



Research article

How daily positive affect increases students' mental health, in mandatory quarantine, through daily engagement: the moderating role of self-leadership

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ARTICLE INFO

Keywords:

Positive affect
Mental health
Academic engagement
Self-leadership
Multilevel modeling

ABSTRACT

The COVID-19 crisis has had significant impacts on mental health. Students are dealing with an uncertain context, not only due to COVID-19 but also because most of them have never been involved with the challenges of online school. The COVID-19 situation presents daily challenges that require students to respond adaptively. However, little is known about how students handle their daily emotions, in such challenging settings. Drawing on the broaden-and-build theory, we developed a multilevel model arguing that daily-positive affect would enhance daily engagement, and this would be positively related to students' end-of-the-day mental health. We also predict that the mediating path would be stronger for students with higher levels of self-leadership. To achieve the goals, we conducted a 5-day diary study ($n = 64 \times 5 = 320$). Results from multilevel modeling showed that positive emotions trigger academic engagement which, in turn, increases mental health, both at the within and between-person level. Results also demonstrated that self-leadership strengthened the positive mediating path, for students with higher levels of self-leadership. Positive affect appears to be a significant predictor of mental health in higher education settings. Moreover, developing self-leadership is an added value, that may be conceived as a personal resource, and may protect students from the uncertainty triggered by the COVID-19 crisis.

1. Introduction

Mental health has been significantly affected by the COVID-19 pandemic crisis. Recognizing the importance of mental health, scholars have sought to understand the psychological damage of the COVID-19 crisis on workers and students (e.g., Li et al., 2021). For instance, Jiloha (2020) stated that individuals are becoming more anxious, angry, stressed, agitated, and withdrawn during the outbreak, or while in quarantine. In a similar vein, Kaparounaki et al. (2020) reported: (1) increased levels of anxiety (43%), depression (74%), and suicidal thoughts (63%), and (2) a decrease in the quality of sleep (43%) and quality of life (57%).

Students are dealing with an uncertain context, not only due to COVID-19 but also because most of them have never been involved with the challenges of online school. The volatile COVID-19 situation presents daily challenges that require students to respond adaptively and

effortfully. In a complex world full of unpredictable changes, emotional experiences are a key resource that shapes daily life (Junça Silva et al., 2021). Empirically, positive emotions are crucial to ameliorating mental health. Diener et al. (1985) stated that the affective component of subjective well-being - that is, the set of positive and negative emotional experiences - is relevant to predict overall happiness. Accordingly, a happy individual tends to experience more often positive emotions (e.g., satisfaction, enthusiasm), and less regularly negative emotions (e.g., sadness, anger).

The broaden-and-build theory (B&B; Fredrickson, 1998) argues that experiencing positive emotions leads to higher levels of emotional and physical well-being because the experience of positive emotional experiences helps the individual to expand his/her scope of cognition and attention, allowing for expansive and novel behaviors. Diverse studies supported this assumption and have shown that positive emotions widen cognitive repertoires. For example, Chang et al. (2020) demonstrated that

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positive emotions make individuals healthier (physically and mentally) and less stressed, even when hassles occur (Junça-Silva et al., 2017). Moreover, feeling positive emotions increased affective commitment (Casaló et al., 2021), and daily engagement (Ouweneel et al., 2012a, 2012b).

This path between positive emotions and positive outcomes is, as Diener et al. (2020) stated, a mediational pathway by which resources are built. These resources might be physical (vigor), behavioral (self-leadership), social (empathy), or psychological (optimism). Indeed, the B&B theory proposes that the frequent experience of positive emotions is associated with the development and accumulation of positive resources (Fredrickson, 2001). Concerning this, Junça-Silva et al. (2017) demonstrated that positive emotions predicted work engagement which influenced well-being. Thus, daily positive emotions tend to enlarge the individuals' daily work engagement – the set of vigor, dedication, and absorption – which in turn, will enable a sense of accomplishment and energy, resulting in higher happiness, well-being, and mental health.

Engagement, as a positive motivational state, has been empirically associated with positive behavioral tendencies, such as self-leadership (Breevaart et al., 2016) – a process of self-controlling behavior using behavioral and cognitive strategies (Manz, 1986; Manz and Neck, 2004). Individuals with higher levels of engagement tend to use regularly self-leadership behaviors – such as behavior-focused, natural reward, or constructive thought pattern strategies, aimed to attain some goals (Gomes et al., 2015). Thus, the use of such behavioral strategies may maximize the positive effects of the mediational path between positive emotions and mental health through engagement.

Despite the existence of empirical tests of these assumptions, most of them resort to cross-sectional designs that do not allow for an analysis of the intra-individual variability. Thus, little is known regarding the interactions among these variables together, and we know even less about the interplay between individual behavioral tendencies (e.g., self-leadership) and positive emotions, at the daily level.

To expand the knowledge on this topic and based on the B&B theory, we propose a motivational path in which daily positive emotions, conceived as energy repertoires, will increase engagement, which in turn will improve mental health. In addition, because self-leadership enables self-monitoring and auto-reward behaviors, we expect that it will moderate the motivational path.

2. Theoretical background

2.1. The broaden-and-build theory of positive emotions

The importance of positive emotions has been acknowledged by diverse scholars who demonstrated their impact on several positive outcomes, such as well-being and health (Chang et al., 2020). In the literature, positive emotions are affective states, processes, and functions regarded as valuable in themselves (Diener et al., 2020).

One of the most frequent theoretical bases to understand positive emotions is the B&B theory (Fredrickson, 1998, 2001). This theory suggests that “momentary experiences of mild, everyday positive emotions broaden people’s awareness in ways that, over time and with frequent recurrence, build consequential personal resources that contribute to their overall emotional and physical well-being” (Fredrickson and Joiner, 2018, p. 194). These processes allow positive emotions to broaden the individuals' thoughts, actions, and dispositions by stimulating their cognitions, attention, and novel behaviors which, in turn, nourish the growth of resources (Fredrickson, 1998, 2001). As such, positive emotions appear to be a source of personal resources that are crucial to deal with daily challenges (Fredrickson and Joiner, 2018).

Personal resources are individual characteristics that assist individuals to deal with their daily life and are related to their own resiliency (Schaufeli and Taris, 2014). In addition, they are enduring (Fredrickson, 2001; Halbesleben et al., 2014), and may include physical (stamina), cognitive (strategic thinking), social (relationship quality), or psychological (engagement) processes that predict positive outcomes, or

attenuate the negative impact of daily hassles (Diener et al., 2020). Hence, these built resources, are a result of positive emotions' cumulative effect, over time (Fredrickson, 2001).

Recently, Diener and colleagues (2020) proposed a mediational channel from positive emotions to positive outcomes. Accordingly, the authors stated that the B&B theory assumes an affect-to-cognition-to outcome route (Diener et al., 2020). In this sense, positive emotions expand cognitive repertoires, enabling expansive behaviors which, in turn, leads to positive daily behaviors. This is in line with the undoing effect, which is described as a potential mechanism that explains how positive emotions influence health outcomes (Fredrickson and Levenson, 1988). Hence, the experience of positive emotions may help the individual recover his/her body's physiological response to stress; that is, positive emotions “correct” or “undo” the detrimental influences of negative emotions. As such, positive emotions are an added value to down-regulate, not only negative emotions but also the psychological actions that they build.

This has received some empirical support. For example, Boehm et al. (2020), in a longitudinal study over 20 years, showed that positive emotions were associated with cardiovascular health. Likewise, Kiken et al. (2017), in their nine-week field study, demonstrated that positive emotions predicted psychological health, in particular for those who were more mindful and for those who tended to savor the moment. Heininga and Kuppens (2021), in their review of ecological momentary assessment studies on positive emotions, highlighted that positive emotions were negatively related to mood disorders. Kwok and Fang (2021), in a longitudinal study with students, showed that positive emotions positively predict positive meaning, strengths use, and academic engagement. Junça-Silva et al. (2017) also demonstrated that positive emotions, triggered by daily uplifts, improved engagement, and well-being. Moskowitz et al. (2021) conducted a thorough review of positive interventions using positive emotions; they highlighted that the experience of positive emotions helped the individuals to improve their physical and psychological health.

2.2. The mediating role of work engagement

Schaufeli and Salanova (2007) argued that positive emotions predict work engagement, both at the daily and individual levels. Leiter and Bakker (2010, p. 1) defined work engagement as “a positive, fulfilling, affective-motivational state of work-related well-being”, that is characterized by three components: (1) *vigor* (characterized by higher levels of energy to perform the tasks); (2) *dedication* (characterized by higher levels of involvement and enthusiasm while performing the tasks), and; (3) *absorption* in work (being concentrated while performing the tasks) (Schaufeli and Bakker, 2004).

As stated before, the B&B theory suggests that positive emotions serve to build personal resources needed for daily life at work. This idea of broadening personal resources (e.g., work engagement) suggests a mediational pathway that delivers positive outcomes, such as health. This has been demonstrated empirically. For instance, Nylocks et al. (2019), in a 14-day diary study, showed that within-person levels of positive emotions were associated with engagement, and this was linked to positive health behaviors. In a similar vein, Ouweneel et al. (2011), in their two-wave study, evidenced that positive emotions influenced students' future personal resources and engagement. Likewise, in a diary study in a higher education institute, Ouweneel et al. (2012a, 2012b) showed that positive emotions influenced academic engagement via experiences of hope. Ouweneel et al. (2012a, 2012b) also demonstrated, in their two-wave study, that positive emotions served to build personal resources, which impacted work engagement, and this impacted again on positive emotions.

Despite the numerous studies that analyze positive emotions, work engagement, and mental health, to our best knowledge, there are no studies analyzing the mediating model, considering within and between-person variance. As such, we aim to test the mediating path that starts with positive emotions as the first predictor in the causal chain. Based on

the B&B, and in Diener et al. (2020), we expect that positive emotions will build personal resources (work engagement), which in turn, will enhance mental health. Hence, we defined the following:

Hypothesis 1. The relation between daily positive emotions and daily mental health will be mediated by daily work engagement.

2.3. The moderating role of self-leadership

Recently, self-leadership has been noticed by scholars and practitioners (e.g., Mans and Sims, 2001). However, self-leadership has been investigated under the framework of work and organizational psychology; studies analyzing self-leadership among university students are scarce.

Self-leadership was defined as a process of self-influence that involves the development of behavioral self-regulation strategies, such as self-directed behavior and self-motivation strategies, to complete daily tasks and attain personal, work, or academic goals (Manz, 1986; Manz and Neck, 2004). Self-leaders can self-regulate their behavior effectively by the use of strategies that help them to achieve their purposes. There are three kinds of strategies: (1) behavior-focused; (2) natural reward and, (3) constructive thought pattern strategies (Manz and Neck, 2004).

First, behavior-focused strategies raise an individual’s self-awareness to facilitate behavioral regulation, for activities needed, but unpleasant (Manz and Neck, 2004); for instance, (1) self-observation (increasing self-awareness of when and why to engage in certain adaptive behaviors, and which ones are to eliminate (Mans and Neck, 2004), (2) self-goal setting (based on self-observation, individuals can set challenging and specific goals), (3) self-reward (it serves to award the effort involved, and it may vary between something simple – such as mentally self-congratulate for an attained goal – to more complex rewards – such as a special vacation after a complex work finished), (4) self-punishment (that is, it involves an introspection of the behavioral process, including potential errors or negative behaviors with the aim to improve the performance toward the goals), and (5) self-cueing (self-regulates attention and keep the energy needed to focus on the goals, and at the same time serve to empower constructive behaviors and eliminate destructive ones (Mans and Neck, 2004), and may include lists, notes, screensavers and motivational posts). Thus, behavior-focused strategies aim to encourage positive and adaptive behaviors needed to attain certain goals.

Secondly, natural reward strategies aim to reward intrinsically through intrinsic factors (Manz and Neck, 2004); for instance: (1) create activities that turn out to be more pleasant and enjoyable (Manz and Sims, 2001); (2) reappraise activities in a more pleasant way, or look at the enjoyable aspects of the activity (Manz and Sims, 2001). Both strategies are motivating and energize adaptive behaviors because by turning the focus to the intrinsic and enjoyable aspects of the tasks they create feelings of competence and self-determination (Deci and Ryan, 1985).

At last, constructive thought pattern strategies include, for instance, identifying and changing dysfunctional beliefs and suppositions with more constructive thought processes, changing negative and destructive self-talk with more optimistic self-dialogues (what individuals secretly tell themselves regarding self-evaluations and reactions; Neck and Manz, 1996), and mental imagery (thinking about the situation prior to its

occurrence; Neck and Manz, 1996). These create positive beliefs about the self and thus improve the likelihood of daily adaptive behaviors (Manz and Neck, 2004).

One of the greatest challenges students face in leading themselves is the self-regulation of their mental health. With the pandemic crisis of COVID-19, universities are facing serious mental health problems (Maykrantz and Houghton, 2020). Mental health goes beyond the simple absence of mental illness; instead, it is a state of well-being in which individuals realize their own potential, cope with daily hassles, and can work effectively (World Health Organization, 2020). Jiloha (2020) stated that students are becoming more anxious, angry, stressed, agitated, and withdrawn during the outbreak, or while in quarantine.

Some researchers suggested that self-leadership has the potential to reduce these negative effects by inspiring the individual to self-influence and, as a result, shaping behaviors that, in turn, lead to more positive results (Manz, 1986). Several studies are exploring the link between self-leadership and mental health (e.g., Lovelace et al., 2007) For instance, the model proposed by Lovelace et al. (2007), suggested that, under stressful working conditions, self-leadership attenuates its detrimental effects leading to a more healthful regeneration and engagement to daily activities, even the unpleasant ones.

Additionally, self-leadership skills can be trained. It adds potential for individuals to deal with the daily challenges posed by the dynamic, complex, and uncertain world. In addition, Lovelace et al. (2007) suggested that self-leadership is associated with engagement by facilitating the energy, dedication, and focus needed to attain the goals. Training self-leadership may improve self-direction and self-motivation needed to attain goals (Manz and Neck, 2004), and is positively associated with satisfaction and negatively related to stress (Dolbier et al., 2001). Based on the theoretical bases described, we hypothesized that:

Hypothesis 2. Self-leadership will moderate the indirect effect of daily positive emotions on daily mental health through the mediation of daily work engagement, such that it will be stronger for higher levels of self-leadership rather than for lower levels (Figure 1).

3. Method

3.1. Participants and procedure

In this study, participated sixty-four students, from one higher education institution, attending a management' course. Overall, 85% were female and the mean age was 23.96 years old (SD = 6.41). On average, participants studied for about 12.72 h per week (SD = 11.90).

Before collecting the data, the study was approved by the ethics committee of the higher education institution. Then, students were asked to participate in a study. The ones that agreed to participate, received more information about the goals of the study and the data collection procedure – a five-day diary study. They were also clarified about the anonymity and confidentiality nature of the data. They had to sign an informed consent before starting the surveys. Each student received a daily reminder, to answer the survey, at the end of the day, at 6 pm, for 5 consecutive days (from Monday to Friday). They had to answer by 10 pm. Of the 68 students

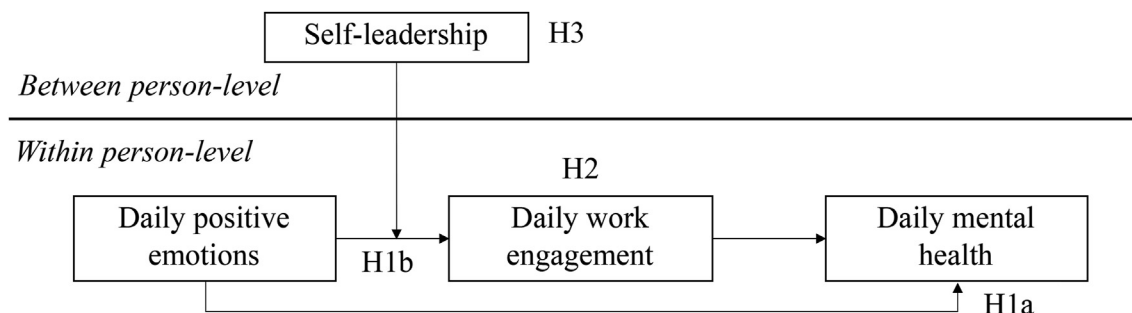


Figure 1. The hypothesized moderated mediation model.

that agreed to participate, 64 answered and gave valid responses across the five days (response rate: 94%; measurement occasions: 320).

3.2. Measures

3.2.1. Daily positive emotions

We used the 8-item Multi-Affect Indicator (Warr, et al., 2014), to measure daily positive emotions experienced during classes on that day (e.g., “happy”). They answered on a 5-point scale (1 – never; 5 – always). Multilevel reliability tests indicated acceptable reliability for daily positive emotions ($\alpha_{\text{between}} = .79$, $\omega_{\text{between}} = .76$; $\alpha_{\text{within}} = .76$, $\omega_{\text{within}} = .75$).

3.2.2. Daily work engagement

We used the three items from Ultra-short Measure for Work Engagement (Schaufeli et al., 2017), of which an example item is: “Today, at my course I felt bursting with energy”. All items were answered on a five-point scale (1 = never, 5 = always) ($\alpha_{\text{between}} = .69$, $\omega_{\text{between}} = .71$; $\alpha_{\text{within}} = .86$, $\omega_{\text{within}} = .86$).

3.2.3. Daily mental health

We used three items from Ware et al. (2007) to evaluate students' daily mental health: “How much of the time during this day, have you been happy?”. Items were rated on a 5-point scale ranging from 1 (none of the time) to 5 (all of the time) ($\alpha_{\text{between}} = .78$, $\omega_{\text{between}} = .79$; $\alpha_{\text{within}} = .84$, $\omega_{\text{within}} = .86$).

3.2.4. Self-leadership

We used the revised self-leadership questionnaire (Houghton and Neck, 2002). It included six items that assessed self-goal setting (e.g., “I work toward specific goals I have set for myself”), self-reward, (e.g., “When I have successfully completed a task, I often reward myself with something I like”), and self-observation (e.g., “I make a point to keep track of how well I’m doing at school”). Participants answered on a five-point scale (1 = totally disagree; 5 = totally agree) ($\alpha = .88$, $\omega = .87$).

3.2.5. Control variables

We used sex as an individual level control variable, because the sex of the participant may account for differences in daily experienced emotions as women tend to report higher levels positive emotions (Dello Russo et al., 2021). We also used the time of data collection (from Monday to Friday) as a daily-level control variable because other studies identified it as an influence regarding criterion variables (e.g., Junça-Silva and Silva, 2022).

3.3. Data analysis

Due to the nature of the data, we used multi-level analysis with nested data to test the model. First, the analysis of variance components indicated that the variables under study had significant variation both at within and between-person levels (daily positive emotions: ICC = .65; daily work engagement: ICC = .56; daily mental health: ICC = .44). Hence, we proceeded with the multilevel analysis.

We used the macro–Multilevel Mediation (MLMed) in SPSS (Rockwood, 2017) to test the hypotheses. This macro appears to be as robust as other software (e.g., Mplus) while estimating the model parameters, and it is particularly useful for models that include level-2 moderators (Rockwood, 2017). We observed the model fit through the analysis of the reduction in model deviance from data (–2LL) at each step of the hypotheses testing (Snijders and Bosker, 1999).

4. Results

4.1. Multilevel confirmatory factor analysis

To test for common method bias, we ran a multilevel confirmatory factor analysis. The results showed that the four-factor model (daily

positive emotions, daily work engagement, and daily mental health) fitted the data well (at both within-and-between-person levels: RMSEA = .09, CFI = .93 TLI = .89, SRMR_{within} = .06, SRMR_{between} = .06). On the other hand, the single factor-model (at both within-and-between-person level) showed an unacceptable fit to the data (RMSEA = .17, CFI = .72 TLI = .66, SRMR_{within} = .09, SRMR_{between} = .15).

4.2. Descriptive statistics and correlations

Table 1 shows the descriptive statistics and correlations.

Table 1. Means, Standard deviations, and Between-and Within-Person Level Correlations.

Variables	M_b, M_w	SD_b, SD_w	1	2	3	4
1. Positive emotions	3.25–3.04	.58–.80	-	.61***	.71***	.12*
2. Work engagement	3.47–3.27	.65–.89	.44***	-	.66***	.16***
3. Mental health	3.32–3.31	.70–1.02	.58***	.35***	-	.11*
4. Self-leadership	4.63	.56	.04	.24*	-.05	-

Note. Correlations below the diagonal are between-person level. Correlations above the diagonal are within-person level. $N_{(\text{observations})} = 320$; $n_{(\text{participants})} = 64$. *** $p < .001$, ** $p < .01$, * $p < .05$.

4.3. Hypotheses testing

Hypothesis 1 expected that daily positive emotions would positively predict daily mental health through daily work engagement. The results showed a significant indirect effect of daily work engagement, both at between and within-person levels (Estimate_{between} = .33, $p = .00$, 95% CI [.13, .55]; Estimate_{within} = .18, $p = .00$, 95% CI [.11, .26]) (see Table 2). Thus, Hypothesis 1 was supported.

Hypothesis 2 predicted that self-leadership would moderate the indirect effect of daily positive emotions on daily mental health through daily work engagement. The index of moderated mediation was .08, with 95% CI (.01, .17) (Table 3). Figure 2 shows that when daily positive emotions increase, daily work engagement is significantly higher for those who scored higher on self-leadership.

5. Discussion

The COVID-19 outbreak has impacted students' mental health in several ways. In support of this, some studies have demonstrated that students, in higher education, are experiencing increased levels of stress, anxiety, and depression about what is happening, which is impacting their mental health (e.g., Kaparounaki et al., 2020). This diary study explores whether an individual characteristic – self-leadership – would interact with a personal resource – daily positive emotions – to predict daily work engagement and mental health.

5.1. Theoretical implications

A central contribution to the literature is the test of the indirect effect of daily positive emotions on mental health via work engagement. The findings show that work engagement mediates the link between positive emotions and mental health, at the within-person level. This means that when students experience positive emotions in their daily academic life (e.g., enthusiasm or joy by performing a pleasant academic task), they tend to be more engaged with their tasks, which in turn, results in better mental health. Our findings are consistent with the B&B theory by demonstrating that, positive emotions energize the individual to accomplish their tasks, feel more involved in them, and as a result, become more focused on what they must do, increasing their daily mental health. Moreover, positive emotions not only broaden the

Table 2. Parameter estimates for 1-1-1 multilevel mediation model.

	Model 1 Mediator (daily work engagement)	Model 1 Dependent (Daily mental health)	Model 2 Mediator (daily work engagement)	Model 2 Dependent (Daily mental health)
Within-level (L1) Effects				
Mean Intercept	.87**	-.15	.67	.20
Daily positive emotions	.53***	.53***	.53***	.53***
Daily work engagement	-	.34***	-	.34***
Time	-	-	-.01	.06***
Between person Effects				
Daily positive emotions	.79***	.68***	.82***	.71***
Daily work engagement	-	.42***	-	.40***
Time	-	-	.14	-.07
Sex	-	-	-.26	-.14
Variance of random components				
Random intercept	.18***	.13***	.17***	.13***
Residual variance	.28***	.29***	.29***	.28***
Direct effect, between-level	.68***		.71***	
Direct effect, within-level	.53***		.53***	
Indirect effect, between-level	.33***		.33***	
Indirect effect, within-level	.18***		.18***	
AIC	1199.48		1191.89	
BIC	1217.23		1209.55	
-2LL	1191.48		1183.89	
Sample size	L1 = 320; L2 = 64			

Note. Maximum likelihood estimation with robust standard errors (MLR) was used in estimation. L1 = level 1, L2 = Level 2 analysis. Model 1 without covariates, Model 2 with covariates. *** $p < .001$, ** $p < .01$, * $p < .05$.

Table 3. Parameter estimates for multilevel moderated mediation model.

	Model 3 Mediator (daily work engagement)	Model 3 Dependent (Daily mental health)	Model 4 Mediator (daily work engagement)	Model 4 Dependent (Daily mental health)
Within-level (L1) Effects				
Mean Intercept	.99	-.14	.49	.20
Daily positive emotions	-.35	.53***	-.35	.53***
Daily work engagement	-	.34***	-	.34***
Self-leadership*Daily positive emotions	.24*	-	.24*	-
Time	-	-	-.01	.06***
Between person Effects				
Daily positive emotions	.60	.68***	.78	.71***
Daily work engagement	-	.42***	-	.40***
Self-leadership	-.02	-	.07	-
Self-leadership*Daily positive emotions	.05	-	-.01	-
Time			.12	-.08
Sex			-.16	-.14
Variance of random components				
Random intercept	.18***	.13***	.18***	.12***
Residual variance	.28***	.29***	.28***	.16***
Direct effect, between-level	.68***		.71***	
Direct effect, within-level	.53***		.53***	
Index of moderated mediation, between-level	.02		-.01	
Index of moderated mediation, within-level	.08***		.08***	
AIC	1185.91		1186.13	
BIC	1203.59		1203.75	
-2LL	1177.91		1178.13	
Sample size	L1 = 320; L2 = 64			

Note. Maximum likelihood estimation with robust standard errors (MLR) was used in estimation. L1 = level 1, L2 = Level 2 analysis. Model 3 without covariates, Model 4 with covariates. *** $p < .001$, ** $p < .01$, * $p < .05$.

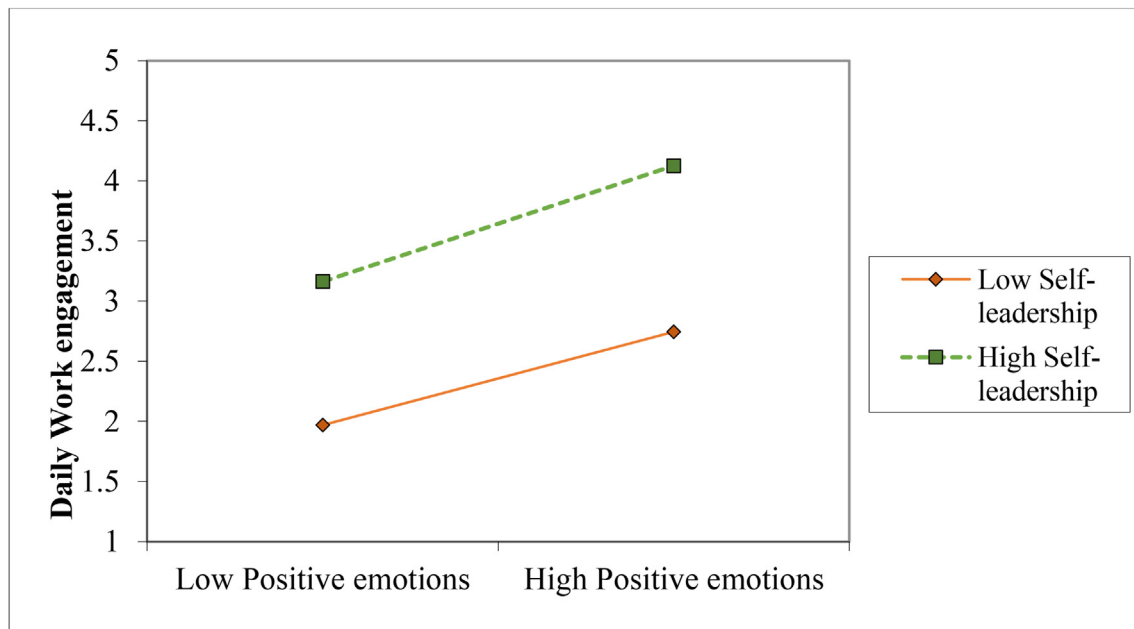


Figure 2. Cross-level interaction between daily positive emotions and self-leadership.

individuals' attention and behavior but also helps them to develop resources, such as academic engagement and mental health (Fredriksson, 2001). Hence, the B&B supports both the direct relation between positive emotions and academic engagement and the indirect one between positive emotions and mental health via academic engagement. Additionally, the conservation of resources theory (Hobfoll, 1998) may support this finding. Accordingly, individuals develop efforts to protect and develop their own resources (Hobfoll et al., 2018). When students experience positive emotions, they create conditions to protect themselves and acquire more resources enabling thereby engaging in what they have to achieve leading to higher levels of mental health.

Moreover, the conditional effect of self-leadership in this indirect effect was the second contribution to the literature. The results evidence that the indirect effect of positive emotions on mental health via work engagement depends on the levels of self-leadership, such that the indirect effect becomes stronger when individuals score high on self-leadership. This means that self-leadership is a boundary condition that intensifies the benefits of experiencing daily positive emotions and helps to construe daily engagement at the within-person level. In other words, when individuals engage in behavioral strategies for self-direct and self-motivate, they take advantage of the experience of positive emotions and thus facilitate their engagement with the tasks at hand and feel better about themselves. Thus, self-leadership is a personal resource that, on one hand, facilitates the focus and dedication needed, even for unpleasant tasks, and on the other hand, energizes the individual to accomplish it. Hence, students benefit from this interaction and have an increased likelihood of flourishing, in the short and long term (e.g., Luthans, 2002).

Overall, we demonstrate that positive emotions increase engagement which, in turn, enhances mental health, on a daily basis. Moreover, self-leadership when interacting with positive emotions, facilitates work engagement. Thus, self-leadership is a cross-level boundary condition that intensifies the positive effects of experiencing daily positive emotions on daily engagement and daily mental health.

5.2. Limitations and future research

Despite the strengths of the study, it has some limitations. First, we measured trait-based self-leadership, because we were interested in the cross-level interaction. However, daily self-leadership would be relevant

for future studies (Maykrantz and Houghton, 2020). Moreover, we used self-reported measures to assess the variables, which might account for common method variance (Podsakoff et al., 2003), even though there are studies that identify self-reported measures as the ones that best capture inner feelings (positive emotions), states (mental health) or attitudes (academic engagement) (Junça-Silva, 2022). In future research, it should be relevant to use other sources of information (e.g., colleagues, and teachers) regarding daily engagement.

5.3. Practical contributions

This research shows the relevance of individual behavioral strategies for teachers, who can find here evidence that training their students with self-leadership behavioral strategies may impact their academic engagement, and at the same time may act as a protection against daily uncertainty and negative emotional experiences. Stimulating engagement and self-leadership tendencies and behaviors may lead to adaptive behaviors to uncertain daily life conditions, that result in better health. In addition, it should be interesting, from a practical point of view, to create “self-leader days” in which students could demonstrate their self-leadership behaviors or even a coaching program focused on self-leadership among students.

6. Conclusion

This study shows the positive mediational path between positive emotions, work engagement, and mental health, among students, both at the daily and person level. In addition, it sheds light on the power that self-leadership plays in this path. That is, individuals who experience more positive emotions, become more engaged with their work, leading therefore to better mental health. However, this is intensified for those who practice self-leadership.

Declarations

Author contribution statement

Ana Junça-Silva: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Daniel Silva; António Caetano: Conceived and designed the experiments; Performed the experiments.

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability statement

Data will be made available on request.

Declaration of interest's statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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