your race?	White / Black or African American / American Indian or Native American / Asian or Pacific Islander / Other		
Born abroad	Were you born in the U.S.?	no / yes / legitimate skip (prior question indicated lived at current address in U.S. since birth)	0 = born in U.S., 1 = born abroad	1
Parent education	How far in school did [mom/mother figure with whom participant lives] go in school?	8th grade or less / > 8th grade, didn't graduate high school / business, trade, vocational school instead of high school / high school graduate / GED / business, trade, vocational school after high school / college, didn't graduate / graduated from college/university / professional training beyond 4-year college/university / never went to school	0 = less than high school grad, 1 = high school grad/GED, 2 = post-secondary vocational training/some college, 3 = college degree, 4 = beyond 4-year degree	
	How far in school did [dad/father figure with whom participant lives] go in school?		parent edu = max (mom edu, dad edu)	1

Family income	[parent interview] About how much total income, before taxes did your family receive in 1994? Include your own income, the income of everyone else in your household, and income from welfare benefits, dividends, and all other sources.	income in dollars	reported income/1000	1
Abuse	By the time you started 6th grade, how often had your parents or other adult caregivers not taken care of your basic needs, such as keeping you clean or providing food or clothing?	one time / two times / 3-5 times / 6-10 times / more than 10 times / this has never happened	0 = never, 1 = 1 or more times	3
	By the time you started 6th grade, how often had your parents or other adult caregivers slapped, hit, or kicked you?			
	By the time you started 6th grade, how often had one of your parents or other adult caregivers touched you in a sexual way, forced you to touch him or her in a sexual way, or forced you to have sexual relations?		If neglect, physical abuse, and/or sexual abuse = 1, abuse = 1; if neglect, physical abuse, and sexual abuse = 0, abuse = 0	
Out-of-home care	Did you ever live in a foster home?	yes / no	0 = no, 1 = yes	3
	Have you ever lived in a group home - that is, a care or treatment facility in which a number of unrelated people live in a home-like setting?	yes / no	If foster home and/or group home = 1, out-of-home care = 1; if foster home and group home = 0, out-of-home care = 0	
Geographic context	[interviewer report] How would you describe the immediate area or street (one block, both sides) where the respondent lives?	rural / suburban / urban, residential only / 3 or more commercial properties, mostly retail / 3 or more commercial properties, mostly wholesale or industrial / other	1 = rural, 2 = suburban, 3 = urban	1, 4

	[contextual data] Urbanicity of census block group	completely urbanized census block group / census block group with any individuals living outside urbanized areas, in rural farm or rural nonfarm locations	0 = not completely urbanized, 1 = completely urbanized	1
Running Away and Homelessness				
Running away	During the past 12 months, how often did you run away from home?	never / 1 or 2 times / 3 or 4 times / 5 or more times	0 = never, 1 = 1 or more times	1
Homelessness	Have you ever been homeless for a week or longer - that is, you slept in a place where people weren't meant to sleep, or slept in a homeless shelter, or didn't have a regular residence in which to sleep?	yes / no	0 = no, 1 = yes	3
Positive Socialization Experiences				
Interpersonal Relationships				
Friend support	How much do you feel that your friends care about you?	not at all / very little / somewhat / quite a bit / very much	0 = less than very much, 1 = very much	1
Relationship with mom	How close do you feel to your mom?	not at all / very little / somewhat / quite a bit / very much	1 = not at all, 2 = very little, 3 = somewhat, 4 = quite a bit, 5= very much	
	Most of the time, your mom is warm and loving toward you.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	When you do something wrong that is important, your mom talks about it with you and helps you understand why it is wrong.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	You are satisfied with the way you and your mom communicate with each other.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	1

	Overall, you are satisfied with your relationship with your mom.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	Note: mom = mother, adoptive mother, stepmother, foster mother, etc. with whom respondent lives		relationship with mom scale score = mean	
Relationship with dad	How close do you feel to your dad?	not at all / very little / somewhat / quite a bit / very much	1 = not at all, 2 = very little, 3 = somewhat, 4 = quite a bit, 5= very much	
	Most of the time, your dad is warm and loving toward you.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	You are satisfied with the way you and your dad communicate with each other.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	Overall, you are satisfied with your relationship with your dad.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	Note: dad = father, adoptive father, stepfather, foster father, etc. with whom respondent lives		relationship with dad scale score = mean	1
Parent communication	In the past four weeks, have you talked with your mom about someone you are dating or a party you went to?	yes / no	0 = no, 1 = yes	
	In the past four weeks, have you talked with your mom about a personal problem you were having?	yes / no	0 = no, 1 = yes	
	In the past four weeks, have you talked with your mom about your school work or grades?	yes / no	0 = no, 1 = yes	
	In the past four weeks, have you talked with your mom about other things you are doing in school?	yes / no	0 = no, 1 = yes	1

	In the past four weeks, have you talked with your dad about someone you are dating or a party you went to?	yes / no	0 = no, 1 = yes	
	In the past four weeks, have you talked with your dad about a personal problem you were having?	yes / no	0 = no, 1 = yes	
	In the past four weeks, have you talked with your dad about your school work or grades?	yes / no	0 = no, 1 = yes	
	In the past four weeks, have you talked with your dad about other things you are doing in school?	yes / no	0 = no, 1 = yes	
	Note: mom = mother, adoptive mother, stepmother, foster mother, etc. with whom respondent lives; dad = father, adoptive father, stepfather, foster father, etc. with whom respondent lives		parent communication scale score = mean	
Mentor	Other than your parents or stepparents, has an adult made an important positive difference in your life at any time since you were 14 years old?	yes / no	0 = no mentor, 1 = sibling, 2 = grandparent/aunt/uncle, 3 = teacher/guidance counselor/coach, 4 = employer/co-worker, 5 = religious leader, 6 = friend/neighbor/friend's parent, 7 = other	3
	How is this person related to you? If there has been more than one person, describe the most influential.	older brother / younger brother / older sister / younger sister / mother's mother / mother's father / father's mother / father's father / aunt / uncle / teacher or guidance counselor / coach or athletic director / minister, priest, rabbi, or religious leader / employer / co-worker / neighbor / friend / spouse or partner / friend's parent / doctor, therapist, or social worker / other		
Formal institutions				
School connectedness	You feel close to people at your school.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	1

	You feel like you are a part of your school.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	You are happy to be at your school.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	The teachers at your school treat students fairly.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	You feel safe in your school.	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
			school connectedness scale score = mean	
Volunteer work	At any time during your adolescence, when you were between 12 to 18 years old, did you regularly participate in volunteer or community service work?	yes / no	0 = did not participate in voluntary service, 1 = participated in voluntary service	
	Was this work strictly voluntary (that is, you did it only because you wanted to), or was it ordered by a court as part of a sentence or required by your parents, school or religious group?	strictly voluntary / court-ordered / required by parents, school, or religious group [respondents could select multiple options]	0 = did not participate in required service, 1 = participated in required service	3
Employment	Are you still working at the first paying job you ever had where you worked for 10 hours or more a week?	yes / no		
	In what month and year did you start this job?	month, year	If still at first job, age at first job = job start date - DOB	
	How old were you when you began your FIRST paying job that lasted for nine weeks or more and where you worked at least 10 hours a week?	age	age at first job = age in years	3

Mental Health Care				
Feelings scale	How often was each of the following things true during the past week? You were bothered by things that usually don't bother you.	never or rarely / sometimes / a lot of the time / most or all of the time	0 = never or rarely, 1 = sometimes, 2 = a lot of the time, 3 = most or all of the time	
	How often was each of the following things true during the past week? You felt that you could not shake off the blues, even with help from your family and your friends.	never or rarely / sometimes / a lot of the time / most or all of the time	0 = never or rarely, 1 = sometimes, 2 = a lot of the time, 3 = most or all of the time	
	How often was each of the following things true during the past week? You felt that you were just as good as other people.	never or rarely / sometimes / a lot of the time / most or all of the time	0 = most or all of the time, 1 = a lot of the time, 2 = sometimes, 3 = never or rarely	
	How often was each of the following things true during the past week? You had trouble keeping your mind on what you were doing.	never or rarely / sometimes / a lot of the time / most or all of the time	0 = never or rarely, 1 = sometimes, 2 = a lot of the time, 3 = most or all of the time	
	How often was each of the following things true during the past week? You felt depressed.	never or rarely / sometimes / a lot of the time / most or all of the time	0 = never or rarely, 1 = sometimes, 2 = a lot of the time, 3 = most or all of the time	
	How often was each of the following things true during the past week? You felt that you were too tired to do things.	never or rarely / sometimes / a lot of the time / most or all of the time	0 = never or rarely, 1 = sometimes, 2 = a lot of the time, 3 = most or all of the time	
	How often was each of the following things true during the past week? You enjoyed life.	never or rarely / sometimes / a lot of the time / most or all of the time	0 = most or all of the time, 1 = a lot of the time, 2 = sometimes, 3 = never or rarely	
	How often was each of the following things true during the past week? You felt sad.	never or rarely / sometimes / a lot of the time / most or all of the time	0 = never or rarely, 1 = sometimes, 2 = a lot of the time, 3 = most or all of the time	
	How often was each of the following things true during the past week? You felt people disliked you.	never or rarely / sometimes / a lot of the time / most or all of the time	0 = never or rarely, 1 = sometimes, 2 = a lot of the time, 3 = most or all of the time	
			feelings scale score = total; CES-D score = feelings scale score * 20/9	1, 3

Suicidality	During the past 12 months, did you ever seriously think about committing suicide?	yes / no	0 = no, 1 = yes	
	During the past 12 months, how many times did you actually attempt suicide?	0 times / 1 times / 2 or 3 times / 4 or 5 times / 6 or more times	0 = 0 times, 1 = 1 or more times	
			If suicidal ideation = 0, suicidality = 0; if suicidal ideation and/or suicide attempt = 1, suicidality = 1	1, 3
Mental distress			If CES-D score ≥ 16 and/or suicidality = 1, mental distress = 1; if CES-D score < 16 and suicidality = 0, mental distress = 0	1, 3
Access	Over the past 12 months, how many months did you have health insurance?	months	0 = less than 12 months, 1 = 12 months	
			1 = mental distress + insured for full year, 2 = mental distress + not insured for full year, 3 = no mental distress + not insured for full year, 4 = no mental distress + insured for full year	1, 3
Utilization	In the past year, have you received psychological or emotional counseling?	yes / no	0 = no counseling, 1 = counseling	
			1 = mental distress + counseling, 2 = mental distress + no counseling, 3 = no mental distress + no counseling, 4 = no mental distress + counseling	1, 3
Adult Outcomes				
Subjective wellbeing	In general, how is your health?	excellent, very good, good, fair, poor	0 = poor, 1 = fair, 2 = good, 3 = very good, 4 = excellent	
	How often was each of the following things true during the past week? You felt happy.	never or rarely / sometimes / a lot of the time / most or all of the time	0 = never or rarely, 1 = sometimes, 2 = a lot of the time, 3 = most or all of the time	4

	In the last 30 days, how often have you felt confident in your ability to handle your personal problems?	never / almost never / sometimes / fairly often / very often	0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often	
	In the last 30 days, how often have you felt that things were going your way?	never / almost never / sometimes / fairly often / very often	0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often	
			subjective wellbeing scale score = total	
Close friendships	How many close friends do you have? (Close friends include people whom you feel at ease with, can talk to about private matters, and can call on for help.)	none / 1 or 2 friends / 3 to 5 friends / 6 to 9 friends / 10 or more friends	1 = none, 2 = 1 or 2 friends, 3 = 3 to 5 friends, 4 = 6 to 9 friends, 5 = 10 or more friends	4
Relationship functioning	We enjoy doing even ordinary, day-to-day things together	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	I am satisfied with the way we handle our problems and disagreements	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	My partner listens to me when I need someone to talk to	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
	My partner expresses love and affection to me	strongly agree / agree / neither agree nor disagree / disagree / strongly disagree	1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree	
			relationship functioning scale score = mean	4

Post-secondary education	What is the highest level of education you have achieved to date?	8th grade or less / some high school / high school graduate / some vocational or technical training after high school / completed vocational or technical training after high school / some college / completed college (bachelor's degree) / some graduate school / completed a master's degree / completed a doctoral degree / some post baccalaureate professional education (e.g., med school, law school) / completed post baccalaureate professional education	0 = less than high school or high school graduate, 1 = any vocational or technical training, college, or graduate/professional school education	4
Job quality	Which one of the following best describes your current/most recent primary job?	it is part of my long-term career or work goals / it is preparation for my long-term career or work goals / it is not related to my long-term career or work goals / I do not have long-term career or work goals	0 = not related to goals or don't have goals, 1 = part of or preparation for goals	
	How satisfied are/were you with this job, as a whole?	extremely satisfied / satisfied / neither satisfied nor dissatisfied / dissatisfied / extremely dissatisfied	0 = less than satisfied, 1 = satisfied or extremely satisfied	
			If goals = 0 or satisfaction = 0, quality = 0; if goals =1 and satisfaction = 1, quality = 1	4
Income	Thinking about your income and the income of everyone who lives in your household and contributes to the household budget, what was the total household income before taxes and deductions last year? Include all sources of income, including non-legal sources.	less than $5,000 / $5,000-9,999 / $10,000-14,999 / $15,000-19,999 / $20,000-24,999 / $25,000-29,999 / $30,000-39,999 / $40,000-49,999 / $50,000-74,999 / $75,000-99,999 / $100,000-149,999 / $150,000 or more	1 = $0-24,999, 2 = $25,000-49,999, 3 = $50,000-74,999, 4 = $75,000-99,999, 5 = $100,000+	4
Volunteering	In the past 12 months, about how many hours did you spend on volunteer or community service work?	0 hours / 1 to 19 hours / 20 to 39 hours / 40 to 79 hours / 80 to 159 hours / 160 hours or more	0 = no time volunteering, 1 = any time volunteering	4
Voting	How often do you usually vote in local or statewide elections?	never / sometimes / often / always	0 = not always, 1 = always	4

Appendix B: *Relationships Between Running Away and Adult Outcomes, Controlling for Demographic and Background Variables*

	Subjective wellbeing	Close friendships	Relationship functioning	Post-secondary education
Overall model	F = 15.61, p < 0.001, R^2 = 0.04	F = 10.23, p < 0.001, R^2 = 0.05	F = 5.41, p < 0.001, R^2 = 0.02	F = 23.49, p < 0.001, R^2 = 0.12
Intercept	B = 10.81 ***	B = 3.02 ***	B = 4.39 ***	Exp(B) = 1.37 (0.43, 4.31)
Runaway	B = -0.67 ***	B = -0.16 *	B = -0.20 **	Exp(B) = 0.74 (0.54, 1.03)
Age	B = -0.01	B = -0.01	B = -0.02	Exp(B) = 0.98 (0.92, 1.05)
Sexual minority	B = -0.58 ***	B = -0.05	B = -0.09	Exp(B) = 1.13 (0.83, 1.55)
Parent education level				
Less than high school	ref.	ref.	ref.	ref.
High school/GED	B = 0.44 *	B = 0.22 **	B = 0.10	Exp(B) = 2.05 (1.50, 2.80)
Some college/vocational training	B = 0.53 *	B = 0.30 ***	B = 0.07	Exp(B) = 5.46 (3.69, 8.08)
College degree	B = 1.02 ***	B = 0.47 ***	B = 0.17 *	Exp(B) = 8.42 (5.42, 13.10)
More than college	B = 1.31 ***	B = 0.63 ***	B = 0.21 **	Exp(B) = 18.40 (10.91, 31.03)
Child abuse/neglect	B = -0.08	B = -0.20 ***	B = -0.18 *	Exp(B) = 0.61 (0.44, 0.84)
Lived in foster/group home	B = -1.16 ***	B = -0.19	B = -0.18	Exp(B) = 0.44 (0.26, 0.74)
Urban census block	B = -0.23 *	B = 0.04	B = 0.02	Exp(B) = 1.09 (0.83, 1.44)

	Job quality	Income	Voting
Overall model	F = 3.33, p = 0.001, R^2 = 0.02	F = 15.02, p < 0.001, R^2 = 0.06	F = 4.24, p < 0.001, R^2 = 0.01
Intercept	Exp(B) = 2.60 (0.76, 8.87)	B = 1.78 ***	Exp(B) = 0.10 (0.04, 0.23)
Runaway	Exp(B) = 0.69 (0.47, 1.01)	B = -0.28 *	Exp(B) = 0.66 (0.47, 0.93)
Age	Exp(B) = 1.02 (0.95, 1.09)	B = 0.04 *	Exp(B) = 1.05 (0.99, 1.10)
Sexual minority	Exp(B) = 0.79 (0.56, 1.11)	B = -0.12	Exp(B) = 1.11 (0.87, 1.42)
Parent education level			
Less than high school	ref.	ref.	ref.
High school/GED	Exp(B) = 1.12 (0.73, 1.73)	B = 0.31 ***	Exp(B) = 1.48 (1.07, 2.03)
Some college/vocational training	Exp(B) = 1.34 (0.86, 2.10)	B = 0.54 ***	Exp(B) = 1.63 (1.21, 2.19)
College degree	Exp(B) = 1.34 (0.86, 2.09)	B = 0.68 ***	Exp(B) = 2.01 (1.47, 2.75)
More than college	Exp(B) = 2.00 (1.24, 3.23)	B = 0.83 ***	Exp(B) = 2.37 (1.67, 3.36)
Child abuse/neglect	Exp(B) = 0.90 (0.61, 1.33)	B = -0.24 **	Exp(B) = 0.92 (0.67, 1.26)
Lived in foster/group home	Exp(B) = 0.48 (0.26, 0.90)	B = -0.40 **	Exp(B) = 1.05 (0.62, 1.77)
Urban census block	Exp(B) = 0.79 (0.63, 0.98)	B = 0.07	Exp(B) = 1.00 (0.81, 1.23)

* p < 0.05, ** p < 0.01, *** p < 0.001

Appendix B: *Relationships Between Homelessness and Adult Outcomes, Controlling for Demographic and Background Variables*

	Subjective wellbeing	Relationship functioning	Post-secondary education
Overall model	F = 13.79, p < 0.001, R^2 = 0.03	F = 3.37, p = 0.01, R^2 = 0.01	F = 13.99, p < 0.001, R^2 = 0.08
Intercept	B = 10.87 ***	B = 4.17 ***	Exp(B) = 1.29 (0.90, 1.83)
Homeless	B = -0.11	B = -0.11	Exp(B) = 0.73 (0.46, 1.15)
Sexual minority	B = -0.70 ***	B = -0.08	Exp(B) = 1.22 (0.88, 1.70)
Family income	B = 0.06 ***	B = 0.01 *	Exp(B) = 1.03 (1.02, 1.03)
Child abuse/neglect	B = -0.23	B = -0.16 *	Exp(B) = 0.58 (0.43, 0.80)
Lived in foster/group home	B = -1.40 ***	B = -0.20	Exp(B) = 0.68 (0.38, 1.22)

	Job quality	Income	Volunteering
Overall model	F = 3.75, p = 0.003, R^2 = 0.02	F = 13.08, p < 0.001, R^2 = 0.04	F = 4.04, p = 0.002, R^2 = 0.01
Intercept	Exp(B) = 2.58 (1.95, 3.43)	B = 2.75 ***	Exp(B) = 0.56 (0.46, 0.67)
Homeless	Exp(B) = 0.63 (0.34, 1.18)	B = -0.59 ***	Exp(B) = 0.63 (0.39, 1.03)
Sexual minority	Exp(B) = 0.73 (0.50, 1.06)	B = -0.09	Exp(B) = 1.09 (0.79, 1.49)
Family income	Exp(B) = 1.08 (1.03, 1.13)	B = 0.04 ***	Exp(B) = 1.03 (1.00, 1.05)
Child abuse/neglect	Exp(B) = 0.91 (0.58, 1.43)	B = -0.25 *	Exp(B) = 0.74 (0.55, 1.00)
Lived in foster/group home	Exp(B) = 0.53 (0.25, 1.14)	B = -0.43 *	Exp(B) = 0.83 (0.51, 1.34)

* p < 0.05, ** p < 0.01, *** p < 0.001
Note: based on $10,000 unit increase for family income

Appendix C: *Adult Outcomes for Participants Based on Mental Health Care Access and Utilization During Adolescence and Transition to Adulthood*

	Subjective wellbeing			**Close friendships**		
		Reference group for comparison of means			Reference group for comparison of means	
Wave 1	Mean score (S.E.)	Mental distress + no health insurance	No mental distress + health insurance	Mean score (S.E.)	Mental distress + no health insurance	No mental distress + health insurance
Mental distress + health insurance	10.22 (0.10)	F = 2.04, p = 0.47	F = 124.68, p < 0.001	3.07 (0.04)	F = 7.41, p = 0.02	F = 27.99, p < 0.001
Mental distress + no health insurance	9.94 (0.17)		F = 71.08, p < 0.001	2.88 (0.06)		F = 34.01, p < 0.001
No mental distress + health insurance	11.41 (0.07)			3.27 (0.03)		
No mental distress + no health insurance	11.15 (0.15)			3.01 (0.04)		
Wave 3		Mental distress + no health insurance	No mental distress + health insurance		Mental distress + no health insurance	No mental distress + health insurance
Mental distress + health insurance	10.23 (0.13)	F = 12.84, p = 0.001	F = 82.99, p < 0.001	3.15 (0.06)	F = 11.76, p = 0.002	F = 6.18, p = 0.04
Mental distress + no health insurance	9.45 (0.16)		F = 141.04, p < 0.001	2.88 (0.06)		F = 44.45, p < 0.001
No mental distress + health insurance	11.49 (0.07)			3.30 (0.03)		
No mental distress + no health insurance	10.95 (0.08)			3.01 (0.04)		

	Subjective wellbeing			**Close friendships**		
		Reference group for comparison of means			Reference group for comparison of means	
Wave 1	Mean score (S.E.)	Mental distress + no counseling	No mental distress	Mean score (S.E.)	Mental distress + no counseling	No mental distress
Mental distress + counseling	9.81 (0.16)	F = 4.58, p = 0.07	F = 92.27, p < 0.001	3.09 (0.06)	F = 1.96, p = 0.33	F = 2.78, p = 0.20
Mental distress + no counseling	10.20 (0.09)		F = 177.94, p < 0.001	2.99 (0.04)		F = 30.12, p < 0.001
No mental distress	11.37 (0.06)			3.21 (0.03)		
Wave 3		Mental distress + no counseling	No mental distress		Mental distress + no counseling	No mental distress
Mental distress + counseling	9.99 (0.24)	F = 0.23, p = 0.99	F = 26.70, p < 0.001	3.10 (0.09)	F = 1.14, p = 0.58	F = 1.15, p = 0.57
Mental distress + no counseling	9.86 (0.11)		F = 150.44, p < 0.001	3.00 (0.05)		F = 15.70, p < 0.001
No mental distress	11.29 (0.06)			3.20 (0.03)		

Appendix C: *Adult Outcomes for Participants Based on Mental Health Care Access and Utilization During Adolescence and Transition to Adulthood*

	Relationship functioning			**Income**		
		Reference group for comparison of means			Reference group for comparison of means	
Wave 1	Mean score (S.E.)	Mental distress + no health insurance	No mental distress + health insurance	Mean score (S.E.)	Mental distress + no health insurance	No mental distress + health insurance
Mental distress + health insurance	4.07 (0.04)	F = 3.12, p = 0.24	F = 12.92, p = 0.001	2.65 (0.06)	F = 13.07, p = 0.001	F = 43.26, p < 0.001
Mental distress + no health insurance	3.95 (0.06)		F = 20.36, p < 0.001	2.37 (0.07)		F = 65.68, p < 0.001
No mental distress + health insurance	4.23 (0.02)			2.98 (0.04)		
No mental distress + no health insurance	4.12 (0.05)			2.66 (0.07)		
Wave 3		Mental distress + no health insurance	No mental distress + health insurance		Mental distress + no health insurance	No mental distress + health insurance
Mental distress + health insurance	4.03 (0.05)	F = 5.94, p = 0.05	F = 16.30, p < 0.001	2.56 (0.08)	F = 7.10, p = 0.03	F = 57.59, p < 0.001
Mental distress + no health insurance	3.85 (0.06)		F = 37.60, p < 0.001	2.30 (0.08)		F = 108.62, p < 0.001
No mental distress + health insurance	4.23 (0.02)			3.11 (0.04)		
No mental distress + no health insurance	4.18 (0.03)			2.61 (0.05)		

	Relationship functioning			**Income**		
		Reference group for comparison of means			Reference group for comparison of means	
Wave 1	Mean score (S.E.)	Mental distress + no counseling	No mental distress	Mean score (S.E.)	Mental distress + no counseling	No mental distress
Mental distress + counseling	4.01 (0.05)	F = 0.18, p = 0.99	F = 12.65, p = 0.001	2.45 (0.08)	F = 3.41, p = 0.13	F = 45.21, p < 0.001
Mental distress + no counseling	4.03 (0.03)		F = 25.19, p < 0.001	2.61 (0.06)		F = 47.93, p < 0.001
No mental distress	4.21 (0.02)			2.93 (0.04)		
Wave 3		Mental distress + no counseling	No mental distress		Mental distress + no counseling	No mental distress
Mental distress + counseling	4.05 (0.08)	F = 2.09, p < 0.30	F = 3.95, p = 0.10	2.21 (0.12)	F = 5.00, p = 0.05	F = 37.17, p < 0.001
Mental distress + no counseling	3.92 (0.04)		F = 43.14, p < 0.001	2.49 (0.07)		F = 55.08, p < 0.001
No mental distress	4.21 (0.02)			2.93 (0.04)		

Appendix C: *Adult Outcomes for Participants Based on Mental Health Care Access and Utilization During Adolescence and Transition to Adulthood*

	Voting		
		Reference group for odds ratio	
Wave 1	Percent (S.E.)	Mental distress + no health insurance	No mental distress + health insurance
Mental distress + health insurance	22.1% (1.5%)	OR = 1.13 (0.82, 1.55)	OR = 0.84 (0.71, 1.00)
Mental distress + no health insurance	20.1% (2.4%)		OR = 0.75 (0.54, 1.03)
No mental distress + health insurance	25.2% (1.2%)		
No mental distress + no health insurance	18.1% (2.1%)		
Wave 3		Mental distress + no health insurance	No mental distress + health insurance
Mental distress + health insurance	22.4% (2.2%)	OR = 1.25 (0.93, 1.69)	OR = 1.00 (0.76, 1.31)
Mental distress + no health insurance	17.2% (2.1%)		OR = 0.80 (0.66, 0.96)
No mental distress + health insurance	27.3% (1.3%)		
No mental distress + no health insurance	19.7% (1.5%)		
	Voting		
		Reference group for comparison of means	
Wave 1	Percent (S.E.)	Mental distress + no counseling	No mental distress
Mental distress + counseling	24.3% (2.3%)	OR = 1.39 (0.96, 2.02)	OR = 0.77 (0.59, 1.00)
Mental distress + no counseling	20.4% (1.5%)		OR = 0.55 (0.40, 0.76)
No mental distress	24.4% (1.1%)		
Wave 3		Mental distress + no counseling	No mental distress
Mental distress + counseling	23.1% (3.7%)	OR = 1.27 (0.81, 2.00)	OR = 0.92 (0.60, 1.40)
Mental distress + no counseling	19.1% (1.7%)		OR = 0.72 (0.57, 0.91)
No mental distress	24.6% (1.1%)		

Appendix D:
Progression of Models for Selected Independent Variable (Runaway) and Outcome (Subjective Wellbeing)

Step 1: Runaway and demographics

Overall model	$F = 15.61$, $p < 0.001$, $R^2 = 0.04$
Intercept	B = 10.81 (0.52), p < 0.001
Runaway *	B = -0.67 (0.20), p = 0.001
Age	B = -0.01 (0.03), p = 0.74
Sexual minority *	B = -0.58 (0.15), p < 0.001
Parent education level *	
Less than high school	ref.
High school/GED	B = 0.44 (0.19), p = 0.02
Some college/vocational training	B = 0.53 (0.20), p = 0.01
College degree	B = 1.02 (0.19), p < 0.001
More than college	B = 1.31 (0.23), p < 0.001
Child abuse/neglect	B = -0.08 (0.15), p = 0.60
Lived in foster/group home *	B = -1.16 (0.29), p < 0.001
Urban census block group *	B = -0.23 (0.10), p = 0.02

Step 2: Socialization variables and demographics

Interpersonal relationships		*Formal institutions*	
Overall model	$F = 7.65$, $p < 0.001$, $R^2 = 0.08$	Overall model	$F = 17.16$, $p < 0.001$, $R^2 = 0.07$
Intercept	B = 7.29, p < 0.001	Intercept	B = 8.62, p < 0.001
Age	B = 0.05, p = 0.16	Age	B = 0.01, p = 0.72
Sexual orientation *	B = -0.46, p = 0.04	Sexual orientation *	B = -0.61, p = 0.001
Parent education *		Parent education *	
Less than high school	ref.	Less than high school	ref.
High school/GED	B = 0.32, p = 0.25	High school/GED	B = 0.35, p = 0.09
Some college/vocational training	B = 0.33, p = 0.25	Some college/vocational training	B = 0.39, p = 0.10
College degree	B = 0.83, p = 0.004	College degree	B = 0.86, p < 0.001
More than college	B = 1.05, p < 0.001	More than college	B = 0.93, p < 0.001
Family income *	B = 0.003, p = 0.01	Family income *	B = 0.003, p = 0.001
Abuse	B = -0.20, p = 0.45	Abuse	B = -0.001, p = 0.99
Foster home	B = -0.87, p = 0.08	Foster home *	B = -1.22, p < 0.001
Urban block *	B = -0.39, p < 0.001	Urban block *	B = -0.34, p = 0.001
Friend support	B = 0.18, p = 0.13	School connectedness *	B = 0.45, p < 0.001
Relationship with mom *	B = 0.33, p = 0.01	Voluntary service *	B = 0.36, p < 0.001
Relationship with dad	B = 0.17, p = 0.05		
Parent communication *	B = 0.48, p = 0.02		
Mentor *			
Sibling	B = 0.05, p = 0.81		
Grandparent/aunt/uncle	B = 0.15, p = 0.57		
Teacher/guidance counselor/coach	B = 0.69, p = 0.001		
Employer/co-worker	B = 0.32, p = 0.22		
Religious leader	B = 0.19, p = 0.64		
Friend/neighbor/friend's parent	B = 0.28, p = 0.18		
Other	B = 0.16, p = 0.62		
No mentor	ref.		

Mental health care (Wave 1)	*Mental health care (Wave 3)*	
Bivariate relationships not significant	Overall model	F = 21.14, p < 0.001, R^2 = .10
	Intercept	B = 11.54, p < 0.001
	Age	B = -0.03, p = 0.36
	Sexual orientation *	B = -0.44, p = 0.01
	Parent education *	
	Less than high school	ref.
	High school/GED	B = 0.38, p = 0.07
	Some college/vocational training	B = 0.44, p = 0.05
	College degree	B = 0.90, p < 0.001
	More than college	B = 1.01, p < 0.001
	Family income *	B = 0.003, p < 0.001
	Abuse *	B = 0.10, p = 0.58
	Foster home *	B = -1.11, p = 0.001
	Urban block *	B = -0.33, p < 0.001
	Mental health care access *	
	Mental distress + insurance	B = -1.19, p < 0.001
	Mental distress + no insurance	B = -1.87, p < 0.001
	No mental distress + no insurance	B = -0.33, p < 0.001
	No mental distress + insurance	ref.

Step 3: Test for interactions

Interpersonal relationships		*Formal institutions*	
Overall model	F = 10.44, p < 0.001, R^2 = 0.07	Overall model	F = 17.51, p < 0.001, R^2 = 0.07
Intercept	B = 8.19, p < 0.001	Intercept	B = 8.94, p < 0.001
Runaway	B = -0.04, p = 0.93	Runaway	B = -1.03, p = 0.07
Sexual orientation	B = -0.61, p < 0.001	Sexual orientation	B = -0.59, p < 0.001
Parent education		Parent education	
Less than high school	ref.	Less than high school	ref.
High school/GED	B = 0.31, p = 0.13	High school/GED	B = 0.28, p = 0.14
Some college/vocational training	B = 0.50, p = 0.02	Some college/vocational training	B = 0.46, p = 0.02
College degree	B = 0.94, p < 0.001	College degree	B = 0.88, p < 0.001
More than college	B = 1.19, p < 0.001	More than college	B = 1.05, p < 0.001
Foster home	B = -0.86, p = 0.002	Foster home	B = -0.93, p = 0.001
Urban block	B = -0.14, p = 0.33	Urban block	B = -0.07, p = 0.72
Relationship with mom	B = 0.45, p < 0.001	School connectedness	B = 0.49, p < 0.001
Parent communication	B = -0.21, p = 0.50	Voluntary service	B = 0.29, p = 0.09
Mentor		Interactions	
Sibling	B = 0.53, p = 0.02	Runaway*school connectedness	B = 0.02, p = 0.89
Grandparent/aunt/uncle	B = 0.52, p = 0.05	Runaway*voluntary service	B = -0.05, p = 0.79
Teacher/guidance counselor/coach	B = 0.91, p < 0.001	Runaway*school connectedness*urban	B = -0.17, p = 0.30
Employer/co-worker	B = 0.61, p = 0.01	Runaway*voluntary service*urban	B = -0.12, p = 0.37

	Religious leader	B = 0.60, p = 0.06	
	Friend/neighbor/friend's parent	B = 0.41, p = 0.01	
	Other	B = 0.05, p = 0.84	
	No mentor	ref.	
Interactions			
	Runaway*relationship with mom	B = -0.07, p = 0.68	
	Runaway*parent communication	B = 0.48, p = 0.22	
	Runaway*mentor	B = 0.06, p = 0.15	
	Runaway*relationship with mom*urban	B = -0.05, p = 0.77	
	Runaway*parent communication*urban	B = -0.01, p = 0.97	
	Runaway*mentor*urban	B = -0.03, p = 0.38	
Mental health care (Wave 1)		*Mental health care (Wave 3)*	
N/A		Overall model	F = 26.21, p < 0.001, R^2 = 0.09
		Intercept	B = 10.72, p < 0.001
		Runaway	B = 0.01, p = 0.98
		Sexual orientation	B = -0.39, p = 0.01
		Parent education	
		Less than high school	ref.
		High school/GED	B = 0.30, p = 0.13
		Some college/vocational training	B = 0.46, p = 0.02
		College degree	B = 0.87, p < 0.001
		More than college	B = 1.10, p < 0.001
		Foster home	B = -0.83, p = 0.004
		Urban block	B = -0.19, p = 0.03
		Mental health care access	
		Mental distress + insurance	B = -0.93, p < 0.001
		Mental distress + no insurance	B = -1.62, p < 0.001
		No mental distress + no insurance	B = -0.25, p = 0.07
		No mental distress + insurance	ref.
		Runaway*mental health care access	B = 0.10, p = 0.23

Step 4: Full model

Overall model	$F = 17.10$, $p < 0.001$, $R^2 = 0.11$
Intercept	B = 8.76, p < 0.001
Runaway	B = -0.40, p = 0.06
Sexual orientation *	B = -0.40, p = 0.01
Parent education	
Less than high school	ref.
High school/GED	B = 0.16, p = 0.42
Some college/vocational training	B = 0.33, p = 0.12
College degree *	B = 0.67, p = 0.002
More than college *	B = 0.85, p < 0.001
Foster home *	B = -0.68, p = 0.02
Urban block *	B = -0.17, p = 0.05
Relationship with mom *	B = 0.25, p = 0.002
Parent communication	B = 0.09, p = 0.60
Mentor	
Sibling	B = 0.27, p = 0.08
Grandparent/aunt/uncle	B = 0.24, p = 0.18
Teacher/guidance counselor/coach *	B = 0.63, p < 0.001
Employer/co-worker	B = 0.39, p = 0.05
Religious leader	B = 0.33, p = 0.24
Friend/neighbor/friend's parent *	B = 0.32, p = 0.03
Other	B = 0.02, p = 0.93
No mentor	ref.
School connectedness *	B = 0.26, p = 0.002
Voluntary service *	B = 0.27, p = 0.003
Mental health care access (Wave 3)	
Mental distress + insurance *	B = -1.09, p < 0.001
Mental distress + no insurance *	B = -1.53, p < 0.001
No mental distress + no insurance *	B = -0.29, p = 0.01
No mental distress + insurance	ref.