

Positive affect and self-care mediate the relationship between trait emotional intelligence and academic engagement in Lebanese undergraduates: Lessons learned from an online setting

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This study examined the impact of positive psychology variables, namely trait emotional intelligence (EI), positive affect and self-care, on academic engagement (AE) in an online learning environment during COVID-19. The study involved 717 undergraduates in Lebanon and utilised structural equation modelling for data analysis. The results demonstrated that positive affect and self-care mediated the relationship between trait EI and AE. In women, both self-care and positive affect were mediators, whereas in men, positive affect was the only mediator. For students who received a mix of synchronous and asynchronous lessons, both self-care and positive affect mediated the relationship between trait EI and AE. However, for those who received only synchronous lessons, positive affect was the sole mediator. Furthermore, AE significantly predicted academic performance (AP) in both models. These findings suggest the importance of interventions that enhance trait EI, positive emotions and self-care to improve AE and ultimately AP in online learning.

Keywords: Online learning; Academic engagement; Trait emotional intelligence; Self-care; Positive affect.

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Following the COVID-19 outbreak in early 2020, Lebanese educational institutions shut down campus-based learning abruptly and started online teaching and learning. This happened during a time in which Lebanon was already facing political unrest and worsening socioeconomic and financial crises. Given its lack of experience, policies and regulations in this domain, the Lebanese educational sector was unprepared. Consequently, online learning took many forms, including synchronous (involving a fixed online schedule for live class sessions via online platforms), asynchronous (involving pre-recorded sessions and flexible scheduling) and mixed (i.e., hybrid, involving both synchronous and asynchronous learning modes).

The shift to online learning was not without challenges. According to a qualitative investigation conducted by Fawaz et al. (2021) in Lebanon, undergraduate students encountered various difficulties while adapting to online learning, including difficulties in comprehending the course content fully, concerns regarding their academic performance and assessment and technical issues such as problems with technology and internet connectivity (Fawaz et al., 2021). The resulting stress on students was palpable and had a direct impact on their ability to meet academic demands (Fawaz et al., 2021). In addition, given the global impact of COVID-19, the challenges experienced in Lebanon were parallel to those experienced by other countries that were similarly underprepared for the abrupt transition to online education.

As the deployment of online learning methods has increased with the pandemic, both in Lebanon and globally, it is essential to investigate factors that can aid in tackling the associated challenges, such as sustaining student academic engagement (AE). The current research aims to make a contribution in this direction.

Student AE can be defined as the quality of effort that students devote to academic activities that directly strengthen their learning experience (Hockings et al., 2007). Online AE, as conceptualised by Dixson (2015), involves academic skills, emotion in learning, participation in different activities and performance as its main factors. Literature has consistently highlighted the strong positive relationship between AE and academic performance (AP; Nauffal, 2012; Sanchez-Ruiz & El Khoury, 2019).

Various studies have highlighted the relevance of positive psychology to educational contexts and AE (see Samavi, 2022, for an overview). A strength-based perspective, rooted in the positive psychology framework, moves beyond the exploration of pathological factors and underscores the importance of recognising and nurturing personal strengths to foster growth and overall well-being. In line with this perspective, the present study focuses on individual traits and resources that can be positively related to AE, including trait emotional intelligence (trait

EI), positive affect and self-care. This is especially relevant to the challenging learning environment following COVID-19 and the need to support AE, with engagement being a key element of the wellbeing model put forth by Seligman (2011).

Correlates of AE and AP

The relationship between trait EI and AE in an online setting has not been investigated, and research has highlighted the importance of considering non-cognitive variables in AE and AP (Sanchez-Ruiz et al., 2016). Trait EI is a constellation of emotion-related self-perceptions that include Sociability, Self-Control, Emotionality and Well-being as its core factors (Petrides et al., 2007). Trait EI has been linked to coping more successfully with academic demands, in addition to better adjustment, engagement, retention outcomes and AP (Petrides et al., 2018). In Lebanon, a study conducted by Sanchez-Ruiz and El Khoury (2019) showed that trait EI predicted AP through major satisfaction among Lebanese undergraduates. Additionally, trait EI was shown to predict AP beyond cognitive ability and the Big Five personality dimensions (e.g., MacCann et al., 2020; Sanchez-Ruiz et al., 2013).

Positive affect has correlated with and predicted both AE and AP in Lebanese (Ayyash-Abdo & Sanchez-Ruiz, 2012) context. This link is attributed to the association between positive affect and determination, mental alertness and enthusiasm, among others (Watson et al., 1988). Given that D'Errico et al. (2016) found positive emotions to be associated with increased AE within various e-learning contexts, there is reason to expect positive affect to play an important role in online AE. The optimism and self-esteem components of trait EI, in addition to emotion regulation, have also been shown to predict positive affect (Ayyash-Abdo & Sanchez-Ruiz, 2012). Therefore, positive affect may mediate the relationship between trait EI and AE.

Another positive variable that has been linked to academic outcomes is self-care, which encompasses a wide range of self-initiated practices and activities that aim to recognise one's internal and external needs, reduce stress, increase wellbeing and help cope with challenging situations (Hotchkiss & Cook-Cottone, 2019). Self-care is expected to have a positive relationship with AE given its core component of effective engagement with external demands (Cook-Cottone & Guyker, 2018). Although limited, research has found the two constructs to be related, and this was replicated in an online setting following the COVID-19 pandemic (Cleofas, 2021). Given the relationship between trait EI and the use of adaptive coping to manage stress (Petrides et al., 2007) and promote physical health (Sarrionandia & Mikolajczak, 2020), we expect self-care to be linked to trait EI in a similar way. Although

scarce, research conducted in this direction supports this link (e.g., Bermejo-Martins et al., 2021). Furthermore, we expect positive affect and self-care to covary given the reciprocal relationship between the variables (e.g., Disabato et al., 2022).

The present study

To our knowledge, this is the first study to explore the role of trait EI, positive affect and self-care in AE and AP in general and in Lebanon in particular within the framework of positive psychology following the transition to online learning. This is especially useful for Lebanon, as well as for countries with similar contexts, given that the country had not previously utilised online modalities before the outbreak. With the increased use of online learning methods across the country and globally, our study aims to explore factors that can be helpful in maintaining online student AE, especially during stressful times, in addition to factors that can moderate these relationships, such as gender and course modality.

Based on the reviewed literature, we hypothesise that online AE will positively correlate with AP (H1) and that trait EI, positive affect and self-care will positively correlate with online AE and AP (H2). We expect that both positive affect (H3) and self-care (H4) will mediate the relationship between trait EI and online AE, and we will explore whether gender (H5) and course delivery mode (Synchronous/Asynchronous/Mixed; H6) will moderate this relationship.

METHODS

Participants

A total of 717 undergraduate students (451 women, 264 men, 2 other) of ages 17 to 30 ($M = 20.58$, $SD = 2.23$) from a Lebanese university (with two campuses, one in Beirut and another one in Byblos) participated in this study. Data were collected during 1 month in the Spring 2020 semester following the switch to online learning. All students received emails with the link to the online survey from the Department of Institutional Research and Assessment.

Measures

Participants were asked demographic and academic-related questions (e.g., received and preferred mode of instruction), followed by a set of questionnaires assessing the key study variables. All questionnaires were administered in English, which is widely spoken by the Lebanese youth and is the official language of instruction at the university from which the sample was surveyed.

Academic performance

AP was measured using two indicators. Cumulative GPA obtained from official university records served as an objective indicator and the self-perceived performance subscale of the adapted OSE served as a subjective indicator.

Online Student Engagement Scale (OSE; Dixon, 2015)

The OSE is a 19-item questionnaire that assesses four areas of online AE: skills, emotions, participation and performance (Dixon, 2015). To ensure that the OSE items were relevant to the online learning experience of the present study sample, one of our research team members conducted a focus group on a matching sample of 30 students from the same university prior to data collection. As a result, two items were added: (a) “I removed all distracting environmental factors when taking online classes,” added to the skills factor, and (b) “I communicated often with the instructor about the content of the course material,” added to the participation factor. In addition, within the participation factor, one item was modified from “Posting in the discussion forum regularly” to “I worked with other students on course projects or assignments.” The performance factor, formed of two items (“I got a good grade” and “I did well on the tests/quizzes”), was identified as self-perceived performance and considered as a separate outcome variable which we used to measure AP alongside the official cumulative GPA.

Participants rated the resulting 21-item scale from 1 (Not at all characteristic of me) to 5 (Very characteristic of me) according to the following instructions: “Based on your online learning experience during the last semester, how well did the following behaviors, thoughts, and feelings describe you?” An exploratory factor analysis was conducted revealing a three-factor structure, identified as academic proactivity (previously “skills”), intrinsic academic motivation (previously “emotions”) and academic participation (previously “participation”). The suggested structure was confirmed by a CFA: CFI = .929, TLI = .918, RMSEA [90% CI] = .062 [.053, .072], SRMR = .050, $\chi^2(149) = 323.738$. Both the adapted OSE and the separated self-perceived performance factor had a Cronbach’s alpha of .90, showing high internal consistency.

The Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF)

The TEIQue-SF (Petrides, 2009) is a 30-item questionnaire that measures global trait EI (calculated as the total score) along with its four factors: sociability, emotionality, wellbeing and self-control (e.g., “I’m usually able to find ways to control my emotions when I want

to”). Participants were asked to “answer each statement based on how you generally think, feel, and behave, regardless of the COVID-19 outbreak” using a 7-point Likert scale from 1 (completely disagree) to 7 (completely agree). The TEIQue-SF items are based on the long form of the questionnaire, which has been validated in Lebanon and has shown good psychometric properties (Sanchez-Ruiz et al., 2021). Although the TEIQue-SF has not yet been validated in Lebanon, previous studies using it have reported good reliability scores (e.g., Sanchez-Ruiz & El Khoury, 2019). Cronbach’s alpha for the global score in this study was .88.

Positive affect and negative affect scale – positive affect dimension (PANAS)

The 10-item positive affect dimension of the PANAS (Watson et al., 1988) was used in this study. Participants were asked to rate the extent to which they experienced a list of moods (e.g., interested) since the beginning of the COVID-19 outbreak on a five-point scale ranging from 1 (Very slightly or not at all) to 5 (Extremely). We used a structure similar to that by Egloff et al. (2003) to examine positive affect as a latent variable for three facets: joy, interest and activation. The English PANAS was previously used in Lebanon showing satisfactory reliability (e.g., Ayyash-Abdo & Sanchez-Ruiz, 2012). Cronbach’s alpha in this sample was .91.

Holistic self-care questionnaire

We developed a self-care scale based on online focus group discussions with students from two psychology courses in the same university. The goal of these discussions was to explore which self-care strategies were used by students during the time of online learning and to develop a corresponding assessment tool that is contextually relevant to the study sample’s experience. Both group discussions took place on an online platform for around 20 minutes as part of the courses and were facilitated by one of the researchers. The main themes that emerged were: getting enough sleep, making time for creativity, eating well, connecting with others and journaling, among others. The data were recorded in the platform and were then analysed in terms of frequency.

The result was a 19-item self-care questionnaire with a 7-point Likert scale ranging from 1 (Never) to 7 (Almost all the time) based on applicability since the beginning of the outbreak. Sample items include “sleeping enough hours.” An exploratory factor analysis of this scale suggested a five-factor structure; however, it did not perform well when tested via CFA. Six items were deleted following modification indices combined with theoretical reasoning. As per CFA results, the remaining 13

items formed a five-factor structure as follows: gratefulness, body care, relaxing activities, hobbies and grounding activities; CFI = .946, TLI = .923, RMSEA [90% CI] = .063 [.049, .077], SRMR = .046, $\chi^2(55) = 129.348$. Cronbach’s alpha was .84 for the overall scale, and .72, .58, .77, .78 and .45 for the factors of gratefulness, body care, relaxing activities, hobbies and grounding activities, respectively.

Procedure

This study was approved by the Lebanese American University Institutional Review Board (Reference number: LAU.SAS.MJ16.29/May/2020). Participants filled out a 15-minute online survey comprising the above questionnaires after providing informed consent. Participation was completely voluntary without incentives. The cumulative GPA of students was matched to their survey responses by the Department of Institutional Research and Assessment, and their anonymity was maintained by eliminating their student ID from all data sets.

Data analysis

Data analysis was conducted using *R* version 4.1.0. Since we adopted the OSE and developed a scale to measure self-care, we conducted an exploratory factor analysis for these scales using principal components analysis on a randomly chosen half of the sample. The number of factors to be extracted was chosen according to a parallel analysis. We then tested the suggested structure using a confirmatory factor analysis on the other half of the sample. We then investigated differences in online AE across gender and course modality and calculated bivariate Pearson correlations between the study variables. The measurement model was then built and assessed via CFA. The structural paths were added to the measurement model and tested. A model was judged to be good if the comparative fit index (CFI) and the Tucker-Lewis index (TLI) are greater than .90, the RMSEA is lower than .06 and the SRMR is below .08.

RESULTS

Differences in gender and course modality

Significant gender differences were observed among the study variables. Compared to men, women were more academically engaged ($t(488) = 2.71, p = .007, d = 0.21$), scored higher on self-perceived performance ($t(478) = 3.14, p = .002, d = 0.25$) and had higher cumulative GPA ($t(488) = 5.27, p < .001, d = 0.43$). Additionally, women scored higher than men on the Emotionality factor of trait EI ($t(526) = 3.4, p < .001, d = 0.27$) and on the gratefulness factor of self-care ($t(532) = 2.43,$

TABLE 1
Correlations among key variables

	<i>Trait EI</i>	<i>Positive affect</i>	<i>Self-care</i>	<i>Academic engagement</i>	<i>Cumulative GPA</i>
Positive affect	0.53				
Self-care	0.43	0.56			
Academic engagement	0.36	0.51	0.42		
Cumulative GPA	0.14	0.11	0.13	0.25	
Self-perceived performance	0.23	0.29	0.31	0.60	0.40

Note: All correlations are significant after Bonferroni correction, $p = .003$.

$p = .02$, $d = 0.19$). Men scored higher than women on the Self-Control factor of trait EI ($t(559) = 3.01$, $p = .003$, $d = 0.23$) and on positive affect ($t(512) = 3.49$, $p = .001$, $d = 0.28$). No gender differences were found in trait EI, self-care and their remaining factors.

Regarding course modality, only 9% of participants attended strictly asynchronous sessions and were thus excluded from the analyses. Online AE did not differ among students who received synchronous versus mixed types of sessions. However, students who received their preferred mode of instruction showed higher online AE than those who did not ($t(648) = 4.55$, $p < .001$, $d = 0.34$).

Correlations among study variables

Significant positive correlations were found between AE and AP (H1) and also between trait EI, self-care and positive affect with AE and AP (H2). Table 1 shows the correlations among the study variables.

The SEM model

A maximum likelihood estimation method with Satorra-Bentler correction was used for the SEM modelling since the concerned variables did not satisfy the multivariate normality condition. The measurement model was first tested and showed very good fit indices: CFI = .958, TLI = .948, RMSEA [90% CI] = .055 [.047, .063], SRMR = .042, $\chi^2(84) = 247.172$. After adding the structural paths between the variables, the SEM model showed excellent fit: CFI = .963, TLI = .956, RMSEA [90% CI] = .047 [.040, .054], SRMR = .040, $\chi^2(127) = 308.500$ (see Figure 1).

The main result is that positive affect fully mediates the relationship between trait EI and AE (H3), while self-care partially mediates this same relationship (H4). Positive affect and self-care were allowed to covary, in addition to cumulative GPA and self-perceived performance (see Figure 2).

Gender differences

Gender was analysed as a moderating variable. The measurement model was tested for invariance across

the two groups. Configural and metric invariance were achieved. Partial scalar invariance was achieved after freeing the intercepts for the following factors: wellbeing, self-control, emotionality, gratefulness, academic proactivity and the first item on the self-perceived performance, "I got a good grade." Their intercepts were non-invariant across gender, which suggests that the measurement model presents significant differences between men and women regarding the mentioned factors. Concerning the structural model, positive affect fully mediated the relationship between trait EI and AE among men, while both positive affect and self-care fully mediated the relationship between trait EI and AE in women. For both genders, AE had an effect on AP as measured by both GPA and self-perceived performance. Self-care did not show any significance as a mediator in the presence of positive affect among men. Moreover, the latter had more than double the effect, as measured by the standardised regression weight, in men as compared to women. Constraining the model to equality in regression weights, except for the self-care and positive affect components, and comparing it to the unconstrained model showed invariance, which supports gender being as a moderator of the model (H5). The model had excellent fit, CFI = .967, TLI = .960, RMSEA [90% CI] = .044 [.036–.052], SRMR = .044 (see Figure 3).

Course delivery modes

We conducted a multi-group analysis on the model to examine the effect of course delivery modes. First, we checked whether the measurement model was invariant across the synchronous and mixed groups. Configural and metric invariance were achieved, and partial scalar invariance was achieved after freeing the intercepts for the factors Wellbeing and Sociability of trait EI for each of the two groups, as well as the first item in self-perceived performance, "I got a good grade," meaning that the intercepts for the two factors were non-invariant between students who received synchronous sessions and those who received a mixture of live online and pre-recorded sessions. Next, the structural model was assessed and was constrained to equality on the weights of the relationships

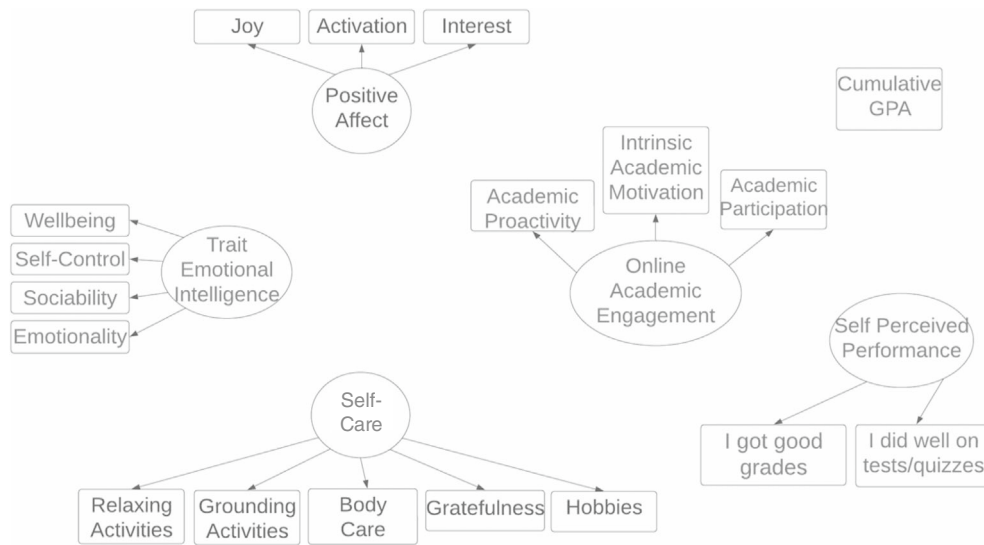


Figure 1. The measurement model.

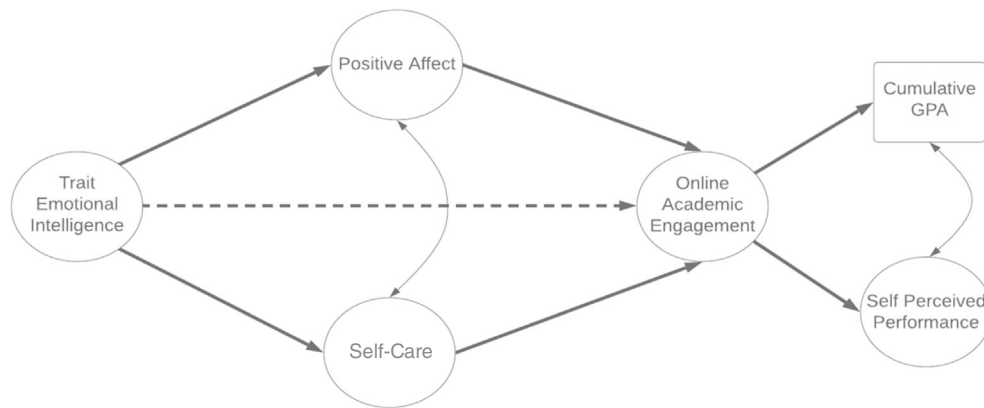


Figure 2. SEM model showing the relationships between the study variables. Note: CFI = .963, TLI = .956, RMSEA [90% CI] = .047 [.040–.054], SRMR = .038.

between AE and AP across the two groups. A significant difference was noted compared to the unconstrained model. After freeing the weights of the self-care score, non-significance was achieved across the constrained and unconstrained models. This implies that the participants receiving synchronous sessions and those receiving mixed sessions share the same coefficients for each of the relationships, except for self-care. Again, a mediation was tested between trait EI and AE, with course delivery mode as moderator and positive affect and self-care as mediators. In synchronous course delivery, the same result as for gender holds, while in mixed course delivery, the effect of self-care was hindered by the full mediating effect of positive affect on the relationship between trait EI and AE (H6). AE also had an effect on AP in both cases. The model had excellent fit indices: CFI = .961, TLI = .953, RMSEA [90% CI] = .049 [.041–.056], SRMR = .045 (see Figure 4).

DISCUSSION

The present study aimed to identify key factors within the framework of positive psychology that can play an essential role in supporting students' online AE and AP, especially during challenging circumstances. Consistent with the literature (e.g., Lei et al., 2018), the findings of this study supported the hypothesised relationships between online AE and AP (H1). This is a key finding given that the relationship was maintained even during COVID-19 and the tumultuous socio-economic context in Lebanon at the time of the study.

Trait EI, positive affect and self-care also correlated positively with online AE and AP (H2), which is expected given that students with high trait EI may be better equipped with the emotional skills to cope with the online learning transition (Petrides et al., 2018). The maintained relationship between trait EI and AP further supports the

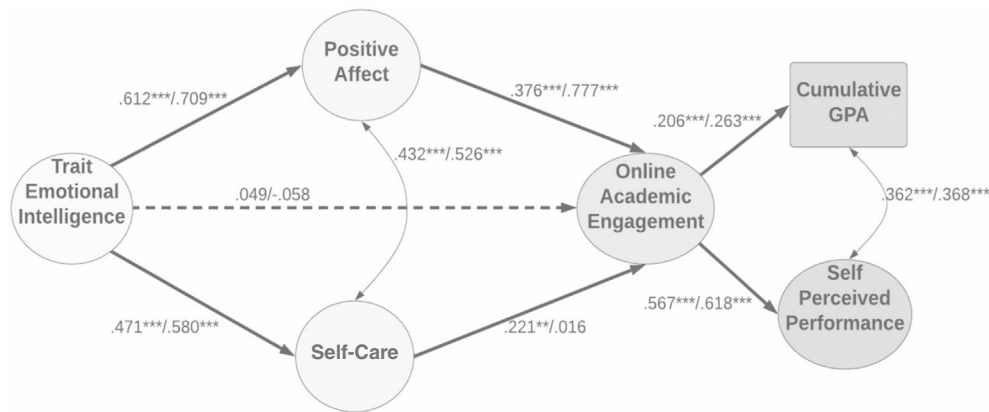


Figure 3. Gender as a moderator. Note: (Women/Men). ** $p < .01$, *** $p < .001$.

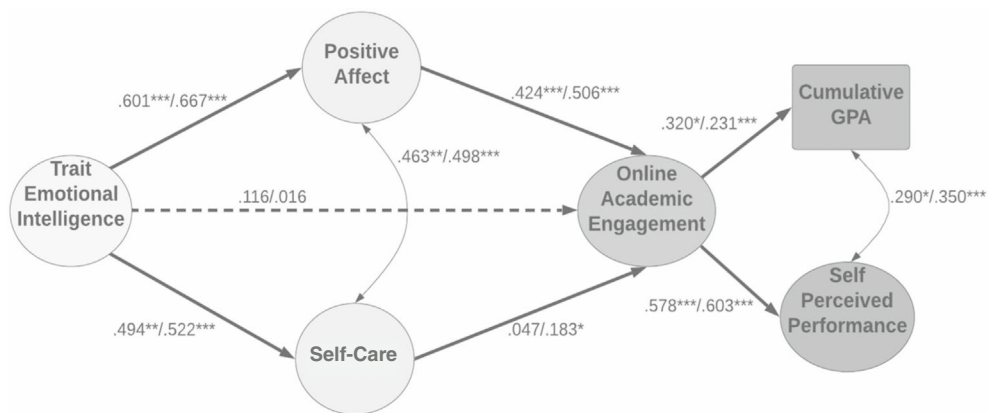


Figure 4. Course modality as a moderator. Note: (Synchronous/Mixed). * $p < .05$, ** $p < .01$, *** $p < .001$.

incremental validity of trait EI over cognitive and personality variables academic outcomes (e.g., Sanchez-Ruiz et al., 2013). The findings related to positive affect highlight the importance of emotions as a personal resource and drive for engagement, potentially through creating a sense of mastery in relation to academic tasks (D'Errico et al., 2016). Although little research exists on the relationship between self-care and academic outcomes (e.g., Cleofas, 2021), the positive association found supports self-care as a relevant factor in learning. Indeed, this might be explained by the value of self-care in facilitating adaptive coping with stress and regulating negative emotions, in addition to buffering against the depletion of personal resources and increase in academic burnout (Wang, 2020).

The SEM model showed that trait EI's link to online AE can be explained through positive affect (H3). Individuals with high trait EI are more likely to use savouring strategies of emotion regulation (Szczygiel & Mikolajczak, 2017), enabling them to prolong and promote the positive emotions elicited from moment-to-moment experiences. Therefore, students with high trait EI might have experienced longer and more frequent states of positive

affect, leaving them engaged with their online courses. Subsequently, these students may have then capitalised on the rewarding experience of being engaged, creating a cycle of continuous sources of positive affect to savour.

Self-Care partially explained the relationship between trait EI and online AE (H4). This is similar to findings from other studies that found that self-care mediated the relationship between trait EI and negative academic outcomes such as academic burnout (Loi & Pryce, 2022). Indeed, trait EI is a factor that promotes and maintains wellbeing both directly and indirectly through other variables, and in the present study, through self-care. With emotion awareness and regulation at the core of trait EI, high scorers are more likely to identify their emotions and utilise adaptive tools to cope or recover (Petrides et al., 2007) and to reduce stress (Bermejo-Martins et al., 2021), and self-care could be one example of those adaptive ways.

Gender was found to be a moderator such that positive affect mediated the relationship between trait EI and online AE among men, whereas both positive affect and self-care mediated this relationship in women (H5). While there were no gender differences in self-care, the

moderating role of gender points to a difference in the role that self-care might have for men and women. For example, self-care might not be relevant for emotionally intelligent men to maintain a state of positive affect and be more academically engaged; in contrast, it might be key for emotionally intelligent women to create positive states that relate to increased engagement in academic activities. Research on gender differences in self-care is scarce; however, a relevant study by Yanci and Dal (2020) found that women teachers scored higher than men teachers on the meaning they assigned to leisurely activities, including subdimensions related to choosing leisurely activities that led them to feel more competent and goal oriented. Although women scored higher than men on the absorption dimensions of work engagement, the source of this difference was not explored. Nevertheless, the study by Yanci and Dal (2020) might have implications on the existence of gender differences in the meanings that are assigned to self-care activities, which ultimately can impact absorption and engagement in academic tasks.

Although online AE did not differ among students who received synchronous versus mixed sessions, the relationship between trait EI and online AE was moderated by course modality (H6). In support of our findings, D'Errico et al. (2016) found that positive affect was directly relevant to synchronous modalities as it acts as a drive behind students' live activities with both instructors and classmates. While positive affect is also relevant for AE in mixed sessions, self-care might have played an additional role to foster the initiative and discipline needed to be independently engaged with pre-recorded learning material outside of an online class environment.

Practical implications

Despite its challenges, online learning has been increasingly adopted globally and in various universities in Lebanon, and has facilitated the development of multiple online programmes. This study identified key characteristics that might play a role in students' engagement in online learning, which can aid educators and counselors in higher education to support students. For example, implementing targeted, evidence-based interventions or workshops may help students build their trait EI and ultimately improve their online learning experience, especially during stressful circumstances. Indeed, recent initiatives targeting trait EI in Lebanese youth have shown encouraging outcomes (Yes to Emotions in Youth programme; Sanchez-Ruiz et al., 2024). Programme directors can also introduce emotional learning into the curriculum to make emotional intelligence an essential part of students' education. Although trait EI is generally linked to improved outcomes across several domains, recent literature has identified some maladaptive aspects of trait EI; in specific emotionally salient contexts, high

levels of trait EI may have deleterious effects, such as such as heightened emotionality and excessive awareness of negative emotion-laden situations and stress response (see Davis & Nichols, 2016). These effects can be particularly relevant in emotionally salient contexts such as the new online learning experience during the pandemic, but can be extrapolated to any academic-related stressful situation. Thus, any emotion education intervention with the aim of developing trait EI should take these potential negative aspects into consideration.

The present findings also highlight the roles of self-care and positive affect in enhancing online AE and AP. For example, trainings on prioritising self-care and cultivating positive emotions may enable students to overcome obstacles and excel in their learning. Both synchronous and asynchronous classes could commence with activities designed to generate positive emotions, fostering greater student involvement. For students in asynchronous classes, it would be helpful to promote self-care practices outside of the classroom. Such interventions may promote AE and AP, and ultimately wellbeing, a key outcome within the framework of positive psychology. The lessons learned from the present study in the context of online learning in higher education during health and socio-economic uncertainty will help shape and inform the educational experience for years to come.

Limitations and recommendations for future research

Our study is not without limitations. First, the measures used in this study were self-report, which may create a mono-method bias. For example, AE correlated weakly with cumulative GPA but strongly with self-perceived performance, which might indicate that the latter was inflated due to common method effect. Second, some of the scales administered have been used in the Middle East but not yet validated. This is the case of the OSE scale (Dixon, 2015), which has not been part of a validation study in the region, possibly because there was no need prior to COVID-19 to measure education-related variables in the online context. Furthermore, the Holistic Self-Care Questionnaire was developed for the purpose of this study, and, although the preliminary factor analysis and correlations with key variables in the present study demonstrate good psychometric properties, future studies should focus on providing evidence of its validity. Third, although there were some gender differences at the factor level, for the purpose of our examination, we focused on global trait EI and self-care scores. It would also be worthwhile to investigate gender differences at the factor level of these two constructs (as well as the relationship between them). Fourth, our study included students from one private institution in Lebanon with English as the official language of instruction, so the findings might not be

generalizable to public universities or universities in other regions in Lebanon. Finally, our findings are from one snapshot in a specific time period for which we do not have a point of comparison.

Future research would benefit from using a longitudinal or mixed methods design to explore the stability and directionality of the relationships between study variables across contexts. In addition, even though the study participants are requested to have a high level of English proficiency to enrol at the university where data was gathered, future designs would benefit from taking into account participants' English levels to ensure a standardised academic language level within an Arabic-speaking population. Lastly, targeting a more diverse sample may increase generalizability of the findings, and future studies can explore the sources of gender differences in self-care and AE, potentially in the meanings that men and women assign to self-care practices.

COMPLIANCE WITH ETHICAL STANDARDS

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee at the Lebanese American University and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual adult participants included in the study.

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