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Environmental Mastery and Self-Acceptance during Emerging Adulthood: A Study of the Determinant Factors in College Students

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Abstract

Emerging Adulthood is a transitional and critical period characterized by multiple challenges. How individuals face life transitions are related to their psychological wellbeing considered a process of self-fulfillment. The most fragile psychological wellbeing dimensions during Emerging Adulthood are environmental mastery and self-acceptance. Few studies have explored the determinants of these dimensions, some of these focused on demographic factors, less on the impact of intrapersonal factors. Interest of this study was investigated with a longitudinal study conducted in 243 Emerging Adults (56.4% females), the role of external (gender, relationship status, socioeconomic status) and internal factors (self-esteem and self-control) in environmental mastery and self-acceptance. Only internal factors predicted both dimensions studied explaining approximately 38% of the variance of environmental mastery and 33% of the variance of self-acceptance. The study suggests that self-esteem and self-control could be important protective factors for EAs attending university to improve their sense of mastery and competence to manage the environment and possess a positive attitude toward the self. These findings add to a growing body of literature highlighting the determinant factors of specific dimensions of PWB of particular relevance during this lifestage and may have important implications in research and clinical fields, providing insights for the development of clinical actions targeting at university students.

Keywords*:* Emerging adulthood, psychological wellbeing, environmental mastery, self-acceptance, university students, self-control, self-esteem.

Introduction

Emerging Adulthood (EA) is a new concept in the developmental phase of life between late adolescence and early adulthood, focusing on ages 18–29 (Arnett, 2015). EA is considered a critical life period (Saikkonen et al., 2018) characterized by several life transitions and multiple changes, including residential status (from dependent living to independent living arrangements), relationships (entering into long-term romantic relationships), education, and employment (from school to entering college or workforce) (Arnett, 2004).

Due to all the changes and the many opportunities afforded for identity exploration and change, this particular life stage is considered the time when young people explore their opportunities and make enduring choices. For the same reasons, EA can also be regarded as a period of instability and uncertainty (Arnett, 2004, 2016), with increased risks of mental health issues (Arnett, 2014). How the people cope different transition challenges may have an impact on their psychological well-being (PWB) (Arnett, 2014; Lane, 2014; Ryff, 2014).

PWB is considered a process of self-fulfillment through which individuals grow over time, exploring their potential, planning for the future, and contributing to the well-being of others (Ryff & Singer, 2008). The PWB model operationalized by Ryff and Keyes (1995), comprising six distinct dimensions (autonomy, environmental mastery (EM), self-acceptance (SA), positive relationship with other, purpose in life, personal growth), has been used to investigate human development and psychological growth.

Cross-sectional and longitudinal studies showed that specific dimensions of PWB improved or declined with age, particularly at specific life transition moments such as EA (Ryff, 1989, 1991; Ryff & Keyes, 1995; Mayordomo et al., 2016; Meléndez et al., 2018).

In her original validation studies, Ryff (1989; 1991) compared different age groups; EAs (18–29 yrs), adults (30–64 yrs), and the elderly (> 64 yrs), and showed that environmental mastery and autonomy were lower during EA but increased over time. Conversely, the author reported a decrease in personal growth and purpose in life dimensions over time, highlighting higher levels during the EA. Moreover, SA and positive relations with others showed no difference according to age, indicating that these dimensions did not change during the lifespan. A subsequent study (Ryff & Keyes, 1995) produced similar results. More recently, Mayordomo and colleagues (2016) compared different group ages and also showed that EAs reported lower levels in environmental mastery and higher levels in personal growth than adults and older adults. However, in contrast to previous studies, EAs also showed higher levels in positive relationships with others and no difference in their purpose in life dimensions compared to the other groups. SA also showed no difference over time. Meléndez and colleagues (2018) also found differences among age groups in almost all dimensions. They showed lower SA and EM levels in EAs than older adults but higher personal growth and positive relationships with other scores.

Most of the existing literature shows that EM, defined as an "individual's ability to choose or create environments suitable to his or her psychic conditions," and SA, defined as "emphasis on acceptance of the self and of one's past life," were the most fragile PWB dimensions during EA (Mayordomo et al., 2016; 2015; Meléndez et al., 2018).

According to EA theory (Arnett, 2004), Lane and colleagues (2016) suggested that people explored their identities and experienced delayed assimilation of adult identities during this period. This led to normative life changes, regarded as positive events (e.g., employment), being considered stressful and corresponding to adult expectations for which they felt ill-prepared, raising feelings of inadequacy and the consequent decrease in EM. Also, in terms of SA and in line with Allport's theoretical perspective (1961), SA is associated with more mature personalities than possessed by EAs, Mature personalities have concluded the path of development of their identity by reaching a broad awareness of the self.

Although EM and SA were considered the most fragile during EA, the literature emphasizes their importance concerning specific transitional challenges. In particular, all the challenges concerning the choices to be made by EAs for their future, such as whether to attend university or opt for a professional career (Uzma & Erum, 2013; Kunnen, 2014). However, few studies have explored the determinant factors of these dimensions.

Some studies explored the impacts of demographic (gender) or psychosocial factors (external factors, i.e., romantic relationship status, family' socioeconomic status), or considered factors that may have an important role in well-being during this transitional period (Mayordomo et al., 2016; Gómez-López et al., 2019).

In terms of gender, recent studies showed inconsistent results. In a sample of college students, Isiklar (2012) showed that females scored higher levels in EM and SA than males. However, a more recent study showed differences between male and female EAs for

SA but no differences in EM (Mayordomo et al., 2016). Specifically, the males in this sample reported higher levels in SA than females. Whereas, in line with a previous study, Matud et al. (2021) found no differences for EM or SA.

Mixed results have been found for the link between relationship status with EM and SA. A recent study conducted in a sample of early EAs (Garcia-Castilla et al., 2020) showed that those involved in a stable romantic relationship reported higher levels of EM than those who were single, but there was no difference for SA. Another study (Shahidi et al., 2019) showed no links between romantic relationships and EM and SA.

Regarding the family socioeconomic status (SES), most studies were conducted on large samples that were not solely composed of EAs, but where age was used as the variable to dictate the analyses conducted. These studies showed positive correlations between SES and the sense of EM and SA (Ruini et al., 2003; Vera-Villarloe et al., 2015; Meléndro et al., 2020; Navarro-Carillo et al., 2020). These studies led to the assumption that people with a higher SES felt more confident and had mastery of themselves and external situations.

To date, few studies have focused on the impact of intrapersonal factors (internal factors) on EM and SA; most relied on personality traits and internal resources (i.e., self-efficacy) used by people to face challenges during this transitional lifestage. Rosenberg (1965) postulated that self-esteem (attitudes, thoughts, and feelings toward oneself and one's life) was an important psychological dimension for good psychological well-being during EA. Some researchers argue that self-esteem is a fundamental construct associated with a range of important life outcomes, including physical and psychological health, satisfaction with several life dimensions, i.e., relationships and work (Swann et al., 2007; Moore & Shell, 2017; Orth et al., 2009; 2012). To date, few studies have investigated self-esteem in relation to the dimensions of EM and SA during EA; most studies are cross-sectional and do not enable us to establish a clear direction of causality between these variables.

A more recent study (Isiklar, 2012) of Turkish EA students found a significant positive relationship between self-esteem and SA; when EAs' self-esteem increased, their SA increased too. Paradise and Kernis' study (2002) pointed out that the stability of high levels of self-esteem during the transition to adulthood predicted higher levels of EM in particular. EAs with higher levels of self-esteem and did not question themselves excessively and felt a greater ability to master the environment and life events.

Self-control represents another important component for good PWB during EA as it often results in a consequent good transition into adulthood (Baumeister & Vohs, 2004; Hofer et al., 2011). Self-control is the capacity to evaluate, control, plan, and adapt internal states to achieve desired goals, in line with personal and social standards and expectations (ideals, values) (Zimmerman, 1996; Baumeister et al., 2007). EAs with high self-control tend to be successful at university or work, have better relationships with others, and experience fewer difficulties and psychological symptoms than EAs with low self-control (Tangney et al., 2004). More recently, research has focused on the relationship between self-control with EM and SA dimensions, as this has had positive implications on several psychological outcomes.

To the best of our knowledge, only two studies have dealt with the issue of self-control (Gagnon et al., 2016; Singh & Sharma, 2018). Gagnon et al.'s (2016) study on college students highlighted positive correlations between self-control with EM and SA. However, in the same study, the authors compared medical students with a sample of physicians, highlighting differences between these two groups in terms of self-control and EM. The results for the students showed a weaker relationship, suggesting that the students had limited control over their environment than the physicians, possibly because they are still part of a structured

training path where they have less opportunity to enact their self-control to impact their EM.

Another more recent study (Singh & Sharma, 2018) found a relationship between self-control and SA but not with EM. The authors suggested that greater self-control allows EAs to control their negative thoughts and beliefs about themselves and accept themselves more.

The current study

To date, few studies have been interested in the determinant factors of PWB in terms of EM and SA of EAs university students. These existing studies, distinguished by cross-sectional research, have focused on the impact of external factors (i.e., demographic and psychosocial variables) rather than the influence of internal factors such as self-esteem and self-control as psychological functioning dimensions. Given the scarce evidence, this longitudinal study aimed (a) to analyze the relationship between EM and SA with self-esteem and self-control, and (b) to investigate the role of these internal factors of EM and SA, controlling for the effects of demographic and psychosocial variables, such as gender, romantic relationships and family SES which may affect these dimensions of interest. In line with previous studies, we expected correlations between all the variables investigated, but with a stronger link between self-esteem and SA (Gagnon et al., 2016; Isiklar et al., 2012; Ryff et al., 1989). More specifically, given the hypothesized strong correlation, we assumed direct relationships between self-esteem and self-control in EM and SA, even after controlling for the external factors. Our findings will explain the role that internal factors such as self-esteem and self-control can play in EM and SA, and consequently in PWB, during the EA transition period.

Methods

Participants and Procedures

We included 243 EA (aged 18-29, mean = 21.77, SD = 1.52) in this longitudinal study, recruited from several Italian Universities and collected through convenience sampling. These participants filled in two online surveys three months apart (T0 and T1). The inclusion criteria of this study were: (1) aged between 18 and 29 years; (2) attending university; (3) agreeing to participate after reading the study description; (4) intention to complete both surveys online at T0 and T1. The study was conducted in compliance with the guidelines reported in the Declaration of Helsinki. Trainees and students in psychology sent the online survey link to friends and university colleagues through email, chat, or social networks (i.e., WhatsApp, Messenger, etc.). All participants, having signed the informed consent/assent after being briefed on the study according to the Ethical Principles of Psychologists and Code of Conduct of the American Psychological Association (2010), The study was conducted in compliance with the guidelines reported in the Declaration of Helsinki. Participation in the study was voluntary and anonymous, and the participants could withdraw at any time. No incentive reward was given. Confidentiality of personal information was guaranteed using an alpha-numeric identification (ID). Table 1 lists the sociodemographic information of the sample.

Table 1: Descriptive Statistics of Socio-demographic information (N 243)

Socio-demographic factors	N	%	χ^2
Gender			
Male	106	43.6	3.95
Female	137	56.4	
Romantic relationship			
Single /Unstable	120	49.3	0.07
Stable	123	50.7	
Family' Socio-Economic Status (SES)			
Low	58	24.1	52.19**

Medium	135	55.2
High	50	20.7

**p <.001

Measures

Sociodemographic form: Composed of questions to collect sociodemographic information of the EA, in particular, gender, age, family SES (calculated from parents' educational levels and occupation), and finally the relationship status (single or in a stable romantic relationship). The EA completed this form at T0.

Rosenberg's Self-Esteem Scale (RSES, Rosenberg, 1965): Composed of 10 items to evaluate self-worth using a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). Higher scores show higher self-esteem. The validity of the RSES has been demonstrated in different cultures and languages and showed adequate internal consistency (Schmitt & Allik, 2005). In this study has been used the Italian version of the RSES (Prezza et al., 1997). The internal consistency in this study was good (Cronbach's Alpha = 0.89). The EA completed this questionnaire at T0.

Brief Self-Control Scale (BSCS, Tangney et al., 2004): Composed of 13 items to assess dispositional self-regulatory behaviors using a 5-point Likert scale from 1 (not at all like me) to 5 (very much like me). Higher scores show higher self-control. Previous studies demonstrated the reliability and construct validity of the BSCS (Gailliot et al., 2006; Schmeichel & Zell, 2007). In this study has been used the Italian version of the BSCS (Chiesi et al., 2020). The internal consistency was good (Cronbach's Alpha = 0.83). The EA completed this questionnaire at T0.

Psychological Well-being Scale (PWBS – Ryff & Keyes, 1995): Composed of 18 items to assess the six PWB dimensions theorized by Ryff, using a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree). Higher scores show higher well-being in each dimension. We considered two specific dimensions of the PWBS; EM and SA. The validity and reliability of the PWBS have been demonstrated in different cultures and languages (Clarke et al., 2001; Van Dierendonck, 2004; Sirigatti et al., 2009). In this study has been used the Italian translation of the PWBS (Ruini et al., 2003). The internal consistency for EM (Cronbach's Alpha = 0.60) and SA (Cronbach's Alpha = 0.68) were adequate, as suggested by Griethuijsen et al., 2014. The EA filled completed questionnaire at T1.

Statistical Analysis

Descriptive statistics of external and internal factors, in terms of percentage, means (M), and standard deviations (SD), were conducted to describe the EM, SA, and external and internal factors. Have been used Pearson's correlations to analyze the relationships between EM and SA dimensions with internal factors, specifically self-esteem and self-control. The effect sizes were interpreted according to Cohen (1992), where 0.10, 0.30, and 0.50 represented small, medium, and strong effects, respectively. Hierarchical multiple regressions were conducted to evaluate the roles of the internal factors in EM and SA changes during EA, controlling for the effects of sociodemographic variables. Have been inserted the external factors (gender, romantic relationship status, and family SES) in the first block (Model 1). Subsequently, have been inserted the internal psychological dimensions (self-esteem and self-control) in the second block (Model 2), to verify if this block improved the model's fit to the EM and SA dimensions over the previous blocks. An ANOVA was calculated to find the best model, as indicated by the significant variation in $\Delta R2$. Finally, the effect size of the best multiple regression model was calculated using Cohen's $f2 = R2/(1 - R2)$. Values close to 0.02, 0.15, and over 0.35 were defined and interpreted as small, medium, and large, respectively (Cohen, 1992). Statistical Package for Social Science (IBM SPSS Version 26, SPSS Inc., 2019) were used for data analysis.

Results

Descriptive Statistics and Pearson's correlations

As shown in Table 2, EM and SA were significantly and positively related to the RSES and BSCS. Most of these relationships showed a strong effect size. Only the relationship between SA and BSCS showed a medium effect size, as suggested by Cohen (1992).

Table 2: Descriptive Statistics and Pearson's correlations among EM, SA and internal factors (N 243)

Psychological dimensions	Mn	Sd	(1)	(2)
(1) EM	11.78	2.49	---	
(2) SA	11.82	2.98		---
Internal dimensions				
(3) RSES	30.37	6.07	.509**	.551**
(4) BSCS	3.40	0.66	508**	.300**

Notes: EM = environmental mastery; SA = self-acceptance; RSES = Rosenberg'self-esteem scale; BSCB = Brief self-control scale.

**p<.001

Hierarchical Multiple Regression

As shown in Table 3, the second model was the better fit for EM and SA. The hierarchical regression analysis showed significant variations in R2 (ΔR2), namely a significant increase in the variance of EM and SA. For EM, Model 2, with the associated internal factors, i.e., self-esteem and self-control, and external factors, such as gender, relationship status, and family SES as predictors, explained approximately 38% of the variance and was significant with a large effect size (F(5,234) = 28.26; p < 0.001; f2 = 0.60). No external factors showed significant effects, but RSES and BSCS positively predicted EM; increasing it by 0.37 standard units for each unit increment both in RSES and BSCS. Similarly for SA, model 2, with the associated internal factors and external factors explained approximately 33% of the variance and was significant with a large effect size it (F(5,234) = 52.49; p < 0.001; f2 = 0.49). Again, no external factors showed an effect on SA, and only RSES positively predicted the SA. Specifically, SA increased by 0.52 standard units for each unit increment in RSES.

Table 3: Hierarchical multiple regression model of external and internal factors on environmental mastery and self-acceptance.

Dependent variable: EM										
Model	**Predictor**	***β***	***t***	***p***	R^2	ΔR^2	***F***	***gdl***	***p***	***Cohen's f2***
1					.006	.006	.436	3,236	.727	.01
	Gender	-.061	-.929	.354						
	Relationship	.005	.079	.937						
	Family's SES	.047	.728	.467						
2					.376	.371	28.26	5,234	<.001	.60
	Gender	-.045	-.858	.392						
	Relationship	-.057	-1.08	.281						
	Family's SES	.047	.911	.363						
	RSES	.367	6.34	**<.001**						
	BSCS	.366	6.43	**<.001**						
Dependent Variable: SA										
Model	**Predictor**	***β***	***t***	***p***	R^2	ΔR^2	***F***	***gdl***	***p***	
1					.025	.025	2.01	3, 236	.114	.02
	Gender	.009	.147	.883						

	Relationship	.143	2.21	.028						
	Family's SES	.069	1.07	.284						
2					.327	.302	52.49	5,234	<.001	.49
	Gender	.071	1.29	.198						
	Relationship	.061	1.12	.265						
	Family's SES	.082	.1.52	.131						
	RSES	.525	8.74	**<.001**						
	BSCS	.073	1.24	.217						

Notes: SES = Socio-Economic Status; RSES = Rosenberg' self-esteem scale; BSCB = Brief self-control scale

Discussion

EA is one of the most important life stages for the development of the self and identity (Arnett, 2004) and is considered a period in which young people face many developmental challenges. EAs often question themselves and their beliefs and self-knowledge, with a consequent impact on their psychological well-being (Orth et al., 2009; Swann et al., 2007). To date, few studies have focused on deepening our understanding of psychological well-being, its dimensions, and internal psychological factors that may play key roles in EA.

This study aimed to investigate the role of internal factors such as self-esteem, and self-control in EM and SA, representing the more fragile dimensions of PWB during the EA, through a longitudinal study.

The findings from the first questions showed strong positive relationships between internal factors, self-esteem and self-control, with EM and SA in EAs. EAs with high levels of EM suggested they felt able to manage the responsibilities of everyday life without feeling overwhelmed by the difficulties encountered. EAs with increased levels of SA suggested they had a positive attitude toward themselves and were able to acknowledge and accept multiple aspects of the self; they felt positive about their life to date, and therefore, felt more secure and had increased self-worth and self-control. These internal factors are considered the most important factors related to aspects of well-being. They often come into play to cope with challenges throughout the EA transition period and have a crucial role in the management of life situations management (Ryff, 1989; Paradise & Kernis, 2002, Singhal & Prakash, 2021; Zimmerman, 1996; Gagnon et al., 2016).

This longitudinal study explored the determinant roles of self-esteem and self-control on EM and SA, controlling for the effects of several sociodemographic variables, which have previously been studied concerning PWB dimensions, including EM and SA. The second regression model was strongest in multiple hierarchical analyses and included the external factors (gender, romantic relationship status, and family SES) and two internal resources. The second model of the first hierarchical multiple regression analysis explained approximately 37% of the variance in EM, while the second model of the subsequent hierarchical multiple regression analysis explained approximately 33% of the variance in SA.

It is noteworthy that controlling for the effect of these external factors, higher levels of self-concept and personal evaluation, and an increased ability to control one's internal states and behaviors acted as determinant factors against PWB in terms of EM and SA during EA. Specifically, concerning the effects of the sociodemographic factors, we showed that no variable influenced EM or SA. The existing literature showed mixed results for the effects of gender and romantic relationship status. Our findings concerning the effect of gender agree with those of Salleh and Mustaffa (2016) and Matud and colleagues (2021), who found no differences in the levels of EM and SA between males and females. These studies were based on Ryff's theory (1989), where well-being is based on strength in some key components, including EM and SA, that will strengthen or weaken, regardless of gender. This study found

no differences for romantic relationship status; whether or not they were part of a couple did not affect EM and SA. These results were in line with Shahidi and colleagues (2019) but differ from a second study that showed higher average scores in partnered EAs, particularly for EM but not for SA (García-Castilla et al., 2020). In terms of the family SES, our findings differ from the existing literature stating that higher family SES levels were related to more confidence and mastery, not only toward the environment and external situations but also toward oneself and several facets of one's own life (Meléndro et al., 2020; Navarro-Carillo et al., 2020). We found no effect for family SES levels. When interpreting these results, the uneven distribution of the sample between three different SES categories must be considered (indicated by a Chi-square < 0.05). Further studies may be needed to clarify the role of these external factors on the trends of EM and SA during EA.

Findings of the role of internal factors, self-esteem, and self-control on EM and SA were partially in line with our hypothesis based on the few existing correlational studies on this topic (Paradise & Kernis, 2002; Singh & Sharma, 2018; Gagnon et al., 2016; Isiklar et al., 2012; Ryff et al., 1989). Specifically, with regard to EM, 37% of the variance was explained by self-esteem and self-control. Having a broad positive perception of oneself and feeling able of controlling one's internal states and behaviors allowed EAs to feel more in control of external activities, an increased sense of mastery and competence to manage their environment, to make effective use of opportunities that arise, and to feel able to make choices suited to their needs, expectations, and personal values. Subsequently, as suggested by Gall et al. (2000), with an increased sense of EM, EAs may also possess the ability to cope adaptively with their stressful transition events.

With regard to SA, 33% of the variance was entirely explained by self-esteem. Singh & Sharma (2018) showed a correlation between self-control and SA, assuming that controlling one's negative emotions and managing one's internal conflicts would allow EAs to focus on their positive aspects. However, in our study, SA was only determined by positive personal evaluation. Higher self-esteem affected the self-satisfaction felt by EAs, the recognition and acceptance of the multiple aspects of themselves (good and bad qualities), and on accepting the multiple aspects of their past and present lives. It is important to be mindful that the strongest relationship of self-esteem with SA could also be due to "its apparent resemblance to the dimension of SA in the proposed formulation of psychological well-being," as suggested by Ryff since her first studies (1989, pp 1073; 1995).

This study has some limitations. Our results cannot be generalized because the sample was composed only of university students, and it was not representative of the whole EAs population. External and internal demands may differ between EA university students and EA employees and affect the levels of self-esteem and self-control differently, as well as the sense of EM and SA. Furthermore, this study was only conducted using self-reporting measures. However, the strength of this research is that it is a longitudinal study rather than cross-sectional, allowing the roles of the internal factors to b predicted. To confirm the stability of our findings over time, further studies are needed with a longer time gap between the two surveys.

In conclusion, to the best of our knowledge, this is the first study to investigate the role of internal functioning dimensions on the incremental EM and SA dimensions, which appear to be the most fragile PWBs during EA. These PWB dimensions are considered important psychological resources for a good transition to adulthood, particularly to cope with the developmental challenges that characterize this life stage. This study adds to the existing literature by deepening our understanding of the contributing factors and dimensions of intrapersonal functions that play key roles in improving EM and SA, and consequently of the PWB, which is considered a full, harmonious, and dynamic development of the individual's potential. Understanding the determinant factors and when to intervene may be important for research and clinical practice.

This study could help clinicians and researchers plan tailored assessments and prevention/treatment interventions that are specific and effective. These treatments can focus on developing the resources and personal strengths to promote the more fragile dimensions during specific life transition periods. Previous evidence has shown that strengthening specific dimensions of EAs' internal functioning can positively impact physical and psychological health (Ryff, 2014). Future research is needed to comprehend these issues better.

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