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Natural Mentors, Mental Health, and Substance Use: Exploring Pathways via Coping and Purpose

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Abstract

In the current study, we tested whether relationships with natural mentors may have contributed to fewer internalizing symptoms and less substance use among emerging adults through improved perceptions of coping abilities and an increased sense of life purpose. In addition, we investigated whether natural mentor role (i.e., familial vs. non-familial mentor) and the amount of time spent together in shared activities influenced emerging adults' internalizing behaviors and substance use via coping and purpose. Participants in the current study included 3,334 emerging adults (mean age = 20.8, 48.6% female, 75.4% White) from diverse regions across the U.S. who participated in an online survey. Participants were recruited via an adapted web-version of Respondent-Driven Sampling (webRDS). Forty-two percent of participants reported a relationship with a natural mentor. We found indirect relationships between natural mentor presence and emerging adults' mental health and substance use via coping and purpose. Additional analyses indicated that emerging adults may benefit more from relationships with non-familial natural mentors in comparison to familial natural mentors. We also found that the amount of time participants spent with their natural mentors in shared activities was related to participants' alcohol use. Implications of this study's findings and directions for future research are discussed.

Researchers have noted the potential of naturally-occurring, supportive relationships with nonparental adults (i.e., natural mentoring relationships) to promote more positive health outcomes among adolescents (Rhodes, Contreras, & Mangelsdorf, 1994; Rhodes, Ebert, & Fischer, 1992; Zimmerman, Bingenheimer, & Notaro, 2002) and emerging adults (DuBois & Silverthorn, 2005a, 2005b; Hurd & Zimmerman, 2010b; Kogan, Brody, & Chen, 2011). Yet few researchers have explored the processes through which relationships with adult mentors may influence mentees' outcomes (Rhodes, 2005). Thus, though research findings suggest that natural mentors may have positive influences on youths' health outcomes, we

know little about how these benefits are conferred. In addition, given that developmental needs shift as youth begin to transition into adulthood, the processes through which mentoring relationships influence mentees' outcomes may be different for emerging adults in comparison to children and adolescents. In the current study, we examined some potential pathways through which relationships with natural mentors may have influenced emerging adults' psychological health and substance use. In particular, we tested whether these relationships may have contributed to fewer internalizing symptoms and less substance use among emerging adults through greater perceptions of coping abilities and an increased sense of purpose. Further, we investigated whether natural mentor role (i.e., familial vs. non-familial mentor) and the amount of time spent together in shared activities may have influenced emerging adults' internalizing behaviors and substance use via coping and purpose.

Over the past decade, researchers have shown increasing interest in the potential of relationships with natural mentors to protect at-risk youth from negative outcomes associated with risks they face (Hurd & Zimmerman, 2010a; Klaw, Rhodes, & Fitzgerald, 2003; Kogan et al., 2011; Zimmerman et al., 2002), and to promote positive developmental outcomes among youth more generally (Beam, Chen, & Greenberger, 2002; Chen, Greenberger, Farruggia, Bush, & Dong, 2003; DuBois & Silverthorn, 2005a, 2005b; Haddad, Chen, & Greenberger, 2011; Liang, Tracy, Taylor, & Williams, 2002; McDonald, Erickson, Johnson, & Elder, 2007). In contrast to formal mentors (who are nonparental adults paired with youth through a mentoring program such as Big Brothers Big Sisters), natural mentors are nonparental adults from youths' pre-existing social networks who develop relationships with youth through mutual selection (Zimmerman, Bingenheimer, & Behrendt, 2005). Natural mentors are often extended family members such as grandparents, aunts, uncles, cousins, or older siblings, neighbors, teachers, coaches, or religious leaders (Sterrett, Jones, McKee, & Kincaid, 2011). Direct comparisons of formal and natural mentoring relationships have not been conducted; however, as natural mentors are a part of youths' pre-existing social networks, it is likely that these relationships are less vulnerable to early termination and last longer than formal mentoring relationships. Notably, longer-lasting mentoring relationships have been associated with more positive youth outcomes (Grossman & Rhodes, 2002).

Natural mentoring relationships may be of particular benefit to emerging adults (DuBois & Silverthorn, 2005a, 2005b; Hurd & Zimmerman, 2010b; Kogan et al., 2011). In industrialized societies, emerging adulthood is the period from the late teens through the twenties, with a particular emphasis on the ages 18–25 (Arnett, 2000). Emerging adulthood is distinct from adolescence and adulthood in its derivation from normative social roles. During this period, individuals are no longer dependent on caregivers as they were in childhood and adolescence, and they have not yet assumed many of the social responsibilities of adulthood. Emerging adulthood also constitutes a time of increased independence and personal freedom (Arnett, 2000). During this time, emerging adults may navigate new terrain in the realms of education, work, financial obligations, identity development, and romantic relationships. Although this developmental period may be a time of tremendous personal growth, it also may be a time of increased transitional stress as youth begin to take on new adult roles and responsibilities. This transitional stress may

contribute to mental health problems or increased substance use among emerging adults. Researchers have noted increased rates of internalizing mental health problems, particularly among females (Rao, Hammen, & Daley, 1999), and elevated levels of substance use (Substance Abuse and Mental Health Services Administration: SAMHSA, 2010) among emerging adults in comparison to other age groups. Thus, supportive relationships with nonparental adults may provide opportunities for emerging adults to avoid some of the negative health outcomes associated with this developmental period.

Relationships with natural mentors may differ from parental and peer relationships in key ways (Beam et al., 2002). As adolescents move toward adulthood, they become increasingly autonomous and less reliant on their parents (Aquilino, 1997); however, they also retain a need for relatedness and adult models as they continue to develop their identities and navigate new social roles and responsibilities. Relationships with non-parental adults may be able to fulfill these needs without posing a threat to emerging adults' autonomy. Further, emerging adults may prefer to seek the advice and guidance of more experienced adults as opposed to consulting their peers. In these ways, relationships with natural mentors may offer unique benefits to emerging adults and contribute to improved health outcomes during this developmental period.

Yet investigations of the potential effects of relationships with natural mentors on emerging adults' psychological health and substance use have yielded inconsistent findings. Some researchers have found that natural mentoring relationships were associated with fewer internalizing mental health problems among emerging adults (Hurd & Zimmerman, 2010a, 2010b). Others, however, have failed to find an association between relationships with natural mentors and emerging adults' anxiety and depressive symptoms (DuBois & Silverthorn, 2005b; Zimmerman et al., 2002). Similarly, some researchers have found lower levels of substance use among emerging adults with natural mentors in comparison to their counterparts without mentors (Zimmerman et al., 2002), while others have failed to find any association between the presence of a natural mentoring relationship and emerging adults' substance use behavior (DuBois & Silverthorn, 2005b; Hurd & Zimmerman, 2010b).

Although researchers have focused primarily on the direct effects of relationships with natural mentors' on emerging adults' psychological and behavioral outcomes, it may be that these relationships relate to mentees' mental health and substance use indirectly via intrapersonal factors that have not been assessed in previous studies. These pathways may explain why direct effects from natural mentoring relationships to emerging adults' mental health and substance use have been inconsistently found. In fact, we know very little about the processes through which relationships with natural mentors may influence youths' psychosocial outcomes.

Rhodes (2005) proposed a model of youth mentoring wherein social-emotional development, cognitive development, and identity development mediated the association between mentoring relationships and more positive youth outcomes. Applying this model to emerging adulthood, in the present study, we considered how relationships with natural mentors may influence emerging adults' psychosocial outcomes via more positive perceptions of one's coping ability and a greater sense of purpose. Effective coping skills are

a key element of socio-emotional development that are particularly relevant during emerging adulthood given the transitional stress that tends to accompany this developmental period. Natural mentors may promote improved perceptions of coping abilities among their mentees by modeling effective coping responses to stressors, providing emotional or instrumental support to help emerging adults build up their own coping skills, or providing specific advice (i.e., informational support) regarding how to manage life stressors.

As they work to establish their identity, emerging adults may be increasingly likely to look to nonparental adults during this developmental period for guidance and support in their quest for securing a sense of purpose. Natural mentors may be trusted individuals with whom emerging adults can discuss major life concerns regarding their role in society and their plans for the future. Having a supportive adult to consult may help emerging adults get a clearer understanding of their passions and aspirations, leading them to feel a greater sense of certainty in their purpose in life. Natural mentors also may represent ideas of who emerging adults want to be in the future. These images of *possible selves* (Marcus & Nurius, 1986) likely influence emerging adults' sense of purpose and plans for the future. Natural mentors also may facilitate opportunities for emerging adults to engage in activities that would have been otherwise inaccessible (Rhodes, 2005). Through their engagement in these novel activities, emerging adults may learn new things about themselves that shape their identity development and sense of purpose. Thus, emerging adults who are successful in forming natural mentoring relationships with caring adults may demonstrate greater coping skills and sense of life purpose in comparison to their counterparts who lack these supportive relationships.

Among adolescents and emerging adults, the ability to cope with stressors and a sense of purpose in life has been linked to positive health and psychological outcomes. Research findings suggest that the ability to handle novel and unpredictable life stressors that occur during the transition from adolescence to adulthood is vital for healthy development. Specifically, the ability to employ effective coping skills to manage life stressors has been associated with less internalizing symptoms (i.e., symptoms of depression and anxiety), while the absence of effective coping has been associated with greater symptoms of anxiety and depression (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001) and substance use (Ebata & Moos, 1991). In addition, a greater sense of life purpose has been associated with more life satisfaction and psychological well-being (Bronk, Finch, Hill, Lapsley, & Talib, 2009). Researchers also have found that a lower sense of life purpose may contribute to increased alcohol, cigarette, and marijuana use (Minehan, Newcomb, & Galaif, 2000).

Although some studies have not found direct associations between natural mentoring relationships and depressive and anxiety symptoms or substance use, these effects may be transmitted through factors such as coping and life purpose. Considering indirect effects in addition to direct effects may advance our understanding of how natural mentoring relationships influence emerging adults' psychosocial outcomes. In addition, this type of analysis may help us determine whether these effects could be more consistently detected if we placed a greater focus on understanding the processes through which natural mentoring relationships may affect youths' outcomes.

Current Study

The purpose of the current study was to test a model of both direct and indirect effects that explored how relationships with natural mentors may have influenced emerging adults' psychosocial outcomes (symptoms of depression and anxiety and substance use) via coping ability and sense of life purpose. Though researchers suggest that relationships with natural mentors positively influence youth and emerging adult health outcomes (DuBois & Silverthorn, 2005a, 2005b; Hurd & Zimmerman, 2010a, 2010b; Kogan et al., 2011; Rhodes et al., 1992, 1994; Zimmerman et al., 2002), few have explored the processes through which these benefits are conferred. Further, little is known about the processes through which mentoring relationships influence mentees' outcomes among emerging adults. We hypothesized that relationships with natural mentors would contribute to fewer internalizing symptoms and less substance use among emerging adults through more positive perceptions of coping abilities and a greater sense of life purpose. To better isolate the potential effects of having a relationship with a natural mentor on study intervening and outcome variables, we controlled for a number of participants' demographics including age, family SES, gender, and race/ethnicity, as well as support from peers, mothers, and fathers.

We also investigated how characteristics of natural mentoring relationships may have differed in their associations with participants' coping abilities, sense of purpose, mental health, and substance use behavior. First, we explored whether having a familial vs. a non-familial natural mentor may have differentially influenced our study intervening and outcome variables. Researchers have investigated differences in natural mentor influence on emerging adults' psychosocial outcomes based on type of mentor and found more favorable outcomes among mentees with non-familial in comparison to familial natural mentors for some psychosocial outcomes (DuBois & Silverthorn, 2005a). Yet these investigations have not considered mentor relationship type as it relates to indirect effects of natural mentor presence on mental health and substance use outcomes. We expected that relationships with both types of natural mentors would be associated with more positive outcomes in comparison to the outcomes of participants without a natural mentor and we hypothesized that relationships with non-familial mentors would be more advantageous given the greater potential of these adults (in comparison to familial adults) to expose their mentees to novel attitudes, behaviors, experiences, and resources (DuBois & Silverthorn, 2005a). Familial mentors may be more likely to have similar backgrounds and comparable access to social resources. Further, family members may be more likely to share belief systems that influence their attitudes and behaviors. Thus, experiencing a mentoring relationship with someone outside of one's family may provide an opportunity for exposure to alternate perspectives and social resources.

Second, we examined how the amount of time mentees spent with their mentors in shared activities influenced mentees' internalizing behaviors and substance use via coping and purpose. Rhodes (2005) has specified the importance of relationship quality indicators as moderators of the associations between mentoring and outcomes. Further, researchers have found that frequency of contact may contribute to lower levels of drug use and greater life satisfaction among mentees (DuBois & Silverthorn, 2005a). Although these findings imply that mentees who spend more time with their mentors in shared activities may display more

positive outcomes, we also acknowledge the possibility that time spent together may be a more influential factor for younger mentees (i.e., children and adolescents) and may become increasingly less important as youth enter into emerging adulthood. Consistent with this possibility, Kogan et al. (2011) did not find differential effects of natural mentoring relationships as a function of frequency of contact in their study of these relationships in an emerging adult sample. Given limited research on the importance of time spent in shared activities between natural mentors and emerging adults, our analyses in this domain were exploratory.

Methods

Participants

Data for the current study were drawn from the *Virtual Networks Study*, a cross-sectional observational study examining emerging adults' interpersonal relationships online. To be eligible for participation, youth had to live in the United States and have access to the Internet. We used an adapted web-version of Respondent-Driven Sampling (webRDS) to recruit participants (Bauermeister et al., 2012; Salganik & Heckathorn, 2004). The first wave of participants (i.e., seeds; $n = 22$) were recruited through an online Facebook advertisement, and selected based on age, race/ethnicity (i.e., White, Black/African American, and Hispanic/Latino) and region of the U.S to ensure that initial network seeds were diverse and that we would not bias our sampling strategy by concentrating recruitment in a single region. The remainder of the sample ($n = 3,426$) was recruited through referral chains from the original 22 seeds. The sample for the current study consisted of 3,334 emerging adults who provided complete data on the presence of a natural mentor (114 participants were dropped due to missing natural mentor data). The demographic characteristics of the study sample are displayed in Table 1.

Data collection

Each prospective participant logged into the survey portal using their unique identifying number (UID), and subsequently created an account using a personal e-mail address. Participants completed a short eligibility screener asking their sex, age, current state of residence, and race/ethnicity. Eligible participants read and consented to the study, and completed the survey. Participants received a monetary incentive for their participation (\$20 dollars on a VISA e-gift card) and were offered an additional \$10 for every additional referred emerging adult (up to 5 for a total of \$50) who completed the questionnaire. Upon completion of the survey, participants were provided with a UID link to invite other friends to participate. Participants could copy and paste their UID-link into Instant Messages, Text Messages, and/or social network sites (e.g., Facebook). Each UID could be used to access the questionnaire up to 10 times. If more than 5 referrals completed the survey, we allowed the first five who completed the survey to refer their peers. The last five were thanked and compensated for completing the survey. Survey data were screened for duplicate and fraudulent cases ($n = 675$; 16% of all completed entries received) in an effort to preserve data quality (Bauermeister, Pingel et al., 2012). Duplicate and fraudulent cases were not allowed to refer others into the study. All study procedures were reviewed and approved by

the University of Michigan Institutional Review Board and data are protected by a Certificate of Confidentiality.

Measures

Natural Mentor—To assess whether or not participants had a natural mentor, they were asked, “Is there an adult other than a parent or person who raised you who you go to for support and guidance (i.e., a mentor)?” Response options included 0 (no) and 1 (yes). If the participant responded affirmatively, they were then asked, “Who is this person?” to determine relationship type (i.e., familial vs. non-familial), and participants were also asked to report the age of their natural mentor. Identified mentors who were parents, step-parents, parents’ boyfriends/girlfriends, caretakers, spouses, boyfriends/girlfriends, therapists, famous persons, or persons less than 20 years old were not included in the mentor category as these roles and characteristics were not consistent with past definitions of natural mentoring (Zimmerman et al., 2002). In addition participants also provided the following demographic information about their mentor: gender, race/ethnicity, and highest level of schooling completed. We also assessed the frequency of contact in shared activities between participants and their natural mentors with the following item: “In an average week, how much time do you spend with him/her in shared activities? (A shared activity means doing something together such as talking in person or on the phone, going somewhere together, or watching TV together.)” Response options ranged from 1 (none) to 5 (7 or more hours a week).

Coping—Six items from Cohen’s Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) were used to assess participants’ perceived coping ability. These six items have been found to load onto a factor representing coping ability in previous research (Hewitt, Flett, & Mosher, 1992) and all six items were deemed to possess face validity (i.e., “In the past month, how often have you felt able to handle your personal problems?”). Response options ranged from 1 (never) to 5 (very often). Cronbach’s alpha for the coping items was .89.

Purpose—Purpose was assessed with eight items: seven items from the Purpose in Life sub-scale of the Ryff Scales of Psychological Well-Being (Ryff & Keyes, 1995; e.g., “Some people wander aimlessly through life, but I am not one of them.”) and one item from the Youth Purpose Survey (Bundick et al, 2006; i.e., “I have a purpose in my life that says a lot about who I am.”). Participants were asked to indicate the extent to which they agreed or disagreed with these statements and response options ranged from 1 (strongly disagree) to 5 (strongly agree). Cronbach’s alpha for the purpose items was .80.

Depressive symptoms—We used ten items from the Center for Epidemiologic Studies Depression Scale (CES-D) to assess participants’ symptoms of depression (Radloff, 1977; e.g., “I felt that everything I did was an effort.”). Participants reported on their symptom frequency during the past week using a 4-point scale that ranged from 1 (rarely or none of the time) to 4 (most or all of the time). Cronbach’s alpha for these items was .82.

Anxiety symptoms—Participants reported how often in the past week they experienced symptoms of anxiety (e.g., nervousness or shakiness inside) using six items from the Brief Symptom Inventory (Derogatis & Melisaratos, 1983). Response options ranged from 1 (never) to 5 (very often). Cronbach’s alpha for these items was .90.

Cigarette, alcohol, and marijuana use—Participants were asked to indicate if they had ever used cigarettes, alcohol, or marijuana in their lifetime (Johnston, O’Malley, Bachman, & Schulenberg, 2011). For each substance used during their lifetime, participants were then asked about frequency of use in the past 30 days. Response options included: 1 (no use in past 30 days), 2 (once a month or less), 3 (2–3 times a month), 4 (about once a week), 5 (2–6 times a week), 6 (about once a day), 7 (more than once a day). Participants who had never used cigarettes, alcohol, or marijuana in their lifetime were coded as 0.

Demographic variables—Participants were asked to report their sex and date of birth (we computed their age by subtracting their month and year of birth from the date of study participation). Participants were asked to indicate their race/ethnicity (participants could check multiple boxes and write in a response if they reported “other”). Participants also were asked to report the occupations of their parents or the male and female persons who raised them. We created a parent/guardian occupational prestige score based on the highest job category of both parents/guardians which we used as an estimate of family socioeconomic status (SES; Nakao & Treas, 1990).

Parental support—Participants were asked about both maternal and paternal support. The same five items were used to assess support from each parent (Procidano and Heller, 1983; e.g., “I have a deep sharing relationship with my mother or the female person who raised me/father or the male person who raised me.”). Participants were asked how true each statement was for them. Response options ranged from 1 (not true) to 5 (very true). Cronbach’s alphas were .95 and .96 for the maternal and paternal support scales, respectively.

Peer support—Support from friends was assessed with a five-item social support scale adapted from the Perceived Social Support from Friends Scale (Procidano & Heller, 1983; e.g., “I rely on my friends for emotional support.”). Participants were asked how true each statement was for them. Response options ranged from 1 (not true) to 5 (very true). Cronbach’s alpha for the peer support items was .92.

Data Analytic Strategy

We tested our hypotheses using structural equation modeling which we conducted using Mplus 6 software (Muthén & Muthén, 2010). For all indicators with six or more manifest variables (coping, purpose, depressive symptoms, anxiety symptoms), we parceled items into three indicators. Prior to parceling, we conducted EM imputation in EQS (Bentler, 1995) to deal with missing data (5% across all study variables with the exception of parental occupation: 8% of participants had missing occupation data for both parents). We created a measurement model to assess whether our parceled variables were appropriate indicators of our latent constructs. Sampling weights were applied to correct for intraclass

correlations that resulted from the network referral procedures (Volz & Heckathorn, 2008). Descriptive statistics are reported for the unweighted sample. We then tested our full structural model which included direct and indirect paths from natural mentor presence to participants' depressive symptoms, anxiety symptoms, and cigarette, alcohol, and marijuana use. Indirect paths were via coping ability and sense of life purpose. In an effort to isolate the potential effects of natural mentor presence on participants' outcomes, we included participants' age, gender, family SES, race/ethnicity (we created dummy variables for Asian, African American, and Latino racial groups/ethnicities using White racial group as the reference group), peer support, maternal support, and paternal support as predictors of coping ability, sense of life purpose, depressive symptoms, anxiety symptoms, and cigarette, alcohol, and marijuana use. All exogenous variables were correlated with each other. We also correlated the disturbances of the two intervening variables (coping ability and sense of life purpose) and errors and disturbances of all of the outcome variables (cigarette, alcohol, and marijuana use) and latent factors (depressive and anxiety symptoms). We evaluated our model fit based on the χ^2 value, the Comparative Fit Index (CFI), the Tucker Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). We also evaluated the statistical significance of structural paths and correlations. To assess the significance of indirect effects, we generated bootstrapped confidence intervals of the indirect effects. If the 95% confidence interval of the standardized specific indirect effect did not include 0, we concluded that there was a significant indirect effect.

We then tested a separate model that instead of including one variable representing the presence or absence of a natural mentor included two dummy coded variables representing the presence of a familial natural mentor or a non-familial natural mentor (no mentor was the reference group). We first constrained all of the structural paths between having a familial mentor and all study intervening factors and outcomes to be equivalent to the structural paths between having a non-familial mentor and all study intervening factors and outcomes. We then released the equality constraints one-by-one to determine if freeing those parameters resulted in a significant reduction in the χ^2 value (when comparing nested models, a χ^2 reduction greater than 3.8 for the loss of 1 degree of freedom is significant at $p < .05$). This set of analyses allowed us to identify potential differences in the effects of having a familial vs. a non-familial natural mentor in comparison to not having a natural mentor. Following this set of analyses, we conducted one additional analysis to determine if the amount of time spent with one's mentor in shared activities influenced participants' outcomes. This analysis only included participants who reported that they had a natural mentor. In place of a variable indicating the presence or absence of a natural mentor, we used the time spent together in shared activities with one's mentor as a predictor of participants' outcomes. This final analysis allowed us to assess whether there may have been added benefits associated with spending greater time in shared activities with one's mentor.

Results

Natural Mentors

Of the 3,334 participants in the current study, 1,395 (42%) reported the presence of a natural mentor. Among those reporting a natural mentor, 44% ($n = 614$) of participants identified a

familial mentor (e.g., aunt, uncle, grandparent, older sibling, cousin) and the remaining 56% ($n = 781$) identified a non-familial mentor (e.g., teacher, coach, religious leader, family friend). Natural mentors varied in age with 30% of natural mentors aged 20–29, 20% aged 30–39, 21% aged 40–49, 15% aged 50–59, 7% aged 60–69, and 6% aged 70–79 (1% of participants did not know the age of their natural mentor). Most of the natural mentors had completed college (39%) or graduate or professional school after college (29%). A little over half (53%) of natural mentors were female. About 72% of natural mentors were gender-matched with participants (73% of females and 71% of males identified a same-gender mentor). Approximately 79% of natural mentors were White, 9% were Asian or Pacific Islander, 6% were Hispanic, 5% were African American, and 1% were Native American or Alaskan Native. Racially/ethnically-matched natural mentors were more prevalent among White participants (94% reported a White mentor) and Asian participants (79% reported an Asian mentor) and somewhat less common among African American and Latino participants (66% and 58% reported a racially/ethnically-matched mentor, respectively). We did not find differences in the prevalence of natural mentoring relationships between African American and non-African-American participants or between Latino and non-Latino participants. We, however, did find that Asian participants were less likely than their non-Asian counterparts to report a relationship with a natural mentor ($\chi^2 = 12.31, 1 df, p < .01$). In response to a question regarding the amount of time spent in shared activities with their natural mentor during an average week, about 29% of participants reported spending no time with their mentor, 41% of participants reported spending 1–2 hours a week, 18% reported 3–4 hours a week, 6% reported 5–6 hours a week, and 7% reported 7 or more hours a week.

Correlations and Measurement Model

Correlations between study variables are displayed in Table 1. Our measurement model fit the data well. Although the χ^2 value was statistically significant, $\chi^2 (197) = 1704.14, p < .01$, the CFI and TLI were above .92 and the RMSEA was .05. Given that our sample was relatively large and the χ^2 statistic is easily influenced by sample size (Browne & Cudeck, 1993), we relied more heavily on the CFI, TLI, and RMSEA when assessing overall model fit. Factor loadings for the indicators of latent factors ranged from .74 to .91. This model indicated that the presence of a natural mentor was positively correlated with coping ability and sense of life purpose. Coping ability and sense of life purpose were negatively correlated with depressive symptoms, anxiety symptoms, and cigarette use. Sense of purpose in life was negatively correlated with marijuana use and coping ability was positively correlated with alcohol use. Natural mentor presence was negatively correlated with cigarette and marijuana use.

Structural Model

The results of our structural model are displayed in Figure 1. Other than a significant χ^2 statistic, $\chi^2 (152) = 1430.45, p < .01$, all other fit statistics indicated acceptable model fit to the data (CFI = .96, TLI = .93, RMSEA = .05). We found that natural mentor presence predicted greater perceived coping ability ($B = .08, p < .01$) and sense of purpose in life ($B = .13, p < .01$). We did not find direct effects of natural mentor presence on participants' depressive symptoms, anxiety symptoms, or cigarette, alcohol, or marijuana use. Greater

perceived coping ability predicted fewer symptoms of depression ($B = -.20, p < .01$) and anxiety ($B = -.11, p < .01$), as well as more alcohol use ($B = .07, p < .01$). Greater sense of purpose in life predicted fewer symptoms of depression ($B = -.54, p < .01$) and anxiety ($B = -.11, p < .01$), and less cigarette ($B = -.12, p < .01$), alcohol ($B = -.08, p < .01$), and marijuana ($B = -.12, p < .01$) use. Bootstrapped confidence intervals of standardized indirect effects indicated that natural mentor presence indirectly predicted participants' depressive symptoms via greater perceived coping ability (standardized indirect effect = $-.016$; 95% CI = $-.024, -.008$) and greater sense of purpose in life (standardized indirect effect = $-.068$; 95% CI = $-.087, -.049$). Similarly, natural mentor presence predicted participants' symptoms of anxiety via greater perceived coping ability (standardized indirect effect = $-.009$; 95% CI = $-.014, -.003$) and greater sense of purpose in life (standardized indirect effect = $-.041$; 95% CI = $-.054, -.028$). Natural mentor presence was associated with less cigarette (standardized indirect effect = $-.015$; 95% CI = $-.022, -.007$), alcohol (standardized indirect effect = $-.010$; 95% CI = $-.016, -.004$), and marijuana (standardized indirect effect = $-.015$; 95% CI = $-.023, -.008$) use via increased sense of purpose in life. We ran a separate analysis to see if natural mentor presence predicted any of our outcome variables when perceived coping ability and sense of purpose in life were not included in the model. Results of these analyses indicated that natural mentor presence predicted less cigarette ($B = -.03, p < .05$) and marijuana ($B = -.04, p < .05$) use. Thus, the effects of natural mentor presence on cigarette and marijuana use were mediated by sense of purpose in life.

Comparative Analysis: Familial vs. Non-familial Mentors

For this comparative analysis, our model contained two dummy-coded variables representing familial and non-familial natural mentors (reference group = no mentor) in place of the mentor presence variable used in previous analyses. When we constrained all of the paths from each mentor variable to all intervening and outcome variables to be equivalent, our model achieved acceptable fit ($\chi^2(167) = 1471.09, p < .01$, CFI = .95, TLI = .93, RMSEA = .05). In an effort to improve the fit of our model, we removed these equality constraints one at a time. We found significant improvements to our χ^2 value when we removed equality constraints from all paths except for paths from the mentor variables to participants' symptoms of depression and anxiety. Thus, our final model with constraints only on those two paths achieved improved fit ($\chi^2(162) = 1439.98, p < .01$, CFI = .96, TLI = .93, RMSEA = .05). Regarding differences in the paths, we found that in comparison to not having a relationship with a natural mentor, having a familial natural mentor predicted more positive perceptions of coping ability ($B = .03, p < .05$) and having a non-familial natural mentor was associated with even more positive perceptions of participants' coping ability ($B = .09, p < .01$). Similarly, in comparison to not having a natural mentor, having a familial natural mentor predicted an increased sense of purpose in life ($B = .06, p < .01$) and having a non-familial natural mentor predicted an even larger increase in sense of purpose in life ($B = .14, p < .01$). Regarding direct effects of mentor presence on participants' substance use, we found that the presence of a non-familial natural mentor, but not the presence of a familial natural mentor, predicted less cigarette ($B = -.03, p < .05$), alcohol ($B = -.05, p < .01$), and marijuana ($B = -.04, p < .05$) use.

Time Spent with Mentor

Our final analysis only included participants who reported having a natural mentor ($n = 1395$) and was exactly the same as the first model we tested except that we replaced the mentor presence variable with a variable representing the amount of time participants spent with their mentor in an average week. Our model achieved acceptable fit ($\chi^2(152) = 545.12$, $p < .01$, CFI = .97, TLI = .94, RMSEA = .04). Results of this analysis indicated that time spent with mentor did not significantly predict any intervening or outcome variables with the exception of participants' alcohol use. Of participants who had a natural mentor, those who spent more time in shared activities with their mentor reported lower levels of alcohol use ($B = -.07$, $p = .01$).

Discussion

Overall, our results support an indirect model of influence of natural mentoring relationships on emerging adults' mental health and substance use via coping and purpose. Similar to other studies (DuBois & Silverthorn, 2005b; Zimmerman et al., 2002), we did not find direct associations between natural mentor presence and emerging adults' symptoms of depression and anxiety. We, however, did find indirect relationships between natural mentor presence and emerging adults' depressive and anxiety symptoms via coping and purpose. These findings suggest that natural mentors may promote improved coping abilities among their mentees through modeling effective coping strategies, providing support, or offering advice. In addition, natural mentors may help emerging adults develop or feel more confident in their life purpose. Emerging adults may feel more comfortable discussing their perceived role in society and plans for the future with their natural mentors as opposed to other important persons in their lives.

Natural mentors are likely older, more experienced, and wiser than peers (Zimmerman, Bingenheimer, & Behrendt, 2005) and are different enough from emerging adults' parents to allow emerging adults to retain their autonomy when seeking advice and guidance from these trusted adults. Further, natural mentors may afford emerging adults opportunities and experiences that allow for the discovery or advancement of emerging adults' passions and abilities. Being able to effectively cope with transitional stressors and having a sense of life purpose may be critical assets for emerging adults that help insulate them from the negative effects of risks they face during this developmental period (Compas et al., 2001). Emerging adults at increased risk of psychological distress may be more inclined to seek out relationships with natural mentors which may explain the absence of direct effects of natural mentor presence on psychological distress in the current study. Emerging adults with caregivers affected by mental illness, for example, may be more motivated to seek out supportive relationships with nonparental adults in their everyday lives. Thus, the significant indirect pathways observed in the current study may counter pathways of risk that emerging adults with natural mentors experience.

We also found that sense of life purpose mediated the relationship between natural mentor presence and cigarette and marijuana use, and an indirect association between natural mentor presence and emerging adults' alcohol use via purpose. When study mediators were removed from the model, we found associations between mentor presence and cigarette and

marijuana use but not between mentor presence and alcohol use. Thus, our findings also represented inconsistent associations between natural mentor presence and substance use (DuBois & Silverthorn, 2005b; Hurd & Zimmerman, 2010b; Zimmerman et al., 2002). Yet when purpose was included as an intervening variable, we found that natural mentor presence consistently related to less substance use (cigarette, alcohol and marijuana) via increased sense of life purpose. Again, these findings suggest that relationships with natural mentors may foster a greater sense of life purpose. Further, these findings represent the potential of greater life purpose to deter emerging adults' substance use. It may be that emerging adults who have a greater sense of life purpose are more oriented toward the future and may be more likely to avoid substance use given its potential to adversely affect their long-term health and impede progress toward their life goals.

Of note, we did not find associations between coping ability and cigarette or marijuana use. In addition, we found that coping ability and alcohol use were positively related. Our findings suggest that cigarette and marijuana use may be unrelated to coping among emerging adults. Cigarette and marijuana use may be engaged in for recreational or social reasons and thus may not be affected by an emerging adults' perceived coping ability. We expected that participants with greater perceived coping abilities would be able to effectively manage stressors and less inclined to use substances (cigarettes, alcohol, and marijuana) in response to stress. Our findings, however, suggest that participants may have considered alcohol use an effective coping strategy. Participants who reported greater perceived coping ability also reported greater alcohol use suggesting that these emerging adults may have felt that alcohol use was an appropriate and acceptable way to manage stress during this developmental period. Although coping ability was associated with increased alcohol use, we did not find evidence of a significant indirect path from mentor presence to alcohol use via coping.

Additional analyses indicated that emerging adults may particularly benefit from relationships with non-familial natural mentors. Although we found that relationships with both types of natural mentors (familial and non-familial) may have promoted greater coping and purpose among emerging adults in comparison to not having a natural mentor, we found that the benefits of having a relationship with a non-familial natural mentor were greater. Further, although we did not find a direct association between the presence of a familial natural mentor and cigarette, alcohol, or marijuana use, we did find that the presence of a non-familial natural mentor was directly associated with less cigarette, alcohol, and marijuana use. These findings are consistent with our hypotheses and may reflect the greater potential of non-familial natural mentors in comparison to familial mentors to expose their mentees to novel attitudes, behaviors, experiences, and resources (DuBois & Silverthorn, 2005a). Natural mentors from outside the family system may be more likely to expose emerging adults to alternate coping strategies that emerging adults can add to their coping repertoire. Furthermore, non-familial natural mentors may have access to resources and provide experiences to their mentees that natural mentors from within emerging adults' family systems may be unable to provide. Therefore, non-familial natural mentors may provide greater opportunities for their mentees to advance their coping abilities and sense of life purpose. In addition, our findings indicate that non-familial natural mentors may be more likely than familial natural mentors to directly address issues of substance use with

their mentees. It is possible that non-familial natural mentors such as teachers/professors, coaches, and religious leaders are more likely than familial natural mentors to talk to their mentees about the risks associated with substance use or suggest alternative activities. Moreover, natural mentors from outside of the family, particularly those in more professional roles, may be less likely than familial natural mentors to model substance use behaviors or support pro-substance use norms (DuBois & Silverthorn, 2005a).

We also investigated whether the amount of time emerging adults spent with their natural mentors in shared activities predicted study intervening and outcome variables. Findings from this analysis (including only participants who had a natural mentor) indicated that time spent in shared activities with their mentor was not a significant predictor of any intervening or outcome variables other than alcohol use. Participants who reported more time in shared activities with their natural mentor also reported lower levels of alcohol use. Therefore, natural mentors who spent more time with their mentees may have engaged in more monitoring of their behavior or may have helped emerging adults to identify activities that they could participate in together that did not involve or revolve around alcohol. Further, the more time emerging adults are spending with a trusted and supportive adult (i.e., natural mentor), the less time they may be spending with their peers. Given how ubiquitous alcohol use is during this developmental period (SAMHSA, 2010), time away from peers may help emerging adults avoid alcohol consumption that results from peer pressure or social activities that involve heavy drinking.

Nevertheless, we did not find associations between time spent with mentor and any other outcomes. Thus, on the whole, our findings imply that the amount of time spent with natural mentors may be of less consequence among emerging adults. This may speak to different needs during this developmental period and different functions of natural mentors based on the stage of development of their mentees. Whereas time spent together may be more influential for outcomes among children and adolescents, it may be less critical among emerging adults. Being available to provide support and guidance during critical junctures (e.g., during life crises, when mentees are making major life decisions), for example, may be a more important aspect of these relationships during emerging adulthood. Additional research is needed to further identify the most influential qualities of these relationships during emerging adulthood.

Limitations and Directions for Future Research

Several study limitations should be acknowledged. In particular, we must acknowledge limitations due to the characteristics of our sample. Our sample of emerging adults was a predominately White, upper middle class sample. A majority of the sample reported enrollment in or completion of college. African American and Hispanic/Latino emerging adults were underrepresented in our sample, as were emerging adults of lower family SES. Our sample was recruited through Facebook and participants completed the survey online. This method of recruitment and data collection may have contributed to the characteristics of our sample. More economically disadvantaged emerging adults may have less access to technology. Further, although most emerging adults in the United States do have access to the internet, there are racial and ethnic disparities in when, where and how long they can

stay online (Smith, 2010). Our sample may be more representative of emerging adults who have more frequent and sustained access to the internet via a desktop or laptop computer.

Given our sample characteristics, our findings may not generalize to emerging adults from lower SES families or to African American and Hispanic/Latino emerging adults. Yet the weight that we used in our analyses to account for network clusters also accounted for the shared racial and ethnic characteristics of social networks. Thus, we weighted the responses of African American and Latino respondents in this sample more heavily in our analyses. In addition, it is worth noting that we found comparable levels of substance use among our sample and a nationally representative sample of emerging adults (SAMHSA, 2010). Nevertheless, future research is needed that focuses on these pathways among diverse groups of emerging adults to determine whether these findings may generalize to other groups of emerging adults.

A notable difference in our findings from previous research on natural mentoring relationships among emerging adults, which may reflect sample characteristics, is the prevalence of natural mentoring relationships in our sample. Specifically, we found natural mentoring relationships were less prevalent than in previous studies. We found that 42% of our participants reported the presence of a natural mentor, whereas, in a nationally representative sample, researchers found around 73% of emerging adults reported a natural mentor (DuBois & Silverthorn, 2005b). Our findings, however, may be due to differences in measurement. We asked participants to report current natural mentor presence, whereas in the study by DuBois & Silverthorn (2005b), participants reported natural mentor presence retrospectively (i.e., the presence of a natural mentor at any time since the age of 14). Thus, our finding may suggest that natural mentoring relationships are less prevalent among emerging adults in comparison to youth and adolescents, yet, given the non-representativeness of our sample, these findings may reflect differences in the presence of natural mentors as a function of emerging adults' demographics. Notably, researchers who have investigated the presence of natural mentoring relationships among economically disadvantaged, African American emerging adults have found a higher prevalence of these relationships in their samples (63%, Hurd & Zimmerman, 2010b; 80%, Kogan et al., 2011). Further analyses into how emerging adults' characteristics and developmental contexts may influence the prevalence of natural mentoring relationships are needed.

Additional limitations of our study include our reliance on self-reported data from one source and the cross-sectional nature of our study. Although the completion of the survey over the internet may have allowed for increased anonymity, social desirability may have been an issue. Further, we did not account for shared method variance. Future studies that incorporate data in natural mentoring relationships from multiple sources (including from the natural mentors; Kogan et al., 2011) have the potential to reduce these threats to validity. In addition, given that our study is based on data collected at a single time point, we are unable to determine directionality in our variables of interest. It is plausible, for example, that emerging adults with higher levels of coping abilities or life purpose may be more inclined and motivated to identify and connect to a natural mentor. Although longitudinal studies of natural mentoring during emerging adulthood have indicated associations between natural mentoring relationships and more positive psychosocial outcomes over time

(suggesting a possible sequential relationship: e.g., Hurd & Zimmerman, 2010b), there remains a need for additional longitudinal research that explores these associations and includes a focus on variables (such as coping and purpose) that may be responsible for transmitting these positive effects over time. Our study also was limited by its assessment of frequency of mentor-mentee contact. This item assessed average weekly contact and did not allow for the evaluation of less frequent contact (e.g., monthly, bi-monthly). It may be important to investigate various degrees of less frequent contact to determine if there is a tipping point at which level of contact matters among emerging adult mentees. Future studies also should collect more in-depth assessments of interactions between natural mentors and mentees. Thoroughly assessing the types of behaviors modeled and the types of support provided to mentees will allow for less speculation and more precise estimates of the processes through which natural mentors may contribute to mentees' psychosocial outcomes.

Study Strengths and Conclusions

In spite of these limitations, our study makes valuable contributions to the study of natural mentoring relationships in emerging adulthood. Strengths of this study include use of a large sample of emerging adults from various regions across the United States and the inclusion of a number of relevant demographic control variables in our structural model to further isolate associations between our variables of interest. In addition, this is one of the first studies to examine the role of coping and life purpose in the associations between natural mentoring relationships and emerging adults' psychological health and substance use.

The results of our study suggest that a continued focus on intervening processes in future research on natural mentoring relationships may yield an improved understanding of how these relationships confer benefits to mentees. Moreover, a focus on intervening processes may promote more consistent findings across studies regarding the potential of natural mentors to contribute to their mentees' psychosocial outcomes. In light of developmental milestones specific to emerging adulthood, future studies may want to consider the potential of natural mentoring relationships to promote more positive psychosocial outcomes among mentees via increased sense of responsibility for self, effective decision-making, aspirations, career skills, worldview development, and more positive relationships with important others (Arnett, 2000; Rhodes, 2005).

On the whole, the results of the current study highlight the potential significance of natural mentoring relationships in emerging adulthood. Results of the current study suggest that these relationships may promote the development of skills and beliefs that help emerging adults to navigate the transitional stress that accompanies this developmental period while simultaneously avoiding health-risk behavior. Of note, however, our findings suggest that natural mentoring relationships may be less common during this developmental period. It may be that increased strivings for independence cause emerging adults to isolate themselves from supportive relationships with adults in general. Further, nonparental adults may perceive fewer opportunities to mentor emerging adults in comparison to children and adolescents. The results of our study suggest that the infrequency with which these relationships occur is to the detriment of emerging adults. Efforts to encourage the

continuance of natural mentoring ties into emerging adulthood or attempts to foster the development of new relationships during emerging adulthood may be warranted. Raising awareness of the potential benefits of these relationships may encourage young people to seek out more experienced adults in their day-to-day lives and vice versa. In addition, creating more opportunities for emerging adults and their more experienced elders to interact informally in educational, occupational, or community settings may facilitate the formation of these beneficial relationships.

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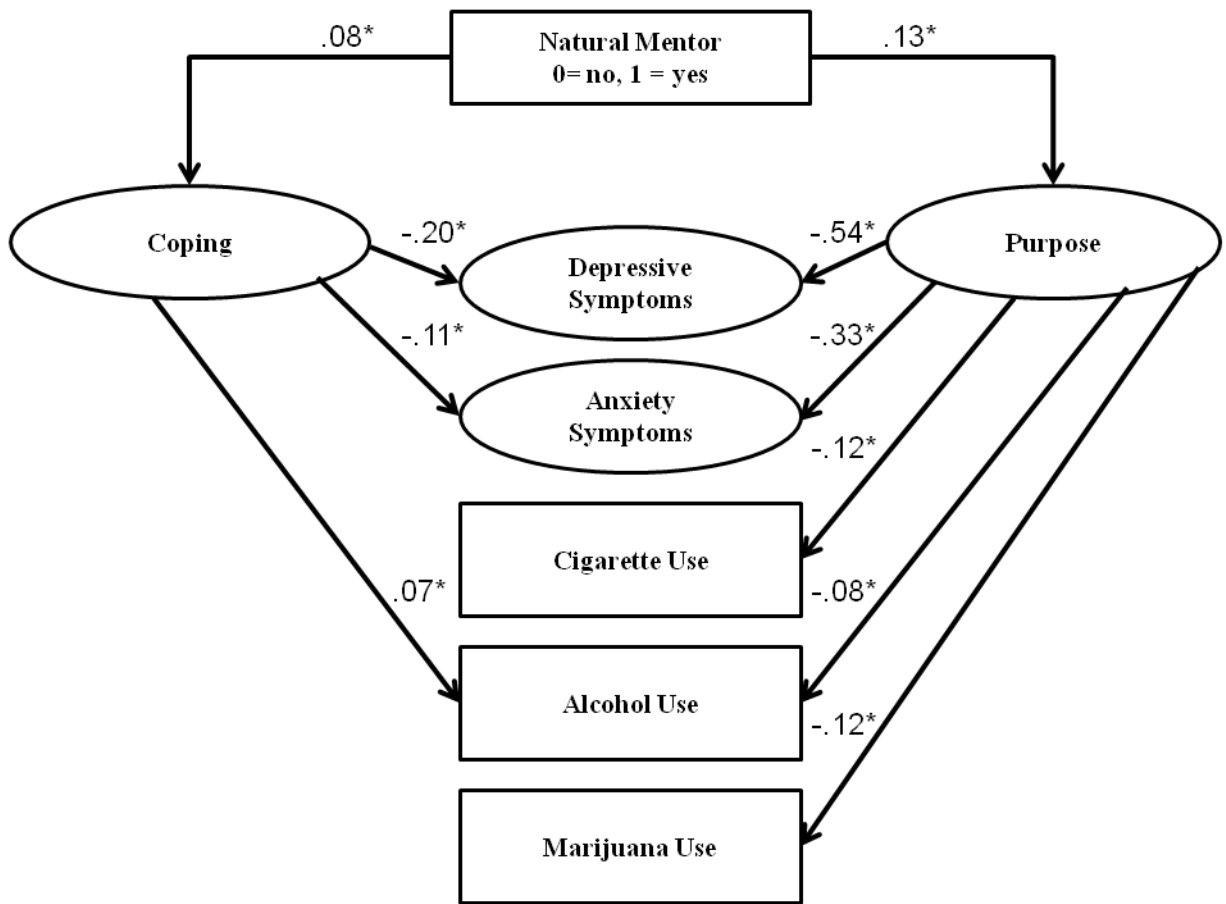


Figure 1. Relationship between natural mentor presence, participants’ perceived coping ability, sense of life purpose, depressive symptoms, anxiety symptoms, and cigarette, alcohol, and marijuana use.

Table 1Sample ($N = 3,334$) demographics and means and distributions of focal study variables

Variable	Mean	SD	Range	Percent
<u>Demographics</u>				
Race/Ethnicity				
African American				4.8
Asian				11.4
Latino				8.4
White				75.4
Age	20.8	1.8	17.1 – 25.8	
Sex				
Male				50.7
Female				48.6
Family SES	17.9	3.2	1 – 29	
<u>Focal Variables</u>				
Mentor (Yes)				41.8
Coping	3.4	.8	1 – 5	
Purpose in life	3.7	.7	1 – 5	
Depressive symptoms	1.9	.5	1 – 4	
Anxiety symptoms	1.9	.8	1 – 5	
Cigarette use	1.0	1.8	0 – 7	
Alcohol use	2.4	1.9	0 – 7	
Marijuana use	1.0	1.7	0 – 7	

Table 2

Correlation matrix for all study variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Mentor Presence																
2. Coping	.13*															
3. Purpose	.18*	.48*														
4. Depressive Symptoms	-.06*	-.41*	-.50*													
5. Anxiety Symptoms	.01	-.24*	-.30*	.66*												
6. Cigarette Use	-.03	-.06*	-.13*	.11*	.11*											
7. Alcohol Use	-.01	.09*	.01	.02	.04*	.38*										
8. Marijuana Use	-.03	.01	-.10*	.08*	.04*	.48*	.47*									
9. Peer Support	.14*	.28*	.25*	-.08*	.01	.04*	.17*	.05*								
10. Maternal Support	.13*	.26*	.27*	-.18*	-.08*	-.05*	.09*	-.02	.33*							
11. Paternal Support	.11*	.25*	.26*	-.21*	-.11*	-.05*	.06*	-.02	.25*	.55*						
12. Age	-.04*	-.01	.02	-.02	-.02	.06*	.16*	-.01	-.02	-.02	-.04*					
13. Female	.06*	.04*	.11*	.07*	.14*	-.06*	-.01	-.10*	.28*	.10*	.01	0.03				
14. Family SES	.01	.07*	.06*	-.06*	-.04*	.01	.09*	.04*	.05*	.11*	.13*	.06*	-.03			
15. Asian	-.06*	-.13*	-.08*	.04*	.03	-.08*	-.13*	-.14*	-.12*	-.12*	-.11*	.05*	-.01	-.14*		
16. African American	-.01	.01	.01	.02	-.03	-.04*	-.06*	-.04*	.02	-.02	-.06*	-.01	.01	.01	-.08*	
17. Latino	-.03	-.01	.01	.01	-.01	-.03	-.04*	.03	-.01	-.02	-.05*	-.07*	-.01	-.08*	-.11*	-.07*

* $p < .05$