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How Are Coping Strategies Associated With Perceived Stress? A Meta-Analytic Review

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Abstract / *Abstrak*

Psychological distress is related to how individuals respond to stressful experiences, highlighting the importance of coping strategies in understanding perceived stress. This study examined associations between coping strategies and perceived stress through a meta-analytic review. A total of 53 effect sizes were synthesized using random-effects models, covering positive or adaptive and negative or maladaptive coping strategies. Positive or adaptive coping was negatively associated with perceived stress, whereas negative or maladaptive coping was positively associated with perceived stress. Substantial heterogeneity was observed across effect sizes. Moderator analyses examined participant type, mean age, survey year, publication year, and continent. Univariate meta-regression indicated that mean age, survey year, and publication year were not significant moderators of either association. Subgroup estimates varied across participant types and continents, although these differences alone do not establish significant moderation. These findings highlight the importance of distinguishing adaptive and maladaptive coping and further investigating sources of between-study heterogeneity.

Distres psikologis berkaitan dengan cara individu merespons pengalaman penuh tekanan, sehingga strategi koping penting untuk memahami stres yang dirasakan. Penelitian ini mengkaji hubungan strategi koping dengan stres yang dirasakan melalui tinjauan meta-analitik. Sebanyak 53 ukuran efek disintesis menggunakan model efek acak, mencakup strategi koping positif atau adaptif serta negatif atau maladaptif. Koping positif atau adaptif berhubungan negatif dengan stres yang dirasakan, sedangkan koping negatif atau maladaptif berhubungan positif dengan stres yang dirasakan. Heterogenitas substansial ditemukan di antara ukuran efek. Analisis moderator menguji jenis partisipan, usia rata-rata, tahun survei, tahun publikasi, dan benua. Meta-regresi univariat menunjukkan bahwa usia rata-rata, tahun survei, dan tahun publikasi bukan moderator signifikan pada kedua hubungan tersebut. Estimasi subkelompok bervariasi menurut jenis partisipan dan benua, tetapi variasi tersebut tidak membuktikan moderasi signifikan. Temuan ini menegaskan pentingnya membedakan koping adaptif dan maladaptif serta menyelidiki sumber heterogenitas antarpenelitian lebih lanjut.

Keywords / *Kata kunci*

Coping strategies;
Adaptive coping;
Maladaptive coping;
Perceived stress;
Meta-analysis

Strategi koping;
Koping adaptif;
Koping maladaptif;
Stres yang dipersepsikan;
Meta-analisis

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Introduction

Major public health crises can substantially alter individuals' perceptions of environmental demands and their available coping resources. The COVID-19 pandemic provides an important historical context for examining these processes because it involved widespread health concerns, social restrictions, quarantine, and disruptions to everyday life (WHO, 2021). Evidence from previous infectious disease outbreaks indicates that quarantine and large-scale health crises can be associated with psychological distress, including post-traumatic stress symptoms (Brooks et al., 2024; Demaria & Vicari, 2021) and general psychological distress (Brooks et al., 2020; Cavicchioli et al., 2021; Wang et al., 2021). However, COVID-19 is not the primary conceptual focus of the present meta-analysis. Rather, it represents an important historical context in which many of the available studies

examining coping and perceived stress were conducted. The present study therefore focuses on the broader association between coping strategies and perceived stress across the available empirical literature.

Perceived stress should be conceptually distinguished from psychological disorders and other forms of psychological distress, including depression, anxiety, and post-traumatic stress disorder (PTSD). These conditions represent distinct psychological constructs with different diagnostic or symptom-based characteristics, whereas perceived stress refers to the extent to which individuals appraise their circumstances as demanding, unpredictable, or exceeding their perceived coping resources. Psychological distress and mental health outcomes may nevertheless vary across individuals and contexts, particularly during and after major health crises (Wang et al., 2020a; Wang et al., 2020b; Wang et al., 2021). Thus, elevated perceived stress does not necessarily indicate the presence of a psychological disorder. This distinction is important because the present meta-analysis examines perceived stress as a specific psychological outcome rather than depression, anxiety, PTSD, or general psychological distress. Perceived stress was selected as the outcome because it is conceptually proximal to coping within the transactional model of stress and coping, which emphasizes the interaction between environmental demands and individuals' perceived resources for managing those demands (Lazarus & Folkman, 1984; Zimmer-Gembeck & Skinner, 2023). Examining perceived stress therefore provides a direct way to investigate how different coping strategies are associated with individuals' appraisals of demanding circumstances.

From a theoretical perspective, the transactional model of stress and coping conceptualizes stress as a dynamic process arising from the interaction between environmental demands and individuals' appraisal of their coping resources (Lazarus & Folkman, 1984; Zimmer-Gembeck & Skinner, 2023). Within this framework, coping refers to cognitive and behavioral efforts to manage demands that are appraised as exceeding or challenging available resources. Coping is therefore not limited to a single behavioral pattern but encompasses a broad range of strategies through which individuals attempt to regulate emotional responses, modify stressful circumstances, seek assistance, or disengage from perceived threats. These strategies have commonly been categorized according to their adaptive or maladaptive characteristics (Schubert & Ringeisen, 2025). Adaptive coping may include problem-solving, cognitive restructuring, positive reappraisal, emotion regulation, and seeking social support. Meaning-based practices such as tafakkur and tadzakur have also been described as strategies for emotional regulation within Islamic psychology (Aziz et al., 2025). In contrast, maladaptive coping may include avoidance, denial, disengagement, and substance use (Chen & Lemmer, 2025; Skinner & Zimmer-Gembeck, 2016). Religious and spiritual coping can also constitute forms of coping through which individuals draw on religious beliefs, spiritual meanings, or faith-based practices when responding to stressful experiences (Aggarwal et al., 2023; Pargament et al., 1998). Related research has examined spirituality and family support in relation to resilience (Cahyani & Nashori, 2024) and has reported the potential relevance of istighfar dhikr-based practices for resilience among survivors of domestic violence (Ruidahasi & Nashori, 2021). Accordingly, coping represents a heterogeneous set of responses that may differ in their associations with perceived stress.

The distinction between adaptive and maladaptive coping provides an important framework for understanding why coping strategies may be differentially associated with perceived stress. Adaptive coping is generally associated with more favorable psychological adjustment, whereas maladaptive coping has been associated with poorer psychological outcomes (Kit, 2025; Zou et al., 2024). However, contemporary perspectives emphasize that the effectiveness of coping may depend on contextual demands rather than on fixed classifications of strategies as inherently adaptive or maladaptive. The concept of coping flexibility highlights the importance of adjusting coping responses to changing situational demands and available resources (Zimmer-Gembeck, 2021; Zimmer-Gembeck & Skinner, 2023). Consequently, associations between coping and perceived stress may vary according to the specific coping strategy, population, context, and measurement approach used in individual studies. Empirical research has reported associations between maladaptive coping and higher levels of depression and anxiety (Kit, 2025), whereas adaptive emotion-regulation strategies such as positive reappraisal may be associated with lower stress responses (Jungmann & Witthöft, 2020;

Riepenhausen et al., 2022; Stover et al., 2024). Individual differences in coping may further contribute to variability in psychological responses to stress exposure (Kohn et al., 2024; Sun et al., 2023; Woo et al., 2024; Zimmer-Gembeck & Skinner, 2023).

Evidence concerning coping and perceived stress has been reported across diverse populations and contexts. Studies conducted during the COVID-19 pandemic, for example, have examined associations between coping strategies and perceived stress, with some reporting significant relationships between specific coping responses and perceived stress (Nugraha et al., 2022; Yıldırım et al., 2021; Ye et al., 2020). Other studies, however, have reported weak or nonsignificant associations (Vagni et al., 2020; Xia & Duan, 2020). Such inconsistencies may reflect differences in population characteristics, cultural context, stress exposure, coping measures, and methodological approaches. Moreover, studies have examined a wide range of coping responses, including avoidance, problem-solving, social support, emotional regulation, religious coping, and substance-related coping. These differences make it difficult to determine whether coping is consistently associated with perceived stress and whether the direction and magnitude of the association vary across different forms of coping.

Importantly, existing empirical evidence has often focused on specific coping strategies, particular populations, or broader psychological outcomes rather than synthesizing the association between coping strategies and perceived stress across studies. Findings concerning depression, anxiety, psychological distress, or other mental health outcomes cannot be assumed to represent the same associations observed for perceived stress because these outcomes reflect conceptually distinct constructs. A synthesis specifically focused on perceived stress is therefore warranted. Such a synthesis may clarify whether coping strategies are consistently associated with perceived stress and whether positive or adaptive forms of coping tend to show different patterns from negative or maladaptive forms of coping.

Critical Gap

Despite the growing literature on coping and stress, comprehensive meta-analytic evidence concerning the association between coping strategies and perceived stress remains limited. Previous studies have reported inconsistent associations between coping strategies and perceived stress across different populations and contexts (Yıldırım et al., 2021; Ye et al., 2020; Vagni et al., 2020; Xia & Duan, 2020). These inconsistencies may reflect differences in population characteristics, cultural contexts, coping strategies, measurement instruments, and methodological approaches. Moreover, existing research has frequently examined coping in relation to broader psychological outcomes, including depression, anxiety, and psychological distress, rather than focusing specifically on perceived stress (Kit, 2025; Zou et al., 2024). Because perceived stress is conceptually distinct from these psychological outcomes and reflects individuals' appraisal of environmental demands relative to their perceived coping resources (Lazarus & Folkman, 1984; Zimmer-Gembeck & Skinner, 2023), findings concerning other mental health outcomes cannot be assumed to represent the same associations with perceived stress. This gap is particularly important because coping encompasses heterogeneous responses, with adaptive strategies generally associated with more favorable adjustment and maladaptive strategies associated with poorer psychological outcomes (Chen & Lemmer, 2025; Skinner & Zimmer-Gembeck, 2016; Kit, 2025). At the same time, coping flexibility perspectives emphasize that the effectiveness of coping may depend on contextual demands rather than fixed adaptive–maladaptive classifications (Zimmer-Gembeck, 2021; Zimmer-Gembeck & Skinner, 2023). Consequently, the overall direction and magnitude of the associations between different coping strategies and perceived stress remain insufficiently established.

Meta-analysis provides a systematic approach for addressing these limitations by quantitatively synthesizing empirical findings and estimating the overall association between coping strategies and perceived stress across studies (Kumar & John, 2025). Beyond estimating an overall effect, meta-analysis can quantify heterogeneity in effect sizes and help identify whether differences in study or sample characteristics contribute to variability in the observed associations. Accordingly, the present study synthesizes empirical evidence on the association between coping strategies and perceived stress, with particular attention to positive or adaptive and negative or maladaptive coping strategies.

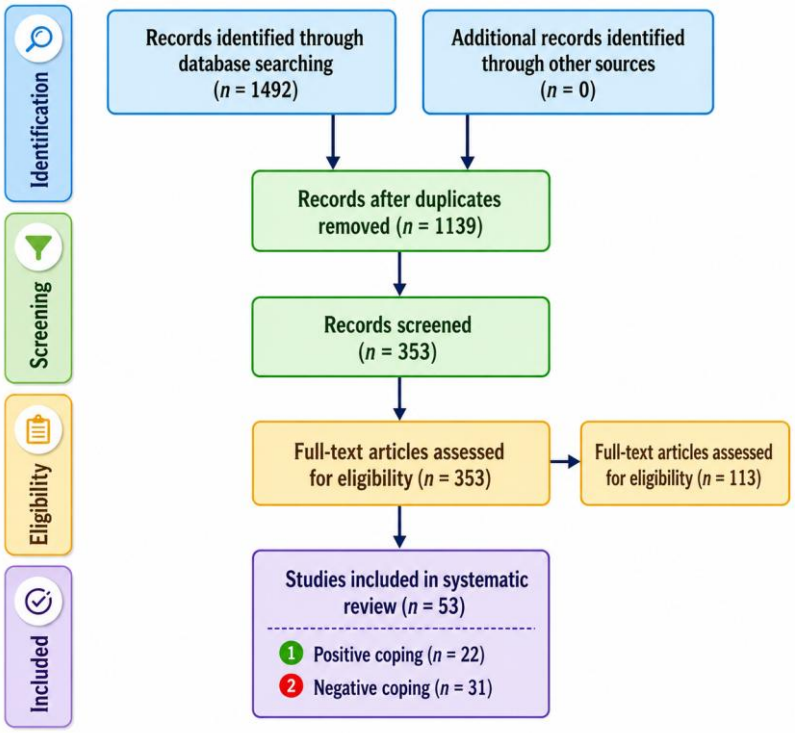


Figure 1. PRISMA Flowchart of Selected Studies

The Present Study

The present study aims to provide a meta-analytic synthesis of the association between coping strategies and perceived stress. Grounded primarily in the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) and informed by contemporary perspectives on coping flexibility and adaptive versus maladaptive coping (Zimmer-Gembeck, 2021; Zimmer-Gembeck & Skinner, 2023), this study examines whether coping strategies are systematically associated with perceived stress across the available empirical literature. The synthesis includes different forms of coping represented in the eligible studies, including positive or adaptive and negative or maladaptive coping strategies. Based on the theoretical distinction between these broad coping categories, we expected positive or adaptive coping to be negatively associated with perceived stress and negative or maladaptive coping to be positively associated with perceived stress. Accordingly, the present meta-analysis addresses two hypotheses: (1) positive or adaptive coping is negatively associated with perceived stress, and (2) negative or maladaptive coping is positively associated with perceived stress.

Method

This study utilized a systematic review and meta-analysis design following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Figure 1).

Operational Definition

Coping strategies are conceptualized within the transactional model of stress and coping as cognitive and behavioral efforts through which individuals manage environmental demands that are appraised as challenging or exceeding their available coping resources (Lazarus & Folkman, 1984; Zimmer-Gembeck & Skinner, 2023). Coping encompasses a broad range of responses, including efforts to solve problems, regulate emotions, seek social support, reinterpret stressful situations, avoid or disengage from stressors, and use other behavioral or cognitive strategies to manage stressful experiences. In the present meta-analysis, coping strategies were classified according to the categorization used in the eligible studies, with particular attention to positive or adaptive and negative or maladaptive coping. Positive or adaptive coping generally included strategies intended to actively manage stressors, regulate emotional responses, or obtain constructive resources, whereas negative or maladaptive coping included strategies

characterized by avoidance, disengagement, suppression, substance use, or other responses generally considered less constructive in managing stressful demands. Because coping strategies are heterogeneous and their effectiveness may depend on contextual demands, the classification of individual strategies was based on the operationalization and categorization reported in the original studies rather than assuming that all coping responses represent a single homogeneous construct (Zimmer-Gembeck, 2021; Zimmer-Gembeck & Skinner, 2023).

Perceived stress is defined as the extent to which individuals perceive environmental demands as exceeding or challenging their available or perceived coping resources, consistent with the transactional model of stress and coping (Folkman & Lazarus, 1985). In the present study, perceived stress was treated as the primary outcome associated with coping strategies. The construct was distinguished from specific coping responses, including avoidance, suppression, social support seeking, problem-focused coping, and substance use, which were treated as coping variables rather than indicators of perceived stress. Although the included studies were conducted in the context of the COVID-19 pandemic, the outcome was not restricted to a single pandemic-specific manifestation. Eligible measures were required to capture individuals' perceptions or appraisals of stress, while studies assessing only depression, anxiety, PTSD, general psychological distress, or other nonspecific psychological symptoms were not considered measures of perceived stress.

Selection Strategy

A systematic literature search was conducted across four electronic databases, namely Scopus, PubMed, Google Scholar, and Crossref, using Harzing's Publish or Perish software where applicable. The search strategy aimed to identify studies examining associations between coping strategies and perceived stress. Combinations of terms related to coping strategies and perceived stress were used with Boolean operators to broaden or narrow the retrieval of potentially relevant studies. The initial search was conducted from September 25 to October 25, 2021. Records identified through the database searches were exported for screening, and duplicate records were removed before title and abstract screening. Potentially eligible articles were subsequently assessed in full text against the predefined inclusion and exclusion criteria.

To address the potential omission of grey literature, the search strategy also considered relevant unpublished or non-commercially published research, including theses, dissertations, and research reports, where accessible and within the scope of the eligibility criteria. The sources searched and procedures used to identify such records were documented to improve transparency and facilitate assessment of potential publication bias. In addition, the original search period was distinguished from any subsequent search updates to ensure that the temporal coverage of the evidence base was clearly reported. The search and selection procedures were documented throughout the review process to support transparency and consistency in study identification and selection.

Inclusion and Exclusion Criteria

Studies were included if they examined the association between coping strategies and perceived stress, reported a Pearson correlation coefficient or other statistical information from which an effect size could be extracted, employed a quantitative research design, and used measures that adequately assessed coping strategies and perceived stress. Perceived stress was defined as individuals' appraisal of environmental demands relative to their perceived coping resources, and studies were eligible when their outcome measure captured this construct rather than general psychological distress, depression, anxiety, PTSD, or other nonspecific psychological symptoms. Studies were also required to be peer-reviewed articles published in English between January 2020 and October 2021. Studies were excluded if they did not provide sufficient statistical information to calculate an effect size, used qualitative or non-empirical designs, contained unclear operational definitions of the relevant variables, were duplicate publications, or used analytical approaches that did not allow extraction of an appropriate effect size. Eligibility disagreements were resolved through structured discussion among three independent reviewers until consensus was reached.

Literature Search Process

The literature search initially identified 1,492 records from the selected databases (Figure 1). After removing 1,139 duplicate records, 353 records remained for title and abstract screening. Based on the predefined inclusion criteria, 240 records were excluded at this stage, leaving 113

full-text articles for eligibility assessment. Following full-text evaluation, 60 articles were excluded because they did not meet one or more predefined eligibility criteria, including incompatibility with the target coping construct or outcome, insufficient statistical information for effect-size extraction, inappropriate study design, duplicate or overlapping publications, or other eligibility requirements specified in the protocol. The remaining studies were included in the final meta-analysis. Because individual studies could report multiple coping strategies or multiple associations with perceived stress, the number of included studies should be distinguished from the number of effect sizes synthesized. Accordingly, the final meta-analysis comprised 53 effect sizes representing the eligible associations between coping strategies and perceived stress (see Appendix Table A1).

Data Analysis

Quantitative synthesis was conducted using Jamovi version 1.8.1 with the MAJOR (Meta-Analysis r & N) module and OpenMEE using the metafor package version 1.6-0 (Viechtbauer, 2010), which was additionally employed for subgroup and moderator analyses. Positive or adaptive and negative or maladaptive coping strategies were analyzed separately according to their respective coping dimensions. Multiple effect sizes reported within the same study were retained when they represented distinct associations between specific coping strategies and perceived stress reported by the original study. Because the analyses were conducted separately by coping dimension, effect sizes representing different coping dimensions were not combined into a single pooled estimate.

A random-effects model was applied because the included studies differed in populations, cultural contexts, study designs, measurement instruments, and operational definitions of coping and perceived stress. Accordingly, the underlying true effect was not assumed to be identical across studies. Heterogeneity was assessed using Cochran's Q statistic and quantified using I^2, representing the proportion of observed variability attributable to between-study heterogeneity and the estimated between-study variance (Huedo-Medina et al., 2006). The Q statistic was interpreted together with its degrees of freedom and p value, while I^2 was considered as an indicator of the extent of heterogeneity rather than interpreted using rigid categorical thresholds.

Pearson's correlation coefficient was used as the primary effect size because it was the most consistently reported association statistic across the included studies. Correlation coefficients were transformed into Fisher's z values to stabilize sampling variance before meta-analysis (Alimoradi et al., 2020; Lipsey & Wilson, 2001). The transformation was calculated as $z = 0.5 \times \ln((1 + r)/(1 - r))$, and the standard error of Fisher's z was calculated as $SEz = 1/\sqrt{(n - 3)}$ (Borenstein et al., 2021). All effect sizes were analyzed and reported as Fisher's z values with corresponding 95% confidence intervals.

Results

Study Characteristics

The meta-analysis included 53 effect sizes derived from the eligible study reports, comprising 22 effect sizes for positive or adaptive coping and 31 effect sizes for negative or maladaptive coping. These effect sizes represented associations between coping strategies and stress during the COVID-19 pandemic. Because several study reports contributed multiple effect sizes based on distinct associations, the 53 effect sizes should not be interpreted as 53 independent study reports or 53 unique samples. Sample characteristics were reported for each effect size, and the same participants could therefore contribute to more than one effect size. The included samples comprised college students, medical teams, and the general public, with data collected during 2020 and 2021 across countries in North America, Europe, and Asia. The distribution of participant characteristics and study-level variables is presented in Table A1.

Calculating the Effect Size

A total of 53 effect sizes were extracted from the included study reports. The direction of the associations differed according to coping dimension. Correlations for positive or adaptive coping were negative, ranging from $r = -0.39$ to -0.08, whereas correlations for negative or maladaptive coping were positive, ranging from $r = 0.01$ to 0.64. These findings indicate that positive or adaptive coping was generally associated with lower levels of stress, whereas negative or maladaptive coping was generally associated with higher levels of stress. Because the extracted effects were correlational, these associations do not establish causal relationships between coping strategies and stress.

Table 1
Random-Effects Meta-Analysis of Coping Strategies and Perceived Stress

Coping strategy	*k*	*r*	95% CI	*Q*	*df*	*p*	I^2 (%)
Positive/adaptive coping	22	−0.22	[−0.26, −0.18]	229.62	21	< 0.001	92.90
Negative/maladaptive coping	31	0.31	[0.22, 0.33]	756.26	30	< 0.001	95.54

Note. *k* = number of effect sizes; *r* = pooled correlation coefficient; CI = confidence interval; *Q* = Cochran's heterogeneity statistic; I^2 = percentage of total variability attributable to between-effect-size heterogeneity.

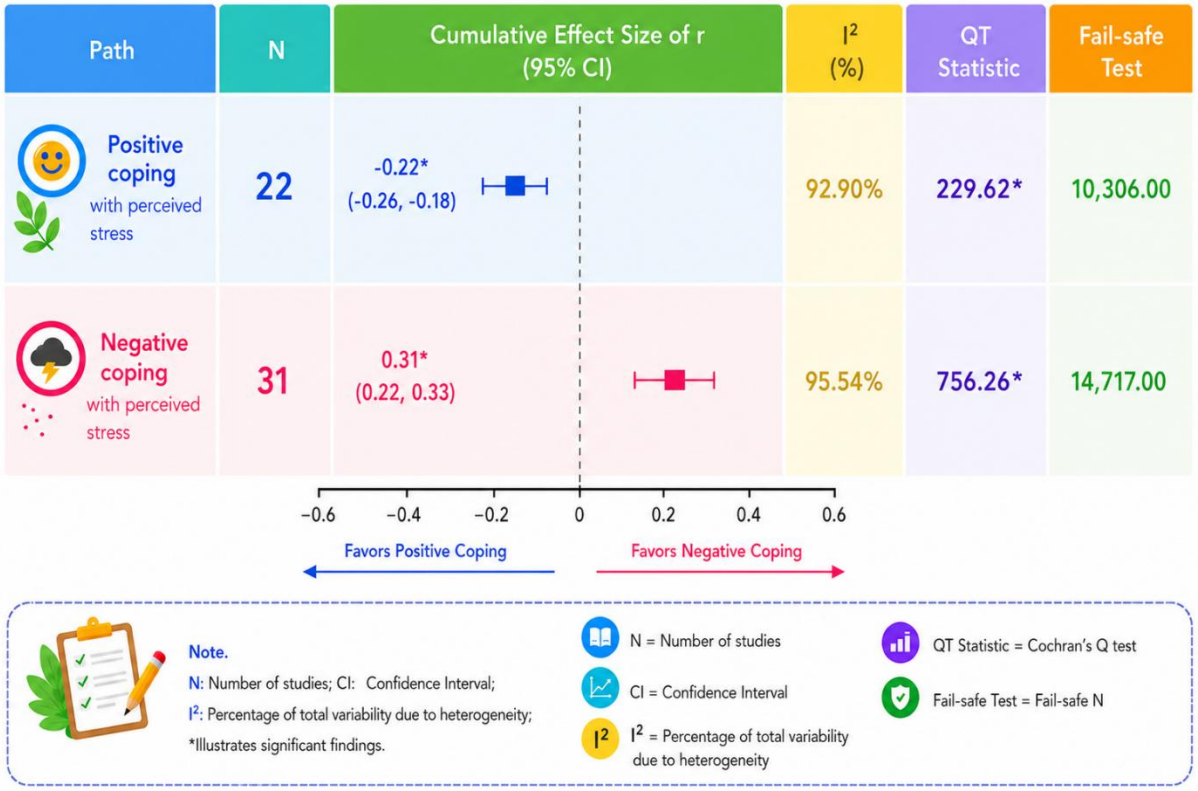


Figure 2. Summary Statistics for Strategies Coping and Perceived Stress

Overall Effect and Heterogeneity

To estimate the pooled associations, the observed correlations were first transformed using Fisher's *r*-to-*z* transformation (Fisher, 1921). The transformed correlations were analyzed using random-effects models, and the pooled estimates with their 95% confidence intervals (CIs) were subsequently back-transformed into correlation coefficients to facilitate interpretation (Riley et al., 2011). Heterogeneity was assessed using Cochran's *Q* statistic (Cochran, 1954) and the I^2 statistic (Higgins et al., 2003). Cochran's *Q* tests the null hypothesis of homogeneity across effect sizes, whereas I^2 estimates the proportion of observed variability attributable to between-effect-size heterogeneity rather than sampling error. Accordingly, statistical significance was evaluated using the *Q* test, while the magnitude of heterogeneity was interpreted using I^2 alongside the other diagnostic evidence.

For positive/adaptive coping, the random-effects meta-analysis synthesized 22 effect sizes and yielded a pooled correlation of $r = -0.22$ (95% CI [−0.26, −0.18]). The heterogeneity test was statistically significant, $Q = 229.62$, $df = 21$, $p < 0.001$, with $I^2 = 92.90\%$, indicating substantial variability across the included effect sizes. The pooled association suggests that higher levels of positive/adaptive coping were associated with lower perceived stress.

For negative/maladaptive coping, 31 effect sizes were synthesized, yielding a pooled correlation of $r = 0.31$ (95% CI [0.22, 0.33]). Heterogeneity was also statistically significant, $Q = 756.26$, $df = 30$, $p < 0.001$, with $I^2 = 95.54\%$. This finding indicates substantial between-effect-size variability. The pooled association suggests that higher levels of negative/maladaptive coping were associated with higher perceived stress. The pooled estimates and heterogeneity statistics for

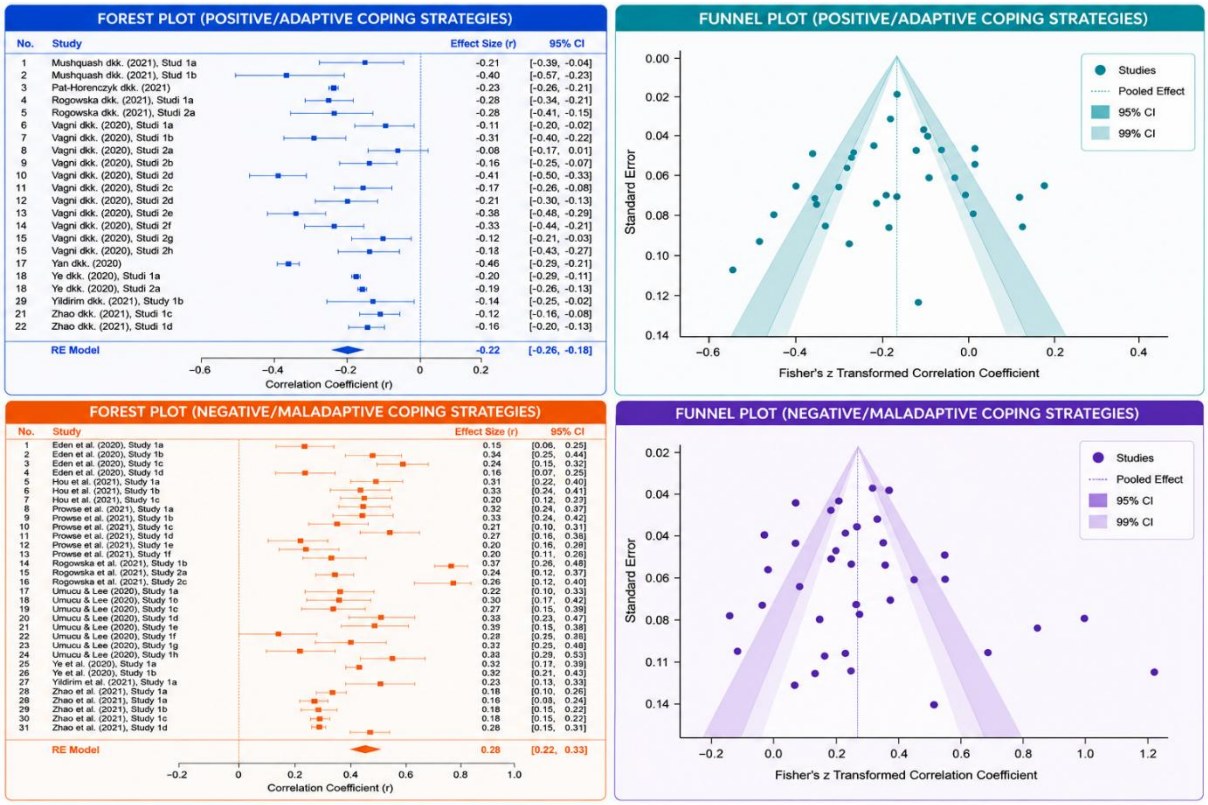


Figure 3. Forest and Funnel Plot of Positive/Adaptive and Negative/Maladaptive Coping Strategies

both analyses are presented in Table 1 and Figure 2, while their forest plots are shown in Figure 3.

Sensitivity Analysis and Publication Bias

Sensitivity analyses indicated that removing individual effect sizes one at a time did not substantially alter the pooled estimate for positive/adaptive coping. Outlier and influence diagnostics, including externally standardized residuals, DFFITS values, Cook's distances, covariance ratios, leave-one-out heterogeneity estimates, hat values, and study weights, did not identify an individual effect size exerting undue influence on the pooled estimate (Figure 4; Viechtbauer & Cheung, 2010). Similar outlier and influence diagnostics for negative/maladaptive coping did not identify an individual effect size exerting undue influence.

Potential publication bias and small-study effects were examined using funnel plot inspection, Egger's regression test, Begg and Mazumdar's rank correlation test, and the trim-and-fill procedure. For positive/adaptive coping, Egger's regression test ($p = 0.59$; Egger et al., 1997; Sterne & Egger, 2005) and Begg and Mazumdar's rank correlation test ($p = 0.21$; Begg & Mazumdar, 1994) were not statistically significant. For negative/maladaptive coping, neither Egger's regression test ($p = 0.18$) nor Begg and Mazumdar's rank correlation test ($p = 0.90$) was statistically significant. Thus, neither analysis provided statistically significant evidence of funnel plot asymmetry based on these tests. However, nonsignificant results do not establish the absence of publication bias.

Visual inspection of the funnel plots showed dispersion around the pooled estimates, with several effect sizes falling outside the pseudo-confidence regions (Figure 3). These findings were treated as complementary assessments of potential small-study effects rather than as definitive evidence for the absence of publication bias. The funnel plots included pseudo-confidence regions of 90% (white), 95% (dark cyan for positive/adaptive coping and dark orchid for negative/maladaptive coping), and 99% (light cyan for positive/adaptive coping and light orchid for negative/maladaptive coping) (Light & Pillemer, 1984; Peters et al., 2008).

The trim-and-fill procedure estimated five potentially missing effect sizes on the left side of the funnel plot for each coping pathway. These estimates should be interpreted cautiously because trim-and-fill provides model-based estimates of potentially missing effect sizes rather than direct

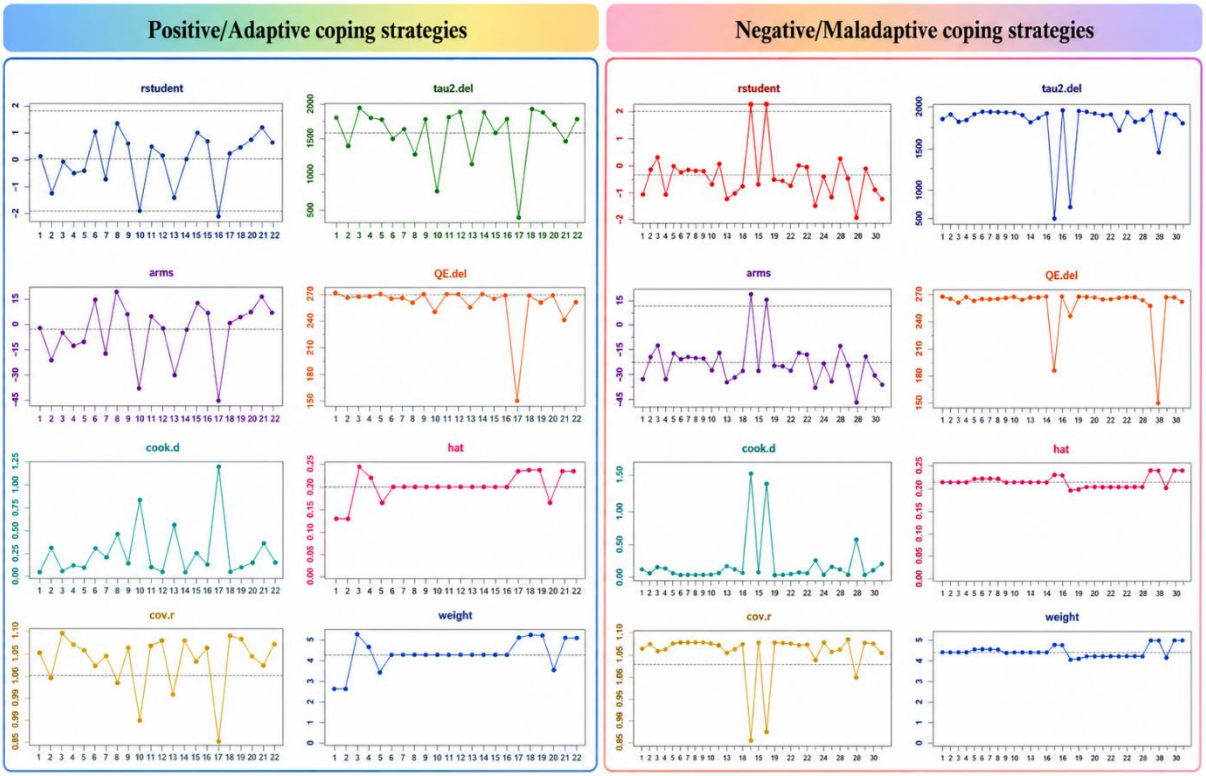


Figure 4. Outlier and Influential Case Diagnostic of Positive/Adaptive and Negative/Maladaptive Coping Strategies

evidence that studies are missing (Duval & Tweedie, 2000a, 2000b; Duval, 2005). The classic Fail-Safe N values were 10,306 for positive/adaptive coping and 14,717 for negative/maladaptive coping. These values represent the estimated numbers of additional unpublished studies with null results required to render the respective pooled findings nonsignificant under the assumptions of the procedure. Although the values are large, they should not be interpreted as definitive evidence against publication bias because Fail-Safe N does not directly assess funnel plot asymmetry.

Furthermore, the substantial heterogeneity observed in both analyses may complicate the interpretation of funnel plot asymmetry and formal publication bias tests. Taken together, the diagnostic findings did not provide statistically significant evidence of asymmetry according to Egger's and Begg and Mazumdar's tests, but the possibility of publication bias could not be definitively excluded.

Moderator Analyses

Countinuos Moderator Analyses

Moderator analyses were conducted using mixed-effects meta-regression models (Raudenbush, 2009) and the mixed-effects model analogue of the DerSimonian–Laird estimator to estimate residual heterogeneity (DerSimonian & Laird, 1986). Each moderator was first examined individually using univariate meta-regression models and was subsequently entered simultaneously into multiple meta-regression models, with backward elimination applied to obtain the final model; moderators with $p > 0.10$ were removed from the model.

Pseudo-R^2 statistics were provided for each model to indicate the proportion of residual heterogeneity accounted for by the moderators included in the model. The Knapp and Hartung method was used to adjust the statistical tests of the moderator coefficients and provide more appropriate control of Type I error rates (Knapp & Hartung, 2003). The moderators examined were participant type (college students, general public, and medical team), mean age of the study sample, survey year, publication year, and continent (North America, Europe, and Asia). Mean age, survey year, and publication year were analyzed as continuous moderators, whereas participant type and continent were entered as categorical moderators using dummy coding.

Figure 5 presents the univariate mixed-effects meta-regression results for the continuous

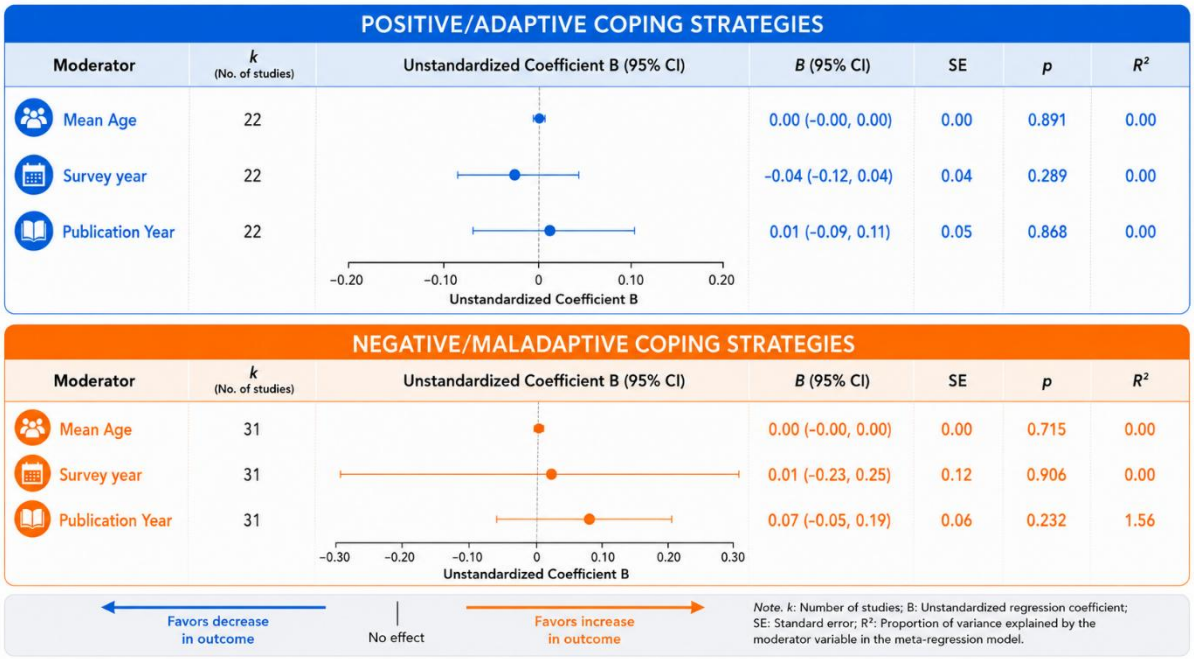


Figure 5. Results of the Univariate Meta-Regression Models for Continuous Moderators

moderators separately for positive/adaptive and negative/maladaptive coping strategies. For positive/adaptive coping strategies, none of the continuous moderators was statistically significant, including mean age (B = 0.00, 95% CI [−0.00, 0.00], p = 0.891), survey year (B = −0.04, 95% CI [−0.12, 0.04], p = 0.289), and publication year (B = 0.01, 95% CI [−0.09, 0.11], p = 0.868). Similarly, none of the continuous moderators was statistically significant for negative/maladaptive coping strategies. The coefficients for mean age (B = 0.00, 95% CI [−0.00, 0.00], p = 0.715), survey year (B = 0.01, 95% CI [−0.23, 0.25], p = 0.906), and publication year (B = 0.07, 95% CI [−0.05, 0.19], p = 0.232) all had confidence intervals that included zero. Thus, the univariate analyses provided no evidence that these continuous study characteristics systematically explained between-study variation in the associations examined.

Categorical Moderator Analyses

Figure 6 presents the categorical subgroup estimates by participant type and continent for positive/adaptive and negative/maladaptive coping strategies. For positive/adaptive coping strategies, the overall pooled correlation was negative (r = −0.22, 95% CI [−0.29, −0.15], R^2 = 0.02). The participant-specific estimates ranged from r = −0.21 to −0.23, with estimates of r = −0.22 for college students, r = −0.23 for the general public, and r = −0.21 for medical teams. Across continents, the pooled correlations were r = −0.21 for Asia and r = −0.23 for Europe. No estimate was available for North America because no eligible studies were included in this subgroup.

For negative/maladaptive coping strategies, the overall pooled correlation was positive (r = 0.27, 95% CI [0.20, 0.34], R^2 = 0.07). The participant-specific estimates were r = 0.27 for college students (95% CI [0.20, 0.34]), r = 0.19 for the general public (95% CI [−0.01, 0.38]), and r = 0.32 for medical teams (95% CI [0.15, 0.49]). Across continents, the pooled correlations were r = 0.24 for Asia (95% CI [0.15, 0.33]), r = 0.43 for Europe (95% CI [0.29, 0.57]), and r = 0.24 for North America (95% CI [0.18, 0.31]).

These findings describe the direction and magnitude of the pooled associations within the participant and continental subgroups. The negative correlations for positive/adaptive coping strategies indicate an inverse association with perceived stress, whereas the positive correlations for negative/maladaptive coping strategies indicate a positive association with perceived stress. The subgroup estimates also show variation in the magnitude of these associations across categories. However, differences in the point estimates or the overlap of their confidence intervals should not be used alone to establish the presence or absence of moderation. Formal conclusions regarding the moderating effects of participant type and continent depend on the corresponding meta-regression tests.

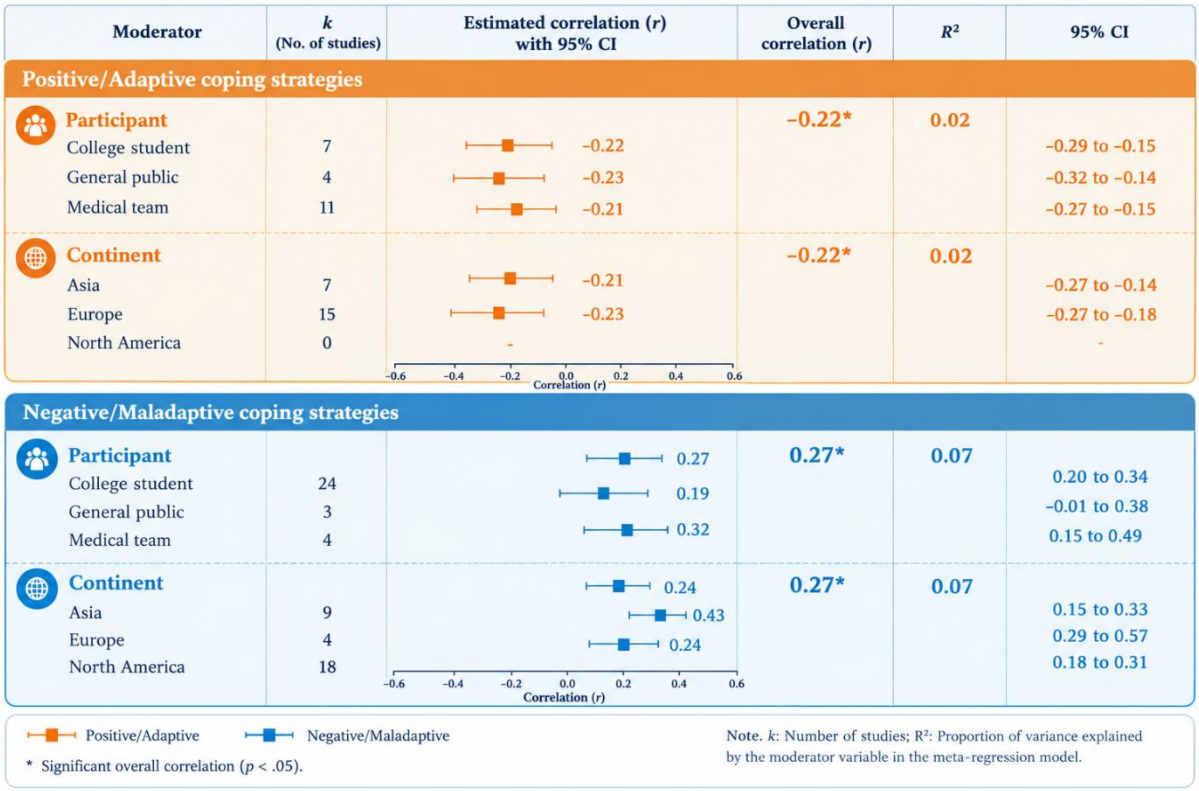


Figure 6. Categorical Moderator Analyses of Positive/Adaptive and Negative/Maladaptive Coping Strategies

Subgroup Analyses

Subgroup analyses were conducted according to participant type and continent (Figure 7). For positive or adaptive coping, the subgroup-specific correlation estimates were negative across participant categories, ranging from $r = -0.24$ (95% CI [−0.34, −0.14]) among the general public to $r = -0.21$ (95% CI [−0.28, −0.15]) among medical teams. Across continents, the estimates were $r = -0.21$ (95% CI [−0.27, −0.15]) for Asia and $r = -0.23$ (95% CI [−0.28, −0.18]) for Europe. No effect-size estimates were available for positive or adaptive coping in North American samples. For negative or maladaptive coping, the estimates were positive across all participant categories, ranging from $r = 0.19$ (95% CI [−0.01, 0.39]) among the general public to $r = 0.33$ (95% CI [0.29, 0.37]) among medical teams. The estimate for the general public did not reach conventional statistical significance ($p = 0.057$), whereas the estimates for college students and medical teams were statistically significant ($p < 0.001$). Across continents, the estimates were $r = 0.24$ (95% CI [0.15, 0.33]) for Asia, $r = 0.48$ (95% CI [0.17, 0.79]) for Europe, and $r = 0.25$ (95% CI [0.20, 0.30]) for North America; all three estimates were statistically significant ($p \leq 0.002$). These findings describe the subgroup-specific associations and their corresponding confidence intervals. However, because formal between-subgroup difference tests were not conducted, the results do not establish whether the associations differed significantly by participant type or continent.

Discussions

The present meta-analysis examined the associations between coping strategies and perceived stress, with particular attention to positive or adaptive and negative or maladaptive coping. Across the included effect sizes, positive or adaptive coping was negatively associated with perceived stress, whereas negative or maladaptive coping was positively associated with perceived stress. These findings indicate that the direction of the association differed according to the coping dimension examined. Rather than indicating that coping strategies directly change stress levels, the findings demonstrate systematic associations between how individuals respond to stressful demands and how they perceive and appraise those demands. This pattern is consistent with the

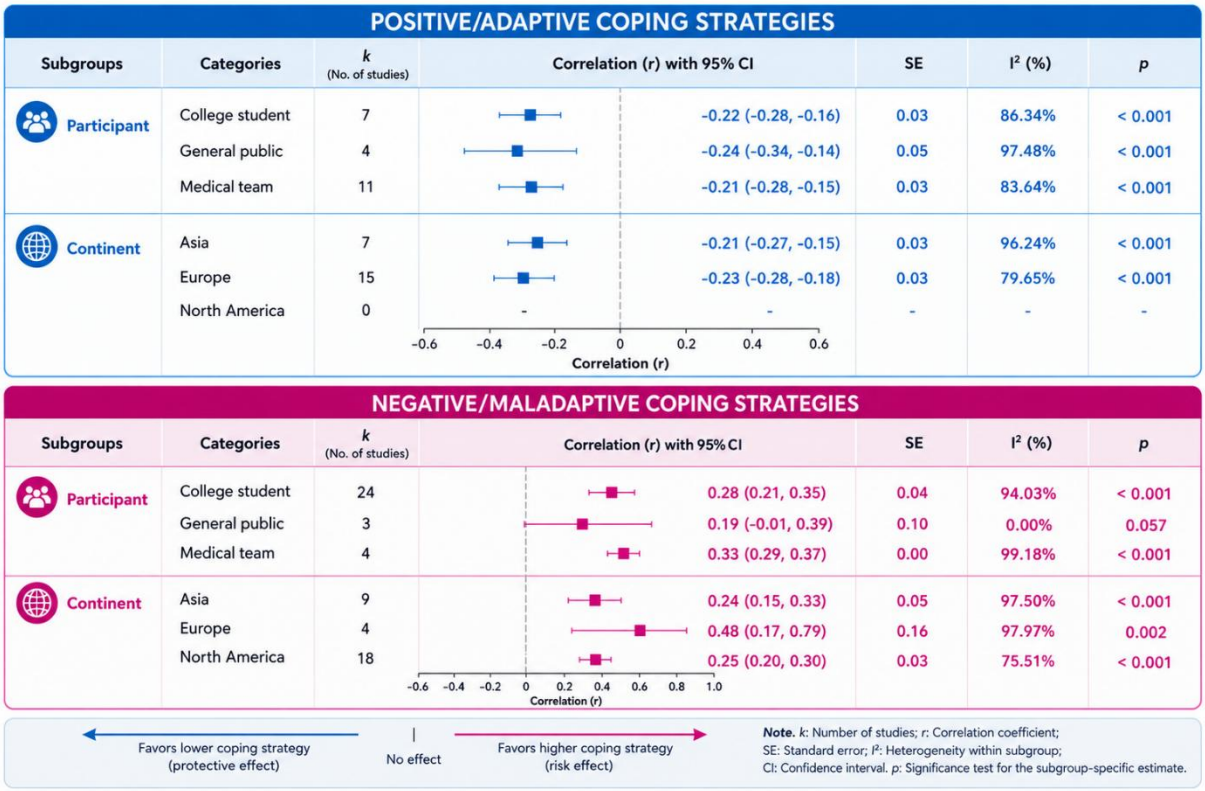


Figure 7. Subgroup Analyses of Positive/Adaptive and Negative/Maladaptive Coping Strategies

transactional model of stress and coping, in which coping represents cognitive and behavioral efforts that emerge in response to individuals' appraisals of environmental demands and available resources (Lazarus & Folkman, 1984; Zimmer-Gembeck & Skinner, 2023).

The negative association between positive or adaptive coping and perceived stress suggests that individuals who report greater use of constructive coping strategies also tend to report lower perceived stress. This pattern is broadly consistent with previous research linking adaptive coping with more favorable psychological adjustment across stressful contexts (Matos et al., 2023; Shamblaw et al., 2021; Woo et al., 2024). Strategies such as problem-focused coping, cognitive reappraisal, emotional regulation, and constructive meaning-making may be relevant because they can involve efforts to evaluate stressors, mobilize available resources, or regulate responses to challenging circumstances (Chang et al., 2024; Cheng & Chen, 2024; Park et al., 2025). Within the transactional framework, such associations can be understood in relation to primary and secondary appraisal. When individuals perceive available resources as sufficient or identify actionable ways of responding to a stressor, their subsequent coping responses may be accompanied by lower perceptions of stress. However, because the included studies were predominantly cross-sectional, this interpretation does not establish the temporal direction of the association. Lower perceived stress may also facilitate the use of constructive coping strategies, or both processes may influence one another.

The positive association between negative or maladaptive coping and perceived stress provides a complementary pattern. Individuals reporting greater use of strategies categorized as negative or maladaptive also tended to report higher perceived stress. Previous studies have similarly linked maladaptive coping with poorer psychological adjustment and a range of adverse psychological outcomes (Kit, 2025; Satici et al., 2021; Trousselard, 2025). Avoidance, disengagement, suppression, and substance-related coping may be particularly relevant when individuals perceive stressors as difficult to control or lack sufficient resources to manage them effectively (Chu et al., 2022; Li et al., 2022; Park & Park, 2024). From a transactional perspective, these associations may reflect the interaction between stress appraisal, resource mobilization, and coping responses

rather than a unidirectional effect of coping on stress. Accordingly, the observed positive association should not be interpreted as evidence that maladaptive coping causes higher perceived stress.

Heterogeneity of the Associations

A central finding of this meta-analysis was the substantial heterogeneity observed for both coping dimensions. The heterogeneity was high for positive or adaptive coping (I^2 = 92.90%) and negative or maladaptive coping (I^2 = 95.54%), indicating that the pooled correlations did not fully represent a uniform association across the included analyses. This variability should therefore be considered an important substantive finding rather than merely a statistical limitation. Differences in participant characteristics, cultural contexts, coping measures, perceived-stress measures, study settings, and operational definitions of coping may contribute to differences in the magnitude of the observed associations (Borenstein, 2023; Kepes et al., 2023). Demographic characteristics may also be relevant to the interpretation of coping patterns, as previous evidence has documented differences in coping strategies across age and gender groups (Lin, 2023). However, the extent to which such demographic differences account for the heterogeneity observed in the present meta-analysis remains uncertain.

The high heterogeneity is also consistent with contemporary perspectives on coping flexibility, which emphasize that the effectiveness or relevance of a coping response may depend on the characteristics of the stressor, available resources, and situational demands rather than on a fixed classification of strategies as universally adaptive or maladaptive (Zimmer-Gembeck, 2021; Zimmer-Gembeck & Skinner, 2023). For example, avoidance may have different implications depending on whether a stressor is controllable, temporarily unavoidable, or requires immediate emotional regulation. Similarly, problem-focused coping may be more relevant when individuals perceive opportunities for direct action, whereas emotion-focused or disengagement strategies may occur when perceived control is limited. Thus, the positive and negative classifications used in the present synthesis provide a useful framework for summarizing the available evidence but should not be interpreted as evidence that every individual coping strategy has the same function across circumstances.

The substantial between-study heterogeneity observed in the meta-analysis (I^2 = 92.90%) and (I^2 = 95.54%) indicates that the variability in the observed effect sizes cannot be adequately characterized by sampling error alone. Although the moderator analyses examined participant type, continent, mean age, survey year, and publication year, they did not identify a consistent pattern of statistically significant moderation. The participant-type comparison for negative or maladaptive coping approached, but did not reach, conventional statistical significance (p = 0.057). Moreover, none of the continuous moderators provided statistically significant evidence that differences in mean age, survey year, or publication year systematically accounted for the observed variation. These findings suggest that the substantial heterogeneity remains largely unexplained by the study-level characteristics assessed in the present analyses.

Several unmeasured methodological and substantive factors may have contributed to this residual heterogeneity. First, differences in coping measurement instruments may have influenced the comparability of effect sizes across studies. Instruments may differ in their item content, dimensional structure, reference periods, and operational definitions of adaptive and maladaptive coping. Some measures may emphasize specific coping strategies, such as problem-focused coping, emotional regulation, or seeking social support, whereas others may assess broader coping tendencies. Consequently, studies classified under the same general coping category may not necessarily measure equivalent psychological constructs. Differences in instrument reliability, validity, scoring procedures, and the aggregation of coping subscales may further contribute to variation in the observed associations. Without consistent instrument-level information and sufficient studies within each measurement category, the extent to which these methodological differences explain the heterogeneity cannot be determined.

Second, variation in population characteristics may have contributed to the observed differences in effect sizes. The relationship between coping and psychological outcomes may differ between clinical and non-clinical populations, as individuals experiencing clinically significant psychological distress or chronic health conditions may encounter different stressor intensities, functional limitations, and coping demands from those encountered by community or student samples. Differences in

recruitment procedures, socioeconomic circumstances, health status, and the severity or chronicity of stressors may also influence the availability and perceived effectiveness of particular coping strategies. Although participant type was examined as a categorical moderator, the comparison did not reach conventional statistical significance ($p = 0.057$)). This result should not be interpreted as demonstrating that population characteristics are irrelevant. Rather, the available classification may have been insufficiently sensitive to capture clinically meaningful differences within and across participant groups.

Third, cultural and social contexts may represent additional sources of variation that were not fully captured by the continental classification. Coping strategies are shaped not only by individual characteristics but also by culturally patterned expectations regarding emotional expression, personal agency, family obligations, interpersonal support, and responses to adversity. For example, coping strategies involving social support or interpersonal accommodation may have different meanings and implications across social contexts. However, continent is a relatively broad geographical indicator and cannot adequately represent within-continent cultural diversity, differences in social norms, or variation in access to psychological and social resources. Consequently, the absence of consistent moderation by continent does not exclude the possibility that more specific cultural or contextual characteristics contribute to the observed heterogeneity.

Fourth, differences in the nature of the stressors examined across studies may have influenced the associations between coping and the outcomes of interest. Coping strategies that are beneficial in relatively controllable situations may not have equivalent implications when individuals face persistent, unpredictable, or uncontrollable stressors. Studies may also differ in the duration of exposure to stressors, the timing of coping assessment, and whether coping is evaluated in relation to a specific event or a broader pattern of everyday challenges. In addition, cross-sectional and longitudinal designs may capture different aspects of the relationship between coping and psychological outcomes. These differences could produce variation in effect sizes even when studies use similar coping measures and recruit broadly comparable populations.

The nonsignificant continuous moderator effects also warrant cautious interpretation. Mean age, survey year, and publication year are relatively broad study-level indicators and may not adequately represent nonlinear relationships, individual-level demographic differences, or changes in the social and environmental conditions surrounding coping. In particular, study-level mean age cannot establish whether the association differs across individual age groups, and publication year may be an imperfect proxy for changes in social conditions, measurement practices, or research methodologies. Furthermore, moderator analyses in meta-analysis may have limited statistical power, particularly when the number of studies is small relative to the number of parameters examined or when moderator values are unevenly distributed across studies. Accordingly, nonsignificant moderator estimates should not be interpreted as evidence that these characteristics have no influence on coping-related associations.

Taken together, the high (I^2) values and the limited explanatory contribution of the examined moderators suggest that the observed variability may reflect the combined influence of measurement differences, population composition, stressor characteristics, cultural and social contexts, and study design. These possibilities remain hypotheses rather than confirmed explanations because the relevant information was not consistently available for formal moderator testing. Future meta-analyses should therefore distinguish clinical from non-clinical populations where feasible, document the specific instruments and subscales used to assess coping, classify stressor types and study designs, and extract more detailed indicators of cultural and socioeconomic context. Where sufficient studies are available, these variables should be examined through prespecified moderator analyses or meta-regression, with appropriate consideration of statistical power and the risk of multiple testing. Individual-participant-data meta-analysis may also help distinguish individual-level variation from study-level differences. Until such evidence becomes available, the pooled estimates should be interpreted as average associations across heterogeneous study contexts rather than as effects that necessarily generalize uniformly across populations and settings.

These findings also have implications for interpreting the pooled effect sizes. The pooled association for positive or adaptive coping was $r = -0.22$, whereas the pooled association for negative or maladaptive coping was $r = 0.31$. Both associations were statistically distinguishable from zero, but their magnitudes should be

interpreted together with the substantial heterogeneity. A pooled correlation represents an average across the included analyses and does not imply that the same magnitude of association should be expected in every population, cultural setting, or measurement context. Prediction intervals, where available, would provide additional information about the expected range of effects in comparable future settings.

Implications of the Study

The findings have theoretical, practical, and research implications for understanding the relationship between coping strategies and perceived stress. The observed associations can be interpreted within the transactional model of stress and coping, which conceptualizes perceived stress in terms of individuals' appraisals of environmental demands in relation to their perceived resources and coping as responses mobilized in relation to those appraisals (Lazarus & Folkman, 1984; Zimmer-Gembeck & Skinner, 2023). The negative association between positive or adaptive coping and perceived stress and the positive association between negative or maladaptive coping and perceived stress are consistent with a dynamic process in which appraisal, coping responses, and perceptions of stress may be interconnected. However, the cross-sectional nature of the included studies prevents conclusions about the temporal direction of these associations.

From a practical perspective, assessment of perceived stress may benefit from considering the coping strategies individuals report using rather than treating perceived stress as an isolated psychological outcome. Brief assessment of coping patterns may help identify whether individuals predominantly rely on constructive approaches, avoidance or disengagement, or other responses when experiencing stressful demands. Given the modest pooled associations and substantial heterogeneity, the findings do not support a single standardized coping intervention that can be assumed to be equally applicable across populations. Psychological support may instead benefit from being context-sensitive and informed by individual appraisal, available resources, and characteristics of the stressor. Practitioners may therefore consider assessing perceived stress together with coping patterns and tailoring psychological support to the specific coping difficulties and contextual demands identified.

Limitations and Future Directions

Several limitations should be considered when interpreting the findings. First, the included studies were geographically uneven, with a substantial proportion conducted in Europe. This distribution may limit the extent to which the pooled associations represent populations from regions that were less frequently studied, particularly given the substantial heterogeneity across effect sizes. Future research should therefore increase representation across diverse cultural and socioeconomic contexts.

Second, the search was restricted to peer-reviewed English-language publications. This criterion may have excluded relevant studies published in other languages or in sources not indexed within the selected databases. The funnel plot analyses, Egger's test, Begg and Mazumdar's test, and trim-and-fill procedure should consequently be interpreted as complementary assessments of potential small-study effects rather than definitive tests establishing the presence or absence of publication bias.

Third, considerable methodological heterogeneity was present across the included studies. Studies differed in their measures of coping and perceived stress, participant characteristics, and study contexts. In addition, positive or adaptive and negative or maladaptive coping represent broad categories that may contain conceptually distinct strategies. Combining heterogeneous strategies within these categories may therefore contribute to variability in the pooled associations. Future meta-analyses should consider more specific coping strategies when sufficient evidence is available and should use clearly defined a priori coding frameworks.

Fourth, the high heterogeneity observed for both coping dimensions indicates that important moderators may remain unidentified. Although participant type, age, survey year, publication year, and continent were examined, these variables did not provide a complete explanation for the variability in effect sizes. Other characteristics, including gender, stressor controllability, socioeconomic conditions, cultural norms, measurement instruments, and specific coping strategies, may contribute to the observed differences. Previous evidence of age- and gender-related differences in coping strategies further underscores the importance of examining demographic characteristics in future research (Lin, 2023). Future studies should collect and report these characteristics systematically to facilitate more informative moderator analyses

and should examine whether demographic characteristics interact with stressor and coping contexts.

Fifth, the interpretation of multiple effect sizes originating from the same study requires caution because observations derived from overlapping samples may not be statistically independent. The distinction between study reports, samples, and extracted effect sizes should therefore remain explicit in future syntheses. Future meta-analyses should consider statistical approaches that appropriately account for dependence among multiple effect sizes when such data structures are present.

Finally, the included evidence was predominantly cross-sectional, limiting conclusions about temporal ordering and causality. The observed associations may reflect reciprocal processes in which coping influences subsequent perceptions of stress, perceived stress influences subsequent coping choices, or both processes operate simultaneously. Longitudinal and experimental research is therefore needed to examine the temporal dynamics between coping and perceived stress and to determine whether changes in specific coping strategies correspond to subsequent changes in perceived stress.

Future research should also examine coping strategies at a more specific level and incorporate contextual characteristics into the analysis. Longitudinal studies could assess how primary and secondary appraisal, coping responses, and perceived stress change over time. Intervention studies could further examine whether modifying particular coping strategies is followed by changes in perceived stress while accounting for stressor characteristics and individual resources. Such approaches would provide a stronger basis for understanding when and for whom particular coping strategies are associated with perceived stress.

Conclusion

This meta-analysis synthesized empirical evidence on the associations between coping strategies and perceived stress, focusing on positive or adaptive and negative or maladaptive coping. Positive or adaptive coping was negatively associated with perceived stress, whereas negative or maladaptive coping was positively associated with perceived stress. These findings indicate that different coping dimensions are systematically related to how individuals perceive and appraise stressful demands. However, the substantial heterogeneity observed across both coping dimensions indicates that these associations vary considerably across studies and contexts. The pooled effects should therefore be interpreted as average associations rather than universal estimates applicable to all populations or situations. The findings are consistent with the transactional model of stress and coping and with perspectives emphasizing coping flexibility, while the cross-sectional nature of the evidence prevents causal conclusions. Overall, the findings highlight the importance of considering coping strategies together with perceived stress and the contextual conditions in which coping occurs. Future research should use more specific and consistently defined coping measures, include culturally and contextually diverse samples, account appropriately for dependent effect sizes, and employ longitudinal or experimental designs to clarify the temporal and potentially reciprocal relationships between coping strategies and perceived stress.

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Author Contributions

Conceptualization: DYN, FN, RRD; Methodology: DYN; Data collection and investigation: DYN; Data analysis: DYN; Writing—original draft preparation: DYN, FN, RRD; Writing—review & editing: DYN, FN, RRD; Supervision: FN, RRD; DRN revising the manuscript after review from reviewers.

Conflict of Interest

The authors declare no conflicts of interest.

Use of Artificial Intelligence

The authors acknowledge the use of ChatGPT (OpenAI) to assist in language refinement, structural editing, and figure presentation improvement in the preparation of this manuscript. The AI tool was not used for data collection, statistical analysis, or interpretation of results. All scientific content, analyses, and conclusions were developed and verified by the

authors, who take full responsibility for the integrity of the manuscript.

Ethical Clearance

Ethical review and approval were not required for this study because it did not involve human participants or animals. This research was conducted as a systematic review and meta-analysis based on previously published studies; therefore, no primary data collection, direct participant involvement, or informed consent was required.

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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Appendix

Table A1

Characteristics of the Studies Included in the Meta-Analysis

No	Study	*N*	*r*	Participant	Age (year)	Type of Coping	Type of Stress	Survey Year	Publication Year	Country	Continent
1	Eden et al. (2020) Studi 1a	425	0.15	College student	20.19	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
2	Eden et al. (2020) Studi 1b	425	0.33	College student	20.19	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
3	Eden et al. (2020) Studi 1c	425	0.40	College student	20.19	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
4	Eden et al. (2020) Studi 1d	425	0.14	College student	20.19	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
5	Hou et al. (2021)	527	0.34	Medical team	34.86	Negative/Maladaptive coping strategies	Specific stress	2021	2021	China	Asia
6	Hou et al. (2021) Studi 1a	528	0.30	Medical team	35.11	Negative/Maladaptive coping strategies	Specific stress	2020	2021	China	Asia
7	Hou et al. (2021) Studi 1b	528	0.32	Medical team	35.11	Negative/Maladaptive coping strategies	Specific stress	2020	2021	China	Asia
8	Hou et al. (2021) Studi 1c	528	0.31	Medical team	35.11	Negative/Maladaptive coping strategies	Specific stress	2020	2021	China	Asia
9	Mushquash & Grassia (2021) Studi 1a	131	-0.21	College student	20.32	Positive/Adaptive coping strategies	Specific stress	2020	2021	Canada	Europe
10	Mushquash & Grassia (2021) Studi 1b	131	-0.38	College student	20.32	Positive/Adaptive coping strategies	Specific stress	2021	2021	Canada	Europe
11	Pat-Horenczyk et al. (2021)	7446	-0.23	College student	28.39	Positive/Adaptive coping strategies	Specific stress	2020	2021	Israel	Asia
12	Prowse et al. (2021) Studi 1a	366	0.31	College student	21.00	Negative/Maladaptive coping strategies	General stress	2020	2021	Canada	North America
13	Prowse et al. (2021) Studi 1b	366	0.22	College student	21.00	Negative/Maladaptive coping strategies	General stress	2020	2021	Canada	North America
14	Prowse et al. (2021) Studi 1c	366	0.35	College student	21.00	Negative/Maladaptive coping strategies	General stress	2020	2021	Canada	North America
15	Prowse et al. (2021) Studi 1d	366	0.12	College student	21.00	Negative/Maladaptive coping strategies	General stress	2020	2021	Canada	North America
16	Prowse et al. (2021) Studi 1e	366	0.15	College student	21.00	Negative/Maladaptive coping strategies	General stress	2020	2021	Canada	North America
17	Prowse et al. (2021) Studi 1f	366	0.21	College student	21.00	Negative/Maladaptive coping strategies	General stress	2020	2021	Canada	North America
18	Rogowska et al. (2021) Studi 1a	914	-0.27	College student	23.21	Positive/Adaptive coping strategies	General stress	2020	2021	Poland	Europe
19	Rogowska et al. (2021) Studi 1b	914	0.61	College student	23.21	Negative/Maladaptive coping strategies	General stress	2020	2021	Poland	Europe
20	Rogowska et al. (2021) Studi 1c	914	0.20	College student	23.21	Negative/Maladaptive coping strategies	General stress	2020	2021	Poland	Europe
21	Rogowska et al. (2021) Studi 2a	231	-0.27	College student	23.21	Positive/Adaptive coping strategies	General stress	2020	2021	Poland	Europe
22	Rogowska et al. (2021) Studi 2b	231	0.64	College student	23.21	Negative/Maladaptive coping strategies	General stress	2020	2021	Poland	Europe
23	Rogowska et al. (2021) Studi 2c	231	0.24	College student	23.21	Negative/Maladaptive coping strategies	General stress	2020	2021	Poland	Europe
24	Umucu & Lee (2020) Studi 1a	269	0.24	College student	39.37	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
25	Umucu & Lee (2020) Studi 1b	269	0.21	College student	39.37	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
26	Umucu & Lee (2020) Studi 1c	269	0.35	College student	39.37	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
27	Umucu & Lee (2020) Studi 1d	269	0.34	College student	39.37	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
28	Umucu & Lee (2020) Studi 1e	269	0.07	College student	39.37	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
29	Umucu & Lee (2020) Studi 1f	269	0.26	College student	39.37	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
30	Umucu & Lee (2020) Studi 1g	269	0.12	College student	39.37	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
31	Umucu & Lee (2020) Studi 1h	269	0.39	College student	39.37	Negative/Maladaptive coping strategies	General stress	2020	2020	USA	North America
32	Vagni et al. (2020) Studi 1a	513	-0.11	Medical team	47.10	Positive/Adaptive coping strategies	Specific stress	NR	2020	Italy	Europe
33	Vagni et al. (2020) Studi 1b	513	-0.30	Medical team	47.10	Positive/Adaptive coping strategies	Specific stress	NR	2020	Italy	Europe
34	Vagni et al. (2020) Studi 1c	513	-0.08	Medical team	47.10	Positive/Adaptive coping strategies	Specific stress	NR	2020	Italy	Europe

No	Study	*N*	*r*	Participant	Age (year)	Type of Coping	Type of Stress	Survey Year	Publication Year	Country	Continent
35	Vagni et al. (2020) Studi 2a	513	-0.16	Medical team	47.10	Positive/Adaptive coping strategies	Specific stress	NR	2020	Italy	Europe
36	Vagni et al. (2020) Studi 2b	513	-0.39	Medical team	47.10	Positive/Adaptive coping strategies	Specific stress	NR	2020	Italy	Europe
37	Vagni et al. (2020) Studi 2c	513	-0.17	Medical team	47.10	Positive/Adaptive coping strategies	Specific stress	NR	2020	Italy	Europe
38	Vagni et al. (2020) Studi 2d	513	-0.21	Medical team	47.10	Positive/Adaptive coping strategies	Specific stress	NR	2020	Italy	Europe
39	Vagni et al. (2020) Studi 2e	513	-0.36	Medical team	47.10	Positive/Adaptive coping strategies	Specific stress	NR	2020	Italy	Europe
40	Vagni et al. (2020) Studi 2f	513	-0.23	Medical team	47.10	Positive/Adaptive coping strategies	Specific stress	NR	2020	Italy	Europe
41	Vagni et al. (2020) Studi 2g	513	-0.12	Medical team	47.10	Positive/Adaptive coping strategies	Specific stress	NR	2020	Italy	Europe
42	Vagni et al. (2020) Studi 2h	513	-0.16	Medical team	47.10	Positive/Adaptive coping strategies	Specific stress	NR	2020	Italy	Europe
43	Yan et al. (2020)	3233	-0.38	General public	31.71	Positive/Adaptive coping strategies	General stress	2020	2020	China	Asia
44	Ye et al. (2020) Studi 1a	7800	-0.20	General public	20.54	Positive/Adaptive coping strategies	Specific stress	2020	2020	China	Asia
45	Ye et al. (2020) Studi 1b	7800	0.25	General public	20.54	Negative/Maladaptive coping strategies	Specific stress	2020	2020	China	Asia
46	Ye et al. (2020) Studi 2a	7800	-0.18	General public	20.54	Positive/Adaptive coping strategies	Specific stress	2020	2020	China	Asia
47	Ye et al. (2020) Studi 2b	7800	0.01	General public	20.54	Negative/Maladaptive coping strategies	Specific stress	2020	2020	China	Asia
48	Yildirim et al. (2021) Studi 1a	255	0.32	General public	32.96	Negative/Maladaptive coping strategies	General stress	NR	2021	Saudi Arabia	Asia
49	Yildirim et al. (2021) Studi 1b	255	-0.14	General public	32.96	Positive/Adaptive coping strategies	General stress	NR	2021	Saudi Arabia	Asia
50	Zhao et al. (2021) Studi 1a	2999	0.18	College student	20.66	Negative/Maladaptive coping strategies	General stress	2020	2021	China	Asia
51	Zhao et al. (2021) Studi 1b	2999	0.12	College student	20.66	Negative/Maladaptive coping strategies	General stress	2020	2021	China	Asia
52	Zhao et al. (2021) Studi 1c	2999	-0.12	College student	20.66	Positive/Adaptive coping strategies	General stress	2020	2021	China	Asia
53	Zhao et al. (2021) Studi 1d	2999	-0.16	College student	20.66	Positive/Adaptive coping strategies	General stress	2020	2021	China	Asia

Note. N: 25,637 (Total participants for 53 studies); NR: Not reported.