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A person-centered approach to resilience and vulnerability in emerging adulthood: Predictions from parenting and personality in adolescence

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Abstract

In this person-centered study, we identified different profiles of resilience and vulnerability in emerging adulthood in response to previously experienced stressful life events. Additionally, we examined whether mothers' and fathers' parenting and participants' personality traits in adolescence predicted these profiles. Data from the Flemish Study on Parenting, Personality, and Development ($N = 346$ families) were used. At T1 (2004; $M_{age} = 11$ years), T2 (2007), and T3 (2009), mothers and fathers reported on their parenting and their child's personality. At T4 (2018; $M_{age} = 25$ years), emerging adults retrospectively self-reported the occurrence and impact of 22 stressful life events and rated current behavior problems and subjective well-being. Latent profile analysis revealed three profiles: Competent (71%; low stress, low behavior problems, high subjective well-being), Vulnerable (21%; average stress, high behavior problems, low subjective well-being), and Resilient (9%; high stress, average behavior problems, average subjective well-being). Emerging adults in the Resilient profile had experienced higher levels of maternal positive parenting and were less emotionally stable and conscientious than those in the Competent profile. Furthermore, emerging adults in the Vulnerable profile were less emotionally stable than their peers in the Competent profile. These findings reveal new insights into the heterogeneous patterns of emerging adults' adaptation following stressful life events.

Keywords: emerging adulthood; parenting; personality traits; person-centered approach; resilience

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The experience of stressful life events in childhood can have long-term adverse effects. Stressful life events are described as discrete experiences, such as the death of a family member, parental separation, or a romantic break up, that are likely to disrupt an individual's usual activities and cause readjustment (Carlson, 2014; Holmes & Rahe, 1967). Children exposed to stressful life events are at increased risk for negative developmental outcomes including a variety of emotional and behavioral problems as they enter adolescence and adulthood (e.g., Burt & Masten, 2009; Cohen et al., 2019; LeMoult et al., 2020; Luecken & Gress, 2010; March-Llanes et al., 2017). Yet, many children growing up in conditions of stress do not experience such negative outcomes and show positive development. These individuals are said to show "resilience" to stress (Masten, 2011). Resilience reflects the dynamic process of positive adaptation despite exposure to risk or adversity. Hence, two components should be present to identify resilience in young people: exposure to *risk* that increases the probability of negative outcomes and relatively *positive adaptation* that is better than expected, given exposure to the risk being studied (Infurna & Luthar, 2018; Masten, 2018; Rutter, 2012).

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Theoretical frameworks of resilience suggest that both contextual and individual factors may contribute to the relative positive adaptation in the context of stress (e.g., Infurna & Luthar, 2018; Masten & Cicchetti, 2016). Resilience theorists emphasize the need to identify specific contextual and individual resources that are potentially modifiable in interventions. One contextual factor that is malleable and that has been considered central to children's resilience for many decades is parenting (Masten & Palmer, 2019; Masten, 2018). From the start of research on resilience, researchers also recognized the potential importance of children's personality as an individual resource factor (e.g., Garmezy, 1985; Masten & Tellegen, 2012; Werner & Smith, 1982). Given increasing evidence indicating that personality traits can change both naturally and through intervention (e.g., Borghuis et al., 2017; Roberts et al., 2017; Shiner et al., 2021), it is particularly worthwhile to study what specific personality traits are important for building resilience.

Although previous work examined the contributions of parenting and personality characteristics to resilience in childhood and adolescence (e.g., Fritz et al., 2018; Masten, 2018; Zolkoski & Bullock, 2012), less is known about how these resource factors are related to resilience in the transition to adulthood, characterized as "emerging adulthood" (Arnett, 2000, 2014). Identifying antecedents of resilience in emerging adulthood is essential, as this developmental period is marked by unique challenges and strengths emerging from normative life transitions (Arnett, 2000, 2014;

Masten et al., 2006). For example, emerging adults begin to establish romantic relationships, engage in the workforce, and explore their identity. The increase in freedom and autonomous functioning during this transition period opens a window of opportunity for positive change, but can also result in adaptational problems, such as mental health problems (Burt & Paysnick, 2012; O'Connor et al., 2016). Therefore, it is important to identify resource factors that promote positive development in emerging adulthood, especially for those at risk for negative outcomes.

Even though research on the antecedents of resilience in the period of emerging adulthood has accelerated in the past decades (e.g., Chen et al., 2020; Donnellan et al., 2009; Ehrlich et al., 2021; Farrell et al., 2017; Feldman et al., 2018), many questions remain (Leung et al., 2020; O'Connor et al., 2016). First, previous studies mostly focused on either internal, individual assets (e.g., personality traits) or external, contextual resources (e.g., social support) as potential protective factors. Yet, to get a more comprehensive picture of the pathways to adulthood resilience, it is essential to consider both individual and contextual factors, as both can facilitate resilience (Fritz et al., 2018; Zolkoski & Bullock, 2012). Second, research examining family level protective factors such as parenting often only includes mothers' parenting, whereas many children in Western societies are raised by both a father and a mother (United Nations, 2019). Third, there is limited information on individual patterns of resilience and vulnerability in the context of stress. Originally, variable-centered studies have clarified relations between resource factors and specific domains of adjustment in the context of stress, overlooking individual, naturally occurring patterns of adjustment that can be elucidated by person-centered approaches (Masten, 2001). An advantage of a person-centered approach is that it enables the examination of resilience as a multidimensional construct within the individual, rather than through associations between variables within a given sample. This allows researchers to identify subgroups of resilient individuals and to scrutinize what characterizes these particular subgroups (Miller-Lewis et al., 2013). The available person-centered studies on resilience in emerging adulthood used a priori classifications based on cutoff scores on adversity and adaptation to create subgroups of individuals (Masten et al., 1999, 2004; Shiner & Masten, 2012). Applying these a priori classifications does not allow for identification of unobserved subgroups who may present with heterogeneous patterns of adaptation across multiple developmental domains. Latent profile analysis (LPA) enables the identification of such hidden profiles, and, moreover, can handle missing data and offers model fit statistics (Lanza & Cooper, 2016). Hence, person-centered approaches such as LPA provide a useful statistical method for addressing the claim that, in studying resilience, adaptation in one domain of functioning only gains meaning in relation to the individual's functioning in other domains (Infurna & Luthar, 2018; Russotti et al., 2020).

In the current person-centered study, we aimed to identify profiles of resilience in emerging adulthood and to examine how these profiles are related to multiple parenting behaviors and personality traits assessed in adolescence. This study may shed more light on how emerging adults adapt after stress exposure and why some emerging adults show more resilience than others, which is beneficial for theory building on the etiology of resilience. In addition, examining the protective role of relatively malleable factors as parenting behaviors and personality traits can provide valuable targets for intervention strategies aimed at promoting resilience in the transition to adulthood.

Parenting and resilience in emerging adulthood

At the contextual level, positive and effective parenting is among the most robust predictors of resilient adaptation in the face of stress (Masten & Palmer, 2019; Masten, 2018). Supportive parent-child relationships, in addition to close relationships with peers, may be an important resource during difficult times in adolescence and emerging adulthood (Burt & Paysnick, 2012). By providing warmth, support, and a safe environment to explore emotions, parents may facilitate healthy communication and coping in adolescents, and subsequently support emotional well-being in adulthood (Dumas et al., 2009).

Positive parenting and other potential resources have been differentiated into two broad categories: *Promotive* factors that generate positive effects independent of the level of risk, and *protective* factors that only benefit children with high levels of risk, mitigating the effects of risk in an interactive fashion (Masten & Tellegen, 2012; Sameroff, 2000). With respect to the beneficial effects of parenting, empirical findings demonstrate that higher levels of positive parenting (e.g., warmth, support, involvement) and lower levels of negative parenting (e.g., hostility, psychological control, coercive control) during adolescence were generally related to better adjustment in adulthood, including lower levels of anxiety, depression (Yap et al., 2014) and risk-taking behavior (Aquilino & Supple, 2001), and higher academic attainment (Loeb et al., 2021) and subjective well-being (Aquilino & Supple, 2001). Likewise, in a person-centered study by Masten et al. (2004), emerging adults characterized by resilience (high stress, good adaptation) and by competence (low stress, good adaptation) had received higher levels of positive parenting (i.e., warmth, closeness, structure) in childhood than those characterized by maladjustment (high stress, poor adaptation). In the same longitudinal cohort, it was found that individuals that showed consistently high adaptation from adolescence to adulthood were distinguished by higher levels of childhood positive parenting (Obradović et al., 2006). These findings suggest that effective parenting in childhood and adolescence can promote positive adaptation in emerging adulthood, regardless of the level of stress exposure.

In addition, parenting can act as a protective factor by buffering the negative impact of adversity on developmental outcomes in emerging adulthood. For example, more nurturant-involved parenting and less angry or hostile parenting in adolescence weakened the link between economic stress and less competent functioning in emerging adulthood (Conger & Conger, 2002; Masarik & Conger, 2017). Likewise, parental positivity and positive parenting behaviors fostered resilience among emerging adults in times of economic stress (Neppl et al., 2015). Positive parenting in childhood has also been associated with increased resilience in adulthood following exposure to childhood maltreatment, protecting these at-risk children from mental health problems (Collishaw et al., 2007; Lind et al., 2018). Such findings imply that positive, supportive parenting may also act as a protective factor for emerging adults exposed to high levels of stress or adversity.

Surprisingly, research on the role of parenting in resilience often solely examined parenting behaviors of mothers (Cabrera et al., 2021). When fathers were included in research, mothers' and fathers' parenting behaviors were either not analyzed independently (e.g., Collishaw et al., 2007; Lind et al., 2018) or not included simultaneously in one model (e.g., Conger & Conger, 2002; with the exception of Neppl et al., 2015). Yet, evidence clearly indicates that fathers are also important to children's problem behavior and positive outcomes (e.g., Day & Padilla-Walker,

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2009; Salgado et al., 2021) and that fathers' positive parenting complements the effects of mothers' parenting (e.g., Cabrera et al., 2021; Lansford et al., 2014). Given the independent contributions of mothers and fathers to their children's development, it is essential to consider both parents when analyzing links between parenting and positive adaptation in emerging adulthood.

Personality and resilience in emerging adulthood

At the individual level, children's personality is one of the most well-studied child characteristics that can promote positive outcomes and resilience. Personality refers to an individual's typical patterns of thinking, feeling, and behaving and can be conceptualized according to the comprehensive Big Five framework (Caspi & Shiner, 2006; McCrae & Costa, 1999). Specifically, the Big Five personality traits are extraversion (i.e., sociability, expressivity), agreeableness (i.e., empathy, consideration of other's needs), conscientiousness (i.e., impulse control, planfulness), emotional stability (vs. neuroticism, i.e., low negative emotionality and high self-esteem), and openness to experience (i.e., intellect, autonomy, imagination).

Empirical findings indicate that children's personality traits can directly shape positive development. For example, higher levels of Big Five personality traits in childhood and adolescence have been related to positive outcomes in adulthood, such as higher subjective well-being (Anglim et al., 2020; Gale et al., 2013), self-efficacy (Deutz et al., 2021), and academic and social competence (Shiner & Masten, 2012) as well as lower internalizing and externalizing problems (Van Eldik et al., 2020). In person-centered analyses (Shiner & Masten, 2012), emerging adults characterized by resilience (high stress, good adaptation) showed higher childhood conscientiousness, agreeableness, openness, and emotional stability than those characterized by maladjustment (high stress, poor adaptation). Yet, personality traits did not differ between the Resilient and the Competent group (low stress, good adaptation), suggesting that personality might be a promotive factor, with positive effects on development independent of the level of adversity.

Additionally, children's personality may counteract the impact of adversity on developmental outcomes. That is, personality traits may influence the reactions and support that children evoke from others, their interpretation of negative life experiences, and their ability to cope with stress (Connor-Smith & Flachsbart, 2007; Hughes et al., 2020; Shiner et al., 2021). Although research on personality and resilience in emerging adulthood is scarce, the available studies showed that higher levels of childhood conscientiousness and agreeableness buffered the link between childhood adversity and poor adaptation in emerging adulthood (Carlson et al., 2015; Masten et al., 2006; Shiner & Masten, 2012). Hence, children's personality traits may function as protective factors in the face of stress, contributing to resilience over time.

The current study

In the current study, we aimed to (1) identify different profiles of resilience and vulnerability in response to stressful life events among emerging adults; and (2) examine to what extent the identified profiles were related to contextual factors (i.e., mothers' and fathers' positive and negative parenting) and individual factors (i.e., personality) assessed in adolescence. We extended research on resilience in several ways. First, in contrast to most studies that relied on cross-sectional or short-term longitudinal designs to investigate positive adaptation in emerging adulthood, we employed a long-term longitudinal, prospective design to identify pathways to resilience over time. Specifically, we examined whether parenting and personality in adolescence (M_{ages} = 11–16 years) predicted profiles of adaptation in emerging adulthood (M_{age} = 25 years). More insight into longitudinal predictors of positive adaptation in emerging adulthood can offer valuable insights for intervention strategies to promote positive development and resilience. Second, we examined the role of both mothers' and fathers' parenting as resource factors for resilience to better match the reality of most children's lives, expanding previous work in which often only mothers were included. Third, we used a multi-informant design, including parent-report of adolescents' personality traits and parenting behaviors in combination with emerging adults' self-report of stress and (mal)adaptation, to avoid shared rater bias. Fourth, we focused on a wide range of outcomes, since broad and multifaceted measures better approximate the general notion of resilience than do narrower, unidimensional outcomes (Infurna & Luthar, 2018; Klika & Herrenkohl, 2013) and resilience may depend on the outcome studied (Fergus & Zimmerman, 2005; Zolkoski & Bullock, 2012). In the current study, we examined both adaptive and maladaptive outcomes in emerging adulthood, in contrast to previous person-centered resilience studies that included either maladaptive (Miller-Lewis et al., 2013) or adaptive outcomes (Masten et al., 1999, 2004; Shiner & Masten, 2012) or a single indicator of global health (Moreno et al., 2016). More specifically, we examined subjective well-being (i.e., life satisfaction and positive affect) as an indicator of emerging adults' adaptation. This fits previous literature in which positive adaptation in emerging adulthood is described as positive social and psychological adjustment, with life satisfaction as one of its key dimensions (Hawkins et al., 2009; O'Connor et al., 2016). The transition to adulthood is characterized by potential for both positive development and problem outcomes such as risk behaviors and mental health problems (Arnett et al., 2014; Smart & Sanson, 2005). Consequently, researchers on emerging adulthood emphasize that it is important to study adaptive outcomes in combination with maladaptive outcomes, such as depression, alcohol abuse, or delinquent behavior (O'Connor et al., 2012, 2016; Oesterle et al., 2008). Therefore, we additionally examined multiple types of behavior problems (i.e., anxious/depressed behavior, withdrawn behavior, somatic complaints, aggressive behavior, rule-breaking behavior, and intrusive behavior) as indicators of maladaptation. As evidence suggests that adaptation and maladaptation in emerging adulthood are separate but correlated constructs (e.g., O'Connor et al., 2012, 2016), it is essential to consider both to obtain a more complete picture of emerging adults' functioning.

With respect to aim 1, we expected to identify multiple profiles of resilience and vulnerability among emerging adults based on indicators of stressful life events, behavior problems, and subjective well-being. More specifically, in line with previous person-centered studies (Masten et al., 1999, 2004; Miller-Lewis et al., 2013; Moreno et al., 2016; Shiner & Masten, 2012) we hypothesized that there would be at least a profile characterized by resilience (high stress, good adaptation), a profile characterized by maladjustment (high stress, poor adaptation), and a profile characterized by competence (low stress, good adaptation). However, no hypotheses regarding the exact number or type of profiles were posited, given that previous studies have not established the profiles using LPA. Regarding aim 2, we hypothesized that emerging adults in profiles characterized by resilience (high stress, good adaptation) and by competence (low stress, good adaptation) experienced higher levels of positive parenting and lower levels of negative parenting by

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mothers and fathers in adolescence than emerging adults in a profile characterized by maladjustment (high stress, poor adaptation). Concerning personality traits, we hypothesized that emerging adults in profiles characterized by resilience (high stress, good adaptation) and by competence (low stress, good adaptation) would show higher extraversion, conscientiousness, agreeableness, and emotional stability in adolescence than emerging adults in a profile characterized by maladjustment (high stress, poor adaptation). Group differences in openness were exploratively examined, due to inconsistent findings in previous work on the association between openness and (mal)adaptation (e.g., Anglim et al., 2020; Kotov et al., 2010; Malouff et al., 2005).

Method

Design and study population

Our study hypotheses, design, and analysis plan were preregistered on the Open Science Framework; see https://osf.io/v38hr. The current study is part of the ongoing longitudinal Flemish Study on Parenting, Personality, and Development, which started in 1999 and consists of nine waves of data collection so far. The recruitment and sample characteristics of the study have been described in detail elsewhere (Prinzie et al., 2003). A proportional stratified sample of elementary-school-aged children and their families in Belgium was randomly selected. Parents of 682 (85.3% response rate) children agreed to participate in the study. Informed consent was obtained from all individual participants and the board of the Katholieke Universiteit Leuven approved the study.

We used data from the fourth (T1; 2004), fifth (T2; 2007), sixth (T3; 2009) and ninth (T4; 2018) measurement waves, as these waves comprised the period of adolescence ($M_{age\ T1} = 10.82$ years; $M_{age\ T2} = 13.82$ years; $M_{age\ T3} = 15.82$ years) and emerging adulthood ($M_{age\ T4} = 24.82$ years). A total of 561 families still participated during adolescence, that is, at T1, T2, and/or T3, and hence were eligible for the current study (82.3% retention rate). Families were included in the identification of resilience and vulnerability profiles (study aim 1) if data were available on at least one profile indicator of stressful life events, behavior problems, or subjective well-being in emerging adulthood. Of the 561 families that participated in adolescence, 346 families had available information on at least one profile indicator in emerging adulthood ($n = 215$, 38.3% lost to follow-up). For the analysis of profile differences regarding parenting and personality (study aim 2), we included families with data on at least one profile indicator and data on at least half of the parenting (i.e., two out of four) and personality (i.e., three out of five) constructs (see Measures). For the same 346 families data were available on at least half of the parenting and personality constructs. Thus, these 346 families comprised the final sample.

Families in the final sample ($n = 346$) did not differ from families that were not included ($n = 215$) regarding the age of children (t (558) = −0.75, $p = .455$), the age of mothers (t (537) = −0.57, $p = .567$) and fathers (t (524) = 0.54, $p = .589$), the education level of mothers (χ^2 (3) = 3.33, $p = .343$) and fathers (χ^2 (3) = 6.77, $p = .080$), and internalizing and externalizing problems of children at ages 6, 7 and 8 years (t (530–539) = −0.004 to 1.38, $ps = .169$–$.997$). However, the final sample contained relatively more girls compared to the excluded sample (χ^2 (1) = 12.53, $p < .001$).

Characteristics of the study sample are presented in Table 1. About 57% of the children were girls. All parents were native Belgians and most were married or lived together (85%). The majority of the mothers (64%) and fathers (57%) had pursued either non-university higher education (vocational or professional degrees, comparable to US "college") or university education (bachelor's or master's degrees).

Table 1. Child and family characteristics of study sample ($N = 346$)

Child characteristics	*M (SD)*, range or %	
Sex		
Girls	57.2%	
Boys	42.8%	
Age at T1, years	10.82 (1.15), 8.92–13.25	
Age at T2, years	13.82 (1.15), 11.92–16.25	
Age at T3, years	15.82 (1.15), 13.92–18.25	
Age at T4, years	24.82 (1.15), 22.92–27.25	
Family characteristics	**Mothers**	**Fathers**
Age at T1, years	40.06 (3.47), 30.08–50.67	41.91 (4.03), 31.67–63.67
Education level		
Primary	0.6%	2.9%
Secondary	34.4%	38.4%
Non-university higher[a]	50.3%	36.4%
University bachelor/master	13.3%	20.2%
Missing	1.4%	2.0%
Children in family	2.5 (0.89), 1–5	
Marital status		
Married/living together	84.7%	
Single/not living together	9.9%	
Missing	5.5%	

[a]Non-university higher education = "college."

Measures

Indicators of resilience and vulnerability profiles: emerging adulthood (T4)

Stressful life events. At T4, emerging adults retrospectively reported on the lifetime occurrence of stressful events (e.g., illness of a loved one, parental separation, being bullied, financial difficulties). We constructed a stressful life event scale (22 items; see Table S1 in Supplementary Material for an overview of items), as we needed a relatively short questionnaire that covers the entire lifetime and measures the perceived stress caused by the events, given that the impact of life events on psychological outcomes may depend on perceived event characteristics (Luhmann et al., 2021). We therefore selected concrete events that are typically perceived as negative or undesirable from established scales that consider lifetime stressful events and show good psychometric properties, that is, the Questionnaire of Stressful Life Events (Butjosa et al., 2017), the Stressful Life Events Screening Questionnaire (Goodman et al., 1998), and the Social Readjustment Rating Scale (Holmes & Rahe, 1967; Scully et al., 2000). Two different stress scores were created to assess both the objective number of life events experienced and the subjective impact of events. First, participants were asked to indicate whether a stressful life event had occurred (0 = *no*, 1 = *yes*) and at what age this happened. We computed a

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total score by summing the number of life events that occurred before 16 years of age, that is, no later than the assessment of our resource factors at age 11, 14, and 16 years. Higher scores represented exposure to more stressful life events (theoretical range: 0–22). Second, for each life event that was experienced, participants retrospectively rated the perceived stress ("How much stress did this event cause you?" from 0 = *no stress* to 10 = *a lot of stress*). A total stress score was computed by summing the amount of stress caused by the life events that occurred before 16 years of age. Higher scores indicated more perceived stress (theoretical range: 0–220).

Behavior problems. Current behavior problems were assessed by emerging adults' ratings on the Adult Self-Report (Achenbach & Rescorla, 2003). The six syndrome scales underlying the internalizing and externalizing broadband scales were used: anxious/depressed behavior (17 items; α = .92), withdrawn behavior (9 items; α = .78), somatic complaints (12 items; α = .80), aggressive behavior (15 items; α = .78), rule-breaking behavior (14 items; α = .71), and intrusive behavior (6 items; α = .72). All items were answered on a 3-point scale (0 = *not true*, 1 = *somewhat or sometimes true,* 2 = *very true or often true*). We computed six problem scores by summing the relevant item scores, with higher scores indicating more problems.

Subjective well-being. Emerging adults reported on their life satisfaction using the Satisfaction With Life Scale (Arrindell et al., 1991; Diener et al., 1985) and on their positive affect using the positive affect subscale of the Positive Affect and Negative Affect Schedule (Peeters et al., 1996; Watson et al., 1988). The five items of the Satisfaction With Life Scale (α = .84) were answered on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). A total score was computed by summing all item scores, with higher scores indicating higher life satisfaction. Concerning the positive affect subscale of the Positive Affect and Negative Affect Schedule (α = .89), emerging adults rated the extent to which they had experienced ten positive mood states during the past week on a 5-point scale (1 = *very slightly or not at all* to 5 = *extremely*). We computed a positive affect score by summing all item scores, with higher scores indicating higher levels of positive affect.

Resource factors: adolescence (T1, T2, and T3)

Positive parenting. Mothers and fathers reported on their positive parenting behaviors using the warmth/involvement (11 items) and reasoning/induction (6 items) subscales of the Parenting Practices Questionnaire (Robinson et al., 1995; Schalenbourg & Verschueren, 2003). Answers on the Parenting Practices Questionnaire are given on a 5-point scale (1 = *never* to 5 = *always*). We computed three scores for warmth/involvement at T1, T2, and T3 ($\alpha_{mothers}$ = .83–.87; $\alpha_{fathers}$ = .85–.86) and three scores for reasoning/induction at T1, T2, and T3 ($\alpha_{mothers}$ = .82–.91; $\alpha_{fathers}$ = .85–.89) for mothers and fathers separately by summing the relevant item scores. Higher scores represented more positive parenting.

Negative parenting. Likewise, mothers and fathers reported on their overreactive parenting as a representation of negative parenting behavior, using the Parenting Scale (Arnold et al., 1993; Prinzie et al., 2007). The nine items tapping overreactivity describe discipline encounters (e.g., "When my child misbehaves . . . ") followed by two options that act as opposite anchor points for a 7-point scale, on which 1 indicates a high probability of using a more positive discipline strategy (e.g., "I speak to my child calmly") and 7 indicates a high probability of using a more negative, that is, overreactive, discipline strategy ("I raise my voice or yell"). We computed three overreactivity scores at T1, T2, and T3 ($\alpha_{mothers}$ = .77–.79; $\alpha_{fathers}$ = .75–.81) for mothers and fathers separately by summing the item scores. Higher scores represented more overreactive parenting.

Personality. Mothers and fathers reported on their adolescent's Big Five personality traits using the Hierarchical Personality Inventory for Children (H*i*PIC; Mervielde & De Fruyt, 2002). The H*i*PIC consists of 144 items that are answered on a 5-point Likert scale (1 = *almost not characteristic* to 5 = *very characteristic*). The five personality traits of the H*i*PIC are: Extraversion (32 items), Benevolence (similar to Agreeableness; 40 items), Conscientiousness (32 items), Emotional stability (16 items), and Imagination (similar to Openness; 24 items). For each personality trait, we computed three scores for mothers at T1, T2, and T3 (α range = .90–.95) and three scores for fathers at T1, T2, and T3 (α range = .89–.95) by summing the relevant item scores.

We estimated latent constructs to form stable indicators of the levels of positive parenting, negative parenting, and personality traits across adolescence. Positive parenting constructs for mothers and fathers were modeled, using warmth/involvement and reasoning/induction scores at T1, T2, and T3 as indicators. Likewise, negative parenting constructs for mothers and fathers were modeled with overreactivity scores at T1, T2, and T3 as indicators. Additionally, we modeled five personality constructs (i.e., extraversion, agreeableness, conscientiousness, emotional stability, and openness), using mothers' and fathers' ratings of the corresponding personality traits at T1, T2, and T3 as indicators. Missing data were handled by full information maximum likelihood (FIML) estimation. Confirmatory factor analyses indicated good model fit for all latent constructs, range χ^2 (1–3) = 0.07–3.62, p = .306–.787; CFI = .999–1.00, TLI = .997–1.01, RMSEA = .00–.02, SRMR = .00–.02 (Byrne, 2012). Model fit of the latent constructs of negative parenting could not be evaluated, since these were saturated models.

Covariates

As prior research indicates that child age, child sex, and parental education may be associated with the experience of stressful life events as well as with behavior problems and subjective well-being (e.g., Hatch & Dohrenwend, 2007; Lucas & Gohm, 2000; World Health Organization, 2016) we considered the inclusion of these demographic characteristics as covariates in the analyses. Parents reported on their highest level of educational attainment (1 = *primary school*, 2 = *secondary school*, 3 = *non-university higher education* ("college"), 4 = *university*) in middle childhood ($M_{age\ child}$ = 7.82 years). We used the level of the parent with the highest education level as our measure of family education attainment.

Statistical Analyses

Missing data

The amount of missing data on profile indicators ranged between 0.0% and 26.9% (M = 3.4%) and on parenting and personality constructs between 0.0% and 2.9% (M = 0.7%) in the final sample (N = 346). In nearly all families (n = 335, 96.8%) both mother and father reports on parenting behaviors and personality traits were present. For a small number of families, only mother reports

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($n = 10$, 2.9%) or only father reports ($n = 1$, 0.3%) were available. We tested patterns in missing data by performing Little's MCAR test (Little, 1988). Since the data were completely missing at random (χ^2 (131) = 141.13, $p = .257$), multiple imputation was performed in Mplus to handle missing data after the parenting and personality constructs were created. We employed multiple imputation instead of FIML as was originally preregistered, since FIML was not compatible with our statistical analyses (Asparouhov & Muthén, 2021). More specifically, missing data on profile indicators, parenting constructs, and personality constructs were imputed using 10 imputed data sets and 100 iterations. We used information on profile indicators, parenting and personality constructs, and auxiliary variables (i.e., emerging adults' age and sex, and family educational level) as predictors in the multiple imputation model (Asparouhov & Muthén, 2021).

Main analyses

First, we checked the data for the assumption of multivariate normality and multivariate outliers. Second, we calculated descriptive statistics and correlations between the study variables. Third, we performed LPA using the recommended three-step approach (R3STEP command; Asparouhov & Muthén, 2014; Vermunt, 2010) in Mplus 8.5 (Muthén & Muthén, 1998–2017) to identify underlying profiles of adaptation in emerging adulthood and to examine whether the profiles differed on maternal and paternal positive and negative parenting and personality traits. In Step 1 of the three-step approach, the latent profiles were evaluated. We used the indicators of stress (i.e., number of life events, stress caused by life events), behavior problems (i.e., anxious/depressed behavior, withdrawn behavior, somatic complaints, aggressive behavior, rule-breaking behavior, and intrusive behavior), and subjective well-being (i.e., life satisfaction and positive affect) as profile indicators. Standardized values (z-scores) of the profile indicators were used, as this increases interpretation of the latent profiles and may help model convergence (Spurk et al., 2020). In Step 2, the individuals were assigned to their most likely profile using the posterior profile probabilities. In Step 3, associations between external variables (i.e., positive and negative parenting and personality traits) and the profiles were examined by performing multinomial logistic regression (MLR) analyses. This method accounted for the average uncertainty in profile assignment, by using the estimated average classification errors for each profile (Asparouhov & Muthén, 2014; Vermunt, 2010). We tested two MLR models with profile membership as outcome variable, including the four parenting behaviors (Model 1) and the five personality traits (Model 2) as predictors. To test our hypotheses, we used a profile characterized by resilience as the reference group, so that this profile was compared against the other identified profiles. If the hypothesized profiles characterized by resilience, maladjustment, or competence were not identified or if profiles characterized by other patterns were identified, we would exploratively test differences in parenting behaviors and personality traits by comparing all identified profiles to each other. Additionally, we computed the percentages of behavior problems in the borderline (93^{rd}–97^{th} percentiles) and clinical (>97^{th} percentile) range per profile, based on the norms for the Adult Self Report problem scales (Achenbach & Rescorla, 2015; not preregistered).

A one-profile model was evaluated first. Subsequently, we increased the number of profiles one by one, examining whether the addition of each profile resulted in statistically and conceptually superior solutions. Relative model fit was assessed by the Akaike information criterion (AIC; Akaike, 1987), the Bayesian information criterion (BIC; Schwarz, 1978), the sample size-adjusted BIC (SSABIC; Sclove, 1987), and entropy. The lower the values of the AIC, BIC, and SSABIC, the better the model fit (Tein et al., 2013). Entropy indicates how well a model categorizes individuals into profiles, with better categorization for values closer to 1 (Celeux & Soromenho, 1996). To compare models, the Vuong-Lo-Mendell-Rubin (VLMR) likelihood ratio test and the adjusted Lo-Mendell-Rubin (adjusted LMR) likelihood ratio test were used with p-values < .05 indicating that the estimated model fits the data better than a model with one profile less (Tein et al., 2013). As recommended by Nylund-Gibson and Choi (2018), we considered statistical fit indices, entropy values, and the substantive interpretability and utility of profiles (Do profiles contain a decent number of individuals, that is, at least 5% of the sample? Do the profiles theoretically make sense?). A common procedure is to accept the model with the largest number of profiles, smallest BIC value, and an adjusted LMR with $p < .05$, in conjunction with the theoretical interpretability and utility of the profiles (Nylund-Gibson & Choi, 2018).

In all analyses, we used significance levels of $p < .05$. As the predictors in the MLR were standardized, odds ratios (OR) could be used as indices of effect size for individual predictors. Effect sizes were defined as very small (OR < 1.68 or inverted > 0.60; equivalent to Cohen's $d < 0.20$), small (1.68 or inverted 0.60; Cohen's $d = 0.20$), medium (OR 3.47 or inverted 0.29, Cohen's $d = 0.50$), or large (OR 6.71 or inverted 0.15, Cohen's $d = 0.80$; Chen et al., 2010; not preregistered). Additionally, McFadden's pseudo R^2 values (ρ^2; McFadden, 1974) were computed to indicate the total variance explained in the profiles by the set of predictors.

We tested whether the proposed covariates should be included in the MLR models. The age and sex of emerging adults and the family educational attainment were included as covariates if these sociodemographic variables were related ($p < .05$) to latent profile membership in the final LPA model (Asparouhov & Muthén, 2014).

Results

Preliminary analyses

Results of assumption checking indicated that the study variables were normally distributed, except for somatic complaints (skewness = 2.2; kurtosis = 6.8). Therefore, a maximum likelihood estimator with robust standard error was used in all analyses (Byrne, 2012, pp. 99–100). No outliers were detected in the data. Means and standard deviations of the variables and correlations between the variables are presented in Table 2. On average, individuals experienced 1.82 out of 22 stressful life events (range: 0–8 events). Most individuals (72.0%) reported to be exposed to 0 (23.1%), 1 (25.2%) or 2 (23.7%) life events. The occurrence per stressful life event ranged from 0.3% ($n = 1$; "Have you ever had alcohol, drug, or addiction problems?") to 29.2% ($n = 101$; "Have you ever been bullied?"). The perceived stress levels caused by a life event ranged from 1 to 10, with average stress levels per event ranging from 1.50 ("Have you ever been suspended or expelled from school?") to 7.00 ("Have you ever had alcohol, drug, or addiction problems?"). Bivariate correlations indicated that exposure to a higher number of stressful life events was weakly correlated with higher levels of behavior problems and lower levels of positive affect and life satisfaction in emerging adulthood. Most of the behavior problems were negatively correlated with levels of positive affect and life satisfaction (small to large effects). The correlations between all behavior problems, between all personality traits, and between

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Table 2. Descriptive statistics and Spearman's correlations for study variables ($N = 346$)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Number life events	–																		
2. Stress life events	.80***	–																	
3. Anxious/depressed	.14**	.17**	–																
4. Withdrawn	.16**	.07	.59***	–															
5. Somatic complaints	.13*	.14*	.59***	.31***	–														
6. Aggressive	.18**	.13*	.69***	.53***	.46***	–													
7. Rule-breaking	.17**	.05	.37***	.40***	.27***	.49***	–												
8. Intrusive	.16**	.14*	.20***	.11*	.19***	.45***	.39***	–											
9. Life satisfaction	−.15**	−.15*	−.54***	−.37***	−.27***	−.36***	−.20***	.00	–										
10. Positive affect	−.14*	−.11	−.45***	−.32***	−.35***	−.24***	−.12*	.07	.49***	–									
11. Positive parenting$_m$	−.01	−.01	.05	−.13*	−.02	.07	−.09	.00	.06	.04	–								
12. Positive parenting$_f$	−.02	−.14*	−.01	−.07	.02	.00	−.06	.00	.06	.11	.31***	–							
13. Negative parenting$_m$	−.04	−.05	.03	.08	−.01	.05	.04	.05	−.05	−.01	−.30***	−.20***	–						
14. Negative parenting$_f$	.03	.05	.01	−.01	−.02	.05	.04	.07	−.04	−.01	−.15**	−.22***	.24***	–					
15. Extraversion	−.09	−.09	−.15**	−.25***	−.05	−.02	.01	.15**	.15**	.18**	.38***	.24***	−.11*	−.08	–				
16. Agreeableness	−.05	.02	−.08	−.17**	−.03	−.19***	−.12*	−.12*	.12*	.05	.37***	.20***	−.45***	−.29***	.20***	–			
17. Conscientiousness	−.15**	−.09	−.05	−.17**	−.11*	−.10	−.24***	−.14*	.11*	.03	.28***	.11*	−.19***	−.12*	.24***	.37***	–		
18. Emotional stability	−.15**	−.17**	−.26***	−.10	−.13*	−.18**	−.03	.02	.13*	.15**	.14*	.14*	−.18**	−.13*	.39***	.25***	.19**	–	
19. Openness	−.05	−.10	−.05	−.06	−.06	−.07	−.11*	−.05	.10	.10	.41***	.30***	−.20***	−.15**	.42***	.22***	.52***	.39***	–
M	1.82	14.49	24.38	11.21	14.44	18.95	15.86	7.88	25.67	34.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SD	1.62	11.01	6.75	2.61	3.00	3.35	2.37	2.04	5.64	6.50	0.66	0.69	0.66	0.65	0.37	0.28	0.37	0.44	0.43

Note. $_m$ = mother; $_f$ = father. Resource factors (variables 11–19) concerned standardized. Latent variables.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 3. Model fit statistics of latent profile analysis

Number of profiles	AIC	BIC	SSABIC	Entropy	VLMR, *p*-value	Adj. LMR, *p*-value	Class sizes, %				
1	9511.33	9588.26	9524.82	–	–	–	100.0				
2	8805.68	8924.92	8826.58	0.92	<.001	<.001	23.7	76.3			
3	**8577.07**	**8738.62**	**8605.38**	**0.93**	**.036**	**.039**	**9.0**	**20.5**	**70.5**		
4	8432.84	8636.70	8468.57	0.94	.331	.336	3.8	9.0	20.2	67.1	
5	8304.62	8550.79	8347.76	0.94	.216	.219	5.8	8.1	10.1	14.5	61.6

Note. The bold three-profile solution represents the most optimal model. AIC = Akaike Information Criterion; BIC = Bayesian information criterion; SSABIC = sample size-adjusted Bayesian information criterion; VLMR = Vuong-Lo-Mendell-Rubin likelihood ratio; Adj. LMR = adjusted Lo-Mendell-Rubin likelihood ratio test.

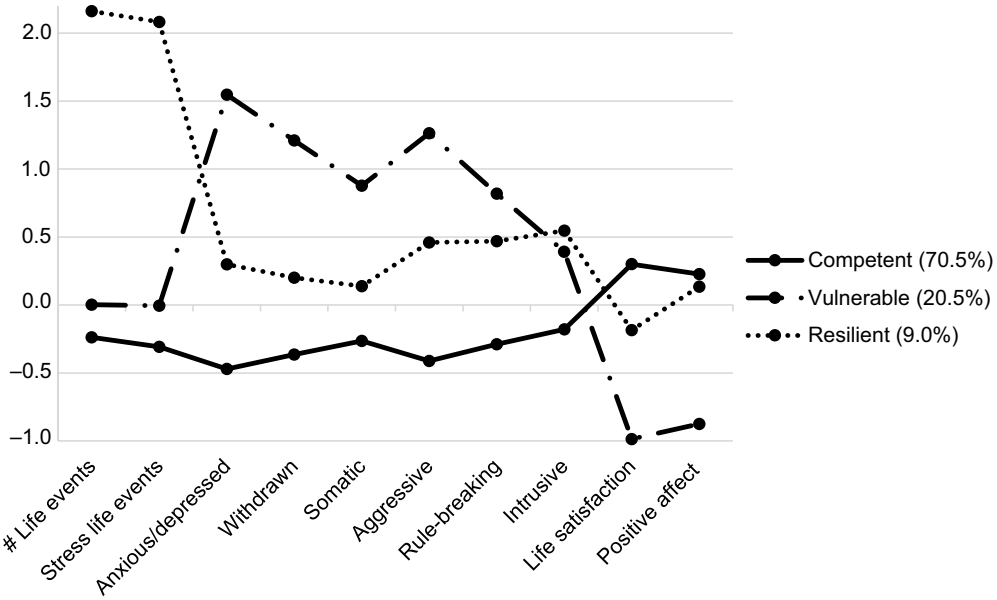

Figure 1. Patterns of Indicator Variables Across the Three Profiles Using Standardized Z-Scores.

all maternal and paternal parenting behaviors were in the expected directions, representing small to large effect sizes. Furthermore, positive parenting behaviors were positively correlated with all personality traits and negative parenting behaviors correlated negatively with most of the personality traits (small to medium effects)

Latent profiles of resilience and vulnerability in emerging adulthood

Fit indices resulting from the latent profile models containing one through five profiles are provided in Table 3. Based on the lower AIC, BIC, and SSABIC values, high entropy value, and VLMR and adjusted LMR tests ($p < .05$), a three-profile model was retained as the best model to fit the data. In addition, the smallest class contained more than 5% of the sample and the profiles were supported by theory. Although the four-profile model displayed lower values on the AIC, BIC and SSABIC statistics, this model did not show a better fit to the data than the three-profile model based on the VLMR and adjusted LMR tests. Moreover, the smallest class size in the four-profile model was too low (<5% of sample). Finally, we tested a five-profile model, however, this model did not show a better fit to the data than the four-profile model and two out of five profiles were theoretically difficult to interpret. As such, the three-profile model was preserved as the statistically and conceptually superior solution.

Description of the three-profile solution

The means and standard deviations of the indicator variables in each profile are provided in Table 4. Additionally, the profiles are graphically represented using standardized scores in Figure 1. Profile 1 comprised 70.5% of the total sample ($n = 244$) and was characterized by emerging adults with lower levels of stress, lower levels of behavior problems, and higher levels of subjective well-being. Following the labeling in previous studies on resilience profiles (e.g., Masten et al., 1999, 2004; Miller-Lewis et al., 2013; Moreno et al., 2016; Shiner & Masten, 2012), this group was labeled "Competent." As shown in Table 5, scores in the (borderline) clinical range on behavior problems for this profile ranged from 0.0% (aggressive behavior) to 1.6% (intrusive behavior). Profile 2 (20.5%, $n = 71$) consisted of emerging adults with average levels of stress, higher levels of behavior problems, and lower levels of subjective well-being. This profile was referred to as "Vulnerable." For emerging adults in this profile, scores in the (borderline) clinical range on behavior problems ranged from 8.4% (intrusive behavior) to 46.5% (anxious/depressed behavior). Profile 3 represented the smallest proportion (9.0%, $n = 31$) of emerging adults in the sample. This group was typified by higher levels of stress, average levels of behavior problems, and average levels of subjective well-being and was labeled "Resilient." In this

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Table 4. Means and standard deviations of indicator and demographic variables per profile

Variable	Competent (70.5%, $n = 244$) *M (SD)* or %	Vulnerable (20.5%, $n = 71$) *M (SD)* or %	Resilient (9.0%, $n = 31$) *M (SD)* or %	Comparison[a]
Indicator variables				
Number life events	1.44 (1.24)	1.82 (1.24)	5.33 (1.24)	C < V < R
Stress life events	11.10 (7.66)	14.40 (7.66)	37.40 (7.66)	C < V < R
Anxious/depressed	4.14 (3.44)	17.75 (5.37)	9.26 (4.01)	C < R < V
Withdrawn	1.23 (1.59)	5.41 (2.94)	2.71 (2.37)	C < R < V
Somatic complaints	1.66 (2.01)	5.01 (4.18)	2.77 (2.99)	C < R < V
Aggressive	2.54 (2.20)	8.08 (3.21)	5.68 (2.30)	C < R < V
Rule-breaking	1.18 (1.70)	3.73 (3.00)	3.13 (2.25)	C < R
Intrusive	1.52 (1.74)	2.63 (2.40)	3.10 (2.55)	C < R
Life satisfaction	27.37 (4.84)	20.11 (4.84)	24.61 (4.84)	V < R < C
Positive affect	35.64 (5.84)	28.48 (5.84)	34.98 (5.84)	V < R
Demographic variables				
Age	24.78 (1.15)	24.90 (1.17)	25.00 (1.07)	
Sex				
Girls	57.8%	54.9%	58.1%	
Boys	42.2%	45.1%	41.9%	
Family educational attainment				
Primary	0.4%	0.0%	0.0%	R < V, R < C
Secondary	24.1%	27.2%	40.0%	
Non-university higher[b]	48.9%	47.1%	53.4%	
University	26.6%	25.7%	6.7%	

Note. Unstandardized values are presented.
[a]Post hoc comparisons (*z*-tests); only significant differences are shown between the Competent (C) profile, Vulnerable (V) profile, and Resilient (R) profile.
[b]Non-university higher education = "college."

profile, scores in the (borderline) clinical range on behavior problems ranged from 0.0% (aggressive behavior) to 6.5% (rule-breaking behavior and somatic complaints).

Post hoc comparisons (*z*-tests) indicated that emerging adults in the Resilient profile reported a greater number of stressful life events and more perceived stress than their peers in the Competent and Vulnerable profile (see Table 4). Furthermore, individuals in the Resilient and Vulnerable profile experienced more behavior problems in emerging adulthood than those in the Competent profile. Moreover, individuals in the Vulnerable profile reported lower levels of subjective well-being than their peers in the Resilient and Competent profile. Concerning demographic variables, results showed that only family educational attainment was related to profile membership (Resilient vs. Competent: $B = -1.36$, $SE = 0.37$, $p < .001$; Resilient vs. Vulnerable: $B = -1.33$, $SE = 0.40$, $p = .001$; Vulnerable vs. Competent: $B = -0.03$, $SE = 0.21$, $p = .874$). Family educational attainment was lower for emerging adults in the Resilient profile compared to those in the Competent ($p < .001$) and Vulnerable ($p = .001$) profiles. The identified profiles did not differ concerning emerging adults' mean age (*p*s range: .336–.934) or sex distribution (*p*s range: .645–.886). Therefore, we included only family educational attainment as a covariate in the MLR models.

Associations of resource factors with latent profiles

Results of the MLR models revealed few differences in resource factors across the identified profiles (see Table 6). Concerning parenting behaviors in adolescence, the results showed that emerging adults in the Resilient profile had experienced higher levels of positive parenting by mothers compared to those in the Competent profile ($B = 0.84$, $p = .038$, OR = 2.33). This difference reflected a small effect size. No other differences in parenting behaviors by mothers or fathers were found (*p*s range: .100–.969). About 6% of the total variance in the profiles was explained by the four parenting behaviors.

Regarding personality traits, emerging adults in the Resilient profile had lower levels of conscientiousness as compared to the Competent profile ($B = -1.40$, $p = .042$, OR = 0.25), indicating a medium effect. Moreover, emerging adults in the Resilient ($B = -1.33$, $p = .028$, OR = 0.26) and the Vulnerable ($B = -1.14$, $p = .004$, OR = 0.32) profile were less emotionally stable during adolescence than those in the Competent profile. These differences represented medium and small effect sizes, respectively. The profiles did not differ on levels of extraversion, agreeableness, and openness (*p*s range: .071–.956). Finally, about 9% of the total variance in the profiles was explained by the five personality traits.

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Table 5. Percentages of individuals with borderline and clinical scores on the Adult Self-Report subscales per profile

Subscale	Competent (70.5%, $n = 244$)	Vulnerable (20.5%, $n = 71$)	Resilient (9.0%, $n = 31$)
Anxious/depressed			
Borderline	0.4%	21.1%	3.2%
Clinical	0.0%	25.4%	0.0%
Total	0.4%	46.5%	3.2%
Withdrawn			
Borderline	0.4%	21.1%	3.2%
Clinical	0.0%	9.9%	0.0%
Total	0.4%	31.0%	3.2%
Somatic complaints			
Borderline	0.8%	11.3%	3.2%
Clinical	0.4%	7.0%	3.2%
Total	1.2%	18.3%	6.5%
Aggressive			
Borderline	0.0%	8.5%	0.0%
Clinical	0.0%	1.4%	0.0%
Total	0.0%	9.9%	0.0%
Rule-breaking			
Borderline	1.2%	7.0%	6.5%
Clinical	0.0%	2.8%	0.0%
Total	1.2%	9.8%	6.5%
Intrusive			
Borderline	1.2%	5.6%	0.0%
Clinical	0.4%	2.8%	3.2%
Total	1.6%	8.4%	3.2%

Note. Percentages in the borderline (93rd–97th percentiles) and clinical (>97th percentiles) range are based on the multicultural norms for the Adult Self-Report (Achenbach & Rescorla, 2015).

Discussion

This study aimed to identify different profiles of resilience and vulnerability in response to stressful life events in a community sample of emerging adults. In addition, we examined to what extent parenting behaviors and personality traits assessed in adolescence were related to the identified profiles. Results of LPA with stressful life events, behavior problems, and subjective well-being as indicators revealed three distinct profiles: A Competent profile (70.5%; low stress, good adaptation), a Vulnerable profile (20.5%; average stress, poor adaptation), and a Resilient profile (9.0%; high stress, good adaptation). Emerging adults in the Resilient profile had experienced higher levels of positive parenting by mothers compared to those in the Competent profile. With respect to personality traits, emerging adults in the Resilient and Vulnerable profile tended to be less emotionally stable during adolescence than those in the Competent profile. Furthermore, emerging adults in the Resilient profile were less conscientious than their peers in the Competent profile.

The identification of the three profiles was partially in line with previous person-centered work on resilience. We used the same labeling as in prior work, in order to build a more cumulative science and to avoid the "jangle fallacy" (Kelley, 1927) in which similar constructs are given different names. More specifically, similar Competent and Resilient groups were identified in childhood and adolescence (Miller-Lewis et al., 2013; Moreno et al., 2016) and in emerging adulthood (Masten et al., 1999, 2004; Shiner & Masten, 2012) by previous studies using traditional a priori classifications. Interestingly, in our study the Resilient group experienced more behavior problems than the Competent group, whereas when groups are created a priori by using cutoff scores, these groups have the same level of behavior problems by definition. This finding raises questions and fits the ongoing debate concerning the conceptualization of resilience: What is resilience and how does it present? (Infurna, 2020; Masten, 2011). Perhaps the effects of stress were still noticeable in our Resilient group, although they were doing "better than expected" based on the high level of stress experienced. Moreover, this result supports the longstanding recognition that resilient people are not invincible but rather may have some circumscribed areas of difficulty (Masten, 2001, 2018; Rutter, 2012).

In contrast to our expectations and to the previously mentioned person-centered studies, we did not find a profile characterized by Maladjustment (high stress, poor adaptation). However, a Vulnerable profile (average stress, poor adaptation) was identified in this sample, representing emerging adults who seemed to experience elevated behavior problems and relatively low subjective well-being with only normative levels of stress. This finding was surprising, as in most previous studies (e.g., Masten et al., 1999, 2004; Shiner & Masten, 2012) this vulnerable group was too small for statistical analyses. Such individuals are likely to be underrepresented in community samples, also described as the "empty cell" phenomenon (Masten et al., 1999; Masten & Tellegen, 2012). An explanation for the identification of a Vulnerable but not a Maladjusted profile in the current study might be related to characteristics of our study sample. That is, on average, the emerging adults in this community sample in Belgium experienced relatively low levels of stressful life events. Whereas there was sufficient variability in the number of stressful life events and the stress caused by these events, few individuals experienced extremely high levels of adversity. In addition, we included other types of stressors than used in the previous person-centered studies among emerging adults (Masten et al., 1999, 2004; Shiner & Masten, 2012). That is, those studies included relatively more chronic adversity (e.g., living with a violent alcoholic parent in chronic poverty) whereas we primarily focused on discrete stressors (e.g., parental separation). Hence, it might be that we did not capture chronic adversity in the configural profiles, which may have reduced the ability to identify certain profiles such as a Maladjusted group. Overall, the results of our LPA indicate that emerging adults show heterogeneous patterns of adaptation after stressful life events and highlight the fact that some individuals are more vulnerable, while others are more resilient to life stress.

When examining the associations between mothers' and fathers' parenting and the identified profiles, we found little support for parenting behaviors as resource factors for resilience in emerging adulthood. Fathers' parenting behaviors were not related to the profiles of resilience and vulnerability, in contrast to earlier work indicating that fathers' parenting behaviors may foster resilience in emerging adulthood in the face of economic stress (Conger & Conger, 2002; Masarik & Conger, 2017; Neppl et al., 2015). However, our results suggested that mothers' parenting behaviors may be a resource factor for later resilience. Specifically, emerging adults in the Resilient profile had experienced higher levels of

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Table 6. Results of multinomial logistic regression with the latent profile construct as dependent variable

	Resilient vs. Competent						Resilient vs. Vulnerable						Vulnerable vs. Competent					
					95% CI						95% CI						95% CI	
	B	*SE*	*p*	OR	*LL*	*UL*	*B*	*SE*	*p*	OR	*LL*	*UL*	*B*	*SE*	*p*	OR	*LL*	*UL*
Model 1: Parenting $\rho^2 = 0.06$																		
Positive parenting$_m$	**0.84**	**0.41**	**.038**	**2.33**	**1.05**	**5.16**	0.73	0.44	.100	2.07	0.87	4.91	0.12	0.23	.606	1.13	0.72	1.76
Positive parenting$_f$	−0.39	0.32	.229	0.68	0.36	1.28	−0.38	0.42	.369	0.69	0.30	1.56	−0.01	0.28	.969	0.99	0.58	1.70
Negative parenting$_m$	−0.02	0.40	.968	0.98	0.45	2.15	−0.38	0.44	.391	0.69	0.29	1.63	0.36	0.25	.143	1.43	0.88	2.34
Negative parenting$_f$	0.07	0.36	.854	1.07	0.53	2.14	−0.04	0.42	.922	0.96	0.42	2.18	0.11	0.24	.654	1.11	0.70	1.77
Model 2: Personality $\rho^2 = 0.09$																		
Extraversion	−0.24	0.70	.730	0.79	0.20	3.11	0.04	0.76	.956	1.04	0.23	4.64	−0.28	0.44	.515	0.75	0.32	1.77
Conscientiousness	**−1.40**	**0.69**	**.042**	**0.25**	**0.06**	**0.95**	−0.90	0.74	.227	0.41	0.10	1.75	−0.50	0.48	.296	0.61	0.24	1.55
Emotional stability	**−1.33**	**0.61**	**.028**	**0.26**	**0.08**	**0.87**	−0.19	0.64	.765	0.83	0.23	2.91	**−1.14**	**0.39**	**.004**	**0.32**	**0.15**	**0.69**
Agreeableness	1.15	0.91	.205	3.17	0.53	18.81	1.90	1.05	.071	6.69	0.85	52.64	−0.75	0.64	.244	0.47	0.13	1.67
Openness	−0.05	0.72	.948	0.55	0.11	2.77	−0.60	0.83	.468	0.55	0.11	2.77	0.55	0.50	.268	1.74	0.65	4.63

Note. $_m$ = mother; $_f$ = father. OR = Odds ratio; CI = confidence interval; LL = lower limit; UL = upper limit. ρ^2 = McFadden's pseudo R^2. Significant coefficients ($p < .05$) are displayed in bold. In Model 1 and 2, the predictor terms were simultaneously included. Family educational attainment was included as a covariate.

positive parenting by mothers in adolescence compared to those in the Competent profile. This result conflicts with previous findings by Masten et al. (2004) showing that emerging adults in the Resilient group were similar to those in the Competent group regarding mothers' positive parenting (i.e., warmth, closeness, structure) assessed in childhood, despite their differences in stressful life experiences. It is possible that, in the current study, maternal warmth and involvement helped Resilient emerging adults to adapt well despite exposure to life stress, while their low-risk, Competent peers perhaps did not need this resource factor to show positive adaptation. Hence, our finding supports the notion that positive and supportive parenting may be a protective factor in the face of risk for some emerging adults (Masten & Palmer, 2019; Masten, 2018).

With respect to Big Five personality traits, our results showed that emerging adults in the Competent profile were more emotionally stable during adolescence than those in the Vulnerable profile. This finding is in line with previous work suggesting that greater emotional stability in youth is related to a variety of positive outcomes in adulthood, including lower levels of internalizing and externalizing problems (e.g., Van Eldik et al., 2020) and higher levels of subjective well-being and self-efficacy (e.g., Anglim et al., 2020; Deutz et al., 2021; Gale et al., 2013). Even at low levels of stress, emotional stability seems to be an important individual trait acting as a promotive factor for positive outcomes.

Moreover, emerging adults in the Resilient profile were less emotionally stable and less conscientious compared to those in the Competent profile. This result is somewhat surprising, given that individuals with higher levels of emotional stability and conscientiousness tend to use more effective coping strategies that may foster resilience (Barańczuk, 2019; Connor-Smith & Flachsbart, 2007; Hughes et al., 2020). In previous person-centered studies, individuals in the Resilient group generally did not differ from those in the Competent group in personality traits (Shiner & Masten, 2012) or other personal assets (i.e., self-control, self-concept; Miller-Lewis et al., 2013). The differences we found in the current study might be explained by the bidirectional interplay between personality and stressful life events that has been posited by dynamic personality theories (Endler & Parker, 1992; Magnusson, 1990; Roberts et al., 2008). For example, individuals who are more emotionally stable and conscientious, like those in the Competent profile, may have a lower risk to experience certain life events, such as a romantic break up or academic failure. Also, evidence indicates that exposure to stressful life events might influence personality development, for example, by decreasing youth's level of emotional stability, conscientiousness (Bleidorn et al., 2018; Jeronimus et al., 2014; Shiner et al., 2017), or self-control (Blair, 2010; Laceulle et al., 2015; Ong et al., 2019). It is possible that the relatively high amount of stress experienced by those in the Resilient profile may have had negative effects on their emotional stability and conscientiousness. Future studies are needed to increase our understanding of the complex processes through which individuals' personalities and their stressful life events affect their development over time.

The finding that emerging adults in the Resilient profile were distinguished by a combination of positive parenting of mothers and lower emotional stability and conscientiousness might seem puzzling. However, this pattern of findings aligns with the growing understanding that parenting behaviors and children's personalities interact in predicting developmental outcomes, exacerbating or buffering their effects (e.g., Loginova, & Slobodskaya, 2021; Pascual-Sagastizabal et al., 2021; Rioux et al., 2016). More specifically, in our study positive parenting behaviors of mothers may have buffered the potential negative effects of lower emotional stability and lower conscientiousness in the Resilient group. In other words, despite their more vulnerable personality, these adolescents may still have developed well because of their warm and supporting mothers. These complex findings point to the importance of considering both individual and family level resources and their interactive effects in resilience research. As argued by several resilience frameworks (e.g., Infurna & Luthar, 2018; Masten & Cicchetti, 2016; Ungar & Theron, 2020), resilience is not merely the result of one factor in an individual's life, but rather is facilitated by multiple dynamic, interacting individual level systems (e.g.,

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psychology, genes, neurobiology), which are embedded in larger environmental systems (e.g., family, culture, policy). Consequently, disentangling the underlying mechanisms that lead to resilience and how to best foster it requires multidisciplinary research that accounts for the multiple systems involved in resilience (Ungar & Theron, 2020).

Practical implications

Our findings underscore that youth may respond differentially to the experience of stressful life events. Some individuals may develop behavior problems after life event exposure and may need help, while others seem to adapt well despite the experience of multiple stressful events. Since stressful life event exposure was not a universal risk factor for all individuals in this study, it is valuable to focus on strengthening individual and contextual characteristics that may promote adaptive coping and successful development in the face of stress. The higher levels of emotional stability and conscientiousness of individuals in the Competent profile, who showed best overall functioning, suggest that strengthening these personality traits in adolescence can optimize behavioral outcomes in emerging adulthood. Therapeutic interventions, such as mindfulness interventions and social skill training, have been shown to be effective in increasing emotional stability and conscientiousness (Roberts et al., 2017). Given that maternal positive parenting was a protective factor in the context of stress, preventative parenting interventions focused on parental warmth and involvement may help children in high-stress environments to avoid negative adult outcomes (Sandler et al., 2015; Yap et al., 2016).

Strengths, limitations, and suggestions for future research

The present study builds upon previous work on resilience in emerging adulthood by using statistically advanced person-centered analyses to identify individual, naturally occurring patterns of stress and (mal)adaptation across multiple developmental domains. We adopted a prospective, longitudinal design with a large time interval from adolescence (age 11–16 years) to emerging adulthood (age 25 years) to investigate potential resource factors at both the contextual level, that is, paternal and maternal parenting, and the individual level, that is, personality traits, to obtain a more comprehensive picture of the resources and assets that may promote resilience.

The strengths of the current study should be interpreted in consideration of some limitations. First, the study design was not fully prospective given that the occurrence of stressful life events and their perceived impact were retrospectively reported in emerging adulthood. Despite findings indicating that retrospective reports of major, easily defined adverse childhood experiences have acceptable psychometric properties and similar associations with adult outcomes as prospective assessments (Hardt & Rutter, 2004; Reuben et al., 2016), it is unknown to what extent individuals' ratings of stress in the current study were affected by recall bias. It is recommended that future studies use prospective measures of stressful life events (e.g., by caregiver report) in addition to retrospective reports to test the robustness of our findings. Likewise, we constructed a new stressful life event scale instead of using an existing scale, as we aimed to assess both the lifetime occurrence of events typically seen as undesirable, and the perceived stress caused by these events. Future research is needed to investigate the psychometric properties of this life event scale.

Second, although we used a multi-informant design with reports of mothers, fathers, and their children, we relied on questionnaires due to the relatively large sample size of the present study. It can be worthwhile to use a combination of assessment methods (e.g., combining questionnaires with behavioral observations of parenting) to minimize the influence of parents' and children's social desirability tendencies and mood states on their ratings (Podsakoff et al., 2012). Further, it is unclear to what extent parents' judgments regarding their child's personality traits correspond to adolescents' own perceptions. In future work, it would be interesting to consider both parent reports and adolescents' self-reports of their personality traits. However, the availability of resources plays a critical role in the selection of research instruments and methods.

Third, caution should be exercised with generalizing these findings to other samples given that our study consisted of predominantly White, European families from middle-class backgrounds. Families in our sample were characterized by relatively high levels of education and low levels of stress, and thus could be considered low risk. Patterns of resilience and vulnerability as well as the relevance of certain parenting and personality characteristics for development are potentially different in higher-risk or culturally different samples (Fergus & Zimmerman, 2005; Valentino et al., 2012; Zolkoski & Bullock, 2012). To generalize our results to other settings, it is essential that future studies examine patterns of resilience and the role of protective factors across families in varying contexts.

Fourth, despite the already mentioned advantages of LPA, this analysis technique has limitations as well. Although LPA is well suited for revealing meaningful patterns of stress and adaptation simultaneously within individuals, person-centered analyses such as LPA may be unduly influenced by features of the sample or by the nature of the selected indicators (Spurk et al., 2020). Therefore, the current inductive findings warrant replication in other samples. In addition, LPA makes several statistical assumptions, such as local independence (i.e., all indicator variables are uncorrelated within each latent profile) and variance homogeneity (i.e., all indicator variable variances are constrained to equality across profiles), which are reason for careful interpretation of the current results (Peugh & Fan, 2013; Spurk et al., 2020).

Fifth, since we found limited evidence for parental overreactivity and (paternal) warmth as family resource factors, it is likely that other parenting and family aspects are involved in the development of resilience in emerging adulthood. It would be valuable to examine the role of other parenting behaviors, such as helicopter parenting (i.e., parents being overly involved and protective in their children's life), which has been related to emerging adults' self-efficacy and well-being (Reed et al., 2016; Schiffrin et al., 2019). Additionally, future studies could consider other potential individual resource factors that may be malleable and responsive to intervention efforts, such as adolescents' mindset and coping strategies (Compas et al., 2017). A more nuanced understanding of what resource factors in childhood and adolescence promote resilience can guide possible targets for interventions *before* youth enter the emerging adulthood period. Such early intervention strategies may help young people to strengthen their abilities and skills so that they are ready to tackle the challenges of emerging adulthood.

Conclusion

The current study provides new insights into the heterogeneous patterns of emerging adults' adaptation after stressful life events.

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We identified three latent profiles characterized by competence, vulnerability, and resilience, demonstrating that some individuals are more vulnerable, whereas others are more resilient to life stress. Additionally, the profiles were associated with maternal warmth and with the personality traits emotional stability and conscientiousness assessed in adolescence. Our findings suggest that maternal warmth is an important protective factor in the context of stress, possibly having the potential to buffer the effects of vulnerable personality traits. In intervention strategies, it is essential to take into account that youth may respond differentially to the experience of stressful life events. Finally, further research into malleable resource factors such as parenting and personality characteristics is needed to guide interventions that help youth better deal with stress, thereby optimizing their development into emerging adulthood.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/S0954579422000578

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