Published in final edited form as:
Psychol Aging. 2021 August ; 36(5): 545–556. doi:10.1037/pag0000537.

Implications of Identity Resolution in Emerging Adulthood for Intimacy, Generativity, and Integrity Across the Adult Lifespan

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Abstract

Erikson's psychosocial stage model posits that identity formation is a key developmental task for adolescents, and that successfully resolving the identity vs. role confusion crisis at this time of life has important impacts on psychosocial development through adulthood. However, little empirical work has tested the consequences of early-life identity development for progression through the subsequent psychosocial stages in Erikson's model. The purpose of the present study was to test whether identity resolution measured during emerging adulthood predicted later developmental trajectories of intimacy, generativity, and integrity across adulthood. We used data from four cohorts of participants in the Rochester Adult Longitudinal Study (N = 1224), with up to five assessments spanning the twenties through the sixties. Latent growth curve modeling was used to estimate developmental trajectories for intimacy, generativity, and integrity, and to test the association between emerging adulthood identity resolution and growth parameters for each psychosocial outcome. Findings suggested that individuals with higher emerging adulthood identity resolution also experienced high levels of intimacy, generativity, and integrity in emerging adulthood, and these levels remained consistently high across adulthood. In contrast, those with lower identity resolution in emerging adulthood experienced lower initial levels of intimacy, generativity, and integrity, but faster growth over time. As a result, these trajectories appeared to nearly converge by the time participants were in their sixties, suggesting that one's emerging adulthood identity has less importance over time, and that individuals who struggled more with identity formation in adolescence and emerging adulthood are able to make up for it later in life.

Keywords

identity resolution; psychosocial development; Lifespan Development

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Typically, adolescence and emerging adulthood are seen as an especially crucial time for identity development (Erikson, 1968; Arnett, 2015; Schwartz et al., 2013; Meeus, 2011; McLean & Syed, 2015). This is a time of life when youth have relatively ample opportunities and motivation to explore what kind of person they want to be, and what direction they would like their life to take (Arnett, 2000). In theory, a stable, coherent identity formed in adolescence is seen as laying the groundwork for healthy psychosocial functioning and growth across the lifespan (Erikson, 1950; 1968; Vaillant & Milofsky, 1980; McLean & Syed, 2015). Individuals who struggle to form an integrated, stable, positive sense of self by early adulthood are expected to have trouble progressing forward through the subsequent developmental tasks of adulthood. However, the consequences of early-life identity development for later-life psychosocial growth have rarely been examined empirically. In the present study, we address this gap in the literature by examining how individuals' degree of identity resolution in emerging adulthood influences their trajectories of development through the subsequent stages of Erikson's model. Specifically, we used five waves of longitudinal data to estimate the effects of emerging adulthood identity resolution on trajectories of intimacy, generativity, and integrity from the twenties through the sixties.

Psychosocial Development Across the Lifespan

Erikson's (1950; 1968) classic psychosocial stage model of human development lays out a set of eight developmental tasks that unfold over the lifespan: trust vs. mistrust, autonomy vs. shame and self-doubt, initiative vs. guilt, industry vs. inferiority, identity vs. role confusion, intimacy vs. isolation, generativity vs. stagnation, and integrity vs. despair. Conventional interpretations of Erikson's model suggest that each of the eight stages builds sequentially on the last, and that successful resolution of the developmental task associated with the current life stage is beneficial or even necessary for moving on to later stages. Indeed, Erikson (1950) notes that each psychosocial construct within the stage model "is systematically related to all others, and that they all depend on the proper development in the proper sequence of each item" (p. 272). An early influential study aimed at validating Erikson's theory suggested that psychosocial development indeed proceeds in a clearly defined sequence, and that problems in mastering earlier stages would prevent successful progression through later stages (Vaillant & Milofsky, 1980; though see Peterson & Stewart, 1990, for a more nuanced view of the continued relevance of earlier psychosocial stages through the adult lifespan).

At the same time, Erikson (1950; 1968) also suggested that each of the eight psychosocial constructs are present at all stages of life, and these constructs remain malleable across the lifespan. Furthermore, recent empirical work calls into question the assumption that the eight stages of Erikson's model follow the neat, sequential order suggested by many conventional interpretations (e.g., Whitbourne et al., 2009). Thus, the extent to which progression through the stages in Erikson's model depends on the resolution of previous developmental tasks remains unclear.

The Role of Identity Development in Erikson's Model

Erikson's (1950; 1968) model situates the identity vs. role confusion crisis as a central developmental task for adolescents, and one that sets the stage for healthy maturation across adulthood. Among the eight psychosocial stages, identity in particular is seen as performing a crucial integrative function for an individual's traits, needs, goals, abilities, and commitments, pulling together these aspects of the self into a coherent whole (Erikson, 1982). A coherent identity then provides the basis of healthy psychosocial functioning across adulthood. Indeed, youth who have managed to establish a stable, coherent, positive sense of self tend to experience greater well-being (Van Hoof & Raaijmakers, 2002; Klimstra & Denissen, 2017). On the other hand, youth who struggle to make identity commitments and develop a clear sense of self tend to experience worse mental health, including depressive symptoms (Luyckx, Klimstra, Duriez, Petegem, & Beyers, 2013), internalizing and externalizing symptoms (Seiffge-Krenke & Weitkamp, 2020), and in severe cases, suicidality (Chandler et al., 2003; Sokol & Eisenheim, 2016). Thus, the relevance of identity for mental health is well established.

Identity is also perhaps the most central and well-developed of the eight psychosocial constructs within Erikson's theory, and one that Erikson explicitly discussed as laying a crucial foundation for development through the later psychosocial stages (see, e.g., Erikson, 1968, p. 94; p. 135–141; p. 187–188). For example, Erikson noted that developing a clear, coherent identity is necessary for forming close intimate relationships with others, without losing one's sense of self in the relationship. Furthermore, during the identity vs. role confusion stage, youth establish initial perspectives on leader and follower roles that inform their development of generativity, and on ideology and values that inform their development of integrity, thus "setting the stage" for development of generativity and integrity through subsequent decades of life. However, despite identity being the most extensively studied construct within Erikson's model (e.g., McLean & Syed, 2015; Meeus, 2011; Schwartz, Luyckx, & Vignoles, 2011), these hypotheses relating early-life identity to subsequent psychosocial stages have not been empirically tested. The lack of research on the consequences of identity development in youth for lifespan psychosocial development is a notable gap within the identity literature, one that is addressed by the current study. Specifically, we examined whether identity development in emerging adulthood indeed influences subsequent development of intimacy, generativity, and integrity (see Supplemental Figure S1). Here, we define each of these psychosocial constructs in turn, and review existing research on their associations with identity.

Intimacy, Generativity, and Integrity

The development of *intimacy* is associated with early adulthood, roughly the mid-twenties through the thirties. In Erikson's model, intimacy refers to the capacity to be open, vulnerable, and empathetic, and to welcome authentic, close connection with others (Erikson, 1950). This capacity is critical for establishing stable, positive romantic relationships, as well as close friendships and other relationships that involve a deep sense of trust and attachment. Fear of making oneself open and vulnerable in a close, intimate relationship with another leads to a sense of isolation and distance.

Perhaps the most evidence exists for connections between identity and the subsequent stage, intimacy. Most of this work has been cross-sectional, and demonstrates positive correlations between identity and intimacy (Orlofsky, Marcia, & Lesser, 1973; Rotenberg, Schaut, & O'Connor, 1993; Montgomery, 2005; Whitbourne & Tesch, 1985). Two studies that used multiple measurements of identity and intimacy across several years found conflicting results. Beyers and Seiffge-Krenke (2010) found that age 15 identity predicted age 25 intimacy, but not vice-versa. In contrast, using the same dataset as the current study, Sneed, Whitbourne, Schwartz and Huang (2012) found that, across adulthood, changes in identity did not predict change in intimacy, after controlling for stability in identity and intimacy over time.

The next stage, *generativity,* is conventionally associated with midlife, and reflects an individual's efforts to nurture future generations and make contributions that will leave a lasting, positive influence on the world (Erikson, 1950). The expression of generativity may include becoming a parent and raising one's own family, but also extends to participating in the education and upbringing of other young people, as well as making concrete contributions to future generations in the form of products or ideas.

A handful of studies have also examined the connections between identity and generativity among adults, but used only a single measurement occasion for both identity and generativity (Vandewater & Stewart, 2006; Vandewater et al., 1997; de Haan & MacDermid, 1994). The results of these studies have been mixed. For example, Vandewater and colleagues (1997) found that identity at age 43 was moderately positively correlated with generativity at age 48. In contrast, de Haan and MacDermid (1994) found that global identity development was unrelated to global generativity among midlife women, though they did find evidence that domain-specific identity development was associated with generativity in the corresponding domain (e.g., political identity achievement was related to civic generativity). Furthermore, because these studies did not assess changes in generativity over multiple measurements, the relationship between early-life identity and trajectories of generativity across the lifespan remains unclear.

Finally, the stage of *integrity* is most closely associated with the late decades of life, and centers around self-acceptance and satisfaction with the way one has lived one's life. Integrity is characterized by the ability to look back on one's life with pride, having achieved one's main goals and lived according to one's principles. There are no major regrets, but rather "acceptance of one's one and only life cycle as something that had to be" (Erikson, 1950, p. 268). Individuals who are able to attain a strong sense of integrity overcome the fear of aging and death as the natural conclusion to a life well-led.

To our knowledge, no studies have examined the relationship between identity and subsequent development of ego integrity. However, Erikson's (1950; 1968) conceptualization of integrity suggests that identity is a crucial precursor to the positive development of integrity in later adulthood. The kind of self-acceptance that forms the basis of integrity relies on a profound understanding of one's identity: one's deepest values and principles, an awareness of one's own flaws balanced against one's strengths and contributions, and an overall sense of comfort with oneself. Settling on one's values early in

adulthood makes it more likely that one will live an adult life according to those values, and avoid major regrets. Developing a positive, coherent view of the self in youth similarly lays the groundwork for accepting one's actions and decisions across adulthood as the behaviors of an imperfect, but fundamentally good and worthy person. On the other hand, youth who struggle to develop an integrated identity may be less likely to set and reach important life goals that would form the basis of a satisfying legacy.

The Present Study

The Rochester Adult Longitudinal Study (RALS) provides a unique opportunity to examine the implications of identity development in emerging adulthood for later-life psychosocial outcomes. The RALS is perhaps the only longitudinal study currently available that includes assessments of the eight Eriksonian psychosocial constructs at multiple time points across early, middle, and later adulthood. At present, data are available starting when participants were emerging adults, and extending through their sixties. Other notable strengths of the RALS dataset are the inclusion of four different cohorts, each spaced approximately ten years apart, and the inclusion of both men and women. In comparison, much of the classic research on Eriksonian psychosocial stages has focused on only one gender (e.g., Helson, 1967; Stewart, 1978; Vaillant & Milofsky, 1980). These strengths of the dataset allow us to examine whether developmental trajectories vary by gender or birth cohort. Indeed, prior research with the RALS has investigated the moderating effects of gender and birth cohort on trajectories of psychosocial development, revealing, for instance, that women tend to score higher on intimacy than men (Whitbourne et al., 2009). Furthermore, sociohistorical contexts associated with different birth cohorts may influence identity development (Erikson, 1968; Fadjukoff, Kokko, & Pulkkinen, 2010). In keeping with this prior research, we included gender and birth cohort as covariates in all analyses, to investigate the potential role of these demographic factors and sociohistorical influences in shaping psychosocial development.

Previous investigations utilizing the RALS dataset have assessed the relationship between identity, intimacy, and wellbeing (Sneed et al., 2012) and normative trajectories of psychosocial development across the life course (Lodi-Smith et al., 2018; Whitbourne & Van Manen, 1996). Generally speaking, results from the RALS demonstrate age-related maturation in psychosocial and identity development (Whitbourne & Van Manen, 1996; Whitbourne et al., 2009) and the consistent predictive relationship between maturation in Eriksonian concerns and well-being (Sneed et al., 2012). These previous investigations have primarily focused on the causes and consequences of psychosocial maturation of individuals in midlife and have collectively worked to illuminate the importance of Eriksonian psychosocial development in predicting physical and psychological health and wellbeing through adulthood.

The purpose of the present study was thus to test whether identity resolution during emerging adulthood predicts trajectories of development in the subsequent Eriksonian psychosocial constructs: intimacy, generativity, and integrity. Our hypotheses were based on Erikson's (1950; 1968) theory, while taking into account prior empirical work with the RALS estimating normative trajectories of development in intimacy, generativity,

and integrity through the early fifties (Whitbourne et al., 2009). This prior research revealed several patterns of growth that diverged from theoretically expected trajectories. Specifically, this work suggested that intimacy follows a slightly curved trajectory, with steeper growth across early adulthood, and leveling off slightly across mid-life. Generativity was characterized by a slowly increasing linear trajectory. Integrity decreased from the twenties through the forties, then increased from there on. Our Open Science Preregistration includes the following hypotheses, which were informed by previous analyses of RALS data in addition to Erikson's theory.

For intimacy, we expected that higher emerging adulthood identity resolution would be associated with a curvilinear trajectory that increases sharply in the thirties (corresponding to the time of life associated with intimacy vs. isolation in the psychosocial stage model), leveling off afterward (see Figure 1a). In contrast, we expected that lower identity resolution would be associated with a trajectory that increases slowly over time but remains relatively low across adulthood.

For generativity, we predicted that higher emerging adulthood identity resolution would be associated with linear increases in generativity, whereas lower identity resolution would be associated with a relatively stable and consistently lower trajectory (see Figure 1b).

For integrity, we expected a U-shaped trajectory that decreases initially, but increases in later waves for those individuals higher in identity resolution. Individuals with lower identity resolution were expected to experience a relatively stable and consistently lower level of integrity relative to their peers with higher emerging adulthood identity resolution (see Figure 1c).

Methods

Participants

The RALS includes four cohorts of University of Rochester alumni, each separated by approximately a decade. Table 1 summarizes the number of participants in each cohort, the timing of assessments for each cohort, and the mean age of participants at each time point. The most recent wave of assessments was completed in 2012–2014. In this wave, Cohort 1 were in their sixties, and Cohort 4, the youngest cohort, were in their thirties. The present study uses data from all four cohorts. On average, participants were 20.01 (*sd* = .63) years old in their first assessment, and for those cohorts that have completed additional assessments, they were 30.96 (*sd* = .63) years old in their second, 42.77 (*sd* = 1.62) in their third, 55.69 (*sd* = 1.61) in their fourth, and 67.68 (*sd* = 1.32) in their fifth assessment. The sample includes 585 women (48%), and is primarily White (96%). Given the racial/ethnic homogeneity of the sample, this demographic factor is not considered in the following analyses. Approximately 25% (N = 308) participants reported completing a graduate or professional degree after their initial assessment.

We checked the intraclass correlation coefficient (ICC) for each outcome within each cohort, at each wave. The ICC was generally very close to zero for these comparisons, suggesting little within-cohort homogeneity on the outcomes of intimacy, generativity, and integrity;

thus we combined all four cohorts to increase sample size and power. The total sample size was N = 1224.

Missing data.—The RALS includes planned missingness due to the cohort sequential design, as well as missingness due to attrition. Among the original sample of 348 recruited in 1965–1968, 47% completed the most recent 2012–2014 assessment. Attrition within the other cohorts ranges from 65% to 62%. However, analyses comparing participants who remained in the sample to those who dropped out revealed no significant association between completion status in 2012–2014 and the main predictor of interest, i.e. emerging adulthood identity resolution (r = .02, p > .05), nor for the focal outcomes of intimacy (*r*s range from −.04 to .08 across waves, all *p*s > .05), generativity (*r*s range from −.08 to .11, all *p*s > .05), or integrity (*r*s range from −.02 to .04, all *p*s > .05), consistent with prior attrition analyses of RALS data (Whitbourne et al., 2009)[1]. We use Full Information Maximum Likelihood (FIML) estimation to account for missingness in all longitudinal analyses.

Measures

Eriksonian Psychosocial Constructs.—The Inventory of Psychosocial Development (IPD; Constantinople, 1969) was originally used to assess the first six psychosocial constructs in Erikson's model. Starting in 1977, items to assess the remaining two constructs (generativity and integrity) were developed and added (Whitbourne & Waterman, 1979). Each construct is assessed with ten items, including five positive and five negative items, each measured on a 7-point Likert scale. Participants are asked to indicate how characteristic or uncharacteristic each item is of them. Sample items for the subscales included in the present study include: "I know who I am and what I want out of life" (identity), "I have sympathetic concern for others" (intimacy), "I feel productive in my work" (generativity), and "I wouldn't change my life if I lived it over" (integrity). Scale scores were calculated for each of these constructs by reverse scoring the negatively associated items and adding them to the positively associated items, yielding a sum score for each subscale that reflects a participant's degree of resolution for each stage of Erikson's model. Item-level data were available for IPD assessments that occurred from Wave 3 (1988–1989) and beyond, but were unavailable for the two assessments in 1965–1968 and 1976–1977. The full IPD instrument is available in the Supplemental Material. Correlations among the baseline measures of each psychosocial construct are reported in Table 2. Cronbach's alpha and test-retest reliability are reported for each subscale where item-level data were available in Supplemental Tables S2 through S5. Alpha was .64 for identity, and ranged from .66–.76 for intimacy, .36–.61 for generativity, and .69-.78 for integrity. Given the low internal consistency estimates for generativity, we ran sensitivity analyses using a version of this subscale that removed two items that were weakly correlated with the rest of the items (detailed in the Analysis Plan and Results sections). Test-retest reliability for the IPD subscales ranged from *r* = .24 to *r* = .81, with stronger correlations among measurements that occurred closer in time. This is consistent with our expectations for data collected at approximately ten-year intervals.

[1]The complete correlation matrix for attrition at each wave is available in Supplemental Table S1.

Procedure

Participants were recruited for their first assessment during college. Subsequently, alumni (i.e., individuals who attended the University of Rochester, regardless of whether they graduated) were contacted for follow-up assessments using information in the University of Rochester alumni directory. In 2000, fee-based services (Find a Friend; Online Detective) were used and by 2002, and particularly by 2012, Internet searches became available for more thorough identification of past participants. These procedures for identifying and contacting alumni are described in more detail elsewhere (e.g., Sneed et al., 2012; Whitbourne et al., 2009). Alumni received a letter describing the study, a questionnaire, and a stamped envelope for returning the completed questionnaire. In the most recent assessments (2002, 2012–14), all questionnaires were completed using online survey tools. The present study was declared exempt from review by the Minneapolis VA IRB (VAM-19–00430).

Analysis Plan

Latent growth curve modeling (LGM) was used to test our main hypotheses. LGM is a longitudinal form of structural equation modeling (Singer & Willett, 2003; Tomarken & Waller, 2005), in which parameters such as an intercept (I), linear slope (S), and quadratic slope (Q) are estimated to define an average trajectory of growth over time. Predictors such as emerging adulthood identity resolution can be entered as time-invariant covariates to examine their association with the growth parameters, thus indicating whether such predictors have a significant influence on trajectories of growth for outcomes.

For each of our focal outcomes – intimacy, generativity, and integrity – we developed a separate model to describe an average trajectory of change, and to determine whether trajectories varied by level of emerging adulthood identity resolution. First, we compared several unconditional growth models (i.e., models with no covariates included) to identify the best fitting functional form for each outcome. For each outcome, we considered the following functional forms: intercept-only, linear, quadratic, and basis (i.e., freely estimating the pattern of change; Preacher, 2010; Grimm et al., 2011) models. For basis models, the loading of Wave 1 scores on the shape factor was set at 0, the loading of the Wave 5 scores on the shape factor was set at 1, and intermediate loadings were allowed to vary freely, allowing estimation of non-linear growth. Thus, the fitted values for outcomes within a basis model are obtained by multiplying the basis shape factor by the basis factor loading for each wave, and adding the model intercept. The model with the best fit, according to visual inspection and fit statistics, was retained for each outcome. Lower values on comparative fit statistics (Akaike Information Criterion and Bayesian Information Criterion), Root Mean Square Error of Approximation (RMSEA) values less than .06, Comparative Fit Index (CFI) values greater than .95, and Standardized Root Mean Residual (SRMR) values less than .08 were taken as indicators of good fit (Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999; Schreiber, Nora, Stage, Barlow, & King, 2006). After identifying the best fitting unconditional model, we added emerging adulthood identity resolution as a time-invariant covariate to examine its association with the growth parameters. We controlled for sex and cohort in these analyses. Identity resolution was mean-centered to facilitate interpretation of results.

In addition to testing our preregistered hypotheses, we conducted additional exploratory analyses to further probe our findings. We conducted exploratory analyses using mediation models to test whether relationships between identity and the later psychosocial stages were mediated by intervening stages. Specifically, we tested whether the relationship between identity and generativity was mediated by intimacy, and similarly whether the relationship between identity and integrity was mediated by generativity. We also conducted sensitivity analyses fitting a latent growth curve model for generativity using the alterative, shortened version of the generativity scale, and including a covariate reflecting whether participants obtained a graduate degree. Finally, we conducted analyses incorporating age as a covariate. All analyses were performed in R (R Core Team, 2018). The package *lavaan* was used for latent growth curve modeling (Rosseel, 2012).

Results

Unconditional Growth Models

Fit statistics for all unconditional models are reported in Table 3. For intimacy, a linear growth curve model fit best. This model indicated that on average, participants started with a positive level of intimacy at baseline, and increased steadily over time (I=11.62, $p<.001$; S= 1.30, $p<.001$; see Figure 2a). For generativity, a linear model also provided the best fit. This model suggested that participants generally began with a positive level of generativity, with linear increases afterward (I=7.45, $p<.001$; S= .63, $p<.001$; see Figure 2c). For integrity, the basis model provided the best fit. The model produced a negative variance estimate for Wave 5 integrity, so we constrained this variance to zero; this constraint did not substantially affect model fit. The unconditional basis model suggested nonlinear growth in integrity, starting at a relatively low level in Wave 1 and increasing somewhat at Wave 2, declining in Wave 3, and then rising continuously through Wave 4 and Wave 5 (I=3.71, $p<.001$; S=4.75, $p<.001$; $\alpha_2=.24$, $p=.001$; $\alpha_3=-.05$, $p=.65$; $\alpha_4=.35$, $p<.001$; see Figure 2e).

Conditional Growth Models

Conditional models for each outcome incorporated emerging adulthood identity, cohort, and gender as covariates (see Table 4). For intimacy, emerging adulthood identity was significantly associated with intercept and slope (see Table 4, Figure 2b). Specifically, each point above the mean level of identity resolution was associated with a .56-point higher level of intimacy at baseline. However, individuals with greater identity resolution in college increased their intimacy more slowly over time than those with lower identity resolution in college. Sex was also associated with baseline intimacy, with women starting out on average 1.61 points higher than men. Cohorts did not differ significantly on baseline intimacy. Neither sex nor cohort was significantly associated with slope.

For generativity, identity resolution was also associated with intercept and slope, in a similar pattern (see Table 4, Figure 2d). Each additional point on the identity resolution scale was associated with .34 additional points on the generativity scale at baseline. Higher identity resolution was also associated with slower growth in generativity over time. In addition, women had a higher initial level of generativity than men by 1.25 points. Cohort was

not significantly associated with baseline generativity, and neither sex nor cohort predicted different rates of change in generativity.[2]

Emerging adulthood identity resolution was also associated with both the initial level and pattern of growth for integrity (see Table 4, Figure 2f). Each point above the average for identity resolution was associated with a .62-point higher level of integrity at baseline. Higher identity resolution in college was also associated with a slower rate of growth from one wave to the next. Sex and cohort were also related to baseline levels of integrity. Women scored higher than men by 1.23 points on average. Later cohorts scored slightly lower than early cohorts, with each cohort starting .60 points below the previous cohort. Sex and cohort were not significantly associated with the growth parameters for integrity.

We conducted sensitivity analyses controlling for attainment of a graduate degree, as well as age. These analyses did not substantively change the results (see Supplemental Tables S7-S10).

Exploratory Mediation Analyses for Intervening Stages

We used path analysis models to test whether the relationships between T1 identity and T3 generativity, as well as between T1 identity and T3 integrity, were mediated by the intervening psychosocial stages. Results of these models are reported in Figure 3. The indirect path from identity to generativity via intimacy was significant ($b = .07$, $p < .001$), though smaller than the direct path from identity to generativity ($b = .18$, $p < .001$). A similar pattern was found for the indirect path from identity to integrity via generativity ($b = .13$, $p < .001$), relative to the direct path from identity to integrity ($b = .23$, $p < .001$). These findings suggest that part, but not all, of the relationship between identity and the later psychosocial stages can be explained by the intervening stages.

Discussion

Erikson's classic psychosocial stage model suggests that identity development in adolescence and emerging adulthood shapes an individual's progression through later developmental tasks across the lifespan (Erikson, 1950; 1968; Vaillant & Milofsky, 1980). The purpose of the present study was to test whether identity resolution in emerging adulthood predicted subsequent development of intimacy, generativity, and integrity across early, middle, and later adulthood. We estimated developmental trajectories for each of these three psychosocial constructs starting in the early twenties and continuing through the sixties. Although emerging adulthood identity resolution did predict higher levels of intimacy, generativity, and integrity, as well as significant differences in growth rates for each of these three constructs, the specific trajectories we found were quite different from what we predicted. We expected that individuals with high identity resolution in college would go on to experience substantial growth in intimacy, generativity, and integrity, while their peers with lower identity resolution would experience little growth in these areas.

[2]Due to the low internal consistency of the generativity subscale, we fit an additional model for generativity, after removing two weakly correlated generativity items from the subscale. The results of this model are reported in Supplemental Table S6. The results were substantively very similar to those found with the full generativity subscale.

Instead, our findings suggest that strong identity resolution in emerging adulthood predicts consistently high levels of intimacy, generativity, and integrity across adulthood. In contrast, those with low identity resolution in emerging adulthood go on to experience faster rates of growth across their thirties, forties, and fifties, so that they start to "catch up" with their peers later in life, especially in the domains of intimacy and integrity[3]. Only data with multiple assessments across the adult years could reveal these developmental patterns - a notable strength of the RALS dataset.

Identity formation is often viewed as a key developmental task for adolescence and emerging adulthood, and a prerequisite for healthy adult functioning (Arnett, 2000; Erikson, 1968; 1950; Marcia, 1966; Meeus, 2011). Individuals who have trouble forming a coherent, stable sense of self at these early times of life are expected to experience poor outcomes later in adulthood as a result. However, we found that having relatively low identity resolution in college did not totally preclude growth through subsequent psychosocial stages. These findings provide some reassurance that individuals who do not manage to form a coherent identity "on time" in emerging adulthood are not destined to fail at the key developmental tasks later across the lifespan – they may just take longer to arrive there. Indeed, some research on adults in their mid-twenties suggests that those who remain in identity diffusion (the least mature, least resolved identity status) can nonetheless progress forward in their identity development later on (Carlsson, Wangqvist, & Frisen, 2015). Prior research with the RALS has also suggested that life experiences such as entering a committed relationship or becoming a parent can contribute to "catching up" on psychosocial growth for individuals who exhibited lower levels of intimacy and generativity early in adulthood (Whitbourne et al., 2009). Course-corrections (Stewart & Vandewater, 1999), or later-life choices made after revisiting one's earlier-life regrets, may be another mechanism for gaining ground in these psychosocial domains through midlife.

Perhaps what was most surprising, from a developmental perspective, was that individuals with high identity resolution in college also tended to score highly on intimacy, generativity, and integrity in their youth, and maintain those levels over time. Eriksonian theory posits that healthy psychosocial development is dynamic, with each psychosocial construct becoming especially salient at a different point in the adult lifespan (Erikson, 1950; 1968; see also Zucker, Ostrove, & Stewart, 2002; McAdams & de St. Aubin, 1992). However, our findings suggest that individuals who had already attained a high level of identity resolution in their early twenties were also particularly mature on all of these dimensions in a stable, trait-like way. Though it is assumed that identity resolution serves as preparation for future growth in these areas, our findings suggest that instead, people who have highly mature identities in emerging adulthood may *already* have a strong sense of intimacy, generativity, and integrity, which remains strong across their lifespan.

In contrast to the conventional, strictly age-graded interpretation of Erikson's psychosocial stage model (e.g., Vaillant & Milofsky, 1980), more recent interpretations have emphasized Erikson's assertion that each psychosocial construct is present across the lifespan

[3]The current findings are distinct from those of Sneed et al. (2012) in demonstrating the association between emerging adulthood levels of identity resolution and long-term trajectories of intimacy; further explanation can be found in the Supplemental Materials.

(Whitbourne et al., 2009; Pratt, Lawford, Matsuba, & Villar, 2020). In support of this "matrix" interpretation, previous research with the RALS (Whitbourne et al., 2009), as well as other longitudinal datasets (Einolf, 2014) has demonstrated a surprising degree of stability in some psychosocial constructs over time, a finding reinforced by the present analyses. Our results also question the sequential, stage-based interpretation by demonstrating that the psychosocial constructs that are typically associated with adulthood can nonetheless be quite strong in the early twenties (see also, e.g., Pratt & Lawford, 2014). Our mediation models suggested that the effects of identity on the later psychosocial stages (e.g., generativity) may be partially explained by the intervening stages (e.g., intimacy). However, identity remained significantly associated with late psychosocial stages after accounting for the indirect paths through the middle stages, further calling into question a strictly sequential interpretation of Erikson's model.

The nonlinear growth pattern we found for integrity is intriguing, as it contradicts theoretically derived expectations for integrity across the lifespan. However, the rise in integrity around age 30 and subsequent dip in the 40's may reflect changing attitudes across these decades of life. In particular, the integrity subscale includes items such as "I have reached my goals," "I am proud of what I've done," "I take responsibility for my actions," and the reverse-coded item, "I am afraid of getting old." The thirties have been a relatively neglected time of the lifespan, but this time of life, recently coined "established adulthood," (Mehta et al., 2020), is a time of increased stability and success, as adults settle into career and family roles, and attain a degree of financial stability. This may be a time when adults feel a greater sense of accomplishment and pride compared to their emerging adulthood years. At the same time, the emerging health concerns and awareness of aging that characterize midlife (Lachman et al., 2015) have not yet set in for most established adults. Thus, it is conceivable that integrity, as measured by the IPD, does indeed increase slightly in the 30's, with a slight decrease afterward. It is important to note that the magnitude of these changes we detected was small, relative to the larger increase in integrity across the 50's and 60's. Nonetheless, they point to possible salience of integrity at earlier stages of life than theoretically expected. Further research examining psychosocial development in established adulthood would help elucidate these effects.

Prior research has demonstrated differences by gender and birth cohort in Eriksonian psychosocial development (e.g., Fadjukoff et al., 2010; Whitbourne et al., 2009; Vandewater & Stewart, 2006), and the present study sheds additional light on how these demographic factors may influence psychosocial growth over time. First, we found that women tended to score slightly higher than men on intimacy, generativity, and integrity in emerging adulthood, and there were no gender differences in slope, suggesting that gender differences persisted over time. These differences may reflect underlying associations between gender and relevant personality traits. For example, meta-analytic evidence suggests that women tend to score higher on warmth and nurturance, two traits that are closely related to intimacy and generativity (Costa, Terracciano, & McCrae, 2001). Birth cohort was unrelated to all outcomes except that later cohorts tended to have lower levels of ego integrity in emerging adulthood, consistent with past RALS research (Whitbourne et al., 2009).

An important direction for future research is understanding how some individuals attained a high level of intimacy, generativity, and integrity earlier in life than expected. Given our findings that high levels of intimacy, generativity, and integrity appear to persist beyond emerging adulthood, promoting the acquisition of these psychosocial attributes in emerging adulthood may have a lasting positive effect across the lifespan.

The present findings point to identity development as one potential mechanism contributing to psychosocial maturity in emerging adulthood. Engaging in identity work may involve trying out different educational and career possibilities, developing friendships and romantic relationships, experimenting with different ideological, religious, and political views, and making lasting commitments in these areas (Marcia, 1966). These same activities could also lead youth to grapple with the same issues that are central to the developmental tasks of intimacy, generativity, and integrity, including forming close bonds with significant others, promoting the well-being and growth of younger people, and contemplating one's lasting impact on the world. For example, volunteering in one's neighborhood and community may contribute to emerging adults' identity development (Pancer, Pratt, Hunsberger, & Alisat, 2007), and also to the development of generative concern (Soucie, Jia, Zhu, & Pratt, 2018). Thus, the activities involved in identity development may also promote the development of intimacy, generativity, and integrity all during emerging adulthood.

Another possibility is that these psychosocial constructs may all reflect underlying dispositional traits, or attributes of personality that are relatively stable across the lifespan. For example, multiple studies have found correlations between generativity and the Big Five personality traits of extraversion, openness to experience, and emotional stability (the opposite of neuroticism) among middle-aged adults (Bradley & Marcia, 1998; Cox, Wilt, Olson, & McAdams, 2010; De St. Aubin & McAdams, 1995; Peterson & Duncan, 2007; Van Hiel, Mervielde, & de Fruyt, 2006). The pattern we observed, where some participants were persistently high on all of the psychosocial constructs we examined, may simply reflect especially adaptive personality trait profiles among those individuals. Furthermore, there is evidence supporting the existence of a general factor of psychosocial development (Dunkel et al., 2012; Dunkel & Harbke, 2017), a latent factor capturing the shared variance among all eight psychosocial constructs. This general psychosocial factor may reflect an overall ability to successfully navigate psychosocial challenges, and could drive simultaneous high scores across multiple psychosocial dimensions.

The present study revealed some limitations of the IPD, the questionnaire measure used to assess Eriksonian constructs in the RALS. Notably, internal consistency for the generativity subscale was quite low for some assessments. Our sensitivity analysis, using a modified version of the generativity subscale with problematic items removed, somewhat mitigates these concerns, as the findings were largely similar to the main analysis. However, future research replicating the present findings using alternative measures of the Eriksonian psychosocial constructs (e.g., the Eriksonian Psychosocial Stage Inventory; Rosenthal, Gurney, & Moore, 1981; the Loyola Generativity Scale; McAdams & de St. Aubin, 1992) are warranted. Though replicating the full forty-year longitudinal models may not be possible, replication of the cross-sectional effects and shorter-scale longitudinal studies may bolster support for the connections between identity, intimacy, generativity, and integrity.

An important limitation of the present sample is its homogeneity in terms of education, race, and social class. The RALS participants were recruited from among students at a private university, and their scores on the IPD indicate that they are in general relatively well-adjusted on most of Erikson's psychosocial dimensions. Investigating similar questions among individuals who have especially low levels of identity resolution may reveal whether developmental trajectories unfold differently for individuals with substantially lower identity resolution in emerging adulthood. Thus, extending this work to clinical samples (e.g., individuals with borderline personality disorder and other mental health concerns characterized by low identity resolution; Wilkinson-Ryan & Westen, 2000) is an important direction for future study. As much of the foundational work on lifespan psychosocial development has relied on relatively highly educated samples (e.g., the Mills College study, Helson, 1967; the Radcliffe College study, Stewart, 1978), investigation of more diverse and representative samples is also needed. Evidence suggests, for example, that emerging adults who do not attend college tend to become parents earlier than college students, and have substantially different patterns of employment and financial dependence across their early twenties – all factors that may affect opportunities for identity development at this time of life (Mitchell & Syed, 2015). In general, research on ego identity development among youth from racial/ethnic minority backgrounds and youth who do not attend college has been sparse, and the need for more work with diverse groups is a longstanding gap within the ego identity development literature (Syed & Mitchell, 2013). Nonetheless, the RALS' strengths – the inclusion of men and women from multiple birth cohorts, and five waves of assessments spanning nearly fifty years – make it a unique and valuable source of information on developmental sequencing of Eriksonian psychosocial stages.

Conclusion

The consequences of adolescent and emerging adulthood identity formation processes for later-life outcomes have been regularly asserted, but insufficiently tested (Erikson, 1950; 1968; Vaillant & Milofsky, 1980; McLean & Syed, 2015). The present study investigated the association between emerging adulthood identity resolution and subsequent development through the Eriksonian psychosocial stages associated with adulthood, namely intimacy, generativity, and integrity. We found that higher identity resolution was associated with persistently high levels on each of these psychosocial constructs, whereas lower identity resolution predicted lower initial levels and gradual increases over time. These trajectories appeared to nearly converge by the time participants were in their sixties, suggesting that one's emerging adulthood identity has less importance over time, and that individuals who struggled more with identity formation in emerging adulthood are able to make up for it later in life. Our findings support the growing body of literature questioning the strictly sequential, age-graded interpretation of Erikson's psychosocial stage model (e.g., Whitbourne et al., 2009; Pratt et al., 2020). Nonetheless, it appears that successfully resolving the identity-related challenges of emerging adulthood may have a lasting, positive impact for intimacy, generativity, and integrity across the lifespan.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Project information including preregistration is available at https://osf.io/38sz2/?view_only=57b2e0d1e629483d964af493ab80f6ed. This material is based on work supported by the Office of Academic Affiliations, Department of Veterans Affairs, through the Health Services Research and Development Advanced Fellowship, TPH 67-000, PI: Diana Burgess. The present analyses have not been previously published or presented. Prior publications based on the Rochester Adult Longitudinal Study dataset are included in the literature review of the present study.

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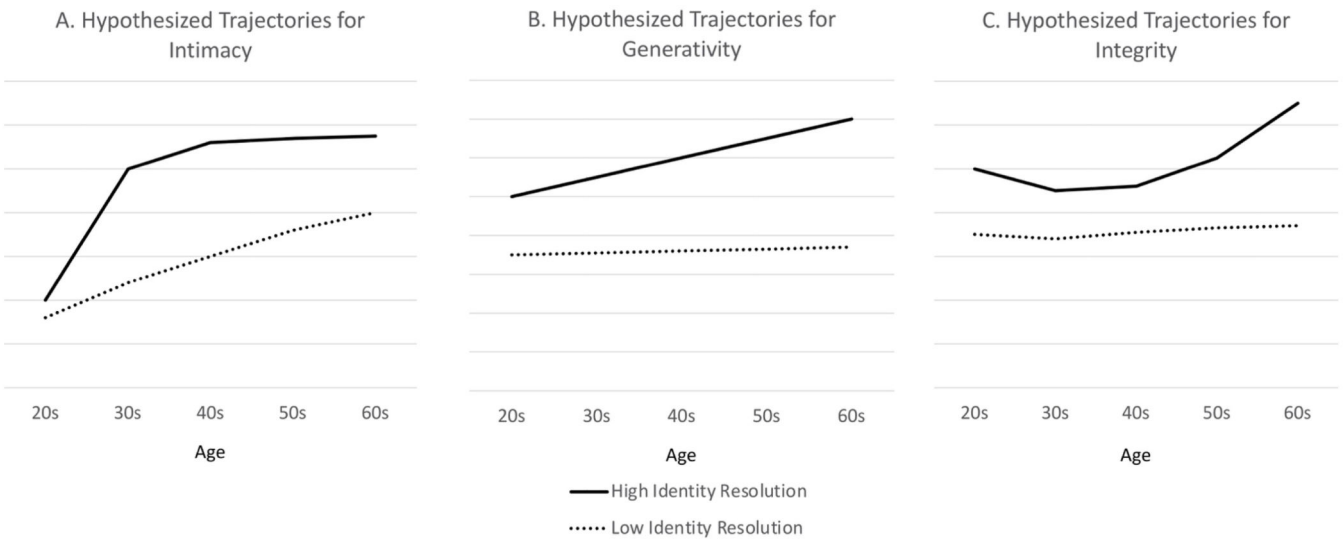

Figure 1. Hypothesized Trajectories for Intimacy, Generativity, and Integrity Based on Identity Resolution

Note. Y-axis labels are not included because we did not hypothesize specific values for intimacy, generativity, or integrity, but rather a general shape for the developmental trajectory.

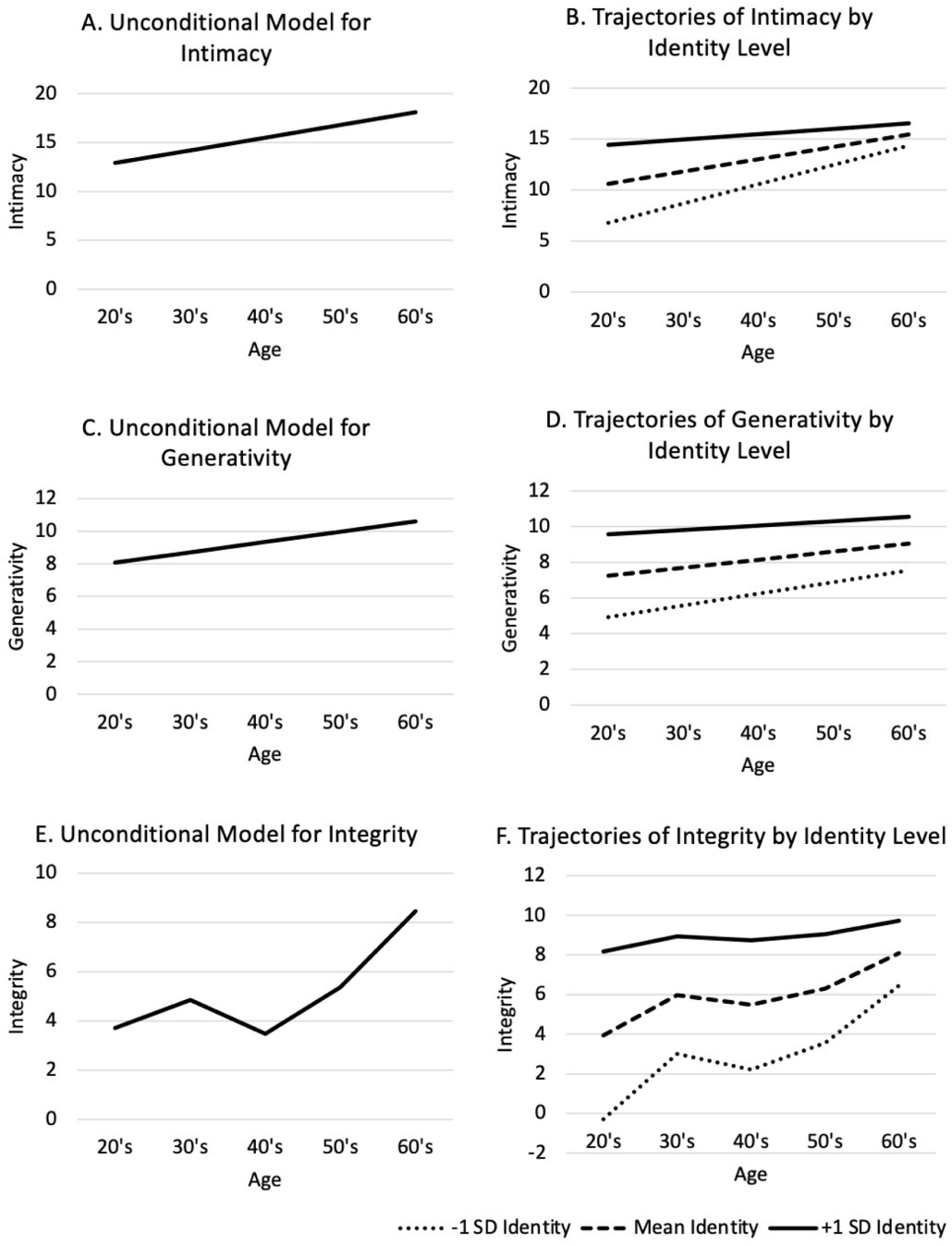

Figure 2. Latent Growth Curve Models for Intimacy, Generativity, and Integrity

Note. Panels A, C, and E illustrate unconditional model-implied trajectories. Panels B, D, and F illustrate the model-implied trajectories for a hypothetical individual with mean-level identity resolution, as well as an individual one standard deviation above or below the mean.

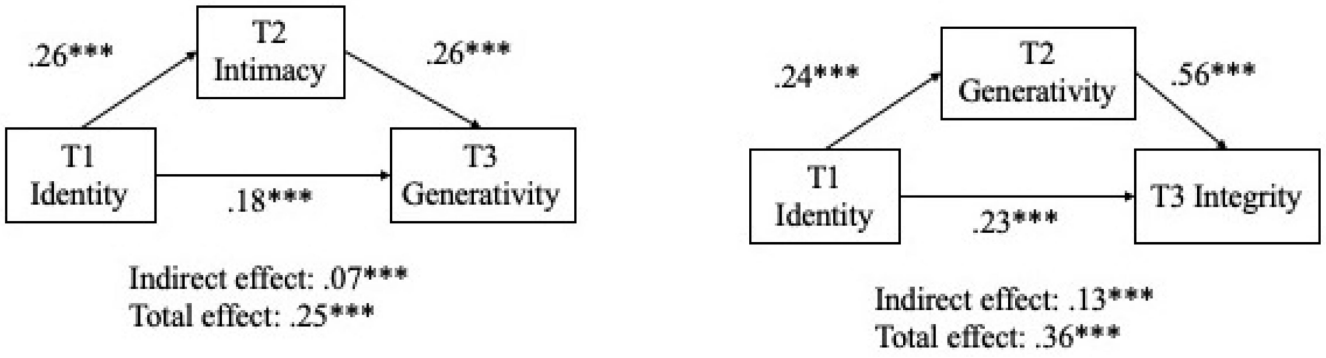

Figure 3. Mediation Models for Intervening Stages

Note. Unstandardized coefficients are reported. ***p<.001, **p<.01, *p<.05

Table 1.

Sample size by cohort and wave.

Cohort	Wave 1 (20's)	Wave 2 (30's)	Wave 3 (40's)	Wave 4 (50's)	Wave 5 (60's)
	M_{age} = 20.01, *SD* = .63, range = 17–24 years	**M_{age} = 30.96, *SD* = .63, range = 28–38 years**	**M_{age} = 42.77, *SD* = 1.62, range = 40–58 years**	**M_{age} = 55.69, *SD* = 1.61, range = 52–60 years**	**M_{age} = 67.68, *SD* = 1.32, range = 64–71 years**
1	1965–1968 N = 348	1976–1977 N = 153	1988–1989 N = 99	2000–2002 N = 182	2012–2014 N = 163
2	1976–1977 N = 299	1988–1989 N = 83	2000–2002 N = 137	2012–2014 N = 114	-
3	1988–1989 N = 292	2000–2002 N = 114	2012–2014 N = 102	-	-
4	2000–2002 N = 285	2012–2014 N = 101	-	-	-

Note. M_{age} = mean age, SD = standard deviation. The discrepancy in sample sizes between the 1988–1989 and the 2000–2002 assessments is a result of major efforts to re-engage participants from Cohorts 1 and 2 in the early 2000's, facilitated by the emergence of the internet. Further detail on these efforts is reported in Whitbourne et al. (2009). Although the age range for Wave 3 includes participants with ages 40–58, only two participants had an age reported outside of the intended 40–49 age range. One participants' age is reported as 55, another's is 58. All other remaining participants' ages fell within the range of 40–48. Sensitivity analyses excluding these two participants are reported in Supplemental Table S8, and had no substantive differences from the main results.

Table 2.

Descriptive Statistics and Correlations among Variables

Variable	1	2	3	4	5	Mean (SD)	Observed Range
1. Cohort	-						
2. Sex	−.01	-					
3. BL Identity	−.04	.07*	-			7.30 (6.83)	−24, 30
4. BL Intimacy	<.01	.13***	.56***	-		11.49 (7.50)	−20, 29
5. BL Generativity	−.03	.15***	.45***	.55***	-	7.24 (5.66)	−10, 23
6. BL Integrity	−.17***	.11***	.56***	.41***	.35***	3.59 (8.31)	−22, 24

Note.

* $p < .05$,

** $p < .01$,

*** $p < .001$.

BL = Baseline. SD = standard deviation. Correlations among Wave 2–5 psychosocial stage variables are available in supplemental material. Scale scores for Identity, Intimacy, Generativity, and Integrity could theoretically range from −30 to 30.

Table 3.

Fit Indices for Latent Growth Curve Models.

Model	AIC	BIC	Chi-square	RMSEA	CFI	SRMR
Intimacy						
Unconditional intercept-only	16085	16121	$\chi^2 = 230.09$, $df = 13$, $p < .001$	.12	.56	.19
Unconditional linear	15887	15938	$\chi^2 = 26.44$, $df = 10$, $p = .003$	.04	.97	.08
Unconditional basis	15886	15952	$\chi^2 = 19.22$, $df = 7$, $p = .008$	.04	.98	.08
Unconditional quadratic	15878	15949	$\chi^2 = 9.52$, $df = 6$, $p = .23$	.02	.99	.03
Conditional linear	15372	15454	$\chi^2 = 80.05$, $df = 19$, $p < .001$	.05	.94	.07
Generativity						
Unconditional intercept-only	12734	12769	$\chi^2 = 95.48$, $df = 13$, $p < .001$	.08	.74	.13
Unconditional linear	12661	12711	$\chi^2 = 16.54$, $df = 10$, $p = .09$	.02	.98	.04
Unconditional basis	12656	12721	$\chi^2 = 5.93$, $df = 7$, $p = .55$	<.001	1.00	.09
Unconditional quadratic	12665	12735	$\chi^2 = 12.85$, $df = 6$, $p = .05$	.03	.98	.04
Conditional linear	12324	12406	$\chi^2 = 32.60$, $df = 19$, $p = .03$	.02	.96	.04
Integrity						
Unconditional intercept-only	14008	14043	$\chi^2 = 132.12$, $df = 13$, $p < .001$	.09	.72	.16
Unconditional linear	13970	14020	$\chi^2 = 88.59$, $df = 10$, $p < .001$	.08	.81	.11
Unconditional basis	13915	13975	$\chi^2 = 29.59$, $df = 8$, $p < .001$	.05	.95	.08
Unconditional quadratic	13939	14004	$\chi^2 = 51.35$, $df = 7$, $p < .001$	.08	.89	.07
Conditional basis	13469	13561	$\chi^2 = 108.23$, $df = 17$, $p < .001$	.07	.78	.11

Note. AIC = Akaike information criterion. BIC = Bayesian information criterion. RMSEA = root mean square error of approximation. CFI = comparative fit index. SRMR = root mean square residual.

Table 4.

Latent Growth Curve Models Predicting Psychosocial Outcomes on Emerging Adulthood Identity

	Intimacy		Generativity		Integrity	
	Coefficient	**SE**	**Coefficient**	**SE**	**Coefficient**	**SE**
Fixed Effects						
For intercept						
Intercept	10.49***	.44	7.49***	.53	-	-
EA Identity	.56***	.03	.34***	.02	-	-
Cohort	.12	.15	−.24	.17	-	-
Female	1.61***	.35	1.25***	.32	-	-
For linear slope						
Intercept	1.06***	.25	.28	.25	-	-
EA Identity	−.10***	.02	−.03*	.01	-	-
Cohort	.15	.13	.17	.12	-	-
Female	.13	.19	.08	.18	-	-
For basis intercept						
Intercept	-	-	-	-	4.54***	.92
EA Identity	-	-	-	-	.62***	.05
Cohort	-	-	-	-	−.60*	.28
Female	-	-	-	-	1.23**	.45
For basis shape factor						
Intercept	-	-	-	-	5.30*	2.38
EA Identity	-	-	-	-	−.38**	.12
Cohort	-	-	-	-	−1.15	.64
Female	-	-	-	-	−.44	1.13
Basis factor loadings						
Wave 2	-	-	-	-	.49***	.08
Wave 3	-	-	-	-	.37	.24
Wave 4	-	-	-	-	.57***	.12
Random Effects						
Intercept	15.89***	2.51	12.23***	2.23	-	-
Slope	1.18*	.50	1.74**	.53	-	-
Basis intercept	-	-	-	-	22.29	13.63
Basis slope	-	-	-	-	62.01	53.87

Note. All coefficients are unstandardized.

*** $p < .001$;

** $p < .01$;

* $p < .05$.

EA = Emerging adulthood. Fixed effects represent the average trajectory across all participants, and random effects represent the variance of individual participants' trajectories around the average trajectory.