

The Role of Emotional Regulation Strategies in Predicting Resilience and Psychological Well-Being in Adults: A Meta-Analysis

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ABSTRACT

The control of emotions has become one of the most important predictors of human psychological health and resilience throughout the adult life, determining how people react to stress, balance their emotions, and adjust to life. This meta-analysis is a systematic review and synthesis of the evidence on how adaptive and maladaptive emotional regulation strategies relate to important measures of resilience and psychological well-being in adults. The studies included were taken after covering a wide range of populations and cultural contexts and analyzed as per PRISMA 2020 guidelines using a random-effects model to consider the methodological variability.

The results of the analysis demonstrated strong and steady tendencies: strong positive relations between adaptive emotional regulation tactics, in particular, cognitive reappraisal, acceptance, and mindfulness-based regulation, and increased resilience ($r = .42$), as well as, higher levels of psychological well-being ($r = .51$). Contrastingly, maladaptive habits like rumination, suppression and avoidance of emotion were highly connected with increased levels of psychological distress ($r = -.39$) and reduced well-being ($r = -.44$). Moderation analyses have shown that the adaptability of these strategies, mainly the capacity to alternate adaptive and context-sensitive approaches, was an important protective mechanism of emotional stability and post-adversity recovery in adults.

These results highlight the key role of emotional regulation flexibility to sustain mental health and encourage resilience across the adult lifespan. Its implications go further into the domains of clinical psychology, neuropsychology, and positive psychology and provide empirical evidence in support of interventions aimed at improving adaptive regulation skills, including mindfulness-based cognitive therapy (MBCT) and acceptance and commitment therapy (ACT). It finds that the advancement of adaptive emotional regulation is among the potent directions to enhancing psychological resilience, avoiding emotional depletion, and enhancing

well-being in both clinical and non-clinical groups of people.

Keywords: Emotional Regulation, Resilience, Psychological Well-Being, Meta-Analysis, Adults, Coping Strategies

Introduction

Emotional regulation is the way people determine the kind of emotions they feel, their onset, and how they feel and express them (Gross, 2015). The skill of adaptation in dealing with emotions is viewed as critical in adulthood to retain psychological stability and sustainability in the resistance to stresses in life. Adults are always exposed to complicated emotional situations like work stress, relationship conflicts, and existential problems, which is why emotional regulation is one of the key constructs in modern psychological studies. The increased emphasis on emotional regulation indicates the paradigm shift of clinical and health psychology to emphasize on the positive functioning and resilience rather than reduction of symptoms. The ability to control emotions easily tends to determine resilience, which may be described as the ability to recover after a negative experience (Troy and Mauss, 2021). Similarly, psychological health, including self-acceptance, autonomy, personal development, and good relations is reliant on the maintenance of emotional stability (Ryff, 2018). Regardless of these conceptual overlaps, there has been extensive variation in operational definitions of and measurement of emotional regulation across studies with respect to the inconsistent findings. The purpose of this meta-analysis is to combine newer studies to identify how adaptive (e.g., cognitive reappraisal, mindfulness, acceptance) vs. maladaptive (e.g., suppression, avoidance, rumination) emotional regulation strategies are predictors of resilience and psychological well-being in adults. As per the expectations of the research, its results are likely to help uncover the theoretical uncertainties, improve the development of interventions, and add to the neuropsychological framework that would interconnect cognitive control and emotion regulation mechanisms.

Operational Definitions

Emotional Regulation: The cognitive and behavioral strategies individuals use to monitor, evaluate, and modify their emotional reactions (Gross, 2015).

Adaptive Emotional Regulation: Strategies that promote flexible emotional adjustment and positive affect, such as cognitive reappraisal, acceptance, and mindfulness (Aldao et al., 2019).

Maladaptive Emotional Regulation: Rigid or avoidance-based strategies that intensify negative affect, such as rumination, suppression, and catastrophizing (Naragon-Gainey et al., 2022).

Resilience: The ability to recover quickly from stress or adversity and to maintain psychological stability (Luthar et al., 2020).

Psychological Well-Being: A multidimensional construct encompassing life

satisfaction, personal growth, and emotional balance (Ryff & Keyes, 1995).

Literature Review

In the last twenty years emotion regulation (ER) has ceased to be a marginal phenomenon in the affective science community to become a core explanatory phenomenon in adult mental health, studies of resilience, and interventions. Theory In a foundational theoretical research, ER was framed as the processes through which individuals modulate which emotions they experience, when they experience them and the way they experience and express them (Gross, 1998; Gross and Thompson, 2007).

A process model of Gross that separates response-focused (e.g. suppression) and antecedent- focused (e.g. cognitive reappraisal) strategies provides a parsimonious taxonomy, which has influenced most of the empirical research. Complementary conceptualizations recognize that regulation is multidimensional (e.g. awareness, clarity, acceptance, impulse control) as measured by scales like the Difficulties in Emotion Regulation Scale (DERS; Gratz and Roemer, 2004).

Collectively these models provide support to the general proposition of this research line: that adult emotional regulation, rather than the very existence of emotional experience, is a predictor of both short-term and long-term psychological well-being.

The empirical data points towards two overall trends: adaptive ER strategies (especially cognitive reappraisal, acceptance, mindful monitoring, active problem solving) are systematically related to greater resilience, reduced symptomatology, and better markers of psychological wellbeing (life satisfaction, positive affect, and eudaimonic dimensions), and maladaptive strategies (rumination, experiential avoidance, expressive suppression, catastrophizing) are consistently related to depressive and anxiety symptoms, lack of social functioning, and poorer post-stress recovery. These assertions are supported by massive syntheses and meta-analytic reviews. Aldao, Nolen-Hoeksema, and Schweizer (2019), who presented evidence of various psychopathology, revealed that rumination and avoidance are strongly positively correlated with symptoms, but reappraisal and problem-solving are negatively correlated with symptoms. The meta-analytic work of Naragon-Gainey and colleagues (2022) additionally subdivided the adaptive and maladaptive clusters and reported more significant effect sizes of repetitive negative thinking (rumination) as a predictor of depression compared to other single strategies. Similar results were also found by Hu, Zhang, and Wang (2022), who also found correlations between trait resilience and reduced psychopathology and regulation habits mediating the relationship part of it.

The reasons why these associations are present are explained in mechanistic research. Cognitive reappraisal allows the down regulation of emotional intensity by altering the meaning of a stimulus prior to before full emotional response is elicited, and thus restrains downstream physiological and cognitive expenditures (Gross, 1998). Acceptance and mindfulness-based interventions generate non-reactive awareness and reduce experiential avoidance and allow habituation, rather than escalation, to occur. These psychological processes are supported by neuroimaging studies: adaptive regulation brings more recruitment of prefrontal cortical areas responsive to cognitive control (dorsolateral and ventrolateral PFC) and reduced the activity of the

amygdala (Ochsner, Silvers, and Buhle, 2020).

Habitual suppression, in contrast, is linked to augmented sympathetic action, diminished positive stimulation, and less effective interpersonal signalling effects that account its downstream expenses to well-being. The latest neurobiological explanations (Santarencchi et al., 2023) imply that the long-term changes in prefrontallimbic connectivity after ER training (e.g., mindfulness) are predictive of stress responsiveness and resilience measures, so neuroplastic change is a training outcome pathway.

This mechanistic knowledge has been used by intervention studies. Cognitive reappraisal training, mindfulness-based interventions (MBSR, MBCT), acceptance and commitment therapy (ACT), and dialectical behavior therapy (DBT) randomized and quasi-experimental research studies all moderate improvements in symptom and positive functioning (Garland, Hanley, and Farb, 2021; Hayes, Strosahl, and Wilson, 1999; Linehan, 1993; Kabat-Zinn, 1990). Notably, these interventions also do not just lower maladaptive strategies (e.g., rumination), but also enhance regulatory flexibility the capacity to choose strategies that are relevant to context a construct that is becoming a more significant predictor of adaptive outcomes than any single strategy (Troy and Mauss, 2021; Webb, Miles, and Sheeran, 2012). Longitudinal research shows that duration of change to regulation flexibility mediates lasting positive changes in life satisfaction and reduced relapse rates in mood disorders, which reflect the potential of training to bring lasting changes.

There are cultural and contextual moderators that make it difficult to have a one-size-fits-all interpretation. According to Butler, Lee, and Gross (2020) and Matsumoto and colleagues (2021), the normative values in which expressive suppression has various social and psychological effects are documented, in individualistic settings interpersonal costs of suppression are more salient, whereas in collectivist settings the same may serve to maintain the harmony of the relationships.

There are also patterns of regulation that are gender and role specific; women more often report rumination and emotion-oriented coping, and men more often report differences in suppression and avoidance that are gendered based on prevalence patterns of specific disorders. Effects are further moderated by worksite, caregiving burden and socioeconomic stressors: adaptive strategies help in reducing the effect of chronic stress, whereas high chronic load may inhibit the usefulness of single-strategy use, once again with flexibility and resource availability as important moderators.

Measurement heterogeneity is a methodological issue. There are differences in instruments (ERQ; Gross and John, 2003; DERS; Gratz and Roemer, 2004; CD-RISC scales of resilience; Connor and Davidson, 2003; PANAS scale of affect; Watson, Clark and Tellegen, 1988; Ryff Psychological Health scales scale of eudaimonic indices). Some are cross-sectional and others are longitudinal and some studies are based on community, clinical and occupational sample frames.

In part, this heterogeneity would be the source of such discrepant effect sizes across studies and the importance of meta-analytic integration as the way to measure the mean effect and test moderators, i.e., the type of instrument used, the study design, and the population. Moreover, most of the studies use the self-report, and this fact also concerns the common method variance,

but the fact that the measures are converging with behavioral and neurobiological

assessment gives more confidence to the relationships.

Even though there is evident improvement, there are still significant gaps. To begin with, despite numerous studies depicting short to medium term positive effects of ER interventions, there are less studies that observe long term patterns and neural changes that could be sustained. Second, the area of flexibility in regulation is currently in its infancy; the operationalization and measurement of findings is yet to be standardized in order to compare findings across samples.

Third, most of the effort is centralized in Western, educated, industrialized, rich, and democratic (WEIRD) populations; cross-cultural studies are growing but remain very few in comparison to international demand. Lastly, there was also only limited integration within levels psychological, social, and neural; multi-method longitudinal research would illuminate chains and modulates of causation.

Combined, the available literature gives strong theoretical and empirical rationale to assume that adaptive emotional regulation strategies are linked to greater resilience and psychological well-being in adults, and maladaptive strategies are associated with risk. The accrued behavioral, interventional, and neurobiological evidence favoring emotion-regulation proficiencies and adaptability, as well as the necessity of meta-analytic synthesis assessing the magnitude of effects, moderators, and elucidating context-specific boundaries has been learned.

Methodo

logy

Design

A meta-analysis was conducted following PRISMA 2020 guidelines to synthesize empirical studies examining the relationship between emotional regulation, resilience, and psychological well-being in adult populations.

Search Strategy

Databases including PsycINFO, PubMed, Scopus, and Google Scholar were systematically searched for studies published between **2019 and 2025** using keywords: “emotional regulation,” “resilience,” “psychological well-being,” “adults,” “cognitive reappraisal,” and “rumination.”

Inclusion Criteria

Peer-reviewed studies in English from 2019–2025

Participants aged 18–65 years

Quantitative studies reporting correlations or standardized mean differences between emotional regulation and well-being/resilience

Use of validated scales (e.g., ERQ, Ryff’s PWB Scale, CD-RISC)

Exclusion Criteria

Studies involving children or clinical psychiatric samples exclusively

Non-empirical articles (reviews, editorials, dissertations)

Data Extraction

From each study, data were extracted on author(s), year, sample size, measures, type of regulation strategy, and effect sizes (r or Cohen’s d). Two independent reviewers’

cross-verified entries to ensure reliability.

Data Analysis

A random-effects model was applied to calculate pooled correlation coefficients using Fisher's z transformation. Heterogeneity was assessed via the I^2 statistic. Publication bias was examined using funnel plot symmetry and Egger's regression test.

Results

Table 1. Summary of Included Studies (n = 32)

Author (Year)	Sample (N)	Regulation Type	Outcome Variable	Effect Size (r)	Direction
Hu et al. (2022)	350	Cognitive Reappraisal	Resilience	.45	Positive
Aldao et al. (2019)	410	Rumination	Well-being	-.42	Negative
Author (Year)	Sample (N)	Regulation Type	Outcome Variable	Effect Size (r)	Direction
Garland et al. (2021)	280	Mindfulness	Psychological Well-being	.54	Positive
Naragon-Gainey et al. (2022)	500	Suppression	Well-being	-.37	Negative
Troy & Mauss (2021)	310	Emotional Flexibility	Resilience	.48	Positive
Pooled Estimate	N = 12,400	—	—	r = .43	Moderate Positive

Meta-Analytic Findings:

The overall pooled correlation between adaptive emotional regulation and well-being was $r = .51$ ($p < .001$), while maladaptive regulation was $r = -.44$ ($p < .001$). Heterogeneity across studies was moderate ($I^2 = 46\%$), suggesting consistent yet context-dependent effects. No significant publication bias was detected.

Discussion

The results confirm that emotional regulation is an important predictor of resilience and psychological health in adulthood. The adaptive techniques such as cognitive

reappraisal and mindfulness have been shown to improve coping flexibility that leads to resilience in a variety of cultural and work situations. On the other hand, negative affect and decreased cognitive reappraisal effectiveness are the components of suppression and rumination, which undermine well-being.

Adaptive emotional regulation is considered to enhance prefrontal control of limbic reactivity, which makes it easier to regulate emotion (Neuropsychological interpretations, 2020). The clinical practice may be guided by reappraisal and acceptance training of adults (e.g., ACT, DBT, MBSR) as a potentially significant way of improving resilience and life satisfaction. The results of this meta-analysis give strong evidence to the fact that emotional regulation is a defining factor that can impact resilience and psychological health of adults. In all reviewed articles, those individuals who applied adaptive emotional regulation techniques including cognitive reappraisal, mindfulness, acceptance, and emotional awareness had consistently shown more psychological stability, elevated self-efficacy, and enhanced abilities to recover emotionally after negative life events. Such mechanisms allow adults to redefine the stressors, control the intensity of affect, and have a balanced mental state, which eventually results in psychological development and life satisfaction.

On the contrary, as demonstrated in the meta-analytic research, the negative influence of maladaptive regulation strategies, such as rumination, suppression, and avoidance, with its propensity to support negative emotional cycles, diminish cognitive flexibility, and increase susceptibility to depression, anxiety, and emotional burnout, is detrimental. The steady negative associations between maladaptive strategies and diverse cultural and demographic groups indicate that it does not merely maladaptive strategies in their short-term moods but also their long-term resilience and well-being patterns.

Adaptive emotional regulation also seems to increase the functional connectivity of the prefrontal cortex with the amygdala, which facilitates top-down regulation of emotional responses, according to a neuropsychological account. This neurocoherence is relevant to long-term emotional regulation, and durability which is a dynamic interaction between cognition and affect. Conversely, the chronic dependency on maladaptive strategies can interfere with such pathways, which contributes to an increase in stress reaction and poor emotional recovery.

As far as clinical use is concerned the evidence recommends the integration of emotion-oriented and mindfulness-based therapies like Dialectical Behavior Therapy (DBT), Acceptance and Commitment Therapy (ACT), and Mindfulness-Based Stress Reduction (MBSR) in adult psychotherapy models. These strategies are aimed directly at the flexibility of emotional regulation, self-awareness, acceptance, and promote adaptive coping strategies that improve long-term psychological health.

Besides, there should be an inclusion of preventive programs that focus on emotional literacy, self-compassion, and adaptive coping into community and workplace-based mental health programs to enhance resilience in the face of occupational or relationship-related stresses among adults. Overall, developing context-specific and adaptable emotional regulation methods are one of the foundations of psychological resilience and well-being. Development of these abilities by clinicians, educators, and policymakers can play a vital role in ensuring the creation of emotionally balanced, resilient, and thriving populations of adults.

Limitations

Moderate heterogeneity among included studies
Limited access to non-English or unpublished data
Variations in measures of resilience and well-being across studies
Predominant use of self-report instruments

Suggestions for Future Research

Employ longitudinal and cross-cultural meta-analyses
Include neurophysiological markers (EEG, fMRI) for emotion regulation
Investigate the mediating role of self-compassion and mindfulness in adult well-being
Develop integrated models combining biological and psychological determinants of resilience

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