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Supporting Meaningful Career Paths: Effects of Mentoring and Adulthood Perception on Vocational Outcomes for Emerging Adults

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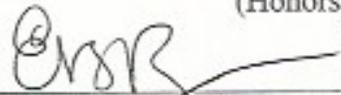
Supporting Meaningful Career Paths:
Effects of Mentoring and Adulthood Perception on Vocational Outcomes for Emerging Adults

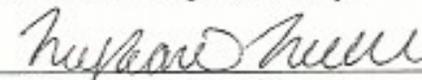
A thesis submitted in partial fulfillment of the requirement
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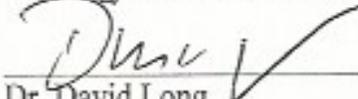
by

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Abstract

During the transition to adulthood, adolescents are faced with numerous developmental challenges, including increased rates of risk-taking, academic pressure, and greater struggles with low self-esteem. Naturally-occurring mentoring relationships can aid in providing guidance and advice as well as emotional and tangible support during this time (Ahrens et al., 2008). The present study examined how natural mentors during adolescence shape vocational outcomes during early adulthood, and whether this impact of mentoring can be explained by changes in perceived adulthood during the transition to adulthood. Analyses used data from a large, nationally representative sample, the National Longitudinal Study of Adolescent Health (Add Health), which followed 15,197 youth longitudinally from adolescence through ages 24-32. Results suggested that the presence of a natural mentor predicted vocational outcomes such as pursuing higher levels of education ($b = .49, SE = .05, p < .001$), more job autonomy ($b = .06, SE = .02, p < .05$), and having first jobs that better aligned with their career goals ($b = -.23, SE = .04, p < .001$) even after co-varying for youth age, minority status, gender, and baseline academic performance. Closeness of natural mentors predicted lower levels of education attained ($b = -.06, SE = .02, p < .001$). In addition, perceived adulthood partially mediated the effects of closeness to mentor on highest education achieved (Sobel = $-.002, SE = .001, p < 0.01$). These results suggest that naturally-occurring mentoring relationships during adolescence can lead to improved vocational outcomes, and that mentoring is also linked to increased perceptions of one's adult roles.

Keywords: AddHealth, mentoring, emerging adults, perceived adulthood, vocational outcomes

Supporting Meaningful Career Paths: Effects of Mentoring and Adulthood Perception on Vocational Outcomes for Emerging Adults

A natural mentoring relationship involves a relationship between a youth and a non-parental adult that arises organically (Miranda-Chan et al., 2016). This type of relationship differs from a formal mentoring relationship, in which a volunteer mentor is paired with a youth through an organized mentoring program like Big Brothers/Big Sisters. Having at least one relationship with a natural mentor appears to promote youth resilience across adolescence and young adulthood (Hurd & Zimmerman, 2010), perhaps especially for those adolescents living in high-stress contexts or particularly in need of a positive role model (DuBois & Silverthorn, 2005, Timpe et al., 2015 and Ahrens et al., 2008). In addition, these relationships are fairly common, with 54% of young adults reporting at least one relationship with an informal, or natural, mentor (Miranda-Chan et al., 2016).

Although researchers have not come to a clear consensus regarding the definition of a mentor, most researchers agree that support, guidance, and encouragement are hallmarks of a mentoring relationship (Miranda-Chan et al., 2016). Natural mentoring relationships develop on the basis of mutual identification and the fulfillment of needs such as social, emotional or occupational support. Mentors might select mentees who they view as younger versions of themselves, and the relationship provides mentors with a sense of generativity, or contribution to future generations (Ragins & Cotton, 1999). In return, mentees often select mentors who they view as role models. This mutual identification leads to a close natural relationship in which mentors can help mentees develop their sense of identity and make difficult decisions as they transition to adulthood (Hurd & Zimmerman, 2010).

Natural mentoring relationships form gradually and are therefore likely to be less pressured than assigned relationships like teacher-student or formal mentoring relationships

(Greeson et al., 2010). Moreover, natural mentors tend to be familiar adults from a youth's own community, and as a result, the adolescent is less likely to have difficulty trusting the adult and developing an enduring bond (Greeson et al., 2010). Both the adolescent and the natural mentor are already in each other's social networks. Therefore, the chances that the relationship will continue over time are better, and the likelihood of positive outcomes increases. Perhaps in part as a result of these factors, natural mentors appear to provide adolescents and young adults with assistance in a wide variety of domains.

Natural Mentors and Youth Outcomes in Young Adulthood

Emerging adulthood is likely to be a crucial developmental period for the effects of natural mentoring, as youth transition to adulthood and adopt adult identities. Older adolescents may be especially open to the influence of adults other than their parents as they develop independence while navigating the challenges of forming an adult identity (Hurd and Zimmerman, 2010). During this emerging adulthood, youth are also faced with increasing rates of risk factors, such as risk-taking behavior, greater academic pressure, and decreases in self-esteem (DuBois & Silverthorn, 2005). These risk factors are associated with elevated rates of emotional distress including depression, anxiety, and substance use problems (Ahrens et al., 2008). During this developmental period, adolescents experiment with a wide range of attitudes and behaviors including the use of substances such as alcohol, cigarettes, and marijuana (Bukstein, 2005). In addition, anxiety and depression disorders are some of the most common psychiatric conditions afflicting adolescents, and often put these youths at a stronger risk for recurrent anxiety or depressive disorders during early adulthood (Pine et al., 1998).

Natural mentoring appears to buffer some of these challenges during young adulthood. Young adults who report having at least one natural mentoring relationship have reduced

problem behavior (i.e., gang membership, hurting others in physical fights, and risk taking), improved psychological well-being (i.e., heightened self-esteem and life satisfaction), and better health as measured by physical activity level and birth control use (DuBois & Silverthorn, 2005). In addition, natural mentoring generally provides benefits that resemble those of formal mentoring programs, such as decreasing problem behaviors and improving psychological well-being, academic performance, and relationships with others (McDonald et al., 2007). Several theories have been suggested for the mechanisms of natural mentors' influences on adolescent and young adult development. Natural mentoring relationships can lead to improved outcomes for at-risk adolescents by influencing risky behaviors, including decreasing drug use and delinquent behavior (Timpe et al., 2015). Natural mentors can promote positive school attitudes and discourage problem behaviors directly, as well as encourage young people not to befriend peers who engage in problem behaviors or who discourage positive school attitudes (Zimmerman et al., 2002). Natural mentors are thought to influence these outcomes throughout the adolescent developmental stage by providing guidance and advice as well as emotional and tangible support (Ahrens et al., 2008). For example, research has identified that both teachers and religious mentors help foster educational attainment in adolescents by providing them with the information necessary to obtain admittance into college. In addition to these skills, research suggests that mentors provide different kinds of support, and help support identity development (especially for racial/ethnic minority youth) as well as help with networking and social engagement (Kram, 1983).

Natural mentoring relationships can also provide late adolescents with knowledge, perspectives, or skills that are different than those found at home. In particular, mentors may help emerging adults accept personal responsibility, make independent decisions, and develop a sense

of efficacy and individuation (Hurd & Zimmerman, 2010). In addition to providing support and guidance, natural mentors have been shown to have a significant impact on emerging adults by providing adult role modeling. This “adult role modeling” was defined as providing guidance and advice, providing emotional support, and providing practical help (Greeson et al., 2009).

Formal Mentoring and Vocational Outcomes

It is therefore clear that mentors can have a broad array of positive effects on adolescent development. However, one area that is less studied involves the long-term effects of mentoring on youths’ vocational success as they transition from high school to college and beyond. Little research has directly examined the effects of natural mentoring on youth vocational outcomes during emerging adulthood. However, a related body of literature shows that *formal* mentors can play an important role in workers’ satisfaction, achievement, and promotion across various job types (McDonald et al., 2007). When motivated by similar goals as their mentees, full-time corporate employees with formal mentors provide necessary psychosocial, career development and role modeling functions, while mentees report finding these behaviors motivating towards career goals (Godshalk & Sosik, 2003). These formal mentoring relationships in the workplace have been linked to benefits such as higher levels of overall compensation, promotions and career advancement, enhanced career mobility, and career satisfaction for mentees (Godshalk & Sosik, 2003).

It is important to note that members of these formal mentoring relationships are typically assigned to one another on the basis of application forms submitted by the potential mentor and mentee. Thus, in contrast to natural mentor relationships, identification, role modeling, and interpersonal comfort do not play a role in the development of formal relationships. Research has suggested that mentees in natural mentoring relationships might gain more career-related support

from their mentors than individuals in formal relationships (Ensher & Murphy, 1997). This is consistent with one study showing that mentees with natural mentors reported that their mentors fulfilled career development and psychosocial roles more often than mentees with formal mentors (Ragins & Cotton, 1999). Despite this evidence, less is known about how naturally occurring mentor relationship influence youths' development in the long-term, in part because employment outcomes have been studied almost exclusively in the context of formal workplace mentoring programs.

Natural Mentoring and Vocational Outcomes

In the past decade there has been an emergence of literature highlighting the value of naturally occurring mentorships for young people. Several recent studies of natural mentoring point to a positive impact of natural mentors on young adult vocational outcomes. For example, one study showed that young adults with at least one natural mentor showed higher rates of working more than 10 hours a week during the transition to adulthood (DuBois & Silverthorn, 2005) and were 25% more likely to gain full-time employment (McDonald et al., 2007). These jobs, in turn, often provide young people with access to additional, work-related mentors, which can provide support throughout one's career (McDonald et al., 2007). Emerging adults with natural mentors also received more compensation and promotions in their jobs than those without mentors (Ragins and Cotton, 1999). In these ways, natural mentoring is thought to play an important role in the transition from school to work, and in the maintenance of stable patterns of work life that are linked to financial stability and greater life satisfaction (McDonald et al., 2007).

Despite this evidence for the impact of natural mentors on adolescent outcomes, the breadth and longevity of this impact remains largely unexplored. Given the effects of natural

mentoring on psychosocial risk and educational attainment in college, there is reason to believe that natural mentoring might also influence young adults' vocational outcomes beyond college (McDonald et al., 2007). This is a crucial question, given the links between vocational success and a number of indicators of life satisfaction and well-being in adulthood (McDonald et al., 2007). Moreover, post-college vocational outcomes play a key role in translating a baccalaureate degree into financial stability that reduces socioeconomic inequalities for youth from underrepresented backgrounds.

In addition to general employment rates, mentoring might also influence the *types* of jobs young adults pursue. For example, in one study, natural mentoring was positively associated with intrinsic job attributes, such as job autonomy and authority, that are hypothesized to increase independence and satisfaction within one's job (McDonald & Lambert, 2014). In addition, among adults in the workforce, having at least one natural mentor improves job and career satisfaction (Miranda-Chan et al., 2016). This study also indicated that mentoring in adolescence has been shown to increase the likelihood of being employed in emerging adulthood (Miranda-Chan et al., 2016). The findings suggest that natural mentors might help steer youth toward intrinsically rewarding careers that further contribute to psychosocial well-being and life satisfaction.

Despite this evidence for the role of natural mentors in vocational outcomes, several studies have also yielded conflicting findings. For example, one study found that having a mentor during adolescence was not significantly related to job satisfaction and stability or extrinsic job rewards, such as pay, in adulthood (Miranda-Chan et al., 2016). Moreover, it is relatively unclear whether certain individuals might benefit more from natural mentoring with respect to vocational outcomes. For instance, it has been suggested that males and females might

thrive under the guidance of different types of social support and the presence of a mentor may influence this dynamic. Young men who develop and maintain mentoring relationships have a 40% chance of being employed during young adulthood, while young women who develop adult “friend” mentors (e.g., older colleagues or more experienced peers) are 57% more likely to be employed full-time (McDonald et al., 2007). Further research is therefore needed to more precisely determine whether and how natural mentoring supports young adults’ vocational outcomes.

Access to Natural Mentors and Adult Identity

There are several plausible mechanisms for the impact of natural mentoring on vocational outcomes during the transition to adulthood, including several of those discussed above. Natural mentors are thought to provide experience-based guidance, specifically for young adults starting their careers (McDonald et al., 2007). One relatively under-studied mechanism of the effects of natural mentors on young adults’ vocational success involves perceptions of adult identity.

Subjective adult identity is the development of an adult sense of self regardless of chronological age (Benson & Johnson, 2009). Prior studies have proposed that people start to feel like an adult during adolescence and the transition to adulthood is a result of experiencing life course transitions, acquiring adult roles, and comparing personal behavior to adult reference groups (Benson & Johnson, 2009).

Adolescence is a crucial developmental period in which young people develop the skills and self-confidence necessary to succeed in their later work careers (McDonald et al., 2007). Several studies have assessed the timing of adolescent perceptions of adult identity (Liang et al., 2008). As they enter emerging adulthood, some young adults exhibited a low level of age identity and psychosocial maturation relative to their peers, and were labelled as “late adults.”

These late adults were more likely to identify with lower self-esteem and fewer adult-like responsibilities (Benson et al., 2012). In addition, late adults appeared to be less likely to take on household responsibility (Benson et al., 2012). In contrast to late adults, some young adults had above average scores on age identity and psychosocial maturation and were labeled “early adults” (Berzin & Elder, 2011). “Early adults” were more likely to report growing up in a higher-stress family, marked by lower levels of family closeness and parental control. These early adults identified that peer-like communication, parent-adolescent conflict, and more frequent housework increased the likelihood of feeling like an adult (Benson et al., 2012).

The increased adulthood perceptions experienced by early adults tend to be linked to vocational success. Although early adults do not tend to pursue as much education as late adults, they earn more, have higher subjective attainment, and possess higher rates of employment in career jobs than late adults (Benson et al., 2012). In comparison, late adults have lower incomes compared with early adults and lower subjective attainment and career-like work than early adults. However, as the most educated group, they eventually hold jobs within their career plans and out-earn their peers. The connection between working full-time and feeling like an adult is also partially due to full-time workers’ self-assessments as being more independent (Johnson et al., 2007). This most likely reflects a delay in establishing their career rather than lower lifetime attainment (Benson et al., 2012).

As mentioned above, natural mentors are hypothesized to play a key role in shaping a youth’s sense of identity during emerging adulthood, perhaps contributing to greater perceived adulthood during this transition. Natural mentoring relationships can help foster adult identity by providing adolescents with knowledge, perspectives, or skills that are different than those found at home. In particular, mentors may help emerging adults accept personal responsibility, make

independent decisions and develop a sense of efficacy and individuation (Hurd & Zimmerman, 2010). Mentors help to develop specific personal skills believed to be most critical for healthy identity development. These include having confidence in one's ability to achieve a goal and make a difference in the world as well as strong desires to engage in important activities (intrinsic motivation), master learning tasks, and be socially connected (Miranda-Chan et al., 2016).

The Current Study

Thus far, no studies have specifically examined the impact of natural mentoring on vocational outcomes during the transition to adulthood, while also examining mediations of these effects. In addition, the current research has not addressed how mentoring might influence the timing of perceptions of adulthood. In order to address the gaps in the current literature, this study used a large, nationally representative sample of adolescents followed longitudinally from adolescence through young adulthood, from the National Longitudinal Study of Adolescent Health (Add Health) study. We examined how natural mentoring relationships during adolescence shape vocational outcomes during early adulthood, and tested whether perceptions of adult identity during emerging adulthood might serve as a mediation of these effects. For the purposes of this study, emerging adult was defined as a transitional stage from late adolescence into adulthood (Arnett, 2000), and perceptions of adulthood were determined by participant ratings of perceived adulthood, social maturity, adult responsibilities, and how they view their age compared to others.

In addition, analyses co-varied for several demographic factors that have been implicated in perceptions of adult identity and vocational outcomes. Demographics can play an important role in the timing of adolescent identity development, as well as the likelihood of holding a full-

time job and experiencing job satisfaction (Johnson et al., 2007). In particular, racial/ethnic minority status was included as a covariate, given that research has shown African Americans might think of themselves as adults more often than Hispanics and whites, while Asians report thinking of themselves as adults less often than all other groups (Johnson et al., 2007). In addition, minority youth have reported lower career satisfaction because they perceive less direction and autonomy in their jobs (Greenhaus et al., 1990). Past research has also suggested that women face greater barriers to developing informal mentoring relationships than men, and may therefore be more likely to seek formal relationships as a substitute for informal mentoring relationships (Ragins & Cotton, 1999). Therefore, gender was also included as a covariate, given that females also tend to have higher odds of feeling like an adult regardless of development stage, a perception that is often linked to problematic developmental outcomes for women (Berzin et al., 2015).

We hypothesized that the presence of at least one naturally-occurring mentoring relationship during adolescence and young adulthood, as well as greater closeness within that relationship, would predict improved vocational outcomes during young adulthood (i.e., types and quality of jobs, career attitudes, and job satisfaction) as well as greater identification with adulthood roles. In addition, we expected that greater perceptions of adult identity during emerging adulthood would mediate the positive impact of natural mentoring on vocational outcomes. This conceptual model is displayed in Figure 1.

Method

Participants

Analyses utilized data from the National Longitudinal Study of Adolescent Health (Add Health), a study that recruited and tracked outcomes for a large, nationally representative sample of over 15,197 adolescent participants (7167 male, 8030 female). For the present analyses, data

included responses from a subset of adolescents who participated during Wave III and Wave IV of the Add Health study. At Wave III, in-home interviews were conducted with 4,882 participants ages 18 to 26 between August 2001 to April 2002. Follow-up interviews were conducted during Wave IV with 5,114 participants ages 24-32, in the year 2008. All Add Health participants provided written informed consent for participation in all aspects of the study in accordance with the University of North Carolina School of Public Health Institutional Review Board guidelines that are based on the Code of Federal Regulations on the Protection of Human Subjects. The participants were sampled to be nationally representative of the United States and sample weights were used to ensure that analyses maintained that representation.

Procedure

The Add Health data is the largest and most comprehensive survey of adolescents ever undertaken (Add Health: Harris, 2009). In addition, compared to other large surveys, Add Health is unique in that it includes specific questions related to natural mentoring. The measures are variables from Wave III and Wave IV of Add Health, which were originally obtained via in-home interviews with adolescents and their parents. These questions address relationships with mentors, perceptions of adulthood, and career outcomes.

Measures

Natural mentoring. Natural mentoring relationships were assessed with two variables. The presence of a natural mentoring relationship was assessed by asking, “other than your parents or step-parents, has an adult made an important positive difference in your life at any time since you were 14 years old?” (Harris, 2009). If adolescents endorsed this item, they were asked to choose the most impactful mentor and report on closeness to this mentor (from 0- not close at all to 4- very close).

Perceived adult identity. Adulthood perception was assessed with four variables (Harris, 2009). First, age compared to others was assessed by asking, “how old do you feel compared with others your age?” (0 *younger all of the time*, 4 *older all of the time*). For social maturity, adolescents were asked, “in terms of social maturity, would you say you grew up faster, slower, or at about the same rate as other people your age? (*faster, at about the same rate, or slower*). For adult responsibilities, adolescents were asked, “in terms of taking on adult responsibilities, would you say you grew up faster, slower, or at about the same rate?” (*faster, at about the same rate, or slower*). Adult status was based on the question “how often do you think of yourself as an adult?” (from 0 *never* to 4 *all of the time*).

Vocational outcomes. Vocational outcomes were assessed with four variables (Harris, 2009). Participants were asked about the highest level of education they had achieved to date (*1- 8th grade through 13- completed post baccalaureate professional education*). In addition, participants were asked the age at which they first began working full-time at a paying job while not primarily a student. Two variables were included to assess job characteristics and satisfaction. First, participants were asked to indicate how well their first job fit with their long-term career goals. Possible responses included, “*it was part of my long-term career or work goals at the time,*” “*it was preparation for my long-term career or work goals at that time,*” “*it was not related to my long-term career or work goals at that time,*” and “*I did not have a long-term career or work goals at that time.*” Participants were also asked about freedom and autonomy around decision-making in their job (from 0- *none of the time* to 3- *all of almost all of the time*).

Covariates. Four covariates were included in analyses to account for potential confounding variables. Demographic variables, including youth age, gender, and racial/ethnic

minority status were included as covariates. In addition, each participant's grade point average at Wave III was included in order to account for baseline academic performance, which likely plays a large role in later educational and vocational outcomes.

Data Analysis

First, linear regression analyses were run to determine the predictive relationships among natural mentoring, perceived adulthood items, and the vocational outcome variables. Separate regression analyses were run for each outcome and youth age, minority status, gender, and baseline academic performance were included as covariates in each analysis. Then, analyses were run to determine if perceptions of adult identity mediated the relationships between natural mentoring and vocational outcomes, and results were reported using the Sobel-Goodman statistic test (Sobel, 1982 and Goodman, 1960).

Results

Natural Mentoring and Vocational Outcomes

Table 1 presents results from analyses predicting the vocational outcomes from the presence of a natural mentor. Youth who identified having a natural mentor during adolescence reported pursuing higher levels of education ($b = .49, SE = .05, p < .001$), greater job autonomy ($b = .06, SE = .02, p < .05$), and having first jobs that better aligned with their career goals ($b = -.23, SE = .04, p < .001$) even after co-varying for youth age, minority status, gender, and baseline academic performance. However, the presence of a natural mentor during adolescence did not predict age at first full-time job ($b = .59, SE = .35, p = .09$).

Contrary to hypotheses, higher youth ratings of closeness with their natural mentor actually predicted a slightly *lower* level of education attained ($b = -.06, SE = .02, p < .001$) after co-varying for youth age, minority status, gender, and baseline academic performance. Closeness within the natural mentoring relationship did not predict job autonomy ($b = .01, SE = .01, p =$

.21), having first jobs that better aligned with their career goals ($b = .00, SE = .02, p = .78$) or their age at first time job ($b = -.12, SE = .15, p = .42$). These results are presented in Table 2.

Natural Mentoring and Perceived Adulthood

The presence of a natural mentor during adolescence predicted greater feelings of adult responsibility ($b = .04, SE = .02, p < .05$), as well as older perceived age compared to others ($b = .03, SE = .02, p < .05$) when co-varying for youth age, minority status, gender, and baseline academic performance. The presence of a natural mentor during adolescence did not predict perceived adulthood ($b = .02, SE = .02, p = .19$) or social maturity ($b = .03, SE = .02, p = .10$). These results are presented in Table 3.

In contrast, youth ratings of closeness with their natural mentor predicted higher perceived adulthood ($b = .04, SE = .01, p < .001$), after co-varying for youth age, minority status, gender, and baseline academic performance. Closeness to mentor did not predict social maturity ($b = .00, SE = .01, p = .63$), adult responsibility ($b = .01, SE = .01, p = .21$), or age compared to others ($b = .01, SE = .01, p = .12$).

Perceived Adulthood and Vocational Outcomes

Youth who identified as having higher perceived adulthood reported pursuing *lower* levels of education ($b = -.18, SE = .03, p < .001$), greater job autonomy ($b = .06, SE = .01, p < .001$) and earlier age at first full-time job ($b = -.57, SE = .22, p < .05$) after co-varying for youth age, minority status, gender, and baseline academic performance (see Table 5). Perceived adulthood did not predict first jobs that aligned with career goals ($b = -.03, SE = .03, p = .21$).

Youth who reported having higher feelings of adult responsibility reported *lower* levels of education achieved ($b = -.02, SE = .03, p < .001$) and earlier age at first full-time job ($b = -1.04, SE = .33, p < .01$) after co-varying for youth age, minority status, gender, and baseline

academic performance (see Table 6). However, adult responsibility did not predict job autonomy ($b = .04, SE = .02, p = .08$) or first jobs that align with career goals ($b = -.06, SE = .03, p = .07$).

Youth who reported having higher social maturity reported *lower* levels of education achieved ($b = -.07, SE = .03, p < .05$), greater job autonomy ($b = .05, SE = .02, p < .01$), first jobs that better align with career goals ($b = -.08, SE = .03, p < .05$) and earlier age at first full-time job ($b = -.87, SE = .27, p < .01$) after co-varying for youth age, minority status, gender, and baseline academic performance (see Table 7).

Youth who reported feeling older compared to their peers reported *lower* levels of education achieved ($b = -.18, SE = .03, p < .001$), and earlier age at first full-time job ($b = -1.27, SE = .03, p < .001$) after co-varying for youth age, minority status, gender, and baseline academic performance (see Table 8). However, higher adult responsibility did not predict job autonomy ($b = .02, SE = .02, p = .44$) and first jobs that align with career goals ($b = -.07, SE = .05, p = .07$).

Mediation Analysis

Because linear regression analyses indicated relationships among mentoring, adult identity, and vocational outcomes, mediation analyses were run to determine whether adult identity variables might partially account for the relationships between natural mentoring and vocational outcomes. These analyses were only run for sets of variables that showed existing relationships in the initial linear regressions. Specifically, perceived adulthood was tested as a mediator of the effects of closeness with one's mentor on highest education level achieved, and feelings of adult responsibilities and feeling older compared to one's peers were each tested as mediators of the effects of the presence of a mentor on highest education level achieved.

Results showed that self-reported ratings of perceived adulthood partially mediated the effects of one's closeness to a natural mentor on highest education achieved (Sobel = $-.002$, $SE = .001$, $p < 0.01$; see Figure 2). However, it should be noted that the size of this partial mediation was relatively small, with the mediator explaining only about 1.5% of the total effect of closeness to a mentor on educational attainment. The remaining models did not show mediation. That is, greater feelings of adult responsibility during emerging adulthood did not mediate the effects of the presence of a natural mentor on highest education achieved (Sobel = $.001$, $SE = .003$, $p = .57$; see Figure 3). Similarly, feeling older compared to one's peers did not mediate the effects of the presence of a natural mentor on highest education achieved (Sobel = $-.002$, $SE = .002$, $p = .38$; see Figure 4).

Discussion

The current study used a large, nationally representative sample of youth followed longitudinally through adolescence and emerging adulthood to determine the effects of natural mentoring and perceived adulthood on vocational outcomes. Results suggested that the presence of a natural mentor during adolescence and young adulthood predicted many vocational outcomes, including higher education achieved, greater job autonomy, and earlier age at first full-time job. Analyses also determined that feeling greater closeness to one's mentor actually predicted *lower* levels of education achieved, contrary to hypotheses. In addition, variables assessing one's emerging adult identity appeared to be related to both experiences of natural mentoring and vocational outcomes, and self-reported ratings of perceived adulthood partially mediated the negative effects of one's closeness to a natural mentor on highest education achieved.

Findings regarding the impact of natural mentoring on vocational success are largely consistent with the body of literature on formal mentoring, including a meta-analysis which

suggests that formally assigned mentors tend to promote vocational achievement for young adults through positive career and work attitudes as well as successful career outcomes (Eby et al., 2008). The mere presence of a natural mentor during adolescence appears to predict a host of positive educational outcomes, including greater job autonomy, higher levels of education achieved, and obtaining first jobs that are better aligned with one's career goals. Overall, this data suggests that naturally-occurring mentoring relationships can be a key strategy for enhancing individual learning, career growth, and managerial advancement during young adulthood (Godshalk & Sosik, 2003). Positive mentor relationships during this crucial time period for young adults can help them feel more prepared to launch their careers and lead them to financial or social success instead of struggling with many new uncertainties. This can most likely be explained because mentors provide specific career development functions: sponsoring promotions and lateral moves, coaching the mentee, protecting the mentee from adverse forces, providing challenging assignments, helping the mentee develop a sense of professional self, and increasing the mentee's exposure and visibility (Kram, 1983). Moreover, natural mentoring might influence the types of jobs a young adult attains, perhaps allowing them to find careers characterized by greater independence in the workplace, and therefore increase job satisfaction (McDonald & Lambert, 2014). As a result, interventions to help youth find natural mentors might be sufficient to promote some types of educational and vocational success.

Surprisingly, greater closeness with a natural mentor tended to have a different pattern of results, predicting a lower level of education achieved. One potential explanation for these findings might involve the types of natural mentors that different youth reach out to for support. Theories of social networks highlight different supportive roles for "close" or "strong" ties like extended family members and close family friends, as compared to a broader network of more

distant or “weak” connections, including teachers, employers, and coaches (Granovetter, 1978). Close ties, such as extended family members, tend to provide practical and emotional support, but might be less helpful in promoting educational and vocational attainment than a network of heterogeneous social connections with key personnel (Raposa, Erickson, Hagler, & Rhodes, 2018). Thus, adolescents who report greater closeness with their mentor may be doing so because the mentor is a family member or family friend, and might be receiving less informational support than other adolescents with mentors who are teachers, guidance counselors, or coaches.

Mentoring was also predictive of adult identity during emerging adulthood. The presence of a natural mentor during adolescence predicted greater feelings of adult responsibility and older perceived age compared to others. Similarly, greater reported closeness to a natural mentor predicted greater perceptions of adulthood. This reinforces the view that close and supportive relationships with non-parental adults may provide youth with additional social resources to help them cope more effectively with the identity transitions that occur as adolescents graduate from high school and enter the adult world (Liang et al., 2008). These results also support the idea that the effects of a natural mentor on identity development could allow for adolescents to have positive vocational outcomes that align with late adults (Benson et al., 2012). Furthermore, natural mentoring relationships may contribute to an emerging adult’s sense of worth and foster a more positive self-appraisal, which may in turn make them less vulnerable to the effects of stress and promote identity development (Liang et al., 2008). The close emotional bond that underlies the relationship appears to be especially important in allowing mentors to be a resource for identity development (Kram, 1983).

Greater perceptions of an adult identity predicted some positive vocational outcomes, such as greater job autonomy. However, greater perceived adulthood also predicted lower educational attainment. Moreover, the adult identity variables did not account for the effects of natural mentoring on vocational outcomes, with one exception: greater perceptions of adulthood partially mediated the negative effects of closeness within a natural mentoring relationship on highest education achieved. It is possible that this model reflects a process for “early adults” living in high-stress contexts—these youth might have close mentoring ties that support them in dealing with practical stressors at home, but do not necessarily support them on the trajectory of an extended period of emerging adulthood (e.g., through college, graduate school) that is common for their more privileged peers. As a result, these youth might begin to feel like adults much earlier than their peers (i.e., greater perceived adulthood), and these perceptions might influence them to discontinue school and begin work earlier than peers. While there was a significant mediation effect, it is important to keep in mind that the proportion of the total effect was relatively small. Thus, there are likely many other factors that help to explain the impact of mentoring on educational outcomes.

Although not included in our original hypotheses, it is important to note that several of our covariates showed consistent relationships with vocational success. Specifically, minority status predicted having a first job that poorly aligned with career goals and a higher age at first full-time job. These findings are consistent with past studies showing that African Americans received less favorable assessments for promotions from their supervisors, were more likely to have plateaued in their careers, and were more dissatisfied with their careers (Greenhaus et al., 1990). In addition, this study supports previous literature suggesting that it may be more difficult for minority young adults to find work (Johnson et al., 2007). These findings are also consistent

with past studies showing that minority youth might have more to gain from natural mentoring relationships, and more to lose from not having them (Erickson & Phillips, 2012). Moreover, efforts to support the continuation of preexisting mentoring relationships for minority youth may be an effective approach to promoting the academic or vocational success (Hurd et al., 2016). Future research might want to address this issue, especially because many researchers have argued that natural mentors are more prevalent and can provide the same or even better benefits than formal mentors for minority youth living in high-stress contexts.

Our study is also consistent with research looking at the differences between males and females in the workplace. Results predicted that females had lower job autonomy, higher level of education, first jobs that poorly aligned with career goals and higher age at first full-time job. Women face numerous obstacles for their career advancement and often, well-educated women with many years of experience are not promoted at the same rate as their male co-workers of the same occupational level (Michailidis et al., 2012). Research confirms that women enter a company in large numbers as supporting staff but only a minority of them reach middle-level management and even fewer achieve an executive position (Michailidis et al., 2012). Interestingly, past research also suggests that gender might interact with mentoring to predict vocational success. For example, women face greater barriers to developing natural mentoring relationships in the workplace relative to men, and may therefore be more likely to seek formal relationships as a substitute for natural mentoring relationships (Ragins & Cotton, 1999). In one study, although female mentees with a history of male mentors received more promotions than their male counterparts, they received less compensation (Ragins & Cotton, 1999). These findings are consistent with previous literature stating that women are more likely than men to pursue higher education, but are less likely to be employed (McDonald et al., 2007). While

mentoring has been shown to be very helpful for the career development of white males, there is still more research needed to examine the importance of mentoring for female and minority youth (Ensher & Murphy, 1997).

While this study has several notable strengths, including its large, nationally representative sample and longitudinal design, there are also some limitations. As always with secondary analyses, the study was constrained by the items in the database. The unstructured and sometimes ambiguous nature of naturally occurring mentor relationships makes them more difficult to study and their impact more difficult to quantify than formal mentoring relationships (Miranda-Chan et al., 2016). For instance, participants were only able to nominate one mentor, rather than provide information about the networks from which they might receive support. As a result, detailed information about natural mentors and the nature of the natural mentoring relationships was not available, making it difficult to assess exactly how natural mentoring relationships influenced the outcomes of interest. In addition, the data were derived from self-reported measures, which could have been subject to bias. Future research should include more comprehensive assessments with both mentors and youth to address these issues.

In addition, although GPA was included as a covariate to attempt to account for an individual's general achievement orientation and academic ability, it is possible that some individuals with mentors may not only be more career-driven, but might also be more responsive to their mentor's career development functions. Future research should use a longitudinal approach to collect performance measures to assess how much of the variance in mentee's career outcomes is due to the mentee's ability, the mentor's ability, or some combination of these two variables (Ragins & Cotton, 1999). Moreover, randomized, controlled experimental designs are

needed to complement these observational, longitudinal data in order to more precisely determine the interplay among these variables of interest.

Finally, despite utilizing prospective, longitudinal analyses, these data only explore a slice of time during emerging adulthood. Several studies show that “late adults” who receive more advanced education may look less successful early in adulthood, but eventually hold steady jobs and out-earn their peers. Thus, although natural mentors play a key role in adult development, it may take time for the benefits of mentoring to have an effect on career outcomes (Ragins & Cotton, 1999). It is important for future research to use longitudinal designs to address how both educational and vocational outcomes can be maximized (Benson et al., 2012).

Conclusion

Despite these limitations, the present study has important implications for supporting young adults’ career development. Naturally occurring mentors are reported by 80% of youth, making them a common source of support during adolescence (Miranda-Chan et al., 2016). Findings suggest that by seeking out a natural mentor during adolescence, individuals can be better prepared to enter college and the workforce. However, future research should explore whether certain types of “close tie” mentors might be less well-suited to promoting educational attainment than others. Moreover, although adults who are in close relationships with adolescents might want to focus on social maturity skills and supporting positive identity development in order to augment the adolescent’s sense of responsibility and further their career outcomes, adult identity appears to have a complex relationship with educational and career outcomes during emerging adulthood. The findings from this study could have important implications for not only helping young adults to shape their identities and find jobs that they are passionate about, but also positioning them to be successful within these roles.

Table 1. Effects of natural mentor on vocational outcomes.

Predictors	Job Autonomy				Highest Level of Education				Goal of 1 st Job				Age at First Job			
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>
Natural Mentor	0.06	0.02	<.05	.01, .10	0.49	0.05	<.001	.40, .58	-0.23	0.04	<.001	-.31, -.15	-0.06	0.40	.09	-1.29, .10
Age	0.01	0	<.05	.00, .02	0.05	0.01	<.001	.03, .07	-0.06	0.01	<.001	-.08, -.04	-0.33	0.10	<.001	-.51, -.15
Minority	-0.02	0.02	.26	-.06, .02	-0.01	0.01	.80	-.09, .07	0.21	0.01	<.001	.13, .28	1.58	0.10	<.001	.96, 2.20
Gender	-0.13	0.01	<.001	-.07, .13	0.25	0.04	<.001	.17, .33	-0.11	0.04	<.001	.04, .18	1.35	0.30	<.001	.73, 1.97
GPA	0.10	0.01	<.001	1.16, 1.71	1.25	0.03	<.001	1.19, 1.30	-0.02	0.02	.52	-.06, .03	1.11	0.20	<.001	.70, 1.52

Table 2. Effects of closeness to mentor on vocational outcomes.

Predictors	Job Autonomy				Highest Level of Education				Goal of 1 st Job				Age at First Job			
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>
Closeness	0.01	0.01	.21	-.01, .03	-0.06	0.01	<.001	-.10, -.03	0	0.02	.78	-.04, .04	-0.12	0.20	.42	-.43, .18
Age	0.01	0.01	.50	-.01, .03	0.09	0.03	<.01	.03, .15	-0.09	0.02	<.001	-.12, -.05	-0.26	0.20	<.001	-.55, .03
Minority	-0.04	0.04	.30	-.12, .04	-0.13	0.10	<.001	-.33, .07	0.12	0.06	<.01	.06, .30	1.78	0.50	<.001	.82, 2.74
Gender	0.08	0.03	<.001	-.22, -.12	0.27	0.05	<.001	.18, 1.30	-0.13	0.05	<.05	.03, .24	1.88	0.50	<.001	.97, 2.78
GPA	0.08	0.24	<.01	.04, .13	0.47	0.63	<.001	1.14, 1.23	-0.03	0.03	.43	-.09, .04	1.32	0.30	<.001	.67, 1.97

Table 3. Effects of natural mentor on perceived adulthood.

Predictors	Perceived Adulthood				Social Maturity				Adult Responsibility				Age Compared to Others			
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>
Natural																
Mentor	0.02	0.02	.19	-.01, .06	0.03	0.02	.10	-.01, .06	0.04	0.02	<.05	.01, .07	0.03	0.02	<.05	.002, .06
Age	0.06	0.001	<.001	.05, .07	-0.001	.004	.82	-.01, .01	0.02	.004	<.001	.01, .03	-0.003	.004	.46	-.01, .005
Minority	-0.001	0.02	.96	-.03, .03	-0.05	0.02	<.01	-.08, -.02	-0.03	0.01	<.05	-.06, -.003	-0.01	0.01	.72	-.03, .02
Gender	0.19	0.02	<.001	.16, .23	0.07	0.02	<.001	.04, .10	0.08	0.01	<.001	.05, .11	0.12	0.01	<.001	.08, .14
GPA	-0.08	0.01	<.001	-.10, -.06	-0.004	0.01	.68	-.02, .02	-0.04	0.01	<.001	-.06, -.02	-0.04	0.01	<.001	-.05, -.02

Table 4. Effects of closeness to mentor on perceived adulthood.

Predictors	Perceived Adulthood				Social Maturity				Adult Responsibility				Age Compared to Others			
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>
Closeness	0.04	0.01	<.001	.02, .05	0.005	0.01	.63	-.02, .02	0.01	0.01	.21	-.01, .03	0.01	0.01	.12	-.003, .03
Age	0.07	0.01	<.001	.05, .09	-0.01	0.01	.24	-.03, .01	0.02	0.01	<.05	.002, .03	0.01	0.01	.37	-.01, .02
Minority	0.001	0.04	.21	-.08, .09	0.01	0.03	.82	-.06, .07	0.05	0.03	.08	-.01, .12	0.05	0.03	.12	-.01, .12
Gender	0.15	0.03	<.001	.09, .21	0.12	0.03	<.001	.06, .17	0.06	0.03	<.05	.01, .12	0.10	0.03	<.001	.05, .15
GPA	-0.09	0.03	<.01	-.14, -.04	-0.02	0.02	.30	-.06, .02	-0.05	0.02	<.01	-.08, -.02	-0.03	0.02	.12	-.07, .01

Table 5. Effect of perceived adulthood on vocational outcomes

Predictors	Job Autonomy				Highest Level of Education				Goal of 1 st Job				Age at First Job			
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>
Perceived Adulthood	0.06	0.01	<.001	.04, .09	-0.19	0.03	<.001	-.25, -.12	-0.04	0.03	.21	-.10, .02	-0.57	0.22	<.05	-1.02, -.12
Age	0.002	0.01	.81	-.02, .02	0.10	0.03	<.001	.05, .16	-0.08	0.02	<.001	-.12, -.05	-0.22	0.15	.13	-.51, .07
Minority	-0.04	0.04	.32	-.19, .04	-0.14	0.10	.17	-.34, .06	0.18	0.06	<.01	.06, .30	1.76	0.49	<.001	.80, 2.72
Gender	-0.17	0.03	<.001	-.22, -.11	0.28	0.05	<.001	.19, 1.29	0.14	0.05	<.05	.03, .24	1.92	0.45	<.001	1.04, 2.81
GPA	0.09	0.02	<.001	0.04, .13	1.21	0.04	<.001	1.13, 1.29	-0.03	0.03	.37	-.10, .04	1.28	0.33	<.001	.62, 1.93

Table 6. Effect of adult responsibility on vocational outcomes

Predictors	Job Autonomy				Highest Level of Education				Goal of 1 st Job				Age at First Job			
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>
Adult																
Responsibility	0.04	0.02	.08	-.005, .08	-0.20	0.03	<.001	-.26, -.14	-0.06	0.03	.07	-.13, .004	-1.04	0.33	<.01	-1.69, -.39
Age	0.006	0.01	.55	-.01, .02	0.09	0.03	<.01	.04, .15	-0.09	0.02	<.001	-.12, -.05	-0.24	0.14	.10	-.52, .04
Minority	-0.05	0.05	.31	-.12, .04	-0.13	0.10	.20	-.33, .07	0.18	0.06	<.05	.06, .31	1.81	0.48	<.001	.86, 2.76
Gender	-0.16	0.03	<.001	-.22, -.11	0.27	0.05	<.001	.17, .37	0.13	0.05	<.05	.03, .24	1.91	0.46	<.001	1.02, 2.81
GPA	0.08	0.02	<.01	.04, .13	1.21	0.04	<.001	1.14, 1.29	-0.03	0.03	.38	-.10, .04	1.28	0.33	<.001	.63, 1.93

Table 7. Effect of social maturity on vocational outcomes.

Predictors	Job Autonomy				Highest Level of Education				Goal of 1 st Job				Age at First Job				
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	
Social																	
Maturity	0.05	0.02	<.01	.01, .08	-0.07	0.03	<.05	-.13, -.01	-0.08	0.03	<.05	-.15, .01	-0.87	0.27	<.01	-1.41, -.34	
Age	0.01	0.01	.48	-.01, .03	0.09	0.03	<.01	.03, .15	-0.09	0.02	<.001	-.12, -.06	-0.27	0.15	.07	-.56, .02	
Minority	-0.04	0.04	.33	-.12, .04	-0.14	0.10	.17	-.34, .06	0.18	0.06	<.01	.06, .30	1.76	0.48	<.001	.81, 2.72	
Gender	-0.16	0.03	<.001	-.22, -.11	0.26	0.05	<.001	.17, .36	0.14	0.05	<.01	.04, .25	1.94	0.46	<.001	1.04, 2.85	
GPA	0.09	0.02	<.01	.04, .13	1.22	0.04	<.001	1.14, 1.30	-0.03	0.03	.40	-.09, .04	1.31	0.33	<.001	.66, 1.97	

Table 8. Effect of age compared to others on vocational outcomes.

Predictors	Job Autonomy				Highest Level of Education				Goal of 1 st Job				Age at First Job			
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>CI</i>
Age																
Comparison	0.02	0.02	.44	-.02, .06	-0.18	0.03	<.001	-.24, -.11	-0.07	0.05	.07	-.14, .005	-1.27	0.30	<.001	-1.87, -.68
Age	0.01	0.01	.51	-.01, .03	0.09	0.03	<.01	.04, .15	-0.09	0.02	<.001	-.12, -.05	-0.25	0.15	.09	-.54, .04
Minority	-0.16	0.03	.32	-.12, .04	-0.13	0.10	.20	-.33, .07	0.18	0.06	<.01	.06, .31	1.82	0.49	<.001	.85, 2.79
Gender	-0.16	0.03	<.001	-.22, -.11	0.27	0.05	<.001	.18, .37	0.14	0.05	<.01	.04, .24	1.97	0.45	<.001	1.09, 2.86
GPA	0.08	0.02	<.01	.04, .13	1.22	0.04	<.001	1.14, 2.30	-0.03	0.03	.39	-.10, .04	1.29	0.32	<.001	.65, 1.93

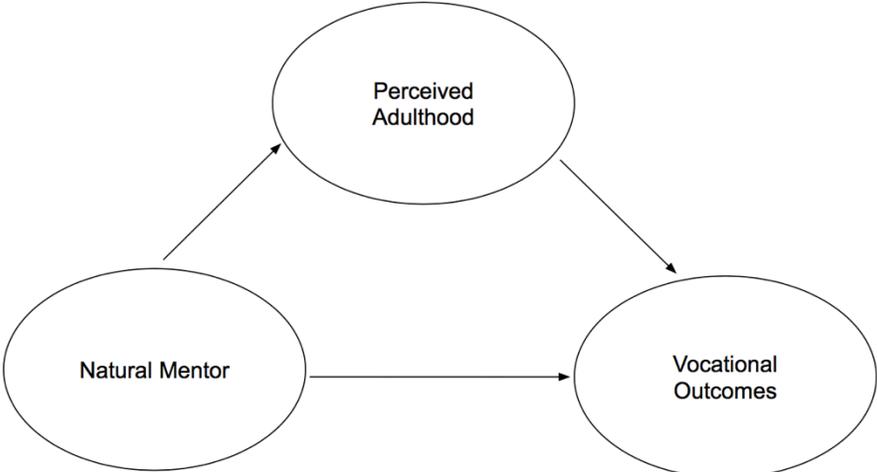


Figure 1 Hypothesis Model: conceptual framework for mediation analysis

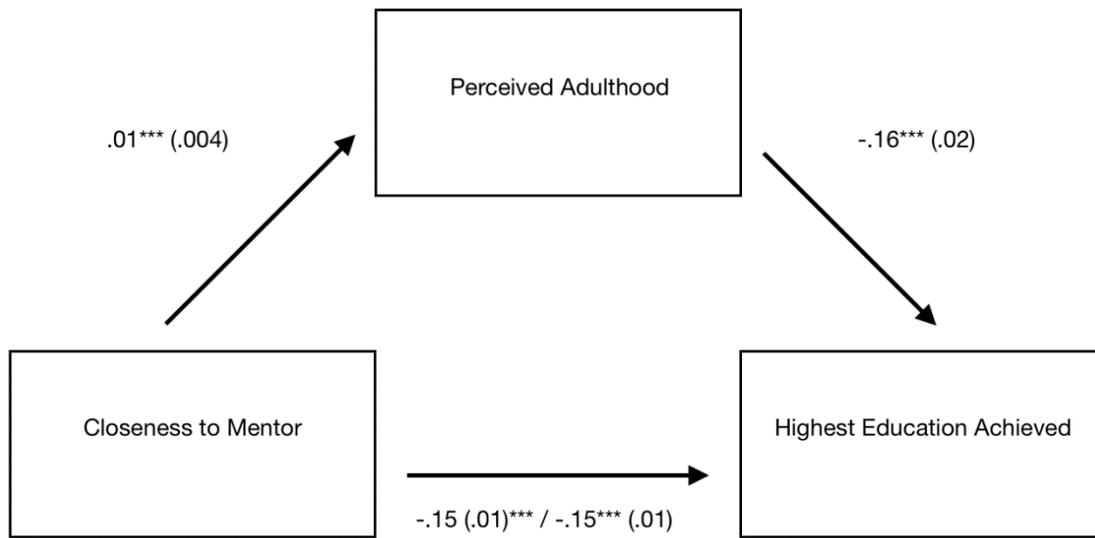


Figure 2 Testing perceived adulthood as a mediator of the effects of closeness to one's mentor on educational attainment. Both the c and c' values are represented (c/c').

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

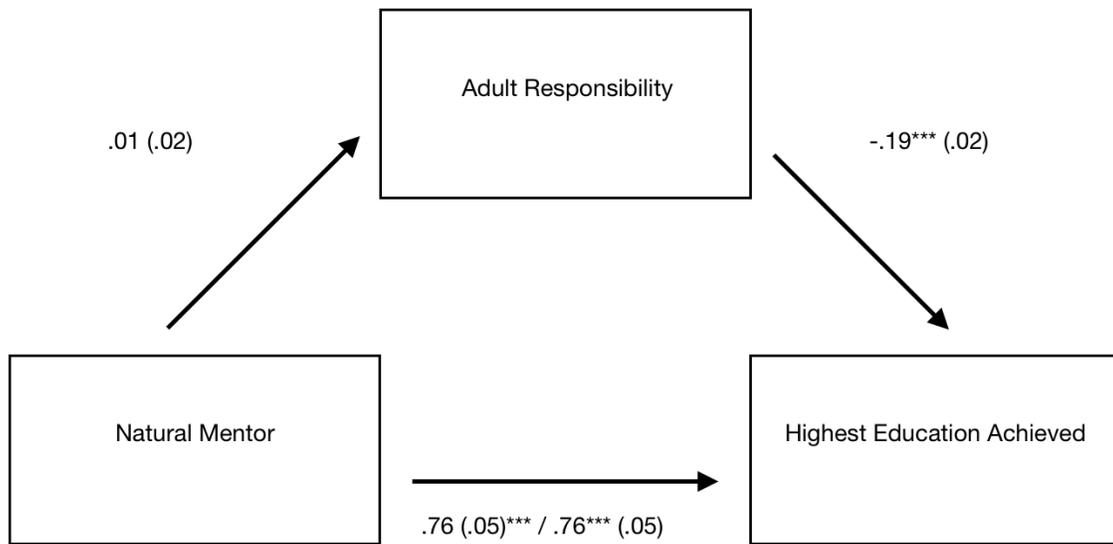


Figure 3 Testing adult responsibility as a mediator of the effects of a natural mentor on educational attainment. Both the c and c' values are represented (c/c').

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

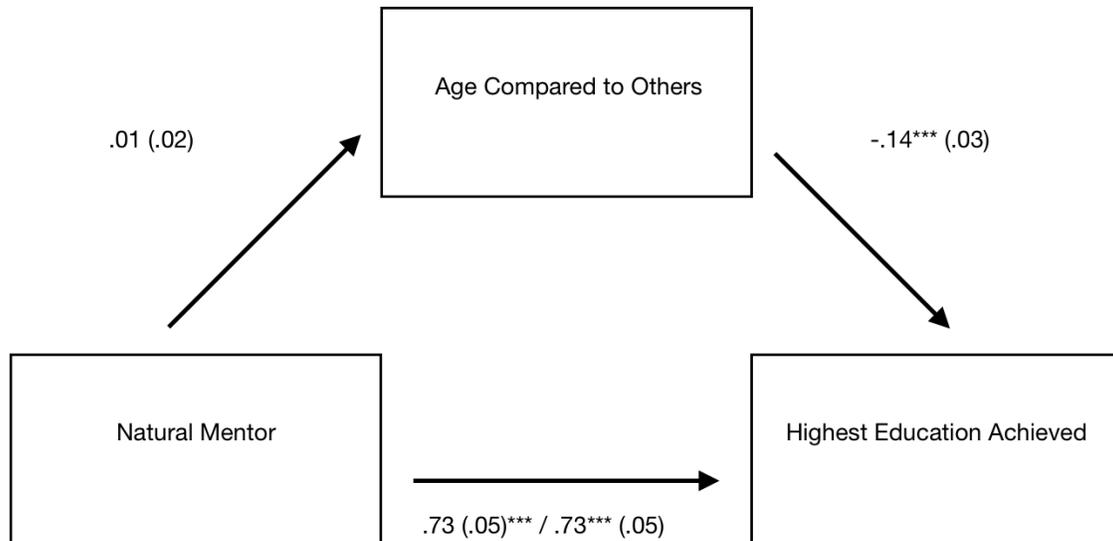


Figure 4 Testing age compared to others as a mediator of the effects of a natural mentor on educational attainment. Both the c and c' values are represented (c/c').

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

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