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ARTICLE

Differential Contributions of Mindfulness, Gratitude, and Forgiveness to Psychological Distress, Well-Being, and Emotion Regulation: A Cross-Sectional Study

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ABSTRACT: Objectives: Virtues have been recognized as central to human flourishing and psychological well-being. This study tested whether three dispositional virtues, i.e., mindfulness, gratitude, and forgiveness, show distinct and overlapping associations with psychological distress, subjective well-being, and emotion-regulation difficulties in adults. **Methods:** A sample of Italian community adults (N = 211; 151 women, 60 men; mean age = 28.63, standard deviation [SD] = 10.89) completed self-report questionnaires assessing mindfulness, gratitude, forgiveness, psychological distress (stress, anxiety, and depression), psychological well-being (subjective happiness, life satisfaction), and emotion regulation difficulties. Sex, age, and lifetime meditation experience were covariates. **Results:** Correlation analysis showed higher virtues related to lower distress and higher well-being. In multivariable models, mindfulness and gratitude uniquely predicted lower depression, anxiety, and stress, whereas forgiveness was non-significant for distress. For well-being, all three virtues were positive, unique predictors, with gratitude and forgiveness showing comparatively stronger links than mindfulness. Emotion-regulation difficulties were lower with higher mindfulness and forgiveness, whereas gratitude was non-significant. Mindfulness, gratitude, and forgiveness form a complementary virtues profile, where different virtues reinforce each other, i.e., mindfulness and gratitude align more with reduced distress, gratitude and forgiveness with enhanced well-being, and mindfulness together with forgiveness with better emotion regulation. **Conclusion:** Mindfulness, gratitude, and forgiveness each contribute uniquely to mental health: mindfulness and gratitude relate more to reduced distress, gratitude and forgiveness to enhanced well-being, and mindfulness and forgiveness to better emotion regulation. Together, they form a complementary virtues profile that supports psychological flourishing and may inform future virtue-based prevention and intervention programs.

KEYWORDS: Mindfulness; gratitude; forgiveness; psychological distress; emotion regulation; well-being

1 Introduction

Virtues have long been recognized as central to human flourishing across philosophical, religious, and psychological traditions [1]. From classical notions of wisdom, courage, temperance, and justice to religious emphasis on compassion, forgiveness, and mindfulness, virtues have been seen as dispositions that guide moral conduct, supporting inner growth and individual well-being [2–6]. Building on this foundation,

contemporary psychological research, particularly in the field of positive psychology, has turned to virtues as key ingredients in promoting psychological well-being [4,7–10].

Contemporary positive psychology draws a key distinction between two forms of psychological well-being: *hedonic* well-being, centered on pleasure, comfort, and the absence of negative emotions, and *eudaimonic* well-being, which emphasizes personal growth, purpose, and self-realization [7,11–13]. While the former reflects transient affective states, the latter is seen as a deeper and more sustainable form of happiness. Within this eudaimonic framework, virtues are conceptualized as psychological strengths that promote human flourishing [1,12]. In recent years, mindfulness, gratitude, and forgiveness have emerged as core traits fostering self-awareness, emotional regulation, and meaningful social connections, dimensions central to eudaimonic well-being [14–16].

Accordingly, in the present study, we focused on mindfulness, gratitude, and forgiveness because they capture three theoretically grounded facets of virtue relevant to mental health: an "attentional-regulatory" orientation (mindfulness), an "other-regarding" reparative orientation (forgiveness), and a "world-directed" appreciative orientation (gratitude). Gratitude and forgiveness are well-established character strengths within the Values in Action/Character Strengths and Virtues taxonomy [1,17], which groups 24 strengths under six broad virtues across cultures. Mindfulness, while not a VIA strength per se, is widely conceptualized as a meta-capacity, defined by attention regulation and an attitude of openness/acceptance, that scaffolds self-regulation and may facilitate the cultivation and expression of virtues [18]. Additionally, theoretical accounts specifically discuss gratitude and forgiveness as virtues with distinct psychological functions and correlates [19].

While prior studies have demonstrated that mindfulness, gratitude, and forgiveness are each beneficial for psychological outcomes, most investigations have considered them in isolation or in pairs, and often with a focus on either distress reduction or well-being enhancement. We assess three outcomes: psychological distress, emotion regulation, and subjective well-being. To provide a comprehensive evaluation, we assessed how each virtue relates to both negative indicators, such as stress, anxiety, and depression (psychological distress), and positive indicators, such as happiness and life satisfaction (subjective well-being). This dual approach aligns with the contemporary definition of mental health as more than the absence of pathology, encompassing the presence of well-being and meaning in life, aligning also with the eudaimonic perspective on well-being. Furthermore, consistent with the dual-continua model of mental health, psychological distress and well-being are related yet distinct dimensions; assessing both is therefore theoretically warranted [20]. Finally, we include emotion regulation as a process-level outcome, given its central status in the Process/Extended Process Models as a proximal mechanism through which virtue-related dispositions may influence both symptoms and well-being [21,22]. By examining all three virtues simultaneously across both negative (distress) and positive (well-being) outcomes, as well as a transdiagnostic mechanism (emotion regulation), our aim is to identify unique versus overlapping contributions of each virtue and highlight which virtues may be more relevant for targeting distress reduction, for fostering well-being, and for emotion-regulation processes.

Dispositional or trait mindfulness is typically defined in terms of two core components: (a) the capacity to maintain present-moment awareness with openness and curiosity, and (b) the ability to adopt an accepting, non-judgmental, and non-reactive stance toward experience [23–25]. Accordingly, dispositional mindfulness has shown robust associations with mental health indicators, with the acceptance-related facets, particularly non-judging and non-reactivity, being especially associated with fewer symptoms [26–29]. These components are commonly referred to as facets of acceptance within mindfulness [18,30], and they appear to be more strongly related to mental health outcomes than present-moment awareness alone [31–33].

Recent reviews confirm the association between mindfulness and the reduction of symptoms of stress, anxiety, and depression [34–37]. Furthermore, mindfulness-based interventions have shown improvements in overall distress [38,39] depression [40,41], anxiety [42–44] across populations.

Gratitude, conceptualized as a generalized tendency to notice and appreciate the positive in one's life [45], has a well-established connection to subjective well-being and lower psychological distress [15, 46–49]. Foundational studies using the "counting blessings" paradigm demonstrated improvements in life satisfaction and affect [50], and meta-analyses confirm consistent, albeit modest, benefits of gratitude interventions on well-being [51]. From a mechanistic perspective, the broaden-and-build theory suggests that gratitude enhances well-being by amplifying positive emotions and psychosocial resources [49,52]. These findings support the hypothesis that gratitude may relate more strongly to well-being than to distress when considered alongside other virtues.

Forgiveness, as conceptualized in Thompson et al. [53], is a trait-like tendency including three domains: forgiveness of self, which involves letting go of negative feelings toward personal mistakes; forgiveness of others, referring to the release of resentment toward people who have caused harm; and forgiveness of situations, defined as the ability to accept and move beyond adverse circumstances beyond one's control [54]. It has been associated with better mental health, partly through reductions in rumination, hostility, and vengefulness [16,53,55]. Meta-analyses of forgiveness interventions show meaningful improvements in psychological outcomes, underscoring its clinical relevance [56,57]. However, evidence is mixed on whether forgiveness more strongly predicts lower distress, higher well-being, or both when other traits are accounted for. Clarifying this pattern requires modeling forgiveness simultaneously with other virtues, such as mindfulness and gratitude.

The present study integrates these strands by examining the unique and shared contributions of mindfulness, gratitude, and forgiveness to psychological distress, subjective well-being, and emotion regulation. Emotion regulation represents a plausible cross-cutting pathway through which these virtues may influence mental health outcomes. Difficulties in emotion regulation are well-established transdiagnostic correlates of various psychological disorders [58–60]. Theoretical frameworks and empirical findings suggest that mindfulness, especially its acceptance-related facets, and forgiveness (e.g., the ability to let go of resentful rumination) are associated with improved regulation skills [31,61]. In contrast, gratitude may exert its benefits primarily through the enhancement of positive affect rather than through direct effects on regulatory processes [27,53]. Testing these differential mechanisms within an integrated model may inform the development of virtue-based clinical interventions tailored to distinguish therapeutic targets.

Building on prior work, we expected that all virtues would correlate favorably with outcomes, negatively with distress, and positively with well-being. Furthermore, we hypothesized that mindfulness would show stronger links to both lower distress and improved emotion regulation, while gratitude would relate more to well-being and forgiveness more to emotion regulation. To test these hypotheses, we examined how each virtue uniquely predicts mental health outcomes while controlling for age, sex, and lifetime meditation experience. Psychological distress (depression, anxiety, and stress) and subjective well-being (happiness and life satisfaction) were designated as primary outcomes, while emotion regulation was considered a secondary outcome. Specifically, in zero-order correlation analysis, we hypothesized (Hypothesis 1a) that all three virtues (mindfulness, gratitude, and forgiveness) will be negatively associated with psychological distress and positively associated with subjective well-being, and (Hypothesis 1b) that the acceptance component of mindfulness (e.g., non-judging, non-reactivity) would correlate more closely with gratitude and forgiveness than with present-moment awareness. In multivariable models controlling for the effects of the other virtues,

(Hypothesis 2a) mindfulness would show stronger unique associations with reduced psychological distress, increased well-being, and reduced difficulties in emotion regulation, while (Hypothesis 2b) gratitude would more strongly predict subjective well-being, and (Hypothesis 2c) forgiveness would more strongly relate to emotional regulation.

2 Methods

2.1 Participants

We conducted a cross-sectional survey using self-report questionnaires administered either in person or online. Participants were recruited via convenience sampling, primarily through online social media platforms and academic mailing lists, resulting in a non-clinical sample of Italian community adults. Participation was uncompensated. Inclusion criteria were being 18 years or older and providing informed consent. No additional screening was applied.

Of 223 adults initially screened, 12 were excluded (six for failed attention checks and six as multivariate outliers), yielding a final sample of N = 211 (151 women, 60 men; Mean age = 28.63, standard deviation [SD] = 10.89). Regarding employment and educational status, the sample was diverse: 53% were currently students, 28% were employed full-time, 12% were employed part-time, and 7% were not working or studying. The educational level was also varied: 52% reported holding a high school degree, 12% a bachelor's degree, 24% a master's degree, and 12% a PhD or specialistic degree.

All measures were administered in Italian in either a pencil-and-paper or an online setting. Lifetime mindfulness-meditation experience was generally low (70% reported 0 h; 24% <100 h; 6% ≥100 h) and was included as a covariate in all analyses as well. The study was approved by the Ethics Committee of the Department of Psychology, Sapienza University of Rome, and all participants provided written or electronic informed consent in accordance with the Declaration of Helsinki.

2.2 Measures

2.2.1 Mindfulness

Dispositional mindfulness was assessed with the Five Facet Mindfulness Questionnaire (FFMQ) [26], covering Observing ("I pay attention to sensations, such as the wind in my hair or sun on my face"), Describing ("I'm good at finding words to describe my feelings"), Acting with Awareness ("When I do things, my mind wanders off and I'm easily distracted"), Non-judging ("I criticize myself for having irrational or inappropriate emotions"), and Non-reacting ("I watch my feelings without getting lost in them"). The Italian validated version was used [62]. Higher scores indicate greater mindfulness. Internal consistency was acceptable to excellent across facets (α = 0.74, 0.90, 0.90, 0.90, 0.81; total α = 0.89).

2.2.2 Gratitude

Dispositional gratitude was measured with the Gratitude Questionnaire-6 (GQ-6) [50]. Example items include "I have so much in life to be thankful for", and "I am grateful to a wide variety of people" (positively worded), as well as reverse-scored items such as "When I look at the world, I don't see much to be grateful for". Higher scores indicate greater dispositional gratitude. In our sample, internal consistency was good (α = 0.80). The Italian validated version was used [63].

2.2.3 Forgiveness

The Heartland Forgiveness Scale (HFS) [53] indexed forgiveness of self, others, and situations. Example items include "Although I feel bad at first when I mess up, over time I can give myself some slack" (forgiveness of self), "With time I am understanding of others for the mistakes they have made" (forgiveness of others), and "Eventually I let go of negative thoughts about bad circumstances that are beyond anyone's control" (forgiveness of situations). A total score was computed as the sum of the items, and a higher total score denotes greater dispositional forgiveness. In our sample, internal consistency was good (total $\alpha = 0.84$). The Italian validated version was used [64].

2.2.4 Psychological Well-Being

Well-being was assessed with the Subjective Happiness Scale (SHS) [65] and the Satisfaction with Life Scale (SWLS) [66]. Higher scores indicate greater happiness/satisfaction, and both scales reported high internal consistency ($\alpha = 0.80$ for SHS; $\alpha = 0.88$ for SWLS). Italian validated versions were used [67,68].

2.2.5 Psychological Distress

The Depression Anxiety and Stress Scale-21 (DASS-21) [69] is a self-report measure assessing the severity of depression, anxiety, and stress symptoms over the past week. It includes 21 items, with seven items per subscale, rated on a 4-point Likert scale from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time), with higher scores indicating greater psychological distress. Example items are "I felt that I had nothing to look forward to" for Depression, "I felt I was close to panic" for Anxiety, and "I found it hard to wind down" for Stress. The Italian version has demonstrated good psychometric properties, with confirmatory factor analysis (CFA) supporting the three-dimensional structure. Internal consistency is high, with Cronbach's $\alpha = 0.88$ for Depression, 0.88 for Anxiety, 0.90 for Stress, and 0.95 for the total scale, confirming its reliability and validity in both community and clinical Italian samples [70].

2.2.6 Emotion Dysregulation

Difficulties in emotion regulation were measured with the Difficulties in Emotion Regulation Scale-18 (DERS-18) [71]. DERS-18 is a self-report measure designed to assess difficulties in emotion regulation. It comprises 18 items rated on a 5-point Likert scale ranging from 1 (Almost Never) to 5 (Almost Always). Higher scores indicate greater difficulties in emotion regulation. Example items include "I pay attention to how I feel" and "I have no idea how I am feeling". In this study, only the total score was computed. The Italian validated version was used [72,73].

2.3 Procedure

Participants first reviewed an information sheet outlining the study aims, instruments, procedures, minimal risk, and data handling. No sensitive identifiers were collected. In the paper format, written consent was obtained prior to completing the questionnaire packet in a quiet classroom setting under research supervision. In the online format, electronic consent was obtained via a dedicated form hosted on Google Forms. The data collection window spanned approximately 1 month. To minimize order effects, the order of the psychological measures was randomized at the block level; demographic questions were collected first. The administration language and item content were identical across modes. Four attention checks (e.g., instructed-response items such as "Please select 'Agree' for this item") were embedded in the

questionnaires, and participants failing two or more checks were excluded. All records were anonymized at entry and stored on institutional servers with restricted access.

2.4 Statistical Analysis

Before conducting the main analyses, we performed preliminary checks to ensure construct distinctiveness and to assess potential common method bias. To this aim, we conducted a confirmatory factor analysis (CFA) comparing a three-factor model (mindfulness, gratitude, forgiveness) with a one-factor model (an overall virtue factor), and testing the superiority of the fit for the three-factor solution. To evaluate Common Method Bias (CMB), we conducted both the Harman's single-factor test and an Unmeasured Latent Method Factor (ULMF).

Then, main analysis proceeded in two steps. First, we computed Pearson's bivariate correlations among the virtues (FFMQ, GQ-6, HFS), and between the virtues and the outcomes (DASS subscales/total, SHS, SWLS, DERS-18). Second, we estimated multiple linear regressions predicting each outcome from mindfulness (FFMQ total), gratitude (GQ-6), and forgiveness (HFS), with sex, age, and meditation experience entered as covariates. Distress models included DASS Depression, Anxiety, Stress, and DASS Total as dependent variables; well-being models included SHS, SWLS, and the z-standardized Well-Being Index (mean of z-SHS and z-SWLS) as dependent variables; the emotion-regulation model used the total score of DERS-18 as a dependent variable. We report for each model R^2, unstandardized coefficients (b) with 95% CIs, standardized coefficients (β), and semi-partial correlations (sr). Multicollinearity was assessed via variance inflation factors (VIF; acceptable <3). A sensitivity power analysis indicated that with N = 211 and six predictors (three virtues + three covariates), this design could detect with adequate power (>0.80) approximately small-to-moderate effects [74]. Data were analyzed using jamovi (The jamovi project, 2024), an open-source statistical software based on the R environment, and the R Studio software, version 2025.05.1, running R version 4.4.3.

3 Results

3.1 Preliminary Analysis

To formally establish that the three primary predictor variables (mindfulness, gratitude, and forgiveness) measure distinct psychological constructs and justify the use of independent terms in the regression analysis, we performed a CFA. We compared the fit of the hypothesized measurement model, i.e., a three-factor model where the items loaded onto their respective constructs, against a constrained one-factor model, where all items loaded onto a single latent general factor. The three-factor model demonstrated a significantly superior fit to the data compared to the one-factor model, supporting the discriminant validity of the measures. This superiority was evident across multiple fit indices (ΔCFI [comparative fit index] = 0.071; ΔTLI [Tucker-Lewis index] = 0.073). Crucially, the Information Criteria strongly favored the more complex, three-factor structure, as indicated by the lower values for both the Akaike information criterion (AIC) (35,853 vs. 36,270) and Bayesian information criterion (BIC) (36,416 vs. 36,823). These results confirm that the scales used capture three empirically distinct virtues, justifying the analysis of their differential contributions.

We also ran a preliminary check for CMB [75], and we performed Harman's Single-Factor Test. The analysis showed that the first unrotated factor accounted for only 22% (proportion var. = 0.22) of the total variance. Since this value is well below the conservative 50% threshold, we conclude that a single factor is not dominant and CMB is not a pervasive issue in the dataset. While this test is often criticized for being conservative, the finding supports the theoretical multi-factor structure of our model, which was

subsequently confirmed and statistically controlled using the Unmeasured Latent Method Factor (ULMF) approach. We ran a UMLF approach within a CFA framework. We compared the fit of the proposed substantive measurement model (six distinct, correlated factors) against a model that included an additional, unmeasured latent factor specified to load onto all observed items. The model comparison demonstrated that the ULMF model was statistically superior to the substantive model, indicating that a significant amount of variance was indeed attributable to the common measurement method. However, although the method factor was statistically significant (p value < 0.05), the theoretically predicted pattern of correlations among the substantive factors remained essentially unchanged (i.e., highly consistent) in the ULMF-controlled model. This stability of the correlation pattern after correction provides strong evidence that the observed differential associations are robust and reflect true theoretical relationships, rather than spurious effects inflated solely by CMB.

3.2 Correlation Analysis

To examine the relations among the constructs, we conducted Pearson's bivariate correlations among the measured variables. We first evaluated correlations between the virtue scales. The correlation coefficients are reported in Table 1. As shown, the Observing facet did not correlate with the other virtue measures, whereas all the other FFMQ facets and the FFMQ total were positively associated with both gratitude and forgiveness. Notably, Non-judging and Non-reacting displayed very high correlations with HFS scores.

Table 1: Bivariate correlations among mindfulness, gratitude, and forgiveness scales.

Measures	Observe	Describe	Act with Awareness	Non-Judging	Non-React	FFMQ Tot
GQ	0.02	0.26**	0.35**	0.37**	0.34**	0.45**
HFS	0.02	0.36**	0.42**	0.61**	0.54**	0.65**

Note: **p < 0.01. GQ, Gratitude Questionnaire; HFS, Heartland Forgiveness Scale; FFMQ, Five Facet Mindfulness Questionnaire.

We then computed correlation coefficients between the virtue scales and indices of psychological distress and well-being. The results are reported in Table 2. The analysis indicated a highly similar pattern across the three virtue scales, with significant negative correlations for all distress indices, particularly Depression, and significant positive correlations for both well-being measures. Overall, this table suggests that the three virtues show similar associations with psychological distress and well-being. To assess the unique effects of each virtue while also accounting for the three covariates (sex, age, meditation experience), we next estimated a set of multiple regression models.

Table 2: Bivariate correlations between virtue scales and psychological distress and well-being.

Measures	Psychological Distress				Psychological Well-Being	
	Depression	Anxiety	Stress	DASS Tot	SHS	SWLS
FFMQ tot	−0.53**	−0.30**	−0.45**	−0.48**	0.52**	0.50**
GQ	−0.49**	−0.32**	−0.31**	−0.41**	0.53**	0.61**
HFS	−0.47**	−0.30**	−0.40**	−0.44**	0.58**	0.56**

Note: **p < 0.01. DASS, Depression Anxiety and Stress Scale; SHS, Subjective Happiness Scale; SWLS, Satisfaction with Life Scale; FFMQ, Five Facet Mindfulness Questionnaire; GQ, Gratitude Questionnaire; HFS, Heartland Forgiveness Scale.

3.3 Regression Analysis

In the subsequent analyses, mindfulness and virtue scales were treated as predictors/antecedents, whereas psychological distress and well-being measures served as dependent/consequent variables. All

linear regression models controlled for sex, age, and meditation experience. For each model, we report model fit (R^2), unstandardized coefficients (b) with 95% confidence intervals (95% CI), standardized coefficients (β), and semi-partial correlations (sr) as comparable effect-size indices. The first set of models used DASS subscales as dependent variables. Results are presented in Table 3.

Table 3: Results of multiple linear regression analyses on psychological distress variables.

DV	Predictor	b	95% CI	β	sr	Fit R^2
Depression	FFMQ	−0.48*	[−0.70, −0.26]	−0.33	0.06	0.38*
	GQ	−0.36*	[−0.52, −0.19]	−0.31	0.08	
	HFS	−0.04	[−0.10, 0.01]	−0.11	0.01	
Anxiety	FFMQ	−0.21	[−0.42, 0.01]	−0.15	0.01	0.15*
	GQ	−0.24*	[−0.44, −0.04]	−0.21	0.04	
	HFS	−0.04	[−0.10, 0.03]	−0.11	0.01	
Stress	FFMQ	−0.47*	[−0.70, −0.22]	−0.33	0.06	0.23*
	GQ	−0.16	[−0.35, 0.04]	−0.14	0.01	
	HFS	−0.04	[−0.11, 0.02]	−0.12	0.01	
DASS tot	FFMQ	−1.17*	[−1.75, −0.59]	−0.30	0.05	0.30*
	GQ	−0.75*	[−1.21, −0.30]	−0.25	0.05	
	HFS	−0.12	[−0.27, 0.05]	−0.13	0.01	

Note: *$p < 0.05$. DV, Dependent Variable; sr, semi-partial correlation; CI, confidence intervals; DASS, Depression Anxiety and Stress Scale; FFMQ, Five Facet Mindfulness Questionnaire; GQ, Gratitude Questionnaire; HFS, Heartland Forgiveness Scale.

Mindfulness showed a significant negative association with Depression (β = −0.33) and Stress (β = −0.33), whereas gratitude was significantly and negatively related to Depression (β = −0.31) and Anxiety (β = −0.24). Both virtues also predicted lower DASS Total (β = −0.30 for FFMQ; β = −0.25 for GQ). Forgiveness did not yield significant unique effects on any distress outcome. Results are summarized in Fig. 1.

The second set of analyses used psychological well-being scales (SHS and SWLS) as dependent variables. As with distress, we also computed a global well-being index as the sum of SHS and SWL scores. Results from these multiple regression models are reported in Table 4.

Table 4: Results of multiple linear regression analyses on psychological well-being variables.

DV	Predictor	b	95% CI	β	sr	Fit R^2
SHS	FFMQ	0.20*	[0.01, 0.40]	0.15	0.01	0.47**
	GQ	0.29**	[0.15, 0.43]	0.27	0.05	
	HFS	0.12**	[0.08, 0.16]	0.37	0.07	
SWLS	FFMQ	0.25*	[−0.00, 0.48]	0.14	0.01	0.48**
	GQ	0.56**	[0.39, 0.73]	0.41	0.12	
	HFS	0.11**	[0.06, 0.17]	0.27	0.04	
Psychological well-being	FFMQ	0.45*	[0.08, 0.83]	0.16	0.01	0.55**
	GQ	0.85**	[0.60, 1.11]	0.38	0.10	
	HFS	0.23**	[0.14, 0.31]	0.34	0.06	

Note: *$p < 0.05$, **$p < 0.01$. DV, Dependent Variable; sr, semi-partial correlation; CI, confidence intervals; SHS, Subjective Happiness Scale; SWLS, Satisfaction with Life Scale.

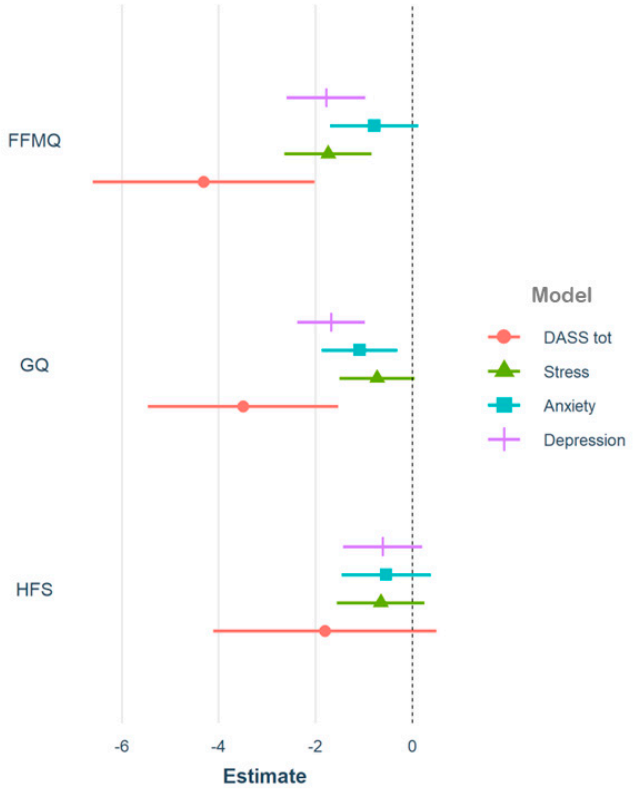

Figure 1: Regression coefficients and 95% confidence intervals for the virtue scales across the multiple linear regression models indicated in the legend. For comparability across models, coefficients were scaled with respect to all models considered. Note: DASS, Depression Anxiety and Stress Scale; FFMQ, Five Facet Mindfulness Questionnaire; GQ, Gratitude Questionnaire; HFS, Heartland Forgiveness Scale.

All three virtues showed significant positive effects on all well-being measures. However, comparing standardized coefficients suggests that GQ and HFS exerted stronger effects than FFMQ on well-being, particularly HFS on SHS ($\beta = 0.37$) and GQ on SWL ($\beta = 0.41$). These analyses indicate that gratitude and forgiveness appear to have stronger links to well-being, whereas mindfulness shows stronger links to reductions in distress. Results are depicted in Fig. 2.

Finally, we estimated a multiple linear regression model using DERS as the dependent variable, indexing difficulties in emotion regulation. Results are presented in Table 5. Difficulties in emotion regulation were significantly lower among individuals, higher in mindfulness ($\beta = -0.44$) and forgiveness ($\beta = -0.30$), whereas gratitude did not show a significant unique effect. This analysis highlights the role of mindfulness and forgiveness as important factors in the management of participants' affective life.

Table 5: Results of multiple linear regression analyses on the emotion regulation scale.

DV	Predictor	b	95% CI	β	sr	Fit R^2
DERS	FFMQ	−1.51**	[−1.92, −1.06]	−0.44	0.10	0.57**
	GQ	−0.28	[−0.58, 0.02]	−0.10	0.01	
	HFS	−0.25**	[−0.35, −0.15]	−0.30	0.05	

Note: **$p < 0.01$. DV, Dependent Variable; sr, semi-partial correlation; CI, confidence intervals; DERS, Difficulties in Emotion Regulation Scale.

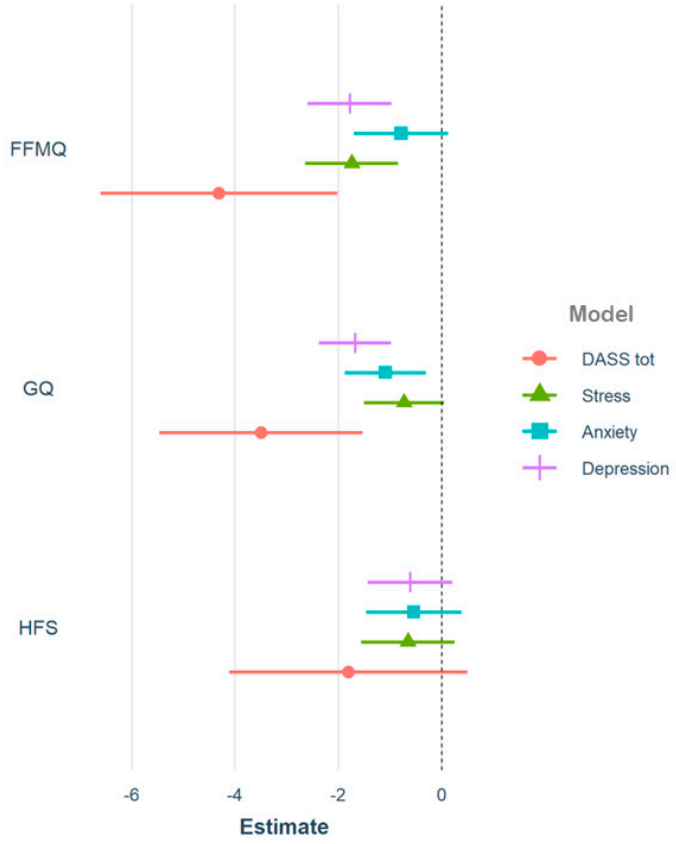

Figure 2: Multiple linear regression coefficients (standardized β) with 95% CIs for predictors (FFMQ, GQ-6, HFS) on SHS, SWLS, and a composite Well-Being Index. All models control for sex, age, and meditation experience. Note: SHS, Subjective Happiness Scale; SWLS, Satisfaction with Life Scale; FFMQ, Five Facet Mindfulness Questionnaire; GQ, Gratitude Questionnaire; HFS, Heartland Forgiveness Scale.

4 Discussion

The present study simultaneously examined trait mindfulness, gratitude, and forgiveness as predictors of psychological distress, subjective well-being, and emotion-regulation difficulties. Three complementary patterns emerged. First, mindfulness and gratitude showed the most consistent unique associations with lower depression, anxiety, and stress. Second, all three virtues are related to higher happiness and life satisfaction, with gratitude and forgiveness exerting comparatively stronger unique links. Third, fewer emotion-regulation difficulties were uniquely associated with higher mindfulness and forgiveness, whereas gratitude's association with emotion regulation was weaker once covariates and the other virtues were modeled.

These findings are consistent with Hypothesis 1a, which anticipated that each virtue would be negatively associated with depression, anxiety, and stress. While this was broadly confirmed at the bivariate level, only mindfulness and gratitude retained unique predictive value in multivariable models, suggesting that forgiveness may overlap conceptually and statistically with these virtues in accounting for distress. These findings confirmed what was anticipated in Hypothesis 2a and Hypothesis 2c regarding mindfulness and forgiveness, but they did not support Hypothesis 2b, as we found that gratitude also makes a unique contribution to reducing distress, particularly symptoms of anxiety and depression. While this effect may be a by-product of increased well-being, it could also indicate a direct role for gratitude in

alleviating distress, given its capacity to sustain positive emotions and psychosocial resources [52]. Further exploration of this topic using longitudinal or experimental designs could provide greater insight into this pattern of effects.

Our distress-related findings align with meta-analytic evidence that mindfulness-based programs yield small-to-moderate reductions in anxiety and depressive symptoms and that MBCT prevents depressive relapse in recurrent depression, suggesting that trait mindfulness may capture skills akin to those cultivated in intervention (e.g., attention monitoring with acceptance). These benefits are consistent with mechanisms proposed by Monitor and Acceptance Theory (MAT) and with broader mechanistic accounts in which attention regulation, non-judgment/acceptance, and decentering reduce reactivity to aversive internal events [25,30,38–40].

Our results fully supported our hypothesis that all three virtues would be positively associated with subjective well-being (Hypothesis 1a): mindfulness, gratitude, and forgiveness each showed significant links with happiness and life satisfaction. Consistent with theory and reviews in positive psychology, gratitude related most strongly to well-being (happiness and life satisfaction). Broaden-and-build theory posits that gratitude amplifies positive effects and psychosocial resources, which may translate more directly into well-being than into symptom reduction when controlling for overlapping virtues. Meta-analytic work on gratitude interventions similarly indicates reliable though small-to-moderate improvements in well-being. This literature supports the present pattern in which gratitude's unique links were more pronounced for well-being than for distress [46,51,52].

Finally, results of multivariate regression analysis show a differential pattern: mindfulness and gratitude would retain stronger links with lower distress, whereas gratitude and forgiveness would show comparatively stronger associations with higher well-being. This expectation was confirmed by the data and underscores the complementary rather than interchangeable nature of the virtues. Forgiveness showed robust bivariate correlations with both lower distress and higher well-being, but its unique effect on distress attenuated in multivariable models, different from what was anticipated in Hypothesis 2c. One explanation is shared variance with mindfulness and gratitude, given conceptual and empirical overlap (e.g., reduced hostile rumination; greater acceptance). Still, meta-analytic evidence shows that forgiveness interventions improve psychological outcomes, and the HFS conceptualization (self/other/situation forgiveness) captures processes plausibly tied to well-being and emotion regulation (e.g., letting go of resentment, reappraisal of transgressions). Thus, the present finding that forgiveness retains unique links to well-being but not distress after covariates is compatible with a pathway emphasizing de-escalation of unforgiveness and cultivation of prosocial, meaning-making appraisals [53,57].

Consistent with both Hypothesis 1a and Hypothesis 1b, difficulties in emotion regulation correlated inversely with mindfulness and forgiveness even after adjustment, suggesting a regulatory pathway linking these virtues to mental health. Mechanistic models hold that acceptance and nonreactivity (core to mindfulness and, functionally, to forgiveness) diminish maladaptive strategies such as rumination and experiential avoidance, i.e., key transdiagnostic correlates of psychopathology. This pattern supports our prediction that all three virtues would be associated with fewer emotion-regulation difficulties. While this was partially confirmed, mindfulness and forgiveness uniquely predicted fewer regulation difficulties; gratitude did not retain predictive value once covariates and overlapping virtues were modeled. Our finding that gratitude did not retain unique predictive value for DERS is consistent with the view that gratitude enhances well-being primarily through positive affective broadening rather than through core regulation processes [58,71,76].

Our findings suggest a functional differentiation between forgiveness and gratitude. Forgiveness, while not associated with distress, was positively related to both well-being and emotion regulation. This suggests that forgiveness may act less as a direct buffer against symptoms of anxiety, stress, and depression, which are often shaped by broader clinical and contextual factors, and more as a resource fostering adaptive mechanisms such as reduced rumination and enhanced acceptance. In this regard, forgiveness has been conceptualized as a specific form of emotion regulation, whereby cognitive reappraisal and self-regulatory processes mediate the transition from interpersonal conflict to greater emotional balance and subjective well-being [56,77,78]. In contrast, gratitude predicted well-being but not emotion regulation. This finding is consistent with the broaden-and-build theory, which posits that gratitude primarily amplifies positive affect and life satisfaction by broadening cognitive and affective repertoires [46,47]. Such processes enhance hedonic and evaluative aspects of well-being but do not necessarily translate into improved regulatory capacities. Taken together, our findings suggest a functional differentiation between forgiveness and gratitude: forgiveness supports regulatory pathways that sustain well-being, whereas gratitude operates mainly by broadening positive affective and evaluative experiences.

Facet-level correlations suggested stronger links of Non-judging and Non-reactivity with forgiveness and with fewer symptoms, as anticipated in Hypothesis 1b. This aligns with prior work showing that, particularly in non-meditators, observing can be weakly or inconsistently related to distress, whereas acceptance-related facets are more robustly favorable. This pattern dovetails with MAT's proposition that monitoring without acceptance may not yield benefits and can even be problematic in high reactivity contexts [28,30,33]. These results are in line with Hypothesis 1b, which proposed that acceptance-related facets of mindfulness (e.g., non-judging, non-reactivity) would correlate more strongly with gratitude and forgiveness than with present-moment awareness. Our findings provide partial support for this hypothesis, highlighting the pivotal role of acceptance skills in linking mindfulness to other virtues and to mental health outcomes. However, this may also be interpreted considering MAT's recent revision [32,33], which emphasizes the pivotal role of acceptance in moderating affective states.

A key innovation of this work is the simultaneous evaluation of a core set of virtues, including mindfulness, gratitude, and forgiveness, within an integrated framework. While prior research has established bivariate links for each virtue, our study offers a novel contribution by systematically differentiating their unique functional profiles against core mental health indicators. This approach clarifies that the virtues are not interchangeable. Instead, forgiveness and gratitude support mental health through different, though complementary, psychological pathways [79]. The differential findings across distress, well-being, and emotion regulation outcomes, which were uncovered by controlling for overlapping variance, provide an empirical support for targeted, virtue-specific intervention strategies aimed at promoting distinct aspects of human flourishing.

Clinically, the virtues suggest targeted levers, i.e., mindfulness components emphasizing acceptance and decentering for distress and regulation; forgiveness components (including self-forgiveness) for well-being and release from hostile rumination; gratitude exercises to amplify positive affect and meaning, thereby elevating well-being. Integrative protocols might sequence these modules based on presenting problems (e.g., regulate first, then broaden), consistent with evidence that MBIs reduce distress and that forgiveness and gratitude interventions add unique value for flourishing [38,39,51,57]. Taken together, these results highlight that each virtue contributes in a distinct way, i.e., mindfulness primarily supports symptom reduction and regulation, gratitude fosters well-being, and forgiveness bridges well-being and regulation. Such differentiation suggests that interventions may benefit from a modular or sequential design tailored to individual needs.

Our findings offer some theoretical contributions. This study highlights the functional specificity of virtue-related dispositions. Gratitude was linked to global evaluations of happiness and life satisfaction, whereas forgiveness was associated with emotion regulation but not with distress, supporting the view that virtues operate through distinct pathways rather than interchangeably [19,46]. Conceptually, we integrate the VIA/CSV taxonomy, where gratitude and forgiveness are established strengths, with the perspective of mindfulness as a meta-capacity of attentional regulation and acceptance [17,18]. By treating emotion regulation as a process-level outcome, we align research on character strengths with contemporary models of emotion regulation [21,22]. Together, these contributions refine theory by distinguishing the mechanisms through which specific virtues support mental health and by offering testable predictions for future intervention studies. Finally, the differentiated effects of gratitude, forgiveness, and mindfulness provide actionable insights for workplace settings. Brief mindfulness practices may enhance attentional control and daily emotion regulation [80], forgiveness strategies can reduce rumination and improve relationships [16], and gratitude routines can foster positive affect and social bonding [81]. These practices should be integrated with organizational resources and evaluated systematically to ensure sustainable benefits for employees' well-being.

Limitations and Future Directions

This study has several limitations that warrant consideration. First, its cross-sectional and self-report design makes it difficult to understand causal patterns between variables. Future work should therefore incorporate multi-method assessments and adopt longitudinal or experimental designs to clarify causal relationships and to directly test whether emotion regulation mediates or moderates the observed associations. Second, given the correlated nature of the predictors, there is a risk of overinterpreting "unique" effects. Relative-importance approaches, such as dominance analysis or relative weights with bootstrapped inference [82,83], as well as preregistration of analytic strategies, would help strengthen inferences about the distinct contributions of each virtue. Third, our non-probabilistic community sample, which reported generally low meditation experience, limits generalizability. Moreover, we did not include behavioral or physiological measures, which could provide additional insight into the processes linking virtues to mental health. These limitations point to concrete avenues for future research. Longitudinal and experimental studies are needed to establish causal directionality and to test mechanistic pathways. Mechanistic modeling, such as Structural Equation Modeling or advanced mediation models, should evaluate emotion regulation as a potential mediator or moderator, advancing a more precise understanding of how mindfulness, gratitude, and forgiveness exert their effects. Multimethod designs, incorporating psychophysiological or neurocognitive indices (e.g., electroencephalographic correlates), could illuminate the interplay of virtues at multiple levels of analysis. Finally, testing these models in clinical populations, including individuals with depression, anxiety, post-traumatic stress disorder (PTSD), or addictions, would also clarify their clinical relevance.

5 Conclusions

This study examined the unique and shared associations of trait mindfulness, gratitude, and forgiveness with psychological distress, subjective well-being, and emotion regulation. The findings show that these virtues are not interchangeable but rather form a complementary profile with partially distinct roles: mindfulness emerged as most closely linked to distress reduction and emotion regulation, gratitude as most strongly tied to well-being, and forgiveness as bridging well-being and regulatory capacities. These differentiated contributions support conceptualizing virtues as distinct yet mutually reinforcing pathways to

mental health. By clarifying the specific psychological functions of mindfulness, gratitude, and forgiveness, the present work extends virtue research within positive psychology and highlights their potential as targeted components in integrative interventions. Together, these findings underscore the importance of a nuanced understanding of virtues in both theory and practice, suggesting that cultivating multiple virtues may provide synergistic benefits for human flourishing.

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References

1. Peterson C, Seligman MEP. Character strengths and virtues: a handbook and classification. Oxford, UK: Oxford University Press; 2004.
2. MacKenzie M. Buddhism and the virtues. Oxford, UK: Oxford University Press; 2017. [CrossRef].
3. Roberts RC. Spiritual emotions: a psychology of Christian virtues. Grand Rapids, MI, USA: Wm. B. Eerdmans Publishing Co.; 2007.
4. Snow NE. Cultivating virtue: perspectives from philosophy, theology, and psychology. New York, NY, USA: Oxford University Press; 2015. [CrossRef].
5. Schnitker SA, Houltberg B, Dyrness W, Redmond N. The virtue of patience, spirituality, and suffering: integrating lessons from positive psychology, psychology of religion, and Christian theology. Psychol Religion Spiritual. 2017;9(3):264–75. [CrossRef].
6. Keown D. Buddhist ethics: a very short introduction. 2nd ed. Oxford, UK: Oxford University Press; 2020. [CrossRef].
7. Han H. Virtue ethics, positive psychology, and a new model of science and engineering ethics education. Sci Eng Ethics. 2015;21(2):441–60. [CrossRef].
8. Kristjánsson K. Virtues and vices in positive psychology: a philosophical critique. New York, NY, USA: Cambridge University Press; 2013. [CrossRef].
9. Titus CS. Aquinas, Seligman, and positive psychology: a Christian approach to the use of the virtues in psychology. J Posit Psychol. 2017;12(5):447–58. [CrossRef].

10. Segall SZ, Kristeller JL. Positive psychology and Buddhism. In: Handbook of positive psychology, religion, and spirituality. Cham, Switzerland: Springer; 2022. p. 211–25. [CrossRef].
11. Delle Fave A, Massimini F, Bassi M. Hedonism and eudaimonism in positive psychology. In: Psychological selection and optimal experience across cultures. Dordrecht, The Netherlands: Springer; 2010. p. 3–18. [CrossRef].
12. Lenzenweger MF. Authentic happiness: using the new positive psychology to realize your potential for lasting fulfillment. Am J Psychiatry. 2004;161(5):936–7. [CrossRef].
13. Ryan RM, Deci EL. On happiness and human potentials: a review of research on hedonic and eudaimonic well-being. Annu Rev Psychol. 2001;52:141–66. [CrossRef].
14. Steger MF, Kashdan TB, Oishi S. Being good by doing good: daily eudaimonic activity and well-being. J Res Pers. 2008;42(1):22–42. [CrossRef].
15. Watkins PC, McLaughlin T, Parker JP. Gratitude and subjective well-being: cultivating gratitude for a harvest of happiness. In: Scientific concepts behind happiness, kindness, and empathy in contemporary society. Hershey, PA, USA: IGI Global; 2018. p. 20–42. [CrossRef].
16. Toussaint L, Webb JR. Theoretical and empirical connections between forgiveness, mental health, and well-being. In: Handbook of forgiveness. New York, NY, USA: Routledge; 2005. p. 349–62.
17. Peterson C. The values in action (VIA) classification of strengths. In: A life worth living. Oxford, UK: Oxford University Press; 2006. p. 29–48. [CrossRef].
18. Bishop SR, Lau M, Shapiro S, Carlson L, Anderson ND, Carmody J, et al. Mindfulness: a proposed operational definition. Clin Psychol Sci Pract. 2004;11(3):230–41. [CrossRef].
19. Carlisle RD, Tsang JA. The virtues: gratitude and forgiveness. In: APA handbook of psychology, religion, and spirituality: context, theory, and research. Washington, DC, USA: American Psychological Association; 2013. p. 423–37. [CrossRef].
20. Iasiello M, van Agteren J, Muir Cochrane E. Mental health and/or mental illness: a scoping review of the evidence and implications of the dual-continua model of mental health. Evid Base. 2020;1:1–45. [CrossRef].
21. Gross JJ. Emotion regulation: conceptual and empirical foundations. In: Handbook of emotion regulation. New York, NY, USA: Guilford Press; 2014. p. 3–20.
22. Gross JJ. Emotion regulation: current status and future prospects. Psychol Inq. 2015;26(1):1–26. [CrossRef].
23. Kabat-Zinn J. Full catastrophe living: the program of the stress reduction clinic at the university of massachusetts medical center. New York, NY, USA: Dell Publishing; 1990.
24. Kabat-Zinn J. Mindfulness meditation: what it is, what it isn't, and its role in health care and medicine. In: Haruki IY, Suzuki M, editors. Comparative and psychological study on meditation. Delft, The Netherlands: Eburon Publishers; 1996. p. 161–70.
25. Hölzel BK, Lazar SW, Gard T, Schuman-Olivier Z, Vago DR, Ott U. How does mindfulness meditation work? Proposing mechanisms of action from a conceptual and neural perspective. Perspect Psychol Sci. 2011;6(6):537–59. [CrossRef].
26. Baer RA, Smith GT, Hopkins J, Krietemeyer J, Toney L. Using self-report assessment methods to explore facets of mindfulness. Assessment. 2006;13(1):27–45. [CrossRef].
27. Baer RA, Smith GT, Lykins E, Button D, Krietemeyer J, Sauer S, et al. Construct validity of the five facet mindfulness questionnaire in meditating and nonmeditating samples. Assessment. 2008;15(3):329–42. [CrossRef].
28. Desrosiers A, Klemanski DH, Nolen-Hoeksema S. Mapping mindfulness facets onto dimensions of anxiety and depression. Behav Ther. 2013;44(3):373–84. [CrossRef].
29. Simione L, Frolli A, Sciattella F, Chiarella SG. Mindfulness-based interventions for people with autism spectrum disorder: a systematic literature review. Brain Sci. 2024;14(10):1001. [CrossRef].
30. Lindsay EK, Creswell JD. Mechanisms of mindfulness training: monitor and acceptance theory (MAT). Clin Psychol Rev. 2017;51:48–59. [CrossRef].
31. Arpaia P, Calabrese L, Chiarella SG, D'Errico G, De Paolis LT, Grassini S, et al. Mindfulness-based emotional acceptance in combination with neurofeedback for improving emotion self-regulation: a pilot study. In: Proceedings of the 2022 IEEE International Conference on Metrology for Extended Reality, Artificial Intelligence and Neural Engineering (MetroXRAINE); 2022 Oct 26–28; Rome, Italy. p. 465–70. [CrossRef].

32. Simione L, Raffone A, Mirolli M. Acceptance, and not its interaction with attention monitoring, increases psychological well-being: testing the monitor and acceptance theory of mindfulness. Mindfulness. 2021;12(6):1398–411. [CrossRef].
33. Simione L, Saldarini F. A critical review of the monitor and acceptance theory of mindfulness. Mindfulness. 2023;14(6):1317–28. [CrossRef].
34. Karl JA, Fischer R. The state of dispositional mindfulness research. Mindfulness. 2022;13(6):1357–72. [CrossRef].
35. Prieto-Fidalgo Á, Gómez-Odriozola J, Royuela-Colomer E, Orue I, Fernández-González L, Oñate L, et al. Predictive associations of dispositional mindfulness facets with anxiety and depression: a meta-analytic structural equation modeling approach. Mindfulness. 2022;13(1):37–53. [CrossRef].
36. Medvedev ON, Norden PA, Krägeloh CU, Siegert RJ. Investigating unique contributions of dispositional mindfulness facets to depression, anxiety, and stress in general and student populations. Mindfulness. 2018;9(6):1757–67. [CrossRef].
37. Quaglia JT, Braun SE, Freeman SP, McDaniel MA, Brown KW. Meta-analytic evidence for effects of mindfulness training on dimensions of self-reported dispositional mindfulness. Psychol Assess. 2016;28(7):803–18. [CrossRef].
38. Goyal M, Singh S, Sibinga EM, Gould NF, Rowland-Seymour A, Sharma R, et al. Meditation programs for psychological stress and well-being: a systematic review and meta-analysis. JAMA Intern Med. 2014;174(3):357–68. [CrossRef].
39. Goldberg SB, Tucker RP, Greene PA, Davidson RJ, Wampold BE, Kearney DJ, et al. Mindfulness-based interventions for psychiatric disorders: a systematic review and meta-analysis. Clin Psychol Rev. 2018;59:52–60. [CrossRef].
40. Kuyken W, Warren FC, Taylor RS, Whalley B, Crane C, Bondolfi G, et al. Efficacy of mindfulness-based cognitive therapy in prevention of depressive relapse: an individual patient data meta-analysis from randomized trials. JAMA Psychiatry. 2016;73(6):565–74. [CrossRef].
41. Goldberg SB, Tucker RP, Greene PA, Davidson RJ, Kearney DJ, Simpson TL. Mindfulness-based cognitive therapy for the treatment of current depressive symptoms: a meta-analysis. Cogn Behav Ther. 2019;48(6):445–62. [CrossRef].
42. Hofmann SG, Gómez AF. Mindfulness-based interventions for anxiety and depression. Psychiatr Clin N Am. 2017;40(4):739–49. [CrossRef].
43. Maddock A, Blair C. How do mindfulness-based programmes improve anxiety, depression and psychological distress? A systematic review. Curr Psychol. 2023;42(12):10200–22. [CrossRef].
44. Li J, Li C, Puts M, Wu YC, Lyu MM, Yuan B, et al. Effectiveness of mindfulness-based interventions on anxiety, depression, and fatigue in people with lung cancer: a systematic review and meta-analysis. Int J Nurs Stud. 2023;140:104447. [CrossRef].
45. Skrzelinska J, Ferreira JA. Gratitude: the state of art. Br J Guid Couns. 2022;50(2):290–302. [CrossRef].
46. Wood AM, Froh JJ, Geraghty AWA. Gratitude and well-being: a review and theoretical integration. Clin Psychol Rev. 2010;30(7):890–905. [CrossRef].
47. Kirca A, M Malouff J, Meynadier J. The effect of expressed gratitude interventions on psychological wellbeing: a meta-analysis of randomised controlled studies. Int J Appl Posit Psychol. 2023;8(1):63–86. [CrossRef].
48. Cregg DR, Cheavens JS. Gratitude interventions: effective self-help? A meta-analysis of the impact on symptoms of depression and anxiety. J Happiness Stud. 2021;22(1):413–45. [CrossRef].
49. Kerry N, Chhabra R, Clifton JDW. Being thankful for what you have: a systematic review of evidence for the effect of gratitude on life satisfaction. Psychol Res Behav Manag. 2023;16:4799–816. [CrossRef].
50. McCullough ME, Emmons RA, Tsang JA. The grateful disposition: a conceptual and empirical topography. J Pers Soc Psychol. 2002;82(1):112–27. [CrossRef].
51. Davis DE, Choe E, Meyers J, Wade N, Varjas K, Gifford A, et al. Thankful for the little things: a meta-analysis of gratitude interventions. J Couns Psychol. 2016;63(1):20–31. [CrossRef].
52. Fredrickson BL. The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions. Am Psychol. 2001;56(3):218–26. [CrossRef].
53. Thompson LY, Snyder CR, Hoffman L, Michael ST, Rasmussen HN, Billings LS, et al. Dispositional forgiveness of self, others, and situations. J Pers. 2005;73(2):313–60. [CrossRef].

54. McCauley TG, Billingsley J, McCullough ME. An evolutionary psychology view of forgiveness: individuals, groups, and culture. Curr Opin Psychol. 2022;44:275–80. [CrossRef].
55. Gao F, Li Y, Bai X. Forgiveness and subjective well-being: a meta-analysis review. Pers Individ Differ. 2022;186:111350. [CrossRef].
56. Brady DL, Saldanha MF, Barclay LJ. Conceptualizing forgiveness: a review and path forward. J Organ Behav. 2023;44(2):261–96. [CrossRef].
57. Wade NG, Hoyt WT, Kidwell JEM, Worthington EL. Efficacy of psychotherapeutic interventions to promote forgiveness: a meta-analysis. J Consult Clin Psychol. 2014;82(1):154–70. [CrossRef].
58. Gratz KL, Roemer L. Multidimensional assessment of emotion regulation and dysregulation: development, factor structure, and initial validation of the difficulties in emotion regulation scale. J Psychopathol Behav Assess. 2004;26(1):41–54. [CrossRef].
59. Miu AC, Szentágotai-Tătar A, Balázsi R, Nechita D, Bunea I, Pollak SD. Emotion regulation as mediator between childhood adversity and psychopathology: a meta-analysis. Clin Psychol Rev. 2022;93:102141. [CrossRef].
60. Lincoln TM, Schulze L, Renneberg B. The role of emotion regulation in the characterization, development and treatment of psychopathology. Nat Rev Psychol. 2022;1(5):272–86. [CrossRef].
61. Chiesa A, Serretti A, Jakobsen JC. Mindfulness: top-down or bottom-up emotion regulation strategy? Clin Psychol Rev. 2013;33(1):82–96. [CrossRef].
62. Giovannini C, Giromini L, Bonalume L, Tagini A, Lang M, Amadei G. The Italian five facet mindfulness questionnaire: a contribution to its validity and reliability. J Psychopathol Behav Assess. 2014;36(3):415–23. [CrossRef].
63. Caputo A. Italian translation and validation of the GQ-6. Intnl J Wellbeing. 2016;6(2):80–92. [CrossRef].
64. Barcaccia B, Milioni M, Pallini S, Vecchio GM. Resentment or forgiveness? The assessment of forgivingness among Italian adolescents. Child Indic Res. 2018;11(4):1407–23. [CrossRef].
65. Lyubomirsky S, Lepper HS. A measure of subjective happiness: preliminary reliability and construct validation. Soc Indic Res. 1999;46(2):137–55. [CrossRef].
66. Diener E, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. J Pers Assess. 1985;49(1):71–5. [CrossRef].
67. Iani L, Lauriola M, Layous K, Sirigatti S. Happiness in Italy: translation, factorial structure and norming of the subjective happiness scale in a large community sample. Soc Indic Res. 2014;118(3):953–67. [CrossRef].
68. Di Fabio A, Gori A. Measuring adolescent life satisfaction: psychometric properties of the satisfaction with life scale in a sample of Italian adolescents and young adults. J Psychoeduc Assess. 2016;34(5):501–6. [CrossRef].
69. Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the depression anxiety stress scales (DASS) with the beck depression and anxiety inventories. Behav Res Ther. 1995;33(3):335–43. [CrossRef].
70. Bottesi G, Ghisi M, Altoè G, Conforti E, Melli G, Sica C. The Italian version of the depression anxiety stress scales-21: factor structure and psychometric properties on community and clinical samples. Compr Psychiatry. 2015;60:170–81. [CrossRef].
71. Victor SE, Klonsky ED. Validation of a brief version of the difficulties in emotion regulation scale (DERS-18) in five samples. J Psychopathol Behav Assess. 2016;38(4):582–9. [CrossRef].
72. Rossi AA, Panzeri A, Mannarini S. The Italian version of the difficulties in emotion regulation scale–short form (IT-DERS-SF): a two-step validation study. J Psychopathol Behav Assess. 2023;45(2):572–90. [CrossRef].
73. Sighinolfi C, Pala AN, Chiri LR, Marchetti I, Sica C. Traduzione e adattamento italiano del difficulties in emotion regulation strategies (DERS): una ricerca preliminare. Psicoter Cogn Comport. 2010;16:141–70.
74. Faul F, Erdfelder E, Buchner A, Lang AG. Statistical power analyses using G*Power 3.1: tests for correlation and regression analyses. Behav Res Methods. 2009;41(4):1149–60. [CrossRef].
75. Podsakoff PM, MacKenzie SB, Lee JY, Podsakoff NP. Common method biases in behavioral research: a critical review of the literature and recommended remedies. J Appl Psychol. 2003;88(5):879–903. [CrossRef].
76. Aldao A, Nolen-Hoeksema S, Schweizer S. Emotion-regulation strategies across psychopathology: a meta-analytic review. Clin Psychol Rev. 2010;30(2):217–37. [CrossRef].

77. Ho MY, Van Tongeren DR, You J. The role of self-regulation in forgiveness: a regulatory model of forgiveness. Front Psychol. 2020;11:1084. [CrossRef].
78. Worthington EL Jr, Van Oyen Witvliet C, Pietrini P, Miller AJ. Forgiveness, health, and well-being: a review of evidence for emotional versus decisional forgiveness, dispositional forgivingness, and reduced unforgiveness. J Behav Med. 2007;30(4):291–302. [CrossRef].
79. Cawley MJ, Martin JE, Johnson JA. A virtues approach to personality. Pers Individ Differ. 2000;28(5):997–1013. [CrossRef].
80. Shahbaz W, Parker J. Workplace mindfulness: an integrative review of antecedents, mediators, and moderators. Hum Resour Manag Rev. 2022;32(3):100849. [CrossRef].
81. Badri SKZ, Yap WM, Ramos HM. Workplace affective well-being: gratitude and friendship in helping millennials to thrive at work. Int J Organ Anal. 2022;30(2):479–98. [CrossRef].
82. Tonidandel S, LeBreton JM, Johnson JW. Determining the statistical significance of relative weights. Psychol Meth. 2009;14(4):387–99. [CrossRef].
83. Johnson JW, Lebreton JM. History and use of relative importance indices in organizational research. Organ Res Meth. 2004;7(3):238–57. [CrossRef].