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The emotion regulation strategies of flourishing adults

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Abstract
Flourishing is an optimal state of wellbeing, but the mechanisms that enable flourishing are unclear. This study examined the role of emotion regulation (ER) strategies that may enable flourishing. The first aim examined differences between flourishers and non-flourishers in the use of functional/adaptive and dysfunctional/maladaptive ER strategies. A second aim specifically compared differences between flourishers and those non-flourishers who were free of psychopathology. We hypothesised that flourishers utilise greater use of functional/adaptive and lower use of dysfunctional/maladaptive strategies in comparison with non-flourishers, and those without pathology. Australian adults *(N* = 292) completed measures of flourishing, depression, and anxiety, and two measures of emotion regulation. Quota sampling obtained a balanced sample by age-group and gender. Regression analyses regressed ER strategies on flourishing and depression/anxiety status, adjusting for socio-demographic covariates. ER measures included the Emotion Regulation Questionnaire (ERQ) to assess reappraisal and suppression strategies, and the Emotion Regulation Profile – Revised (ERP-R) used vignettes to assess intentional response to situations. For the first aim, there was limited evidence that flourishers utilise higher levels of functional/adaptive, but substantive evidence that they use lower levels of dysfunctional/maladaptive ER strategies. For the second aim, flourishing was associated with these ER strategies over-and-above being free of pathology. The findings highlight a nuanced understanding of the ER of flourishers; flourishers appear to limit their use of dysfunctional/maladaptive strategies and do not necessarily report increased use of functional/adaptive strategies. Implications for wellbeing research and clinical practice are discussed.

Keywords Flourishing · Emotion regulation · Mental health · Psychological wellbeing

Wellbeing is frequently described as comprising subjective (hedonic), psychological (eudaimonic) and social wellbeing components (Keyes, 2002; Ryan & Deci, 2001). Subjective wellbeing (SWB) emphasises positive emotional experiences and judgments of satisfaction and happiness, whilst minimising negative emotional experiences. Psychological wellbeing (PWB) emphasises individuals' functional capacities in respect to their capacity to live life with a sense of engagement, mastery, purpose and with autonomy, while social wellbeing (SoWB) emphasises individuals' connection with significant others and community (Keyes, 2002; Ryan & Deci, 2001).

Wellbeing is related to but distinct from mental health. Whilst wellbeing focusses on SWB, PWB and SoWB experiences, mental health focuses on the extent of adverse psychological functioning, emotions and behavioural adaptations which inhibit individuals' capacity to realise inner potential and connect with work, family, and community. There is considerable research-base emphasising a dual-factor or dual-continuum model that separate dimensions of wellbeing/health and illness, across the lifespan and within multiple populations (Burns, Crisp 2022; Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008; Westerhof & Keyes, 2010). And several studies have specifically identified the risk of low wellbeing for prospective poor mental health outcomes (Brown et al., 1998; Burns et al., 2011, 2020; Burns, Crisp et al., 2022; Burns, Windsor 2022).

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Flourishing as the experience of high wellbeing

Flourishing is a term that has frequently been defined in terms of the extent of individuals' experience of high wellbeing across SWB, PWB and SoWB domains (Butler & Kern, 2016; Diener et al., 2009; Huppert & So, 2013; Keyes, 2002, 2006; Keyes et al., 2008; VanderWeele, 2017). Different flourishing models have been proposed with each derived or focused on somewhat different wellbeing components (Hone et al., 2014). Keyes has broadly proposed two operational definitions (Keyes, 2002, 2006; Keyes et al., 2008), both derived from the Mental Health Continuum-Short Form (MHC-SF). In the first method, Keyes (2002) defined flourishing by standardizing the distribution of participant responses to how strongly they endorsed individual wellbeing indicators (e.g. strongly agree vs. strongly disagree) and defined flourishing as individuals who scored in the upper tertiles on one of two emotional wellbeing indicators and six of 11 psychological and social wellbeing indicators. In the second method (Keyes, 2006; Keyes et al., 2008), wellbeing was assessed in terms of the frequency different wellbeing indicators were experienced; flourishing was then defined in terms of the experience *'everyday'* or *'almost everyday'* of at least one of three emotional wellbeing indicators and either five of nine (Keyes, 2006) or six of 11 psychological and social wellbeing indicators (Keyes et al., 2008); the latter 2008 model (Keyes et al., 2008) is perhaps the more ubiquitous in the flourishing/wellbeing literature.

Other flourishing models have been proposed. Huppert and So (2013) proposed a definition similar to Keyes' second methodology (Keyes, 2006; Keyes et al., 2008), which was derived from the European Social Survey (ESS) wellbeing module; they defined flourishing by the frequency to which individuals experience a range of wellbeing indicators. But in contrast to these categorical operationalisations, continuous measures of flourishing have been also proposed which define flourishing as a continuum on a unidimensional scale on which degrees of flourishing are captured (Butler & Kern, 2016; Diener et al., 2009; VanderWeele, 2017), in contrast to a discrete flourishing state (Huppert & So, 2013; Keyes, 2002, 2006; Keyes et al., 2008). Ultimately these models capture different areas of wellbeing, however Hone et al. (2014) argued that flourishing models align in two keyways: (a) they are multidimensional, and (b) encompass feeling (hedonic) and functioning (eudaimonic) components. As Keyes' (2008) model is perhaps the most ubiquitous, it will be utilised in the current paper.

The experience of high wellbeing (i.e. flourishing) is important; flourishing is positively associated with resilience (Keyes, 2005) and physical activity (Kim et al., 2017), and confers lower risk for physical and mental health conditions (Burns, Windsor 2022; Kubzansky et al., 2018). Quite why flourishing or flourishers are associated with better outcomes is unclear, and the current paper seeks to understand and identify potential mechanisms by which flourishing may confer individuals' benefit over not flourishing or experiencing mental illness. One potential mechanism that will be explored in this study is through emotion regulation. That is, we propose that flourishing individuals may be conferred benefits through their effective use of adaptive and functional emotion regulation strategies.

Models of emotion regulation and regulation strategies

Emotion regulation is a psychological and behavioural process of identifying, monitoring, evaluating, and adjusting one's emotional response to events and circumstances both within and external to the individual (Aldao, 2013; Gross, 2001). Emotion regulation is prompted by environmental demands or a mismatch between individuals' desired and actual emotional state (Aldao, 2013; Gross, 2001) with the purpose to reach a desired emotional state (Gross & John, 2003; John & Gross, 2004). Emotion regulation strategies can be adaptive, functional, maladaptive, or dysfunctional. Adaptive and functional strategies can be defined as helpful strategies, as they aid a person to successfully achieve their desired emotional state. On the other hand, maladaptive and dysfunctional strategies are unhelpful as they are either unsuccessful at achieving the desired emotion state or are associated with subsequent emotional or psychological difficulties (Gross & John, 2003). Adaptive and maladaptive are used specifically to refer to the regulation of positive emotions, while the terms functional and dysfunctional are used to describe the regulation of negative emotions (Nelis et al., 2011). More specifically, adaptive strategies seek to up-regulate (or increase) positive emotion. For example, displaying positive emotion through one's behaviour can work to maintain and increase the feeling of that positive emotion. Conversely, maladaptive strategies, such as finding fault in a positive experience, can result in a down-regulation (or decrease) in positive emotion. Strategies regulating negative emotions work in a similar way. Functional strategies (e.g., using cognitive reappraisal to interpret a situation differently) work to down-regulate negative emotions, whereas dysfunctional strategies (e.g., ruminating on a negative emotion or event) can increase these negative feelings (Aldao et al., 2010; Gross & John, 2003; Nelis et al., 2011).

Emotion regulation strategies and poor mental health outcomes

Dysfunctional or maladaptive strategies are associated with poorer long-term emotional and psychological outcomes (Gross & John, 2003; John & Gross, 2004). Individuals with emotion regulation deficits are at a greater risk for a range of psychological disorders including depression, anxiety, eating disorders, substance abuse and borderline personality disorder (Gross & Jazaieri, 2014; Gross & Muñoz, 1995; Sheppes et al., 2015). Individuals' risk for these pathologies is believed to be related to regulation failures where individuals are unable to recognise the need to regulate or instigate the regulation process and dysregulation involves an impaired ability to select and implement a contextually appropriate and adaptive regulation category or tactic (Gross & Jazaieri, 2014; Sheppes et al., 2015). Rumination, avoidance and suppression are three common types of emotion regulation strategies employed by those at-risk for poor mental health outcomes. Rumination involves dwelling or repetitive thinking on one's negative feelings and their causes and consequences, while suppression involves actively pushing adverse feelings and memories from conscious awareness. Avoidance is a maladaptive response in which an individual changes their behaviour to avoid thinking or feeling to a stressor and having to generate a response to it. Specifically, increased rumination and avoidance have been identified as particular risk factors for range of mental health issues, including depression, anxiety substance abuse and eating disorders (Nolen-Hoeksema et al., 2007), while suppression has been identified as a risk for depression (Matheson & Anisman, 2003). The relationship between psychopathology and emotion regulation also appears to be bi-directional; those with pathology report use of poor emotional regulation strategies and conversely those who utilise poor emotion regulation strategies are at risk of poor mental health outcomes (Dawel et al., 2021).

Emotion regulation and wellbeing

In addition to its links with psychopathology, emotion regulation is arguably also fundamentally tied to happiness and wellbeing (Kraiss et al., 2020). Fredrickson's (1998) broaden-and-build theory posits that experiencing positive emotions can broaden individuals' mindsets to a wider range of thoughts and activities which in turn bring about positivity and wellbeing. Over time these broadened mindsets become habitual and produce long-term benefits such as building psychological resources (e.g., learning, knowledge, attachments) and improved coping and resilience to adversity (Fredrickson, 1998; Fredrickson & Branigan, 2005). Ongoing engagement with positive initiates an upwards spiral of increasing positivity and emotional wellbeing.

The relationship between emotion regulation and wellbeing has been well described (Kraiss et al., 2020), but this research has focused on SWB dimensions; adaptive and functional regulation strategies are associated with positive affect, subjective happiness, life satisfaction, and resilience (Eisner et al., 2009; Quoidbach et al., 2010). Few studies have examined the relationship between emotion regulation and PWB or SoWB (Eisner et al., 2017; Haeyen et al., 2018; Kladnitski et al., 2018; Valiente et al., 2017). And there is a paucity of research that examines the relationship between emotion regulation and flourishing specifically (Barber et al., 2010; Basson & Rothmann, 2018). Barber et al. (2010) suggested that non-flourishers were more likely engaged with strategies that prevented flourishing, rather than flourishers engaging in strategies that promoted wellbeing. In contrast, Basson and Rothmann (2018) reported that flourishers were more likely to use certain adaptive regulation strategies (savouring the moment, behaviour display) and less likely to use certain maladaptive regulation strategies (fault finding, negative mental time travel, inattention) than non-flourishers. Flourishers were also more likely to up-regulate their positive emotion. However, both Barber et al. (2010) and Basson and Rothmann (2018) are limited by their use of university-aged convenience samples; determining these relationship across the adult lifespan is needed. Critically, this past research was not examined in concordance with psychopathology, and it is unclear whether flourishing is associated with more adaptive and functional regulation strategies over-and-above being simply free of psychopathology.

The Present Study

The present study seeks to extend the current literature base by examining the emotion regulation strategies of flourishers and to establish whether flourishers report higher levels of functional/adaptive and lower levels of dysfunctional/maladaptive emotion regulation strategies in comparison with non-flourishers with and without psychopathology. Our first aim will be to examine the emotion regulation strategies of flourishers. Although there is some research examining the association between emotion regulation and SWB (Eisner et al., 2009; Kraiss et al., 2020; Quoidbach et al., 2010) and PWB (Eisner et al., 2017; Haeyen et al., 2018; Kladnitski et al., 2018; Valiente et al., 2017), the strategies employed by flourishers specifically are limited to convenience university samples (Barber et al., 2010; Basson & Rothmann, 2018). However, based on those studies of wellbeing more generally, we hypothesise that flourishing individuals will report (a) greater use of functional and adaptive regulation

strategies (e.g., cognitive reappraisal), and (b) lower use of dysfunctional and maladaptive regulation strategies (e.g., expressive suppression) in comparison with non-flourishers. A second aim extends on aim 1 by examining the emotion regulation differences between flourishers and those who are specifically free of pathology. We hypothesise that flourishers will utilise greater levels of adaptive/functional emotion regulation strategies and lower levels of maladaptive/dysfunctional emotion regulation strategies than those non-flourishers who report being free of depression and anxiety. A third aim will assess the relationship between depression and anxiety with emotion regulation in our sample after adjusting for flourishing status. Based on the existing literature we hypothesise that depression and anxiety status will be positively associated with greater use of maladaptive and dysfunctional emotion regulation strategies.

Studies of wellbeing and psychopathology need to consider potential confounds that are known to be related to psychological health outcomes and wellbeing (Burns et al., 2020; Ryan & Deci, 2001; Spiers et al., 2011; Stewart-Brown et al., 2015). Substantial age and sex differences in wellbeing and mental health are frequently reported; females and younger adults often report lower wellbeing and greater burden of depression and anxiety. Similarly, other key individual characteristics including partner status and education status, are known to influence wellbeing and mental health; partnered and higher education are frequently seen as protective buffers for poor wellbeing and mental health outcomes. As such, these factors will be controlled for in the current study.

Method

Participants

Participants ($N = 306$) were recruited from The Online Research Unit (The ORU), an Australian-based, ISO-accredited data collection and panel management system that has recruited over 350,000 Australians to form a representative panel. Participants recruited by The ORU were sent an invitation email containing a link to a survey that had been programmed in *Qualtrics*. Inclusion criteria were that participants were Australian residents aged 18 years and over who had consented to participate. We recruited participants using a quota sampling method to ensure comparable group sizes by age (18–39; 40–59; 60 + years) and gender (Male; Female). An a-priori power analysis identified that, with $_{\alpha} = 0.05$ and power = 0.90, the projected sample needed to detect a medium effect was approximately $N = 231$. Allowing for partial responses and drop-out, and whilst maintaining quota balance, 51 participants in each age-sex group were recruited. Fifteen participants were excluded from the analysis as they were missing data on key socio-demographics resulting in a final $N = 292$. As such, the final sample was sufficient to detect medium-sized group differences. Participants provided informed consent and were compensated for their time by The ORU. The study was approved by the Australian National University Human Research Ethics Committee (Protocol 2022/118). Data for this study is available from the Open Science Framework repository at: https://doi.org/10.17605/OSF.IO/D7NTM.

Measures

Dependent/outcome variables

Emotion regulation was measured with the Emotion Regulation Questionnaire (Gross & John, 2003) and the Emotion Regulation Profile – Revised (Nelis et al., 2011). The ERQ is a validated and frequently used measure of emotion regulation. It is a 10-item scale designed to measure participants' tendency to regulate their emotions through cognitive reappraisal (six items, e.g., *"I control my emotions by changing the way I think about the situation I'm in"*) and expressive suppression (four items, e.g., *"I keep my emotions to myself"*). Participants indicated their response on a 7-point Likert scale ranging from 1 *(Strongly Disagree)* to 7 *(Strongly Agree)*. Subscale scores were calculated by averaging item scores; higher scores represent greater use of reappraisal or suppression emotion regulation strategies. Internal consistency was good for reappraisal ($\alpha = 0.89$) and acceptable for suppression ($\alpha = 0.76$).

The ERP-R is a vignette based measure which examines overall regulation tendencies, and as such is likely to reflect behavioural intentions rather than participant attitudes (Nelis et al., 2011). The ERP-R comprises 15 vignettes which assess participants' likelihood to down-regulate negative emotions and up-regulate positive emotions through the use of functional and dysfunctional, and adaptive and maladaptive strategies respectively. Of the 15 vignettes, six depict positive emotions (e.g., joy, pride, excitation) and nine depict negative emotions (e.g., fear, sadness, anger); each include eight possible response options. For negative emotions, responses are categorised into functional and dysfunctional strategies; responses to positive emotions are categorised into adaptive and maladaptive strategies (see Table 1 for specific strategies within each subtype). Respondents' tendency to utilise functional, dysfunctional, adaptive, and maladaptive strategies were calculated by producing a total score for each of these subcategories. The Cronbach's Alpha for each of the subscales were suitable (Adaptive $\alpha = 0.83$; Maladaptive $\alpha = 0.77$; Functional $\alpha = 0.72$; Dysfunctional $\alpha = 0.77$).

Table 1 Types of strategies for regulating negative and positive emotions within the emotion regulation profile-revised (ERP-R)

Emotion	Regulation strategy	
	Functional/adaptive	Dysfunctional/maladaptive
Negative	Situation modification Attention reorienting Positive reappraisal Emotion expression	Learned helplessness Substance abuse Rumination Acting out
Positive	Savouring the moment Behaviour display Capitalising Positive mental time travel	Inhibition of emotion expression Inattention Fault finding Negative mental time travel

Note. Within the ERP-R nomenclature, regulation of negative emotions is considered either functional or dysfunctional, while regulation of positive emotion is considered either adaptive or maladaptive

Independent variables

Flourishing was measured using the Mental Health Continuum – Short Form scale (Keyes, 2005; Keyes et al., 2008) as this is the most ubiquitous model of flourishing. The MHC-SF is a 14-item scale designed to measure participants' SWB, PWB, and SoWB. Participants were asked how they felt during the past month on a scale ranging from *Never* to *Everyday*. Three items measure SWB, (e.g., *"How often have you experienced or felt happy?"*), 5-items measure SoWB, (e.g., *"How often have you experienced or felt that you belonged to a community?"*), and 6-items measure PWB (e.g., *"How often have you experienced or felt good at managing the responsibilities of your daily life?"*). Following Keyes et al. (2008), participants were categorised as flourishing if they responded *Almost Everyday* or *Everyday* to at least one of the SWB items and at least six of the 11 positive functioning symptoms (PWB & SOWB items). All other participants were classified as non-flourishing. The scale reported excellent internal reliability ($\alpha = 0.94$).

Depression was assessed with the Brief Patient Health Questionnaire (Spitzer et al., 1999). The BPHQ comprises 9-items reflecting how often someone has experienced depressive symptoms (e.g., *"feeling down, depressed, or hopeless"*) over the last two weeks on a scale ranging from 0 (*Not at all)* to 3 (*Nearly every day)*. Following Spitzer et al. (2006), cases of major depression were identified when participants scored *More than half the days* or *Nearly every day* to either *"Little interest or pleasure in doing things"* or *"Feeling down, depressed or hopeless"*, and also responded *More than half the days* or *Nearly every day* to at least five of the nine items. The BPHQ has reported sensitivity of 93% (Spitzer et al., 1999) and reported excellent internal consistency ($\alpha = 0.92$).

Anxiety was measured using the Generalised Anxiety Disorder Screener (Spitzer et al., 2006). The GADS-7 comprises 7-items reflecting how often someone has experienced symptoms associated generalised anxiety disorder (e.g., "not being able to stop or control worrying") over the last two weeks on a scale ranging from 0 (*Not at all)* to 3 (*Nearly every day)*. Following Spitzer et al. (1999), cases of generalised anxiety were identified by a total score of 10 or greater. The GADS-7 has reported good sensitivity (89%) and specificity (82%) (Spitzer et al., 2006). The scale reported excellent internal consistency ($\alpha = 0.93$).

Covariates

A number of covariates were adjusted for in the analyses which are known to be associated with mental health and wellbeing. These include gender (Male vs. Female), age-group (18–39, 40–59, 60 + years), partner status (Partnered vs. Not Partnered), and education (Tertiary Education completed vs. no Tertiary education).

Statistical approach

Chi-Square compared flourishing prevalence across key socio-demographic and health variables. To answer the main research questions, generalized linear regression analyses with a Gaussian distribution and identity link examined the association between flourishing and emotion regulation. For each dependent variable, two models were estimated. The first model sought to test the first aim: to identify differences in emotion regulation strategies between flourishers and non-flourishers. The second model added the depression and anxiety status variables and allowed us to assess whether the differences between flourishers and non-flourishers remain after adjusting for depression and anxiety. Indeed, as binary mental health variables, the flourishing coefficient would then reflect the differences between flourishers and non-flourishers when the depression and anxiety status variables = 0; (i.e., no depression or anxiety reported) and address our second aim. The second model would also allow us to test the third aim and assess the relationship between depression and anxiety with emotional regulation in our sample. Both models were adjusted for age-group, gender, partner status, employment status, tertiary education. All emotion regulation variables (the dependent variables) were Z-score standardised ($M = 0$; $SD = 1$) so that regression coefficients reflect measures of effects where Z-score effect sizes are equivalent to $d = 0.2$, $d = 0.5$, and $d = 0.8$ (Kim, 2015). Analyses were implemented in Stata V.17 (StataCorp, 2021).

Results

Sample characteristics and emotion regulation measures by flourishing status

Key socio-demographic details are presented in Table 2. Participants were predominantly partnered (71.9%). Half of all participants reported tertiary education (50.3%), while more than half were employed (58.6%). Of the sample, 42.1% of participants were classified as flourishing according to Keyes' definition. Flourishing status was unrelated to age-group, gender, employment, and education. Flourishing respondents were more likely to be partnered, and not report current depression or anxiety.

Bivariate associations between flourishing status and the emotion regulation scales on their original scales (before *Z*-transformation) are also reported in Table 2. There are differences between flourishing and non-flourishing participants on both the ERQ and ERP-R subscales. Flourishers reported higher levels of the ERQ cognitive appraisal ($t = 4.66$ ($df = 290$), $p < .001$), and ERP-R functional ($t = 2.32$ ($df = 290$), $p = .021$) and adaptive ($t = 2.90$ ($df = 290$), $p = .004$) regulation strategies, but lower levels of the ERQ expressive suppression ($t = 4.90$ ($df = 290$), $p < .001$) and ERP-R dysfunctional ($t = 7.27$ ($df = 290$), $p < .001$) and maladaptive ($t = 6.49$ ($df = 290$), $p < .001$) regulation strategies.

Flourishing and strategies of reappraisal and suppression

In terms of the ERQ, flourishing was associated with both increased use of cognitive reappraisal (B (SE) = 0.50 (0.12), $p < .001$) and lower use of expressive suppression (B (SE) = −0.51 (0.12), $p < .001$), supporting our first hypothesis (Table 3). These effects remained even when adjusting for depression and anxiety (Cognitive reappraisal: B (SE) = 0.42 (0.13), $p = .001$; expressive suppression: B (SE) = −0.46 (0.13), $p < .001$). Notably depression was unrelated to cognitive reappraisal (B (SE) = 0.05 (0.19), $p = .796$), but was related to increased use of expressive suppression (B (SE) = 0.48 (0.19), $p = .013$), while anxiety was marginally related to lower cognitive reappraisal (B (SE) = −0.32 (0.18), $p = .077$) only but was reported with low statistical significance.

Table 2 Frequencies of key participant characteristics by flourishing status (N = 292)

	Non-flourishing ($n = 169$; 57.9%)	Flourishing ($n = 123$; 42.1%)	X^2/t	p
	N (%)	N (%)		
Age-group[a]				
Younger Adults	52 (30.8)	42 (34.2)	1.92	0.383
Middle Adults	64 (37.9)	37 (30.1)		
Older Adults	53 (31.4)	44 (35.8)		
Gender				
Male	90 (53.3)	57 (46.3)	1.36	0.243
Partner status[b]				
Partnered	108 (63.9)	102 (82.9)	12.75	< 0.001
Employment status[c]				
Employed	94 (55.2)	77 (62.6)	1.43	0.232
Education Status				
Tertiary education	81 (47.9)	66 (53.7)	0.93	0.334
Depression Status				
Depression	37 (21.9)	6 (4.9)	16.41	< 0.001
Anxiety Status				
Anxiety	55 (32.5)	5 (4.1)	35.37	< 0.001
ERQ				
Cognitive Reappraisal, $M(SD)$	4.57 (0.96)	5.12 (1.03)	4.66	< 0.001
Expressive Suppression, $M(SD)$	4.46 (1.09)	3.77 (1.29)	4.90	< 0.001
ERP-R				
Down-Regulation				
Dysfunctional, $M(SD)$	7.80 (5.25)	3.69 (4.03)	7.27	< 0.001
Functional, $M(SD)$	9.75 (6.28)	11.37 (5.34)	2.32	0.021
Up-Regulation				
Maladaptive, $M(SD)$	4.91 (4.17)	2.17 (2.49)	6.49	< 0.001
Adaptive, $M(SD)$	7.83 (5.23)	9.72 (5.84)	2.90	0.004

Note. [a]Younger adults: 18–39 years; Middle adults: 40–59 years; Older adults: 60 + years. [b]Partnered: vs. Not partnered. [c]Employed vs. Not employed. ERQ: Emotion Regulation Questionnaire (Gross & John, 2003). ERP-R: Emotion Regulation Profile – Revised (Nelis et al., 2011)

Table 3 Associations between flourishing and ERQ subscales of cognitive reappraisal and expressive suppression

	Model 1		Model 2	
	B (SE)	*p*	*B (SE)*	*p*
	Cognitive Reappraisal			
Intercept	−0.90 (0.20)	< 0.001	−0.77 (0.21)	< 0.001
Flourishing (ref. Not Flourishing)	0.50 (0.12)	< 0.001	0.42 (0.13)	0.001
Depression (ref. No Depression)			0.05 (0.19)	0.796
Anxiety (ref. No Anxiety)			−0.32 (0.18)	0.077
	Expressive Suppression			
Intercept	0.40 (0.20)	0.042	0.20 (0.22)	0.345
Flourishing (ref. Not Flourishing)	−0.51 (0.12)	< 0.001	−0.46 (0.13)	< 0.001
Depression (ref. No Depression)			0.48 (0.19)	0.013
Anxiety (ref. No Anxiety)			−0.09 (0.18)	0.630

Note. Models adjusted for age, gender, partner status, education, employment status

Table 4 Associations between flourishing and up-regulation of positive emotions and down-regulation of negative emotions

	Model 1		Model 2	
	B (SE)	*p*	*B (SE)*	*p*
	Adaptive up-regulation of positive emotions			
Intercept	-1.03 (0.19)	< 0.001	−0.74 (0.21)	< 0.001
Flourishing[a]	0.28 (0.12)	0.017	0.19 (0.12)	0.110
Depression[b]			−0.62 (0.19)	0.001
Anxiety[c]			0.04 (0.17)	0.828
	Maladaptive up-regulation of positive emotions			
Intercept	0.66 (0.19)	< 0.001	0.20 (0.20)	0.317
Flourishing[a]	−0.69 (0.11)	< 0.001	−0.49 (0.11)	< 0.001
Depression[b]			0.47 (0.18)	0.008
Anxiety[c]			0.46 (0.16)	0.005
	Functional down-regulation of negative emotions			
Intercept	−0.86 (0.20)	< 0.001	−0.65 (0.22)	0.003
Flourishing[a]	0.22 (0.12)	0.071	0.17 (0.13)	0.177
Depression[b]			−0.57 (0.19)	0.003
Anxiety[c]			0.15 (0.18)	0.407
	Dysfunctional down-regulation of negative emotions			
Intercept	0.38 (0.19)	0.044	0.17 (0.21)	0.426
Flourishing[a]	−0.79 (0.12)	< 0.001	−0.69 (0.12)	< 0.001
Depression[b]			0.18 (0.19)	0.342
Anxiety[c]			0.26 (0.17)	0.136

Models adjusted for age, gender, partner status, education, employment status. [a]0 = Not Flourishing, 1 = Flourishing.[b]0 = No Depression, 1 = Depression. [c]0 = No Anxiety, 1 = Anxiety

Flourishing and intentional emotion regulation in hypothetical scenarios

Analysis of the four ERP-R subscales, the adaptive and maladaptive up-regulation of positive emotions, and the functional and dysfunctional down-regulation of negative emotions are reported in Table 4. Flourishing was associated with lower use of both maladaptive up-regulation of positive emotions (B (SE) = −0.69 (0.11), $p < .001$), and dysfunctional down-regulation of negative emotions (B (SE) = −0.79 (0.12), $p < .001$). These effects remained even after controlling for mental health (maladaptive up-regulation: B (SE) = 0.49 (0.11), $p < .001$; dysfunctional down-regulation: B (SE) = −0.69 (0.12), $p < .001$). The dysfunctional down-regulation of negative emotions were considerably more substantive than the effects reported for mental health. Effects sizes between flourishing and mental health for the maladaptive up-regulation of positive emotions were comparable. Despite the associations reported in Table 2, flourishing reported only a marginal positive association with adaptive up-regulation of positive emotions (B (SE) = 0.28 (0.12), $p = .017$) when adjusting for socio-demographic controls, and was fully attenuated by the mental health variables (B (SE) = 0.19 (0.12), $p = .110$). Similarly, when controlling for socio-demographic controls and mental health, flourishing was no longer associated with functional down-regulation of negative emotions (B (SE) = 0.17 (0.13), $p = .177$). These results only partially support our second hypothesis since flourishing individuals were more likely to report lower dysfunctional and maladaptive emotion regulation strategies but not increased use of adaptive or functional emotion regulation strategies.

Exploratory analyses of the ERP-R subscales were undertaken on the individual regulation strategies (Tables 5 and

Table 5 Associations Between Flourishing and Functional/Adaptive and Dysfunctional/Maladaptive strategies of negative emotions

	Functional and Adaptive		Dysfunctional and Maladaptive	
	B (SE)	*p*	*B (SE)*	*p*
	Situation modification		**Learned helplessness**	
Intercept	−0.35 (0.22)	0.118	0.08 (0.21)	0.703
Flourishing[a]	0.08 (0.13)	0.555	−0.65 (0.12)	<0.001
Depression[b]	−0.47 (0.20)	0.019	0.36 (0.19)	0.055
Anxiety[c]	−0.06 (0.19)	0.741	0.15 (0.17)	0.379
	Attention reorienting		**Substance abuse**	
Intercept	−0.27 (0.23)	0.231	0.46 (0.22)	0.035
Flourishing[a]	0.15 (0.13)	0.259	−0.28 (0.13)	0.027
Depression[b]	−0.53 (0.20)	0.009	−0.25 (0.19)	0.204
Anxiety[c]	0.54 (0.19)	0.004	0.54 (0.18)	0.003
	Positive reappraisal		**Rumination**	
Intercept	−0.81 (0.21)	<0.001	0.15 (0.22)	0.505
Flourishing[a]	0.33 (0.12)	0.006	−0.69 (0.13)	<0.001
Depression[b]	−0.27 (0.19)	0.148	−0.12 (0.20)	0.541
Anxiety[c]	−0.16 (0.17)	0.361	0.08 (0.18)	0.639
	Emotion expression		**Acting out**	
Intercept	−0.39 (0.22)	0.081	−0.11 (0.22)	0.608
Flourishing[a]	−0.09 (0.13)	0.470	−0.38 (0.13)	0.003
Depression[b]	−0.48 (0.20)	0.017	0.51 (0.19)	0.009
Anxiety[c]	0.24 (0.19)	0.202	0.12 (0.18)	0.512

Models adjusted for age, gender, partner status, education, employment status. [a]0 = Not Flourishing, 1 = Flourishing.[b]0 = No Depression, 1 = Depression. [c]0 = No Anxiety, 1 = Anxiety

Table 6 Associations Between Flourishing and Functional/Adaptive and Dysfunctional/Maladaptive strategies of positive emotions

	Functional and Adaptive		Dysfunctional and Maladaptive	
	B (SE)	*p*	*B (SE)*	*p*
	Savouring the moment		**Inhibition of emotion expression**	
Intercept	−0.47 (0.21)	0.026	0.35 (0.21)	0.092
Flourishing[a]	0.28 (0.12)	0.023	−0.41 (0.12)	0.001
Depression[b]	−0.56 (0.19)	0.003	0.47 (0.19)	0.013
Anxiety[c]	−0.02 (0.18)	0.915	0.05 (0.17)	0.782
	Behaviour display		**Inattention**	
Intercept	−0.57 (0.22)	0.009	−0.07 (0.21)	0.732
Flourishing[a]	0.18 (0.13)	0.151	−0.23 (0.12)	0.052
Depression[b]	−0.40 (0.20)	0.043	0.57 (0.19)	0.002
Anxiety[c]	−0.06 (0.18)	0.731	0.47 (0.17)	0.006
	Capitalising		**Fault finding**	
Intercept	−0.76 (0.21)	<0.001	0.18 (0.22)	0.401
Flourishing[a]	−0.00 (0.12)	0.990	−0.38 (0.13)	0.002
Depression[b]	−0.41 (0.19)	0.029	0.23 (0.19)	0.245
Anxiety[c]	−0.04 (0.17)	0.829	0.33 (0.18)	0.062
	Positive mental time travel		**Negative mental time travel**	
Intercept	−0.61 (0.22)	0.005	0.11 (0.21)	0.606
Flourishing[a]	0.16 (0.13)	0.207	−0.47 (0.12)	<0.001
Depression[b]	−0.64 (0.19)	0.001	0.16 (0.18)	0.383
Anxiety[c]	0.22 (0.18)	0.209	0.57 (0.17)	0.001

Models adjusted for age, gender, partner status, education, employment status. [a]0 = Not Flourishing, 1 = Flourishing.[b]0 = No Depression, 1 = Depression. [c]0 = No Anxiety, 1 = Anxiety

6). For negative emotions (Table 5), flourishing was substantively negatively related to the dysfunctional strategies learned helplessness (B $(SE) = -0.65$ (0.12), $p < .001$) and rumination (B $(SE) = -0.69$ (0.13), $p < .001$), with small effect sizes reported for substance abuse (B $(SE) = -0.28$ (0.13), $p = .027$) and acting out (B $(SE) = -0.38$ (0.13), $p = .003$). A small positive association with the functional strategy positive reappraisal was also reported (B $(SE) = 0.33$ (0.12), $p = .006$). For positive emotions (Table 6), flourishing was substantively negatively related to the maladaptive strategies inhibition of emotion expression (B $(SE) = -0.41$ (0.12), $p = .001$), fault finding (B $(SE) = -0.38$ (0.13), $p = .002$) and negative mental time travel (B $(SE) = -0.47$ (0.12), $p < .001$). A small positive association with the adaptive strategy savouring the moment was also reported (B $(SE) = 0.28$ (0.12), $p = .023$).

Discussion

The aim of the present study was to examine differences in emotion regulation between flourishers and non-flourishers on two measures of emotion regulation, and to identify whether flourishing is associated with better emotion regulation strategies over and above being free of psychopathology. The current study found only partial evidence to support the first hypothesis that flourishers engaged in better (i.e., more helpful and less unhelpful) emotion regulation strategies compared to non-flourishers. Flourishers reported using significantly less suppression and fewer maladaptive and dysfunctional strategies than non-flourishers. Given suppression represents an example of an unhelpful strategy (John & Gross, 2004), these findings support previous research that found flourishers engaged in fewer unhelpful strategies (Basson & Rothmann, 2018). Flourishers also reported greater reappraisal use (a helpful strategy). Contrary to expectation, flourishing status was not associated with greater use of adaptive and functional regulation strategies in comparison to those free of pathology. This implies flourishers may have better emotion regulation only in that they utilise greater reappraisal and refrain from engaging in unhelpful strategies. This supports prior research of undergraduate students (Barber et al., 2010) in which flourishers engaged in fewer maladaptive strategies. As a contrast, depression was notably related to lower functional and adaptive strategy use and greater use of suppression and maladaptive strategies.

The findings in respect to positive and negative emotion are notable and require careful interpretation. First, our findings suggest that rather than reporting greater use of adaptive strategies that increase their positive emotions, flourishers are less likely to use maladaptive strategies that reduce feelings of positive emotion. This implies that it may be more important for an individual's wellbeing to avoid minimising positive emotions than it is to strive to increase them. Results also suggest that rather than utilising functional strategies to decrease negative emotion, flourishers refrain from engaging in dysfunctional strategies that increase negative emotion. Rather than attempting to reduce negative emotions, it appears to be more important to refrain from engaging in strategies which make them worse (i.e., increase feelings of negative emotion). Put simply, the current findings suggest flourishers have better emotion regulation than non-flourishers because they refrain from downward spirals of increased negativity (i.e., use fewer dysfunctional strategies), as opposed to engaging in upward spirals of increased positivity (i.e., use a greater number of adaptive strategies) as described by Fredrickson and colleagues (Fredrickson, 1998; Fredrickson & Branigan, 2005).

Associations between flourishing and emotion regulation were mostly maintained after adjusting for depression and anxiety status. Flourishing was still positively associated with reappraisal, and negatively associated with suppression, maladaptive and dysfunctional strategy use, while remaining unrelated to adaptive and functional strategy use. Depression was strongly associated with suppression, and maladaptive and functional strategy use, though these associations were weaker than the relationship reported for flourishing. Anxiety was generally unrelated to emotion regulation with the exception of maladaptive strategy use which appears contrary to some previous findings (Aldao et al., 2010).

Together though, this suggests that increased reappraisal, but reduced suppression and maladaptive and dysfunctional strategies may be more strongly linked with wellness than disorder. Notably, the emotion regulation measures that were unrelated to flourishing (adaptive and functional strategy use) were strongly associated with depression. It is possible that adaptive and functional strategy use is simply associated with the absence of depression rather than with high wellbeing. Overall, these findings suggests that flourishing is associated with emotion regulation benefit over and above being free of disorder. This extends prior studies into the flourishing-emotion regulation link, and which did not control for the influence of mental health. Given that mental ill-health is much less likely to occur in flourishers than non-flourishers (Burns, Windsor 2022; Keyes, 2005), this has limited our understanding of emotion regulation in flourishers. The present study extends this research and provides novel evidence that the emotion regulation benefit experienced by flourishers is not explained simply by differences in mental health status; flourishing confers benefit.

Implications of the study findings

These results are important for a number of reasons. First, flourishing was associated with emotional regulation over and above the effect of common mental health pathology. Importantly the results showed that the association between flourishing and emotional regulation was greater than simple being free of pathology. A second major finding relates to the results between a broad general emotion regulation measure (ERQ) and a measure of intentional response to a series of real-life scenarios (ERP-R), which elicited somewhat different results. Whilst the results of the ERQ suggest flourishers reported increased use of constructive and decreased use of less constructive emotion regulation strategies in terms of regulation of emotions generally (i.e., irrespective of valence), the results of the ERP-R measure indicates that in terms of intentional use of specific strategies for regulating distinct positive or negative emotions, flourishers reported lower use of dysfunctional/maladaptive strategies and not necessarily increased use of functional/adaptive. This possibly reflects real differences in the format of measures where the ERP-R is situational specific and the ERQ is not specific to particular situations. Alternatively, this may reflect the importance of differentiating between the regulation of positive and negative emotions when measuring the use of emotion regulation strategies. The use of hypothetical scenarios in the ERP-R certainly provides an additional benefit to other emotion regulation studies that focus on self-reported attitudinal surveys like the ERQ.

That flourishing was not necessarily related to adaptive or functional strategies, especially when adjust for mental health, and primarily associated with lower use of maladaptive and dysfunctional strategies, was contrary to the hypothesis we made in that more positive wellbeing (flourishing) would be associated with increased positive behaviours as reflected by functional and adaptive emotion regulation strategies. This is also important to note as it has implications for how understanding of the emotion regulation of flourishers. Given these findings are contrary to expected, this could suggest that there are different mechanisms in the relationship between flourishing and the use of emotion regulation strategies than previously assumed. Formerly, it was suggested that flourishers may have better emotion regulation because they engage in and seek out a greater number of positive experiences which can in turn become positively reinforcing and create an upwards spiral of increasing positivity (Fredrickson, 1998; Fredrickson & Branigan, 2005). However, what the current study indicates is that flourishers

have better emotion regulation not because they necessarily engage in increasing positive emotion, but because they are less likely to refrain from engaging in unhelpful strategies and less likely to be caught in a cycle of increasing negativity. Alternatively, it is possible that results were contrary to hypothesised because associations between flourishing and emotion regulation differed depending on the particular emotion regulation strategy examined. In the current study, flourishing was associated with lower use of all dysfunctional strategies and all maladaptive strategies except for inattention, but was only associated with the functional strategy of reappraisal and the adaptive strategy of savouring the moment. Flourishing appeared unrelated to all other functional and adaptive strategies, indicating that associations between flourishing and emotion regulation may be strategy specific as it appears to be related to some adaptive and functional strategies but not others.

Limitations and future directions

There are clearly limitations which moderate our interpretation of the results. That the ERQ reported differences in both cognitive reappraisal and expressive suppression, but the ERP-R only reported differences on the dysfunctional/maladaptive strategies, may be partly explained by non-flourishers overestimating their utilisation of functional/adaptive strategies and may not reflect their response in real-life situations. Whilst the ERP-R utilises a series of vignettes, responses represent participants' behavioural intentions (Nelis et al., 2011) which may not always predict actual behaviour (Chandon et al., 2005). Clearly there is a need for designs that go beyond intentional responses but can capture actualised responses. One potential may be the use of informant designs where a close confidant of respondents may inform how respondents actually respond in difficult scenarios.

A further limitation is that the present study utilised a cross-sectional rather than longitudinal design, so findings lack predictive or explanatory power. It is unclear whether flourishing status is an outcome of refraining from maladaptive and dysfunctional regulation strategies or whether refraining from such strategies creates increased wellbeing and flourishing, if this association is mutually reinforcing (i.e., bidirectional), or produced by another factor. Such a relationship has been established between psychopathology and emotion regulation (Dawel et al., 2021; Nolen-Hoeksema et al., 2007). This may have important implications for wellbeing promotion and inform wellbeing research, clinical interventions, and public health initiatives.

Although Keyes' (2002) flourishing model is one of the most ubiquitous, there are several models of flourishing and slight differences in wellbeing components and categorisations between models can lead to major differences in prevalence (Hone et al., 2014). Although it has been argued the models align in keyways, results may differ depending on the flourishing model used, and future research should examine the relationship between flourishing and emotion regulation across different models.

Conclusion

The findings of the present study inform our understanding of how flourishing is related to emotion regulation, but not in the way we might expect. Whilst flourishers appear to report general positive emotion regulation strategies flourishers are more likely to refrain from utilising unhelpful dysfunctional and maladaptive regulation strategies to hypothetical situations rather than engaging more frequently more adaptive and functional strategies. Importantly, the study provides novel evidence that the emotion regulation benefits experienced by flourishers is not explained by their low rates of psychopathology.

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Data availability Data for this study is available from the Open Science Framework repository at: DOI https://doi.org/10.17605/OSF.IO/D7NTM.

Declarations

Conflict of interest The authors declare that there are no disclosures to report.

Compliance of ethical standard The Australian National University Human Research Ethics Committee approved the research study (Protocol 2022/118). All procedures performed in this study involving human participants were in accordance with the ethical approval. As part of the ethics approval, participants provided consent to participate and were able to withdraw from the study at any time during data collection.

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