

# The Relationship Between Adult Attachment and Mental Health: A Meta-Analysis

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Attachment theory provides a framework for understanding the correlations among interpersonal relationships, stress, and health. Moreover, adult attachment is an important predictor of mental health. However, there is a lack of systematic reviews that simultaneously examine the associations between adult attachment and both positive and negative indicators of mental health. Consequently, we meta-analyzed 224 studies examining the associations between adult attachment and mental health, using robust variance estimation with random effects. The results ( $k = 245$  samples,  $N = 79,722$ ) showed that higher levels of attachment anxiety and avoidance were positively correlated with negative affect (e.g., depression, anxiety, loneliness) and they were negatively correlated with positive affect (e.g., life satisfaction, self-esteem). More specifically, there were moderate associations between attachment avoidance and negative mental health ( $r = .28$ ) and positive mental health ( $r = -.24$ ). Likewise, there were moderate associations between attachment anxiety and negative mental health ( $r = .42$ ) and positive mental health ( $r = -.29$ ). Furthermore, the association between the attachment dimensions and mental health outcomes was also moderated by several variables (e.g., gender, age). Finally, these associations remained statistically significant even when the attachment dimensions were mutually controlled using meta-analytic structural equation modeling. Overall, attachment anxiety had larger associations with mental health than did attachment avoidance. Thus, the current results support robust links between adult attachment and mental health. This may have implications for future research and mental health treatments.

*Keywords:* adult attachment, mental health, meta-analysis, attachment theory

Health—both physical and mental—is essential to individuals' happiness throughout the lifespan (Dolan et al., 2008; Hudson et al., 2019). Indeed, scholars have suggested that mental health is paramount; individuals value their happiness and well-being above nearly all else (Diener, 2000; Prince et al., 2007). In general, mental health has no universal definition. However, key indicators include depression and anxiety, which have been found to be highly prevalent among young adults (Biddle et al., 2019). Research suggests that early life experiences (e.g., children's attachment-related experiences) may be a particularly important predictor of subsequent mental health (e.g., depression and anxiety) in adulthood

(Stovall-McClough & Dozier, 2016). Indeed, the World Health Organization (WHO) identifies relationships as a key factor that determines mental health (WHO, 2004).

*Attachment* is an important variable that can refer both to (a) individual differences in how people form close relationships (Overall et al., 2003) and also (b) a specific type of relational bond between two people (Antonucci et al., 2004). According to the attachment theory (Bowlby, 1979/2005), adults' attachment orientations are an extension of children's relational experiences. More specifically, children's experiences with their parents can affect their *internal working models*—cognitive/emotional representations of the

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self and others (Bowlby, 1969, 1973). In adulthood, internal working models are measured as a combination of two traits: (a) attachment anxiety and (b) attachment avoidance (Mikulincer & Shaver, 2007). Collectively, individuals' levels of attachment anxiety and avoidance comprise their *attachment styles* or *attachment orientations*.

Attachment styles affect people's relationships (e.g., relational success, relationship satisfaction) throughout the life course. To this end, attachment theory provides a framework for understanding how relationships may affect mental health (Maunder & Hunter, 2001; Pietromonaco et al., 2013). In particular, numerous studies have found that attachment styles are associated with a plethora of mental health outcomes, including depression (Bekker & Croon, 2010; Gallagher et al., 2017; Gillath et al., 2011; Homa & Chow, 2014; Kidd et al., 2016), anxiety (Axfors et al., 2017; Bekker & Croon, 2010; English et al., 2018; Kidd et al., 2016), negative affect (Langston, 2014; Widom et al., 2018), life satisfaction (Cronin et al., 2019; Gnilka et al., 2013; Molero et al., 2017), self-esteem (Han, 2017; Kim & Koh, 2018; Wu, 2009), and positive affect (Carr et al., 2013; Kidd et al., 2016). Although these findings converge on the idea that attachment orientations have important implications for mental health (Hunter & Maunder, 2001), there is substantial variance in the magnitude of the reported correlations.

Despite the large body of studies examining the links between adult attachment and mental health, there is a lack of systematic and comprehensive reviews on the topic. This limits our understanding of how attachment and mental health covary. More specifically, although some previous meta-analyses of the links between adult attachment and mental health do exist, they have utilized (a) only a single indicator of mental health, (b) have generally neglected the links between attachment and *positive mental health* (e.g., life satisfaction), and/or (c) have operationalized attachment in suboptimal ways (e.g., as categories rather than as continuous variables). With respect to single-outcome reviews, meta-analyses have summarized the association between adult attachment and depressive symptoms (Dagan et al., 2018), anxiety symptoms (Dagan et al., 2020), and posttraumatic stress symptoms (Woodhouse et al., 2015). Using only a single indicator of mental health limits our understanding of the broader links between attachment and mental health more generally.

In addition to the shortcomings of previous studies mentioned above, the links between attachment and *positive* indicators of mental health have received little attention in meta-analyses. Finally, existing meta-analyses have primarily conceptualized adult attachment as a categorical phenomenon. Adult attachment is a continuous construct (Fraley et al., 2015) and polytomizing it into categories discards an enormous amount of information (Cohen, 1983). Indeed, when seeking to predict mental health (e.g., psychopathology), it is more useful to obtain information about the strength of the underlying attachment dimensions than it is to attempt to classify individuals into categories (Bifulco et al., 2003). Therefore, to address these limitations of prior studies, the aim of the present article was to statistically summarize the associations between adult attachment and a number of both positive and negative mental health outcomes by conducting a series of meta-analyses—each of which conceptualized attachment as a continuous dimension. All said, this meta-analysis provides a

more comprehensive understanding of how adult attachment is connected to a variety of mental health outcomes—which has both theoretical and clinical implications.

## Adult Attachment

According to the attachment theory (Bowlby, 1969), interpersonal experiences—particularly with caregivers (usually parents or other family members)—shape children's beliefs about themselves and close others. Over time, early experiences with primary caregivers—called *attachment figures*—consolidate into a generalized relational schema (i.e., beliefs and expectations about relationships), which are called internal working models of attachment (Bowlby, 1969; Fariborz et al., 1996). These internal working models influence how children and adults interact with the world, experience themselves in relation to others, and regulate affect. Thus, internal working models have a direct effect on adult functioning (Sroufe, 2005; Sroufe et al., 2005a, 2005b). Although attachment orientations develop in the first year of life, they have been found to be somewhat stable over the lifespan—which has implications for long-term developmental outcomes (Fraley, 2002). In sum, adult attachment is thought to be based on the beliefs, expectations, and feelings that individuals learned as infants via experiences with their caregiver (Shaver & Hazan, 1987; Tasca & Balfour, 2014).

Although adult attachment was initially conceptualized as a categorical phenomenon (i.e., people fell into one of four attachment categories; Bartholomew & Horowitz, 1991), numerous studies have provided indisputable evidence that adult attachment orientations are, in fact, best characterized as two continuous dimensions (Fraley & Spieker, 2003; Fraley et al., 2015; Zhang et al., 2018). Specifically, the two dimensions underlying adult attachment are (a) attachment anxiety and (b) attachment avoidance (Brennan et al., 1998). Attachment anxiety refers to fear of abandonment by partners, excessive need for approval, and distress at perceived rejection. In contrast, attachment avoidance refers to fear of dependence and intimacy, and excessive need for self-reliance, and avoidance of self-disclosure. Prototypically “secure” individuals have low levels of both attachment anxiety and avoidance. Consequently, secure individuals tend to less worry about rejection or abandonment, and they tend to be comfortable with both being dependent on others and having others depend on them (Bartholomew & Horowitz, 1991). In general, attachment theory provides a developmental and contextual perspective on adult functioning (Tasca & Balfour, 2014) and has the potential to impact individuals' mental health (Akdoğan, 2017; Besser et al., 2012; Chow & Ruhl, 2014). Indeed, as mentioned above, both anxiety and avoidance have been found to robustly predict mental health across a variety of studies (Huang et al., 2019; Kidd et al., 2016; Neumann, 2017).

## Mental Health

Mental health generally refers to a positive state of well-being in which individuals realize their potential, experience positive emotions, can cope with stress, maintain interpersonal relationships, work productively, and contribute to their community (Herrman et al., 2005). Given that “mental health” is a broad and somewhat

poorly defined construct, many theories have attempted to specify its structure. As one particularly compelling and widely used example, the dual-factor model of mental health (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008) stipulates that holistic mental health consists of both the absence of negative indicators of mental health (e.g., depression, anxiety, loneliness) as well as the presence of positive ones (e.g., life satisfaction, positive affect, self-esteem). Indeed, numerous meta-analyses have adopted the dual-factor model of mental health (Hu et al., 2015; White et al., 2017). Consequently, the present meta-analysis also examines both positive and negative indicators of mental health.

### Adult Attachment and Mental Health

Adult attachment provides a theoretical framework to explain the interpersonal pathways linking romantic relationships and mental health (Mikulincer & Shaver, 2012). Specifically, adult attachment insecurity (i.e., higher levels of attachment anxiety and/or avoidance) is associated with a higher risk of psychopathology in adulthood, including anxiety, depression, relationship dysfunction, and reduced well-being (Feeney et al., 2003; Good, 2019; Kafetsios & Sideridis, 2006; Wei, Vogel, et al., 2005). In general, attachment processes govern how people regulate their behavior and emotions—especially in the context of relationships—and therefore are likely to play a unique role in predicting health-related behaviors (Pietromonaco et al., 2013). As one specific example, Pietromonaco et al. (2013) suggested that the mental representations of relationships (e.g., attachment orientations) may contribute to relationship processes (e.g., care seeking and caregiving), which may have implications for health outcomes (e.g., seeking care may reduce stress).

In sum, there is substantial reason to expect a close association between adult attachment and mental health. However, in empirical investigations of the links between adult attachment orientations and mental health, there is substantial variance in the magnitude of reported associations. For example, many studies have found that attachment anxiety is highly correlated with generalized anxiety (e.g.,  $r_s \geq .47$ ; Bekker & Croon, 2010; English et al., 2018; O'Neill & Murray, 2016). In contrast, other studies have reported a more moderate correlation between attachment anxiety and generalized anxiety (e.g.,  $r \leq .24$ ; Kidd et al., 2016; Meredith et al., 2016; Ng & Hou, 2017; Patel, 2008). Similarly, one large-scale study found a very large correlation between attachment avoidance and depression (e.g.,  $r \geq .47$ ; Gallagher et al., 2017; Joeng et al., 2017; Pandeya, 2017), whereas other studies have reported a moderate correlation between these variables (e.g.,  $r \leq .20$ ; Bekker & Croon, 2010; Gnilka et al., 2013; Necef, 2014; Ng & Hou, 2017; Rholes et al., 2011).

In addition to the variance in effect sizes reported across studies, most studies have looked at the associations between adult attachment and single indicator of mental health. Moreover, these studies have primarily utilized categorical measures of attachment (e.g., Dagan et al., 2018; Woodhouse et al., 2015), which suffer numerous limitations (e.g., lower individual variability, less statistical power, and lower scale reliability than continuous measures; Fraley & Waller, 1998; Segal et al., 2009). Finally, meta-analyses have largely neglected the associations between adult attachment and positive indicators of mental health have conducted, which limits our understanding of how attachment styles predict holistic mental

health. In sum, given that adult attachment insecurity predicts many indicators of mental health (e.g., depression, anxiety, loneliness, negative affect, life satisfaction, positive affect, self-esteem), a systematic meta-analysis is needed to assess the consistency and magnitude of such effects.

In order to provide a relatively comprehensive and systematic review of the relationship between adult attachment and mental health, the present meta-analysis was designed to include a wide swath of both positive and negative mental health outcomes (i.e., depression, anxiety, loneliness, emotion regulation difficulty, borderline personality disorder, negative affect, life satisfaction, positive affect, psychological well-being, and self-esteem). The results of this meta-analysis may have important implications for both mental health research and education.<sup>1</sup>

### Overview of the Present Meta-Analysis

In the present study, we conducted a quantitative meta-analysis of existing studies, examining the association between adult attachment and mental health across populations with different backgrounds and cultures. Such an analysis is important because it allows for a combination of effect sizes across studies and provides a more powerful estimate of true size of the correlation. In addition, we were also interested in evaluating participants' gender (percentage of women), age, ethnicity (percentage of sample that was White), relationship status (the percentage of married or cohabiting participants), source of subjects (clinical or nonclinical participants), study type (cross-sectional vs. longitudinal studies), and attachment measure used (experiences in close relationships [ECR] or non-ECR) as potential moderators of the association between adult attachment and mental health.

We selected the aforementioned moderators for a variety of reasons. First, many studies have found gender differences in mental health, finding that women have higher rates of *internalizing disorders* (e.g., anxiety), whereas men have higher rates of *externalizing disorders* (e.g., disruptive behavior; Donner & Lowry, 2013; Kessler et al., 2005; Rosenfield et al., 2000). Most self-report indicators of mental health (e.g., anxiety, depression) tap internalizing disorders; thus, we would expect higher levels of them in women. Furthermore, meta-analyses indicate that men tend to have higher attachment avoidance and lower anxiety than do women (Del Giudice, 2011). Consequently, the gender of participants may moderate the association between adult attachment and mental health outcomes.

Second, both adult attachment and well-being (e.g., positive affect, life satisfaction) fluctuate with age across adulthood (Charles et al., 2001; Chopik et al., 2013; Mroczek & Spiro, 2005). This raises the possibility that the correlation between attachment styles and well-being may be moderated by participants'

<sup>1</sup> Notably, the specific variables mentioned in our preregistration (on PROSPERO; <https://www.crd.york.ac.uk/prospero/#myprospero>) differ somewhat from the final variables included in our meta-analysis. For example, we originally intended to study the links between attachment dimensions and stress. However, after extensive literature review, we realized that the literature on some of our preregistered variables (e.g., attachment and stress) was quite small. Moreover, it also became apparent that attachment was linked to other important indicators of mental health, such as loneliness—which we included in our final meta-analysis.

age. Thus, we examined whether participants' age moderated the correlation between adult attachment and mental health.

Third, although attachment theory is considered to have cross-cultural applications, at least one study indicates that attachment patterns may vary based on race (Agishtein & Brumbaugh, 2013). Thus, racial differences may moderate the correlation between adult attachment and mental health outcomes (Merz & Consedine, 2012). In the present meta-analysis, we focused on possible moderating effects of race (i.e., percent of sample that was White) on the links between attachment and mental health.

Fourth, given that the adult attachment is typically measured by asking people about their current romantic partner (e.g., Fraley et al., 2000), individuals' relationship status may moderate the links between attachment and mental health. Indeed, previous studies have found that, as compared with their single peers, partnered individuals reported lower levels of attachment anxiety and avoidance (Chopik et al., 2013; Edelstein & Gillath, 2008; Kirkpatrick & Hazan, 1994). Thus, we examined whether relationship status moderated the correlation between adult attachment and mental health. That said, cohabitation with an unmarried romantic partner and marriage may have similar psychological effects, and many studies tend to report the proportion of married or cohabiting participants in total (Dagnino et al., 2017; Espeleta et al., 2017; Falgares et al., 2019; Kohlhoff & Barnett, 2013; Marques et al., 2018; Nielsen et al., 2017; O'Neill & Murray, 2016; Reizer, 2015; Segel-Karpas et al., 2013; Zech et al., 2006). Thus, we operationalized relationship status as cohabiting *and/or* married *versus* not.

Fifth, attachment-related studies have been conducted on both nonclinical groups (e.g., students) and clinical groups (e.g., patients with psychiatric symptoms). Generally, clinical populations have higher levels of anxiety and avoidance than does the general population (Bakermans-Kranenburg & van IJzendoorn, 2009). Furthermore, some psychiatric symptoms are closely related to attachment insecurity, such as borderline personality disorder (Bekker & Croon, 2010). Thus, we examined whether participants being drawn from clinical versus nonclinical sources moderated the links between adult attachment and mental health.

Sixth, recent research suggests that attachment and mental health should be more strongly correlated when they are measured concurrently as opposed to at separate times (Pallini et al., 2018). Indeed, numerous studies suggest that the relationship between adult attachment and mental health outcomes may be different in cross-sectional as opposed to longitudinal studies (Axfors et al., 2017; Givertz & Safford, 2011). Thus, we examined the potential moderating effect of cross-sectional versus longitudinal studies on the relation between adult attachment and mental health.

Seventh, although most studies of adult attachment tend to use the ECR scale (Brennan et al., 1998) or variant versions, other studies use different measures. Given that measurement of the construct can affect its correlates, we examined the potential moderating effect of attachment measures (i.e., ECR or non-ECR) on the association between adult attachment and mental health.

In sum, we examined gender, age, race (White vs. non-White), relationship status (married/cohabiting vs. not), clinical versus nonclinical participants, cross-sectional versus longitudinal study design, and attachment measure (ECR vs. not) as potential moderators of the association between adult attachment and mental health outcomes.

What should we expect to find? Attachment anxiety and avoidance are two distinct dimensions, and many studies suggest that they may have different relationships with psychopathology (Marganska et al., 2013; Riggs & Han, 2009). Specifically, some studies suggest that attachment anxiety may be more strongly associated with mental health than attachment avoidance (Chatziioannidis et al., 2019; Cooper et al., 1998; Wei, Mallinckrodt, et al., 2005). Thus, we expect that our meta-analysis will reveal that both attachment anxiety and avoidance predict worse mental health—across both positive and negative indicators of mental health—but that the associations will be stronger for anxiety. All told, these findings will help advance knowledge about the impact of adult attachment on mental health during the adulthood.

## Method

### Open Science

This meta-analysis was preregistered on the International Prospective Register for Systematic Reviews (PROSPERO; registration number CRD42020152864). All data and analysis code are available on OSF (<https://osf.io/4h65e/>).

### Study Selection and Inclusion Criteria

#### Literature Review

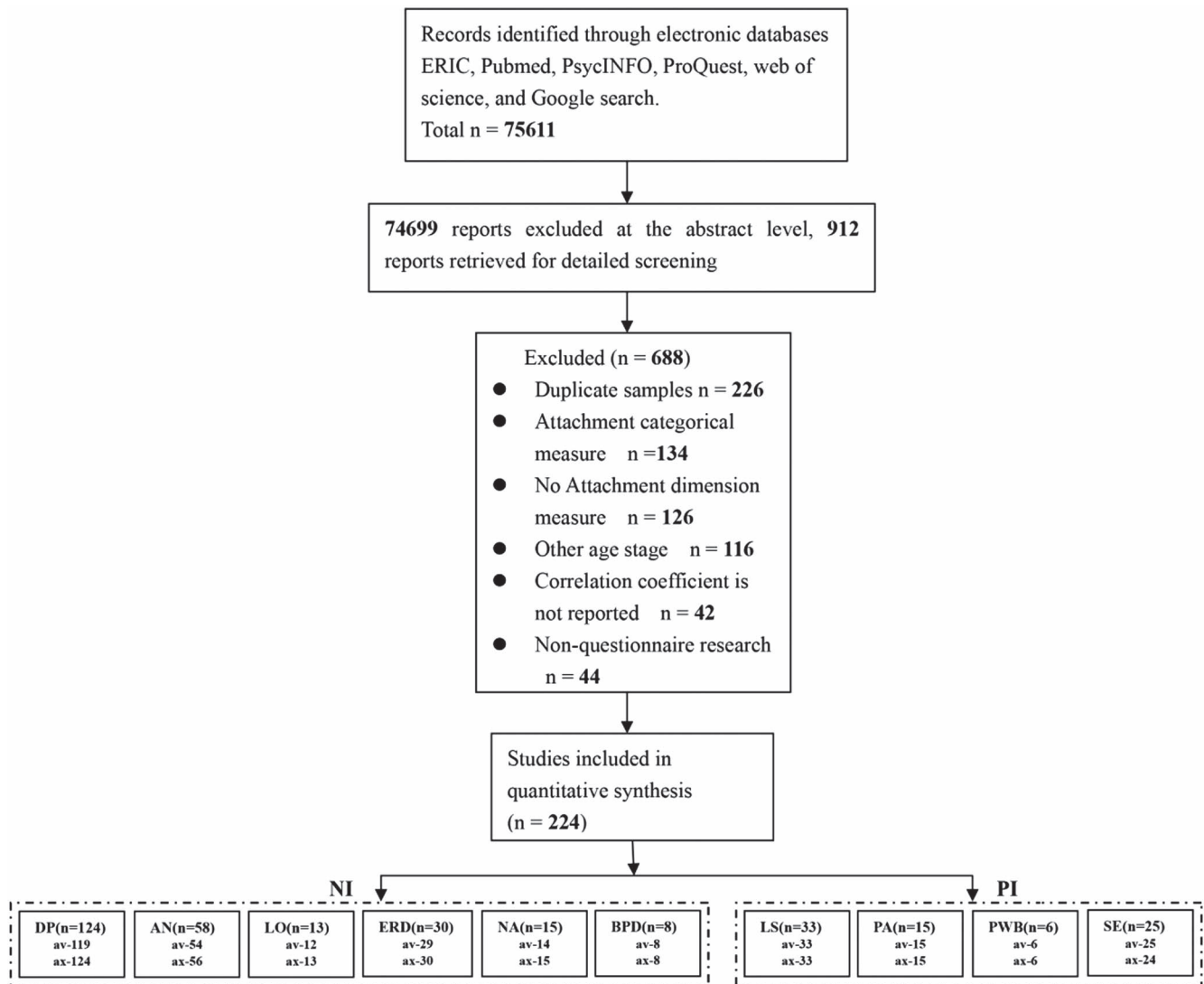
We retrieved peer-reviewed articles and master/doctoral dissertations investigating the relation between adult attachment and mental health in November 2019 by systematically searching Education Resource Information Center, Pubmed, PsycINFO, ProQuest databases (ProQuest Central and ProQuest Digital Dissertations), web of science, and Google.<sup>2</sup> Our search keywords included many possible combinations of terms reflecting adult attachment (adult attachment, attachment style, attachment, romantic attachment, attachment insecurity, insecure attachment, attachment security, attachment anxiety, attachment avoidance) and mental health (depression, anxiety, loneliness, emotion regulation, emotion dysregulation, negative affect, borderline personality disorder, mental disorders, well-being, subject well-being, psychological well-being, mental health, life satisfaction, positive affect, and self-esteem). Subsequently, abstracts of articles were reviewed and the full text of an article was read whenever a article's title or abstract indicated that the study might be relevant to the present analyses. In addition, to ensure that all studies on this topic were included, the references from relevant articles were also reviewed. Finally, if we could not compute effect sizes from the information provided in the articles, we sent an email to the corresponding author(s). For detailed information on our study selection procedure, see Figure 1.

#### Inclusion Criteria

Studies were incorporated into this meta-analysis if they (a) examined human participants; (b) measured adult attachment from a dimensional perspective; (c) measured mental health, including depression, anxiety, loneliness, emotion regulation difficulty,

<sup>2</sup> In our preregistration, we also intended to search relevant literature in MEDLINE database. However, we were unable to access the MEDLINE database.

**Figure 1**  
Flow Chart for Study Selection



*Note.* av = attachment avoidance; ax = attachment anxiety; NI = negative indicator of mental health; DP = depression; AN = generalized anxiety; LO = loneliness; ERD = emotion regulation difficulty; NA = negative affect; BPD = borderline personality disorder; PI = positive indicator of mental health; LS = life satisfaction; PA = positive affect; PWB = psychological well-being; SE = self-esteem.

negative affect, borderline personality disorder, life satisfaction, positive affect, psychological well-being, and/or self-esteem; (d) reported Pearson's correlation coefficients between adult attachment and the indicators of mental health; (e) adopted subjective and complete measures of adult attachment and mental health using questionnaire surveys; (f) utilized cross-sectional or longitudinal design; and (g) the study was written in English.

### Selected Studies

Properties of included studies, including the distribution of studies that included each variable of interest are listed in Table 1.

### Coding of Variables

For each study, we coded a variety of variables. First, we coded which attachment dimension(s) the study investigated (i.e., anxiety and/or avoidance). Second, we coded whether the study examined a positive indicator of mental health (e.g., life satisfaction) or a negative one (e.g., loneliness). We also coded source characteristics, including (a) author, (b) publication year, (c) publication type (i.e., peer-reviewed or dissertation report), and (d) country of data collection.

We also coded study- and sample-level properties, including (a) participant mean age, (b) sample size, (c) gender (percent of women

**Table 1**  
*Properties of Selected Studies*

Articles type	<i>N</i>
Peer-reviewed	173
Master/doctoral dissertations	51
Total	224
Variables included	
Attachment avoidance—depression	119
Attachment anxiety—depression	124
Attachment avoidance—generalized anxiety	54
Attachment anxiety—generalized anxiety	56
Attachment avoidance—loneliness	12
Attachment anxiety—loneliness	13
Attachment avoidance—emotion regulation difficulty	29
Attachment anxiety—emotion regulation difficulty	30
Attachment avoidance—negative affect	14
Attachment anxiety—negative affect	15
Attachment avoidance—borderline personality disorder	8
Attachment anxiety—borderline personality disorder	8
Attachment avoidance—life satisfaction	33
Attachment anxiety—life satisfaction	33
Attachment avoidance—positive affect	15
Attachment anxiety—positive affect	15
Attachment avoidance—psychological well-being	6
Attachment anxiety—psychological well-being	6
Attachment avoidance—self-esteem	25
Attachment anxiety—self-esteem	24

in the study), (d) race (percent of sample that identified as White or Caucasian), (e) relationship status (percent of married or cohabiting participants in the study), (f) whether the study was longitudinal versus cross-sectional, (g) whether the participants were drawn from clinical or nonclinical sources, (h) which attachment dimensions were investigated, (i) whether the study used the ECR or an alternative measure, (j) which specific indicators of mental health the study included, (k) the intercorrelations between attachment anxiety and avoidance, (l) the study's effect sizes between adult attachment dimension and mental health, and (m) description of the source of the sample.

Among the study- and sample-level properties, gender, race, and relationship status were coded as continuous variables. In contrast, age groups, longitudinal versus cross-section study design, and clinical versus nonclinical samples were coded as categorical variables. In order to compare cross-sectional and longitudinal associations between adult attachment and mental health outcomes, we only extracted longitudinal associations from longitudinal studies (e.g., correlations between baseline attachment dimensions and depression at follow-ups). More specifically, if the study contained only one follow-up time point (such as T2), we extracted T2 correlation. In contrast, if the study contained multiple follow-up time points, we extracted all follow-up correlations and calculated the mean of these correlations.

Finally, if the studies reported more than one sample, the effect sizes of each sample were included in current meta-analysis. If the studies analyzed men and women separately, these analyses were included in our meta-analysis as two unique samples. If studies reported multiple measures of the *same* construct (e.g., two measures of attachment anxiety), the mean effect size for the construct

within the study was calculated and coded. When studies reported multiple outcomes (such as depression, anxiety, loneliness, and life satisfaction), multiple effect sizes were coded. If studies reported duplicate samples (e.g., two articles used the same sample and reported similar results), only one instance of each unique sample was included and coded (i.e., if the samples of the master/doctoral dissertation and peer-reviewed article were redundant, the effect sizes of peer-reviewed article were reported).

To improve the accuracy of coding, two authors (Xing Zhang and Jihang Li) independently coded all primary studies that were included in present meta-analysis. Interrater reliability was assessed by calculating intraclass correlation (ICC) for the continuous variables and by calculating kappa coefficients (*k*) for categorical variables. If there were discrepancies between coders, both coders independently reviewed the study again, and possible errors were identified and corrected after the two coders came to an agreement.

### Meta-Analytic Procedure

The effect size of interest was the Pearson's *r* between adult attachment (i.e., attachment avoidance or anxiety) and indicators of mental health (e.g., depression, anxiety, loneliness, LS). Given that correlations become increasingly skewed as the value moves away from zero, all *r*s were converted to Fisher's adjusted *Z* scale (*z*), which is nearly normally distributed (Borenstein et al., 2011; Rosenthal, 1986). Subsequently, the variance (*v*) and SE of each effect size were calculated. Finally, all Fisher's *z* values were converted back to correlation coefficients (*r*) for ease of interpretation (Xie et al., 2020). Thus, the meta-analyses were conducted based on Fisher's *z* values to obtain unbiased estimates of the correlation coefficients (Shadish & Haddock, 2009). We used the *robumeta* package (Fisher & Tipton, 2015) in the R statistical environment (R Core Team, 2016) to synthesize the effect sizes of the bivariate relations and to test the moderation effects. In addition, we used the *metaSEM* package (Cheung, 2015b) to compute the correlations between each attachment dimension (e.g., anxiety) and mental health outcomes, controlling the other attachment dimension (e.g., avoidance).

First, we conducted a series of bivariate meta-analyses using robust variance estimation (RVE; 4 for the relations between adult attachment and positive or negative mental health indicators, 20 for the relations between adult attachment and the specific mental health outcomes). Given the multifaceted nature of mental health, most studies reported more than one outcome. Averaging effect sizes within studies without accounting for within-study dependencies can alter or obscure true effect size estimates (Scammacca et al., 2014). Thus, to account for within-study dependencies in effect size estimates, we employed the meta-analytic technique of RVE (Hedges et al., 2010; Tanner-Smith & Tipton, 2014; Xie et al., 2020; Yang et al., 2018). Specifically, we used the *robu()* function of the *robumeta* package, Version 2.0, in R, Version 3.5.1, to conduct these analyses using correlated weights (Hedges et al., 2010) and small sample corrections (Tipton, 2015). The value of  $\rho$  was set to the recommended 0.80 to account for dependency between effect size estimates (Tanner-Smith & Tipton, 2014). Furthermore, we assessed the magnitude of heterogeneity between study-average effects with  $\tau^2$  (Deeks et al., 2008), and with  $I^2$  indicating the

proportion of variance due to variability in true effects rather than sampling error (Borenstein et al., 2017; Higgins & Thompson, 2002). We computed effect sizes corrected for measurement unreliability using Spearman's correction for attenuation (Hunter & Schmidt, 2004). To test whether the relations were moderated by included moderators, we estimated mixed-effects RVE metaregression models. Following procedures from prior research (Yang et al., 2018), we conducted metaregression for outcomes in which there were at least 10 samples per moderator to test for potential moderation effects.

Second, we assessed the unique associations of attachment avoidance and attachment anxiety with the 10 mental health outcomes by adopting a two-stage structural equation modeling (TSSEM) approach to meta-analytic structural equation modeling (MASEM; Cheung, 2015a). In the first stage, the correlation matrices from all samples were synthesized into a pooled correlation matrix using multivariate methods, taking into account the covariance between the included correlations and weighting each cell by its respective sample size. In the second stage, based on the pooled correlation matrix, the structural models were run using weighted least square estimation. For each mental health variable, we estimated a separate Structural Equation Modeling (SEM) model with attachment avoidance and attachment anxiety as simultaneous predictors of the mental health outcome. In the case that there were multiple effect sizes describing the same association from one sample, the averaged effect sizes within the sample were computed. TSSEM handles missing correlations with the use of maximum likelihood estimation (Cheung & Cheung, 2016). Our data and related R scripts are available via the OSF: <https://osf.io/4h65e/>.

## Publication Bias

Funnel plots and Egger's test (Egger et al., 1997) were used to test for publication bias. If the funnel plots are symmetrical and the  $p$  values of Egger's test are greater than .05, publication bias likely does not exist to any significant degree.

## Results

### Preliminary Analyses

#### Study Characteristics

The final sample consisted of 224 studies, with a total of 245 samples (i.e.,  $k = 245$ ). The interrater agreement between the two raters was satisfactory (ICCs ranged from .976 to .993, and kappas ranged from 0.923 to 1.00). All disagreements were resolved through discussion, and 100% consensus was reached before data analysis. For the specific correlation coefficient distribution, please see Table 2. And Table 3 describes each study and its characteristics.

#### Assessment of Publication Bias

As shown in Figures 2–11, the funnel plots were reasonably symmetrical. Furthermore, following procedures used in prior research (Peng et al., 2016; Xie et al., 2020), we used the robumeta package in R 3.6.3 to conduct an Egger's test for publication bias.

**Table 2**

*Distribution of Correlation Coefficient in Final Analysis in Meta-Analysis*

Adult attachment-mental health outcomes	The number of correlation coefficient
Overall	
AV-NI	180 (280 correlations)
AV-PI	62 (89 correlations)
AX-NI	187 (290 correlations)
AX-PI	61 (88 correlations)
Individual outcomes	
Att-DP	124 (correlations: AV-145, AX-150)
Att-AN	58 (correlations: AV-61, AX-63)
Att-LO	13 (correlations: AV-15, AX-16)
Att-ERD	30 (correlations: AV-35, AX-34)
Att-NA	15 (correlations: AV-16, AX-17)
Att-BPD	8 (correlations: AV-9, AX-9)
Att-LS	33 (correlations: AV-39, AX-39)
Att-PA	15 (correlations: AV-17, AX-17)
Att-PWB	6 (correlations: AV-7, AX-7)
Att-SE	25 (correlations: AV-26, AX-25)

*Note.* AV = attachment avoidance; AX = attachment anxiety; NI = negative indicate of mental health; PI = positive indicate of mental health; Att = attachment; DP = depression; AN = generalized anxiety; LO = loneliness; ERD = emotion regulation difficulty; NA = negative affect; BPD = borderline personality disorder; LS = life satisfaction; PA = positive affect; PWB = psychological well-being; SE = self-esteem.

The tests for publication bias returned nonsignificant for the associations between adult attachment and mental health outcomes ( $p > .05$ ; see Table 4). In sum, there appeared to be little-to-no publication bias in the included studies.

## Primary Analyses of Adult Attachment and Mental Health

### Overall Relationship Between Adult Attachment and Mental Health

We first tested for an overall association between attachment orientations and positive and negative indicators of mental health. Subsequently, we explored the correlations between attachment orientations and specific indicators of mental health. With respect to the former, results indicated that attachment anxiety and avoidance were both moderately related to poor mental health. Specifically, attachment avoidance was positively correlated with negative indicators of mental health ( $r = .28$ , 95% CI [0.26, 0.31],  $p < .01$ ), and it was negatively correlated with positive indicators of mental health ( $r = -.24$ , 95% CI [-0.31, -0.20],  $p < .01$ ). Likewise, attachment anxiety was positively correlated with negative indicators of mental health ( $r = .42$ , 95% CI [0.42, 0.48],  $p < .01$ ), and it was negatively correlated with positive indicators of mental health ( $r = -0.29$ , 95% CI [-0.37, -0.23],  $p < .01$ ). The average correlation in personality and social psychology is approximately  $r = .21$  (Richard et al., 2003). Thus, attachment generally had approximately average to somewhat-bigger-than-average associations with mental health.

**Table 3**  
*Effect Sizes and Study Characteristics*

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	din <sup>h</sup>	mea <sup>i</sup>	R <sub>0-ax</sub>	R	Description of source of the sample
Aarts et al. (2014)	The Netherlands	1	68.6	NR	250	43.9	83.6	0	1	AN	AV	ECR-R	0.58	0.41	Participants were patients who consecutively referred candidates for bariatric surgery assessed by the Slotervaart bariatric surgery clinic in Amsterdam.
Akdoğan (2017)	Turkey	1	NR	NR	422	20.98	67.06	1	1	LO	AV	ECR-R	0.43	0.42	Participants were students.
Arcuri (2009)	Canada	0	41.4	73.4	169	18.15	75.15	1	1	DP	AV	ECR	0.31	0.35	Participants were first-year undergraduate students.
Atabay (2017)	Turkey	0	9.4	NR	425	24.87	NR	1	1	LO	AV	ECR-R	0.28	0.41	Participants were individuals with age ranged from 18 to 62 years.
Axfors et al. (2017)	Sweden	1	100	100	1,618	31.4	100	1	0	DP	AV	ASQ-S	0.59	0.30	Participants were Swedish-speaking pregnant women.
Beeney et al. (2015)	The United States	1	31	57	150	44.9	65	0	1	BDP	AV	ECR-R	0.40	0.42	Participants were adult participants recruited for a study of interpersonal and emotional functioning among individuals with borderline personality disorder.
Bekker and Croon (2010)	Netherlands	1	NR	NR	69	39.94	71.01	0	1	AN	AV	ASQ	0.41	0.19	Dutch primary mental health care clients whose diagnoses were anxiety and mood disorders.
Berlin et al. (2011)	The United States	1	100	48	490	22.8	100	1	1	DP	AV	ASQ	0.36	0.44	105 Dutch nonclients who were college students.
Besser et al. (2012)	Israel	1	100	NR	389	24.56	56.56	1	1	DP	AV	ECR-R	0.25	0.20	Participants for the present study came from six sites of the Early Head Start National Research and Evaluation Project, program group.
											AX			0.22	Participants for the present study came from six sites of the Early Head Start National Research and Evaluation Project, control group.
											AX			0.32	Participants were Jewish Israeli community adults.

(table continues)

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**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>no-ax</sub>	R	Description of source of the sample
Bishop et al. (2019)	The United States	1	NR	72.3	299	18–25	40.4	1	1	DP	AV AX	ECR	0.22	-0.07 0.36	Participant were students representing more than 60 undergraduate majors were recruited from introductory psychology courses at a large, public, southeastern university.
Blair (2015)	The United States	0	NR	36.5	216	21.54	64.81	1	1	LS	AV AX	ECR	0.47	0.37 0.58	Participants are 18 years of age and above, enrolled in college.
Boldero et al. (2009)	Australia	1	NR	NR	101	20.64	70.23	1	1	BPD	AV AX	ECR	0.20	0.41 0.50	Participants were students.
Bradford et al. (2017)	The United States	1	100	86	680	33.25	0	1	1	DP	AV AX	AAQ	0.30	0.62 0.60 0.29 0.37	Participants were convenience sample of married or remarried, opposite-sex couple (husband).
Bradstreet et al. (2018)	United Kingdom	1	NR	84.3	680	31.36	100	1	1	DP	AV AX	PAM	0.36	0.35 0.33	Participants were convenience sample of married or remarried, opposite-sex couples (wife).
Brandão et al. (2020)	Portugal	1	100	NR	119	37	0	1	1	PWB	AV AX	ECR-RS	0.26	0.18 0.32	A convenience sample approach was employed with participants recruited to the study using a number of approaches.
Braunstein-Bercovitz et al. (2012)	Israel	1	NR	100	200	23.7	84.5	1	1	AN	AV AX	ECR	0.29	-0.23 -0.42 -0.24	Participants were heterosexual couples.
Brenning et al. (2011)	Belgium	1	100	NR	303	44	100	1	1	DP	AV AX	ECR-R	0.60	0.63 0.38	Participants were college freshmen.
Brownlee (2016)	The United States	0	72	87	179	NR	83	1	1	DP	AV AX	ECR	0.46	0.62 0.33 0.51	Participants were mothers of early adolescent.
Buller (2016)	Australia	0	NR	NR	213	38.8	77.93	1	1	ERD	AV AX	ASQ	0.61	0.51 0.68	Participants are individuals (over the age of 18) who have experienced at least one adverse event in childhood.
Burmette et al. (2009)	The United States	1	0.9	87.2	221	NR	63.8	1	1	DP	AV AX	ECR-R	0.43	0.25 0.52	Participants were recruited from the general public and the Hunter Medical Research Institute.
Cantazaro and Wei (2010)	The United States	1	1.7	73	424	19.45	62.03	1	1	DP	AV AX	ECR	0.13	0.20 0.34	Participants were undergraduate students.

(table continues)

**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>95-ax</sub>	R	Description of source of the sample
Carmichael and Reis (2005)	The United States	1	100	NR	78	39.3	0	1	1	DP	AV	ECR (18-item version)	0.37	0.22	Participants were 78 married couples, husband.
					78	37.2	100	1	1	DP	AV	AV	0.56	0.40	Participants were 78 married couples, wife.
Camelley et al. (2018)	United Kingdom	1	41.7	68.8	48	50.9	60.42	0	0	AN	AV	ECR-S	0.008	0.05	Participants were 48 adults with a diagnosis of a primary depressive disorder who were undergoing at least one psychotropic drug treatment.
										DP	AV	AX	0.08	0.17	Participants were college students in China.
Liu and Ma (2019)	Mainland China	1	0	0	463	19.94	74.3	1	1	ERD	AV	ECR-S	0.17	0.12	Participants consisted of adult couples in the Washington, DC (female).
Cheche Hoover and Jackson (2021)	The United States	1	100	59.3	124	40.72	100	1	1	ERD	AV	ECR	-0.05	0.36	Participants consisted of adult couples in the Washington, DC (male).
					124	42.2	0	1	1	ERD	AX	AX	0.09	0.14	Participants were 110 couples in the Washington, DC (female).
Cheche (2017)	The United States	0	NR	57.3	110	40.98	100	1	1	ERD	AV	ECR	-0.01	0.36	Participants were 110 couples in the Washington, DC (female).
Kuan Mak et al. (2010)	China (Hong Kong)	1	NR	0	150	20.44	54	1	1	DP	AX	AX	0.13	0.15	Participants were 110 couples in the Washington, DC (male).
					209	19.03	52.15	1	1	DP	AX	AX	0.14	0.57	Participants were students from Hong Kong.
Chow and Ruhl (2014)	The United States	1	53	89	164	19.1	49.7	1	1	DP	AV	ECR	0.15	0.22	Participants were students from United States.
Clear et al. (2020)	Australia	1	100	70	383	19.6	47.26	1	1	DP	AX	ECR-S	0.37	0.40	Participants were emerging adults.
Conradi et al. (2018)	The Netherlands	1	NR	NR	103	44.91	72.8	1	0	DP	AV	ECR	NR	0.35	Participants were undergraduate university students.
										DP	AX	AX	NR	0.35	Participants were primary care patients meeting criteria for a current or recent Major Depressive Episode.
Cook et al. (2017)	The United States	1	NR	NR	228	25	0	0	1	DP	AV	ECR-R	0.57	0.39	Participants were young Black gay and bisexual men.
Cooke et al. (2019)	Canada	1	100	81.8	1994	36.48	100	1	1	DP	AV	ECR-S	0.46	0.46	Participants were pregnant women.
					190	22.2	76.32	1	1	DP	AV	ECR-RS	0.38	0.17	Participants were university students.
Corcoran and McNulty (2018)	Ireland	1	NR	NR	190	22.2	76.32	1	1	DP	AX	AX	0.30	0.30	Participants were university students.
Crockett (2014)	The United States	0	56.1	82.8	203	27.64	89.7	1	1	ERD	AV	ECR-R	0.55	0.38	Participants were a geographically diverse sample of young adults.
										AX	AX	AX		0.56	

(table continues)

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**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>0-ax</sub>	R	Description of source of the sample
Cronin et al. (2019)	Australia	1	NR	80.2	101	39.78	52.48	1	1	LS	AV AX	ECR-S	0.35	-0.31 -0.25	Participants were generally well-educated, with most having attained an undergraduate or postgraduate university qualification.
Crow and Levy (2019)	The United States	1	NR	78	950	19.18	62.9	1	1	BPD	AV AX	ECR-R	0.27	0.15 0.39	Participants were undergraduates in China.
Cusimano and Riggs (2013)	The United States	1	NR	67.7	330	20.4	71.82	1	1	AN	AV AX	ECR	0.18	0.13 0.41	Participants were undergraduate students.
Dagnino et al. (2017)	Chile	1	47.5	NR	70	41.47	87	0	1	DP	AV AX	ECR	0.20	0.12 0.50	Participants were adult outpatients of a mental health clinic in Santiago.
Dan et al. (2014)	Israel	1	NR	NR	172	23.7	77.33	1	1	SE	AV AX	ECR	0.02	-0.33 -0.43	Participants were first-year college students.
Davidson (2014)	The United States	0	NR	53.3	60	33.2	50	1	0	DP	AV AX	ECR	NR	0.24 0.52	Participants were person with a principal diagnosis of generalized social anxiety disorder.
Demirli and Demir (2014)	Turkey	1	NR	NR	473	21.1	59.4	1	1	LO	AV AX	ECR-R	0.41	0.33 0.28	Participants were students at Ankara University.
Dilmaç et al. (2009)	Turkey	1	NR	NR	480	20.87	55.63	1	1	AN	AV AX	ECR	NR	0.21 0.27	Participants were undergraduates of Selçuk University.
Dodd et al. (2015)	The United States	1	47.1	81	106	43.8	35.8	0	1	DP	AV AX	ECR	0.29	0.37 0.40	Participants were inpatient rehabilitation at Baylor Institute for Rehabilitation.
Downing (2008)	The United States	0	36.5	75.9	241	30.22	70.95	1	1	LO	AV AX	ECR	0.34	0.37 0.50	Participation was open to people engaged in either a dating or marital relationship, as well as those not involved in a dating or marital relationship.
Elwood and Williams (2007)	The United States	1	NR	89	287	20.18	76	1	1	AN	AV AX	ECR	0.03	0.18 0.33	Participants were undergraduate students.
English et al. (2018)	Canada	1	NR	NR	126	18.98	100	1	1	AN	AV AX	ECR	0.37	0.38	Participants were university students in Canada.
Espeleta et al. (2017)	The United States	1	3.3	91.4	830	18.75	100	1	1	ER	AV AX	ECR	0.33	0.48 0.30	Participants were primarily heterosexual college women.
Falgares et al. (2019)	Italy	1	56.4	100	62	43.8	29	1	0	DP	AV AX	ASQ	0.52	0.53 0.41	Participants were recruited from the Prosthetic Centre of the Italian Workers' Compensation Authority.
Felton and Jowett (2015)	United Kingdom	1	NR	88	241	20.74	64	1	1	NA	AV AX	AAS (Coach)	0.26	0.46 0.18 0.17	Participants were 241 athletes.
										DP	AV AX			0.28 0.27	
										LS	AV AX			-0.21 -0.09	

(table continues)

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**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>no-ax</sub>	R	Description of source of the sample		
Felton and Jowett (2013)	United Kingdom	1	NR	87	430	20.4	61	1	1	NA	AV	ECR-S	0.17	0.21	Participants were Athletes from a range of sports and competition levels.		
																AX	0.38
Ferezezi and Marshall (2016)	United Kingdom	1	NR	36	258	27.81	61.63	1	1	LS	AV	RSQ	0.51	-0.36	Participants were a first or a second/later generation migrant.		
																AX	-0.23
																AV	-0.16
																AX	-0.16
																AX	-0.55
Gallagher et al. (2017)	Australia	1	100	NR	120	56.5	0	1	1	DP	AV	ECR	0.49	0.47	The study sample included 127 heterosexual couples (males).		
																AX	0.55
																AV	0.57
																AX	0.47
Gallagher (2015)	The United States	0	93.2	82	132	NR	100	1	1	NA	AV	ECR	0.80	0.35	Participants were women with at least one child between the ages of 2 and 12 years residing in the home.		
																AX	0.38
Garrison et al. (2012)	The United States	1	2.48	84	121	19.76	79.34	1	1	DP	AV	ECR	0.34	0.28	Participants were college students.		
																AX	0.55
Garrison (2014)	The United States	0	2.3	71.1	745	19.9	64.4	1	1	DP	AX	ECR	0.20	0.25	Participants were students from a large public university.		
																AX	0.52
Gillath et al. (2011)	The United States	1	NR	>95	26	72.8	57.69	1	1	DP	AV	ECR	0.07	0.30	Participants were older adults who recently (within the last 6 months) became the primary caregivers for their spouse because of a stroke or onset of dementia.		
																AX	0.37
Gimarc (2019)	The United States	0	2	59.5	306	20.74	70.9	1	1	AN	AV	ECR-S	0.28	0.28	Participants were individuals who are in a self-defined committed relationship.		
																AX	0.42
Gilchalan (2015)	Iran	0	100	NR	154	NR	50	1	1	LS	AV	ECR-R	0.56	-0.48	Participants were Iranian married heterosexual couples.		
																AX	-0.28
Givertz and Safford (2011)	The United States	1	100	NR	99	21.95	100	1	0	DP	AV	ECR	0.57	0.25	Participant were dating couples of females.		
																AX	0.44
Givertz et al. (2013)	The United States	1	100	NR	225	47.98	0	1	1	LO	AV	ECR-R	0.71	0.56	Participants were 225 marital dyads (males).		
																AX	0.47
						44	100	1	1	LO	AV	ECR-R	0.78	0.57	Participants were 225 marital dyads (females).		
																AX	0.56

(table continues)

**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>no-ax</sub>	R	Description of source of the sample
Gnilka et al. (2013)	The United States	1	NR	70.6	180	21.2	74.4	1	1	DP	AV AX	ECR	0.28	0.17	Participants were recruited from introductory undergraduate psychology research pools.
Göbel et al. (2019)	Germany	1	100	NR	93	32.6	100	1	1	AN	AV AX	ECR-R	0.42	0.47	Participants were dating couples of females from Hamburg in Germany.
Goldstein et al. (2019)	Canada	1	39.2	50	203	21.15	64.7	1	1	ERD	AV AX	ECR-R	0.33	0.29	Participants were emerging adults.
Good (2019)	The United States	0	NR	57.2	152	20	75	1	1	AN ERD	AX AX	ECR-R	NR	0.56	Participants were Western Michigan University students over the age of 18 recruited from undergraduate courses.
Goodall (2015)	United Kingdom	1	NR	NR	174	32	82.76	1	1	SE	AV AX	ECR	0.58	-0.44	Participants were contacted via the Queen Margaret University.
Gormley and McNiel (2010)	The United States	1	15	59	109	40.7	41	0	1	DP	AV AX	ECR	0.36	0.21	The participants were patients with psychological disorders.
Green et al. (2017)	United Kingdom	1	39.1	95.7	23	37.74	82.6	0	1	DP	AX AX AX	ASQ	NR	0.58	Participants were patients with psychogenic nonepileptic seizures.
Güllüm and Dağ (2014)	Turkey	1	NR	NR	294	NR	0	1	1	DP	AV AX	ECR-R	0.26	0.14	Participants were men students from nine different provinces.
Guzmán-González, Lafontaine, et al. (2016)	Chile	1	NR	NR	239	21.46	0	1	1	ERD	AV AX	ECR	0.10	0.23	Participants were male undergraduate students.
Guzmán-González, Barrientos, et al. (2016)	Chile	1	NR	NR	460	27.8	42.6	1	1	LS	AX AX	ECR	0.11	0.42	Participants were gay men and lesbian group.
Hairston et al. (2018)	Israel	1	NR	0	114	31.73	100	1	1	DP	AV AX	AAQ	0.43	0.27	Participants were mothers of infants 4–12 weeks of age.
Haller (2016)	Canada	0	NR	37	141	NR	64.7	1	1	ERD	AV AX	ASQ	0.45	0.45	Participants were recruited from the community and from a large, urban university in downtown Toronto.
Han (2017)	The United States	1	NR	NR	338	21.18	58.6	1	1	SE	AV AX	ECR-S	0.18	-0.24	Participants were undergraduates enrolled at a regional Midwestern university in the United States.

(table continues)

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**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dir <sup>h</sup>	mea <sup>i</sup>	R <sub>av-ax</sub>	R	Description of source of the sample
Haner (2018)	The United States	0	NR	45.8	585	20.7	51.3	1	1	AN	AV	ECR-R	-0.23	-0.13	Participants were college students in the United States.
											AX				
											AV				
Hankin et al. (2005)	The United States	1	NR	89	187	18.4	81.4	1	0	DP	AV	ASQ	0.15	0.37	Participants were undergraduate students at a large southeastern university (Study 1).
											AX				
											AV				
Heene et al. (2005)	Belgium	1	100	NR	415	34.18	100	1	1	DP	AV	AAS	0.56	0.36	Participants were couples who had to be married or cohabiting for at least 1 year, wife.
											AX				
											AV				
Herbster (2016)	The United States	0	9.6	73	174	NR	75.3	1	1	DP	AV	ECR	0.32	0.35	Participants are students from a private, northeastern Pennsylvania university.
											AX				
											AV				
Hiebler-Ragger et al. (2016)	Austria	1	NR	NR	481	23	76	1	1	DP	AV	ECR	0.40	0.26	Participants were students and postgraduates at the University of Graz, Austria.
											AX				
											AV				
Hinnen et al. (2009)	Netherlands	1	83.75	NR	437	37	91.08	1	1	LS	AV	ECR-R	0.58	-0.52	Participants were invited from the website.
											AX				
											AV				
Homa and Chow (2014)	The United States	1	NR	83.9	205	18.93	66	1	1	DP	AV	ECR	0.33	0.35	Participants were 212 pairs of same-sex friends attending a Midwestern university.
											AX				
											AV				
Huang et al. (2019)	China (Tai wan)	1	NR	0	96	20.7	60.42	1	0	DP	AX	R-AAS	0.25	0.46	Participants were depression-prone individuals.
											AV				
											AV				
Izchaky et al. (2017)	Israel	1	92.66	NR	504	47.16	NR	0	1	LO	AV	ECR	0.34	0.72	Participants were veterans.
											AX				
											AV				
Jakovina et al. (2018)	Croatia	1	NR	NR	100	20.4	100	1	1	ERD	AV	ECR-R	0.63	0.45	The study included a total of 100 female participants, the clinical group consisted of 50 patients suffering from Bulimia nervosa, the control group consisted of 50 subjects that were matched with participants of clinical groups to the essential characteristics.
											AX				
											AV				

(table continues)

**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>95-ax</sub>	R	Description of source of the sample
Jin and Wang (2018)	The United States	1	NR	49	217	26	48.4	1	1	DP	AV	ECR	0.26	0.22	Participants were international students recruited from a large public university in Southwestern United States.
														0.31	
														0.34	
Jinyao et al. (2012)	Mainland China	1	NR	0	662	20.11	52.6	1	1	DP	AV	ASQ	0.47	0.31	Participants were university students from mainland China.
														0.45	
														0.19	
Joeng et al. (2017)	South Korea	1	NR	0	473	25.26	39	1	1	DP	AV	ECR-R	0.40	0.50	Participants were Korean college students.
														0.40	
														0.50	
Jurgensen (2019)	The United States	0	34.5	75.9	87	33.85	0	1	1	DP	AV	ECR	0.45	0.37	Participants were recruited via an internet marketplace called Amazon's Mechanical Turk.
														0.56	
														0.71	
Kafetsios and Sideridis (2006)	Greece	1	74	NR	99	18-34	69	1	1	AN	AV	ECR	0.13	0.19	Participants were young adults in an urban area in northern Greece.
														0.37	
														0.16	
Kankotan (2008)	Turkey	0	NR	NR	389	21.3	74.04	1	1	NA	AV	ECR	0.16	0.13	Participants were students of the Faculty of Education at Middle East Technical University.
														0.41	
														-0.18	
Katz et al. (2009)	The United States	1	NR	NR	163	NR	100	1	1	DP	AX	AAS	NR	-0.12	Participants were undergraduate women.
														0.49	
														0.29	
Keleher et al. (2010)	The United States	1	NR	77	163	30	100	1	1	DP	AV	ECR-S	0.38	0.29	Participants were self-identified as lesbian women recruited either from the internet or in person through LGBT (lesbian, gay, bisexual, and transgender) student associations or community websites.
														0.40	
														0.41	
Keough et al. (2018)	Canada	1	26.5	84.7	275	43.02	63.6	0	1	DP	AV	ECR	0.39	0.28	Participants were peoples with a lifetime diagnosis of a depressive disorder.
														0.41	

(table continues)

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**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	met <sup>i</sup>	R <sub>av-as</sub>	R	Description of source of the sample
Kidd et al. (2016)	United Kingdom	1	NR	89.67	155	68.2	12.9	0	0	DP	AV AX	ECR-RS	0.70	0.27 0.30	Participants are a presurgery assessment clinic from a United Kingdom hospital.
Kim and Koh (2018)	South Korea	1	NR	0	313	22	58.1	1	1	AN SE	AV AV	ECR-R	NR	0.19 0.25 0.14 -0.23	Participants were college students from a large-sized private university in Gyeonggi Province, Korea. Participants were enrolled in a parent education program.
Kim et al. (2019)	Korea	1	100	0	44	NR	NR	1	1	DP AN	AV AX	ECR-R	0.28	0.00 0.25 -0.03	Participants were enrolled in a parent education program.
Kohlhoff and Barnett (2013).	Australia	1	91.6	NR	83	32.2	100	1	1	DP AN	AV AX	ASQ	0.56	0.01 0.27 0.09	Participants in this study were primiparous women.
Kormas et al. (2014)	Greece	1	40.6	NR	318	19.39	67.92	1	1	DP	AX	ECR	NR	0.36 0.18	Participants were undergraduate students.
Korver-Nieberg et al. (2015)	The Netherlands	1	8.2	NR	500	37.5	80.4	0	1	DP AN	AX AV	RQ	NR	0.32 0.16 0.28	Participants were psychiatric patients.
Kviric et al. (2012).	Switzerland	1	20.5	NR	127	44.6	34	0	1	DP	AV AX	PAM	0.30	0.29 0.41	Participants were recruited via two community mental health centers in the greater Basel area, Switzerland.
Land (2012)	The United States	1	NR	82.9	123	22	100	1	1	DP AN	AX AX	ECR-S	NR	0.35 0.38	Participants were undergraduate and graduate level students of three universities.
Landen and Wang (2010).	The United States	1	82	87	170	38.39	5	1	1	LS PA	AV AX AV AX	ECR	0.59	-0.54 -0.42 -0.46 -0.40	Participants were full-time professional firefighters.
Lane and Fink (2015)	The United States	1	NR	83.1	213	22.94	72.3	1	1	NA LS PA	AV AX AV AX	ECR-S	0.35	0.18 0.28 -0.30 -0.36 -0.22 -0.28	Participants were emerging adults.
Lane et al. (2017)	Portland	1	NR	82.1	207	22.6	70	1	1	LS	AV AX	ECR-S	0.22	-0.16 -0.32	Participants were emerging adults experiencing a life transition.
Lane (2016)	The United States	1	NR	90.7	182	22.5	79.7	1	1	LS PWB	AV AX AX AX	ECR-S	0.26	-0.47 -0.41 -0.35 -0.48 -0.39 0.30	Participants were emerging adults not experiencing a life transition. Participants were traditional-aged college seniors enrolled at a medium-sized University.

(table continues)



**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>no-ax</sub>	R	Description of source of the sample
Langston (2014)	The United States	0	67.6	NR	561	22.71	85.7	1	1	NA	AV	ECR	0.26	0.21	Participants are pet-owning adults who were at least 18 years of age.
LaTulip (2013)	The United States	0	NR	53	135	22.16	80	1	1	DP	AV	ECR-S	0.29	0.39	Participants were students at Old Dominion University.
Lavy and Littman-Ovadia (2011)	Israel	1	NR	NR	394	25.99	61.68	1	1	LS	AX	ECR	NR	-0.25	Participants are Jewish Israeli individuals.
Levesque et al. (2017)	Canada	1	12.2	NR	797	19.65	81.9	1	1	ERD	AV	ECR-S	0.17	0.26	Participants were students at a Canadian university.
Levi-Belz et al. (2013)	Israel	1	NR	NR	102	38.12	51.96	0	1	LO	AV	ECR	NR	0.58	Participants were patients at a tertiary university-affiliated medical center.
Lewczuk et al. (2021)	Poland	1	NR	NR	191	22.58	66	1	1	DP	AV	ECR-R	0.29	0.16	Participants were Polish-speaking participants.
Li and Zheng (2014)	Mainland China	1	NR	0	585	20	53.85	1	1	NA	AX	ECR	0.13	0.48	Participants were undergraduates from mainland China.
Li et al. (2008)	Mainland China	1	92	NR	100	58.45	30	0	1	LS	AV	ECR	0.14	0.22	Participants were patients from four hospitals in Tatyuan, Shanxi Province.
Liao and Wei (2015)	The United States	1	1	90	403	19.42	72	1	1	DP	AV	ECR	0.27	0.21	Participants were undergraduate students.
Lilly and Hong (Phyllice) Lim (2013)	The United States	1	NR	60.2	114	29.57	100	1	1	DP	AV	ECR	0.31	0.18	Participants were intimate partner violence survivors subsample from the community.
Lilly and Hong (Phyllice) Lim (2013)	The United States	1	0	64.5	290	19.77	60	1	1	ERD	AX	ECR	0.59	0.47	Participants were undergraduate subsample.
Lin (2006)	The United States	0	NR	92.7	374	21	53	1	1	SE	AX	ECR-R	0.51	0.49	Participants were undergraduate students.
Liu et al. (2021)	Mainland China	1	0	0	908	21.04	52.2	1	1	LO	AX	ECR	NR	-0.57	Participants were Chinese college students.
Lopez and Fons-Scheyd (2008)	Greece	1	NR	32.5	446	20.8	63.68	1	1	DP	AV	ECR	0.24	0.29	Participants were college students who acknowledged being involved in a romantic relationship.

(table continues)

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**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	met <sup>i</sup>	R <sub>av-ax</sub>	R	Description of source of the sample
MacDonald (2011)	Canada	0	7	45	415	NR	53.73	1	1	PWB	AV	ECR	0.22	-0.33	Participants were university students.
										SE	AV			-0.41	
										DP	AV	ECR-R	0.36	-0.27	
Mackintosh et al. (2018)	United Kingdom	1	32.5	97.5	74	40.3	59.5	0	1	AN	AV			-0.43	Participants were adults aged 18 upwards, presenting with anxiety and/or depressive disorders to a primary care psychological therapies service in a psychotherapy service agency.
										AN	AV		0.10	0.16	Participants were recruited through a Psychology Department's Research Experience Program.
Majstorovic (2015)	The United States	0	NR	80.2	302	19.3	52.1	1	1	AN	AV	ECR-S		0.26	Participants were 450 postpartum women.
										DP	AV	ECR-RS	0.33	0.41	
Marques et al. (2018)	Portugal	1	86.2	100	450	31.14	100	1	1	AN	AV			0.50	
										SE	AV	ASQ	0.35	0.35	
Marrero-Quevedo et al. (2019)	Spain	1	NR	NR	1,403	37.2	47.11	1	1	SE	AV	ASQ	0.35	0.48	Participants were students of the University of La Laguna.
Marsh (2014)	The United States	0	64.5	88.4	172	57.76	63.4	1	1	ERD	AV	ASQ	0.19	-0.39	Participants were professional disaster responders.
										DP	AV	ECR	0.21	0.70	Participants were undergraduate students.
Matyja (2014)	The United States	0	4.2	49	259	18.43	57.92	1	1	DP	AV			0.35	
										AN	AV			0.66	
										AN	AV			0.32	
Maunder et al. (2005)	Canada	1	NR	NR	99	45.2	45.4	0	0	DP	AV	ECR-R	0.53	0.57	Participants were patients with ulcerative colitis.
Mauricio et al. (2007)	The United States	1	36	67	192	33	0	1	1	BPD	AV	ECR-S	0.23	0.61	Participants were heterosexual men.
McCampbell (2012)	The United States	0	NR	49.4	166	22	77.7	1	1	PWB	AV	ECR-R	0.51	0.57	The participants were undergraduate in the New York City metropolitan area.
										DP	AV	ECR-S	0.27	-0.48	Participants were contacted by email and invited to participate in a campus wide study of mental health.
McDermott et al. (2015)	The United States	1	NR	67	2,644	22.5	46	1	1	AN	AV			0.34	Participants were university students.
										SE	AV	ECR-RS	NR	0.41	
McDonagh (2019)	Ireland	0	NR	NR	114	23.14	63.8	1	1	SE	AV			0.25	Participants were undergraduate psychology students.
										DP	AV	ECR-R	0.12	0.36	
McDonald et al. (2016)	Australia	1	24.88	NR	402	NR	83.08	1	1	AN	AV			-0.24	Participants were undergraduate psychology students.
										AN	AV			0.00	
										ERD	AV			0.45	
										AN	AV			0.01	
										ERD	AV			0.42	
										AN	AV			0.13	
										ERD	AV			0.49	

(table continues)

**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Ref <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>av-ax</sub>	R	Description of source of the sample
Meredith et al. (2016)	Australia	1	22.4	85.3	116	29.5	59.5	1	1	DP	AV	ECR	0.66	0.16	Participants were healthy adults.
										AN	AX			0.23	
										AN	AV			0.15	
										NA	AX			0.19	
Meuwly and Davila (2019)	The United States	1	NR	41.9	142	19.79	NR	1	1	NA	AV	R-AAS	0.47	0.28	Participants were undergraduate students.
										SE	AX			0.37	
										SE	AV			-0.17	
										NA	AX			-0.45	
Molero et al. (2017)	Spain	1	80	NR	174	38.6	0	1	1	NA	AV	ECR	0.24	0.15	Participants were couples came from widely distributed regions of Spain (men).
										LS	AX			0.32	
										LS	AV			-0.46	
										PA	AX			-0.34	
										PA	AV			-0.40	
										NA	AX			-0.07	
							100	1	1	NA	AV		0.29	0.21	Participants were couples came from widely distributed regions of Spain (women).
										LS	AX			0.29	
										LS	AV			-0.37	
										PA	AX			-0.20	
										PA	AV			-0.38	
										DP	AX			0.01	
Monti and Rudolph (2014)	The United States	1	NR	71.5	417	37.83	100	1	0	DP	AV	ASQ	0.57	0.48	Participants were women recruited from a small urban community and surrounding rural areas.
										AX	AX			0.43	
Myers and Wells (2015)	Norway	1	NR	76.3	350	21.8	78.6	1	1	NA	AX	RSQ	NR	0.43	Students and staff at The University of Manchester completed questionnaires online.
Neef (2014)	The United States	0	NR	36	195	24.07	41.5	1	1	DP	AV	ECR	0.37	0.04	Participants were international students.
										ERD	AX			0.26	
Neumann (2016)	The United States	0	12.2	76.3	1,217	NR	71.7	1	1	ERD	AV	ECR-R	0.48	0.43	Participants were recruited from the University of North Texas or community society.
										ERD	AX			0.57	
Neumann (2017)	Germany	1	34	90	110	41	59	0	1	BPD	AV	ECR	NR	0.30	Participants were patients with mental disorders.
										DP	AX		0.02	0.45	Participants were students the university in Hong Kong.
Ng and Hou (2017)	China (Hong Kong)	1	1.1	0	284	21.75	82.4	1	1	DP	AV	ECR-R		0.08	Participants were students the university in Hong Kong.
Nielsen et al. (2019)	The United States	1	72	97.37	76	33.2	80	1	0	ERD	AX	ECR-R	0.414	0.10	Participants were adults with anxiety disorders.
										AN	AX		0.40	0.29	Participants were nondisabled siblings of individuals with disabilities, recruited through U.K. disability charities.
O'Neill and Murray (2016)	The United States	1	61.33	NR	150	34.46	78	1	1	AN	AV	ECR	0.22	0.12	Participants were individuals did not have a sibling with disabilities.
										AN	AX			0.56	
										AN	AV		0.22	0.24	Participants were individuals did not have a sibling with disabilities.
										AN	AX			0.51	

(table continues)

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**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	met <sup>i</sup>	R <sub>av-ax</sub>	R	Description of source of the sample
O'Neill (2015)	The United States	0	NR	NR	544	26.87	39.3	0	1	ERD	AV AX	RQ	NR	-0.23 -0.47	Participants were adult inpatient marijuana users.
Overup et al. (2017)	The United States	1	48	24	370	22.31	77.57	1	1	DP	AV AX	ECR-R	0.70	0.36 0.50	Participants were either planning to retire within the next 6 months or had retired from work during the previous 6 months.
Owens et al. (2018)	The United States	1	5	82	336	19.26	64	1	1	DP	AV AX	ECR-S	0.23	0.21 0.46	Participants were recruited through the department of psychology research pool at a large southeastern university who reported experiencing a stressful event.
Pandeya (2017)	Indian	1	NR	NR	110	20.70	50	1	1	DP	AV AX	ECR	0.31	0.51 0.25	Participants were undergraduate students randomly selected from different colleges of Chandigarh.
Patel (2008)	The United States	0	NR	NR	174	20.5	60	1	1	DP	AV AX	ECR	0.28	0.28 -0.40	Participants were undergraduate students with one or more South Asian parents.
Pepping et al. (2013)	Australia	1	NR	NR	572	21.27	74.3	1	1	ERD	AV AX	ECR-R	0.28	0.51	Participants were undergraduate students.
Pereira et al. (2014)	The United States	1	NR	NR	345	19.46	75	1	1	LO	AV AX	ECR-S	0.37	0.22 0.38	Participants were students.
Pote (2016)	The United States	0	100	62.2	90	63	73.33	1	1	LS	AV AX	ECR-R	0.44	-0.39 -0.33	Participants were spousal caregivers of individuals with dementia began the electronic survey.
Potter (2011)	Canada	0	NR	62.3	239	19.8	100	1	1	BPD	AV AX	ECR	0.22	0.28 0.63	Participants were female undergraduate university students.
Psouni and Eichbichler (2020)	Sweden	1	100	NR	530	33.76	0	1	1	DP	AV AX	ECR-R	-0.58	0.49 0.66	Participants were fathers who became a father of a full-term baby within the past 18 months.
Quinn (2005)	The United States	0	39.67	95.74	305	42.6	61.31	1	1	DP	AV AX AV AX	ECR	0.07	0.23 0.45 0.05 0.37	People who were owners of dogs, cats, and horses were recruited.
Ramos and Lopez (2018)	The United States	1	NR	29.4	476	37.55	66.39	1	1	LS	AV AX	ECR-R	0.45	-0.33 -0.24	Participants were young and older adults who participated in a web-based online study described as a study focused on understanding personal perceptions and experiences with career transitions.

(table continues)

**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>0-ax</sub>	R	Description of source of the sample
Reiser (2013)	Canada	0	NR	77.3	181	20.29	79	1	1	DP	AV AX	ECR-R	0.51	0.43	Participants were undergraduate students.
Reizer (2015)	Israel	1	59.2	NR	339	35.91	59	1	1	LS	AV AX	ECR	0.21	-0.21	Participants were Israeli employees.
Rendina (2018)	The United States	0	NR	47.5	831	23.54	79.8	1	1	BPD	AV AX	ECR	0.23	-0.34	Participants were undergraduate students.
Rholes et al. (2011)	The United States	1	100	82	194	28.4	100	1	1	DP	AV AX	ECR	0.18	0.15	Participants were lived in a southwestern U.S. city (women).
Riggs et al. (2007)	The United States	1	NR	29.5	288	41.5	48	0	1	DP	AV AX	ECR	0.20	0.28	Participants were lived in a southwestern U.S. city (men).
Ringer et al. (2014)	The United States	1	NR	40.4	52	46.64	0	0	1	SE	AV AX	ECR	NR	0.31	Participants were recruited from AIDS Service Organizations.
Rodin et al. (2007)	Canada	1	68.4	NR	326	61.8	42.9	0	1	DP	AV AX	ECR	0.28	0.17	Participants were 326 cancer outpatients with advanced disease.
Rodrigues et al. (2018)	Portugal	1	89.4	NR	387	32.3	100	1	1	DP	AV AX	ECR-RS	0.32	0.42	Participants were women in the postpartum.
Sabuncuoglu and Berkem (2006)	Turkey	1	100	NR	110	28.6	100	0	1	DP	AV AX	AAQ	0.54	0.47	Participants were mothers who were in their 2nd to 18th postpartum month.
Sandoval (2008)	The United States	0	68	58.8	97	28.67	NR	1	1	SE	AV AX	ECR-R	0.47	-0.38	Participants were students at Texas A&M University.
Sandusky (2016)	The United States	0	NR	80.1	111	NR	80.3	1	1	AN	AV AX	ECR-R	0.63	-0.32	Participants were counseling trainees and professional counselors.
Sato et al. (2020)	United Kingdom	1	NR	37.1	256	23.77	67.19	1	1	BPD	AV AX	ECR-R	0.27	0.05	Participants were recruited from the University College London.
Schierholz et al. (2016)	Germany	1	NR	NR	340	36.1	82.4	0	1	DP	AV AX	ECR	-0.02	0.23	Participants were a large sample of acute or recovered depressed individuals.
Segei-Kampas et al. (2013)	The United States	1	72	100	257	58	38	1	0	DP	AV AX	ECR	0.45	0.40	Participants were retired unionized worker.
Selwood (2013)	United Kingdom	0	NR	87.9	91	36.5	20.9	1	1	ERD	AV AX	RSQ	0.61	0.36	Participants were homeless individuals.
Şenkal and İşıkli (2015)	Turkey	1	NR	NR	417	19.9	76.3	1	1	DP	AV AX	ECR-R	0.06	0.44	Participants were undergraduate students.
Shakory et al. (2015)	Canada	1	58.2	84.8	1,388	44.69	79.3	0	1	ERD	AV AX	ECR-M16	0.39	0.34	Participants were morbidly obese patients.

(table continues)

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**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>no-ax</sub>	R	Description of source of the sample																
Shaver et al. (2005)	The United States	1	100	NR	72	NR	0	1	1	DP	AV	ECR	0.13	0.21	Participants were heterosexual couple (husband).																
																AX	0.62														
																AV	0.16														
Shea (2014)	The United States	0	45	76.3	169	21	73.4	1	0	DP	AV	ECR	0.34	0.28	Participants were undergraduate students above 18 years of age at Indiana University–Purdue University Indianapolis.																
																AX	0.61														
																AV	0.22														
																AX	0.28														
																AX	0.37														
																AX	0.15														
Shorey et al. (2003)	The United States	1	NR	47	197	20.97	55.33	1	1	DP	AV	ASQ	0.45	0.29	Participants recruited from the psychology department subject pool at a mid-sized Southern California University.																
																AX	0.56														
																AX	0.31														
																AX	0.42														
																AV	–0.35														
																AX	–0.52														
																AV	0.43														
																AX	0.61														
																Simon et al. (2019)	The United States	1	0	80	175	NR	71.4	1	1	DP	AV	ECR	0.52	0.43	Participants were students from Central Connecticut State University.
AX	0.42																														
Smaugur et al. (2018)	The United States	1	100	63	206	25.38	100	1	1	DP	AV	ASQ	0.52	0.37	Participants were women in their third trimester of pregnancy.																
																AX	0.42														
Smaugur (2017)	The United States	0	7	75	301	19.52	100	1	1	DP	AV	ECR	0.46	0.32	Participants were undergraduate women recruited through the Michigan State University human subject pool.																
																AX	0.47														
Smith (2009)	The United States	0	NR	NR	70	19.36	68.6	1	1	LS	AV	ECR	0.11	0.27	Participants were undergraduates and community volunteer.																
																AX	0.42														
Stroud et al. (2016)	The United States	1	NR	50.4	373	NR	61.7	1	1	DP	AV	R-AAS	0.49	0.39	Participants were undergraduate students.																
																AX	0.43														
Sümer and Yetkili (2018)	Turkey	1	100	NR	1,553	36.96	100	1	1	LS	AV	ECR-R	0.44	–0.43	Participants were married couples in four large cities in Turkey (wives).																
																AX	–0.27														
										LS	AV		0.42	–0.26	Participants were married couples in four large cities in Turkey (husbands).																
																AX	–0.17														
					91	40.95	100	1	1	LS	AV		0.44	–0.31	Participants were mothers from the United States.																
																AX	–0.49														
					89	30.75	100	1	1	LS	AV		0.42	–0.60	Participants were mothers from the Turkey.																
																AX	–0.51														

(table continues)

Table 3 (continued)

Study	Country	Pub <sup>a</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>0-ax</sub>	R	Description of source of the sample
Sutin and Gillath (2009)	The United States	1	37	39	454	19.69	64	1	1	DP	AV	ECR	0.28	0.30	Participants were 454 undergraduate students.
			50	30	534	19.3	62	1	1	DP	AV	AX	0.22	0.47	Participants were 534 undergraduate students.
Tammy Lin (2019)	China (Taiwan)	1	NR	0	921	21.49	58.4	1	1	LS	AV	AAQ	0.02	0.44	Participants were students from four large universities in the northern, central, and southern parts of Taiwan.
			NR	96	268	34.3	100	0	1	DP	AV	ASQ	0.62	0.59	Participants were women seeking treatment at a center for eating disorders of a general hospital.
Tasca et al. (2006)	Canada	1	NR	91	310	26.31	100	0	1	DP	AV	ECR	0.21	0.42	Participants were 310 women seeking treatment for an eating disorder.
Tasca et al. (2009)	Canada	1	NR	NR	1,383	44.72	79	0	1	DP	AV	ECR-16	0.38	0.15	Participants were consecutively referred candidates assessed by the Toronto Western Hospital Bariatric Surgery program.
			NR	61.4	114	NR	73.68	1	1	SE	AV	AX	0.44	0.57	Participants were from the participant pool at Walden University.
Ty and Francis (2013)	Australia	1	NR	NR	247	24.51	100	1	1	ERD	AV	ECR-RS	0.55	0.39	Participants were women living in Australia.
			NR	NR	81	74.9	64	1	1	DP	AV	AX	NR	0.48	0.40
Van Assche et al. (2020)	Belgium	1	NR	0	111	56.85	0	0	0	DP	AV	ECR	0.31	0.26	Participants were married or cohabitating Jewish men, with the diagnosis of first acute coronary syndrome.
			NR	89	258	31.78	100	0	1	AN	AV	AX	0.44	0.37	Participants were pregnant women.
Vilchinsky et al. (2013)	Israel	1	100	0	109	55.05	100	0	0	DP	AV	ECR	0.52	0.32	Participants were person from the cardiac care unit of the Meir Medical Center in central Israel.
			NR	NR	250	22.1	100	1	1	ERD	AV	AX	0.32	0.31	Participants were female undergraduate students.
Walsh et al. (2014)	United Kingdom	1	100	89	112	20.61	64	1	1	DP	AV	ECR	0.13	0.18	Participants were Chinese American college students from a large public university in the western United States.
			NR	NR	250	22.1	100	1	1	ERD	AV	AX	0.32	0.49	Participants were female undergraduate students.
Wang and Ratanasiripong (2010)	The United States	1	NR	NR	250	22.1	100	1	1	ERD	AV	ECR	0.32	0.49	Participants were female undergraduate students.
Wang (2017)	The United States	0	NR	26.4	250	22.1	100	1	1	ERD	AV	ECR	0.32	0.49	Participants were female undergraduate students.

(table continues)

**Table 3** (continued)

Study	Country	Pub <sup>b</sup>	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>av-ax</sub>	R	Description of source of the sample
Wardrope et al. (2019)	United Kingdom	1	NR	98.5	66	57.5	56.1	0	1	DP	AV	ASQ	NR	0.27	Participants were carer participants for epilepsy.
Waring (2015)	The United States	0	23.1	58.7	376	28.3	75.3	1	1	LS	AX	ECR-S	NR	0.27	Participants were carer participants for Psychogenic nonepileptic seizures.
Weaver (2011)	The United States	0	5.2	58	175	20.14	100	1	1	NA	AV	ECR	0.24	0.21	Participants were recruited by means of convenience and snowball sampling.
Wei et al. (2003)	Canada	1	NR	85	515	18.93	68	1	1	DP	AV	AAS	0.25	0.32	Participants were college women between the ages of 18 and 28 at a private Christian university.
Wei et al. (2004)	The United States	1	2	84	310	19.27	73	1	1	DP	AV	ECR	0.16	0.18	Participants were undergraduate students at a large midwestern university.
Wei, Mallinckrodt, et al. (2005)	The United States	1	14.4	90	425	19.38	61	1	1	DP	AV	ECR	0.33	0.31	Participants were undergraduate students at a large midwestern university.
Wei, Shaffer, et al. (2005)	The United States	1	NR	92	308	18.31	59	1	0	DP	AX	ECR	0.13	0.01	Participants were college students.
Wei, Vogel, et al. (2005)	The United States	1	1	81.3	299	19.73	68	1	1	LO	AV	ECR	0.20	0.55	Participants were freshmen students.
Wei et al. (2011)	The United States	1	100	95.4	195	20.07	55	1	1	NA	AV	ECR	0.22	0.23	Participants were undergraduate students.
Weng (2016)	The United States	0	75.3	0	215	35.95	68.4	1	1	PWB	AX	ECR-S	0.31	-0.29	Participants were undergraduate students.
Whiffen (2005)	Canada	1	100	NR	149	34.8	0	1	1	DP	AV	ECR	0.05	0.09	Participants were undergraduate students.
					229	33	100	1	1	DP	AV		0.04	-0.10	Participants were Chinese/Taiwanese immigrants who were born overseas in the United States.
											AX			0.42	Participants were romantic partners or spouses (men). Participants were romantic partners or spouses (women).

(table continues)



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**Table 3** (continued)

Study	Country	Pub <sup>a</sup>	Ref <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>av-ax</sub>	R	Description of source of the sample
White (2015)	Canada	0	NR	NR	703	19.5	62.73	1	1	DP	AV AX	ECR	0.32	0.31 0.46 0.27	Participants were introductory psychology students.
Widom et al. (2018)	The United States	1	NR	59.4	650	41.01	50.5	1	1	DP	AV AX	RSQ	0.04	0.44 0.22 0.30	Participants were adults.
Wiltgen et al. (2015)	The United States	1	NR	89.6	414	34	61.6	0	1	AN	AV AX	RQ	0.15	0.14 0.25	Participants were adult patients admitted to a private psychiatric hospital in a major city in the Southwest United States between 2008 and 2013.
Winham et al. (2015)	The United States	1	18	50.5	406	37.3	100	0	1	DP	AV AX	R-AAS	0.44	0.30 0.36 0.23	Participants were women on probation and parole from Jefferson County, Kentucky.
Wix (2012)	The United States	0	49.2	77.3	128	20.81	100	1	1	DP	AV AX	ECR-S	0.02	0.31 0.28 0.19	Participants were undergraduate women.
Worsley et al. (2018)	United Kingdom	1	NR	NR	1,029	19.8	74.8	1	1	DP	AV AX	RQ	0.07	0.16 0.14 0.39	Participants were students from a university in North West England.
Worsley et al. (2018)	United Kingdom	1	NR	NR	915	20.19	68	1	1	PWB	AV AX	RQ	0.12	-0.18 -0.48	Participants were young adults.
Wright et al. (2017)	The United States	1	NR	74.3	583	19.4	66.7	1	1	LS	AV AX	ECR-R	0.38	-0.34 -0.35	Participants were undergraduate college students from a university in the Rocky Mountain region.
Wu (2009)	United Kingdom	1	NR	NR	123	20.15	72.36	1	1	SE	AV AX	AAS	0.25	-0.36 -0.43	Participants were undergraduate students.
Yarkovsky (2016)	Canada	0	100	NR	158	21.31	0	1	1	ERD	AV AX	ECR	0.28	0.31 0.51	Participants were heterosexual dating couples.
You et al. (2015)	Mainland China	1	NR	0	153	20.44	46	1	1	DP	AV AX	ECR	0.13	0.48 0.63	Participants were college students from Hong Kong.
Zakalik and Wei (2006)	The United States	1	NR	77.4	234	37	0	1	1	DP	AV AX	ECR	0.25	0.22 0.22 0.40	Participants were self-identified gay male participants from a variety of sources related to the gay community.
Zech et al. (2006)	Belgium	1	67	NR	254	42	62.99	0	1	DP	AV AX	AAS	-0.39	-0.43 0.29	Participants were adults sitting in a general practitioner's waiting room.

(table continues)

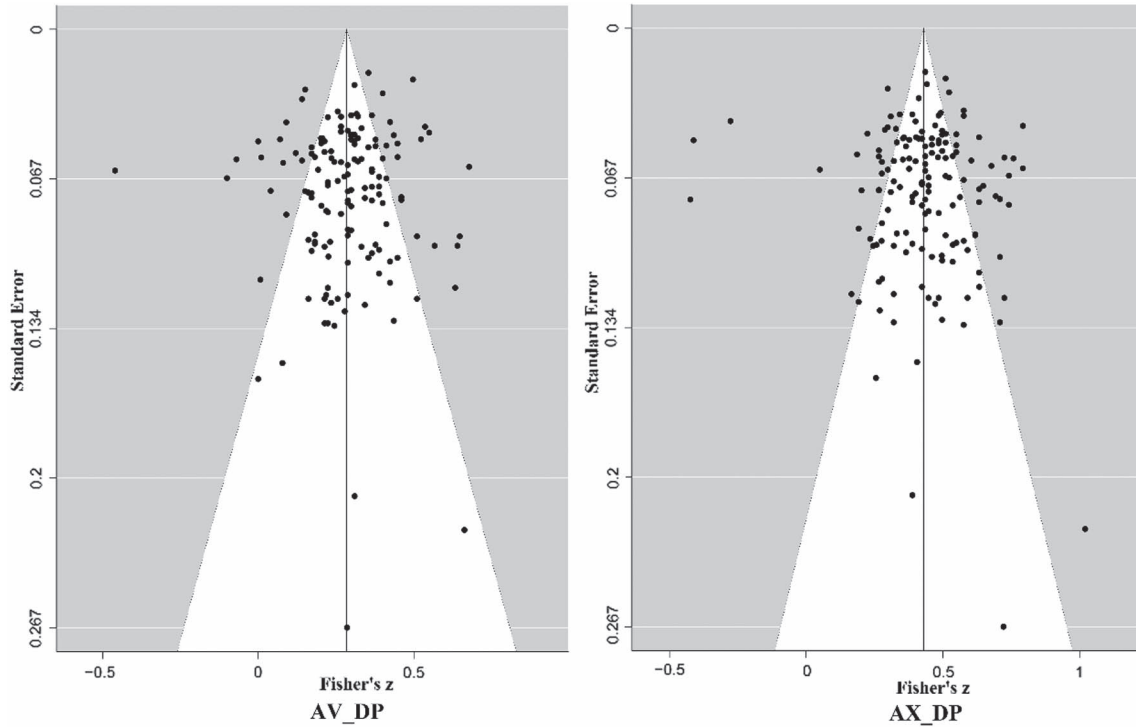
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**Table 3** (continued)

Study	Country	Pub*	Rel <sup>b</sup> (%)	Rac <sup>c</sup> (%)	N	M <sub>age</sub>	Gen <sup>d</sup>	Sub <sup>e</sup>	Stu <sup>f</sup>	MH <sup>g</sup>	dim <sup>h</sup>	mea <sup>i</sup>	R <sub>av-ax</sub>	R	Description of source of the sample
Zeynep (2019)	Turkey	1	NR	45.3	340	21.19	70.3	1	1	SE	AV	ECR/II	0.30	-0.14	Participants were university students.
Zhang et al. (2011)	Mainland China	1	44.9	0	147	21.44	59.2	1	1	NA	AV	ECR	-0.04	0.07	Participants were students at the Peking University.
										LO	AX			0.41	
										PA	AX			0.30	
										SE	AX			0.40	
										SE	AX			0.06	
										SE	AX			-0.21	
										SE	AX			-0.12	
										SE	AX			-0.28	
Zhang et al. (2016)	Mainland China	1	100	0	319	67.34	49.5	1	1	SE	AV	ECR	0.26	-0.19	Participants were person from several communities in Chongqing China.
										SE	AX			-0.16	
Zhang et al. (2017)	Mainland China	1	NR	0	928	20.19	24.46	1	1	SE	AV	ECR	0.23	-0.27	Participants were undergraduate students.
										DP	AX			-0.26	
Zhu et al. (2016)	The United States	1	NR	48.2	363	19.83	63.1	1	1	DP	AV	ECR	0.19	0.34	Participants were the U.S. sample consisted of college students a participant pool recruited from a large public university in the Southwestern United States.
										DP	AX			0.41	
										DP	AV	ECR	0.38	0.17	The Chinese cultural group had college students recruited from a 4-year, comprehensive university in central China.
										DP	AX			0.35	

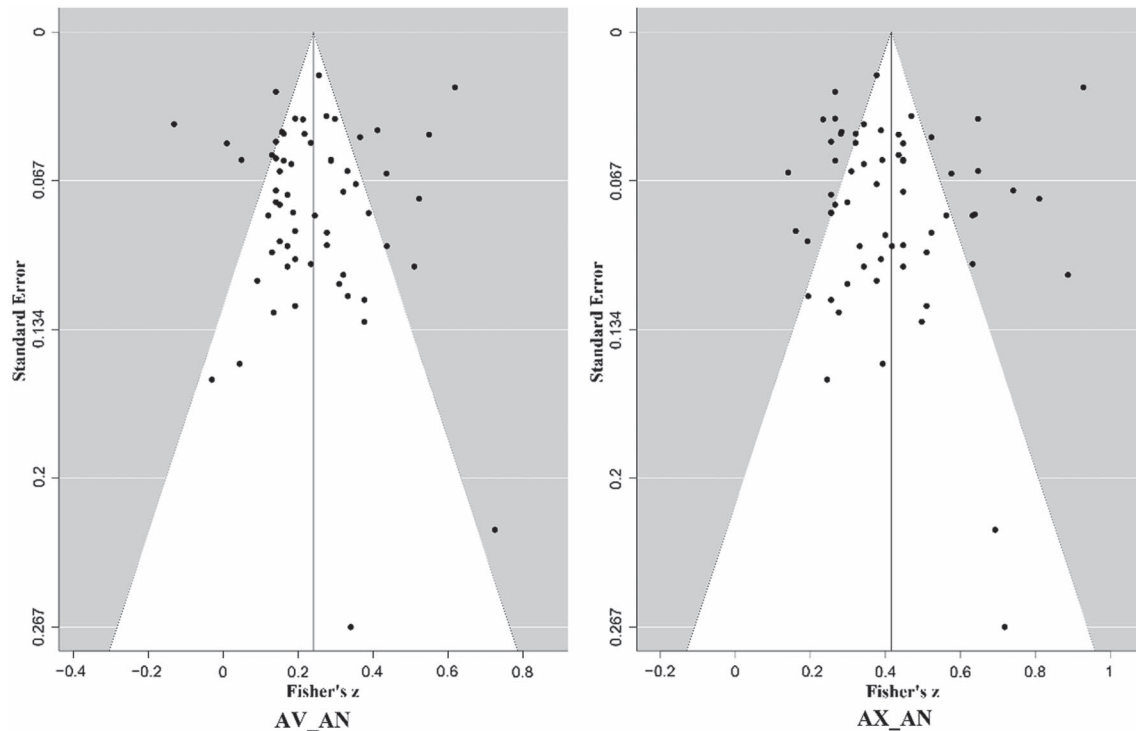
Note. All studies included in the meta-analysis are marked with\* in the reference section. Pub\* = publication type; 1 = peer-reviewed, 0 = master/doctor dissertation report; Rel<sup>b</sup>(%) = relationship status (percent of married or cohabiting); Rac<sup>c</sup>(%) = race (percent of sample that identified as White or Caucasian); M<sub>age</sub> = mean age; Gen<sup>d</sup> = women (percent of women); Sub<sup>e</sup> = subject types; 1 = normal population, 0 = clinical population; Stu<sup>f</sup> = study types; 1 = cross-sectional study, 0 = longitudinal study; MH<sup>g</sup> = mental health indicators: DP = depression, AN = anxiety, LO = loneliness, NA = negative affect, BPD = borderline personality disorder, ERD = difficulties in emotion regulation, PWB = psychological well-being, LS = life satisfaction, PA = positive affect, SE = self-esteem; dim<sup>h</sup> = attachment dimension: AX = attachment anxiety, AV = attachment avoidance; mea<sup>i</sup> = attachment measures: ECR = Experiences in Close Relationships Scale, ECR-S = Experiences in Close Relationships Scale-Short Version, ECR-R = Experiences in Close Relationships Scale-Revised, ECR-RS = Experiences in Close Relationships Structures Questionnaire, PAM = psychosis attachment measure, RQ = Relationship Questionnaire, RSQ = Relationship Structures Questionnaire, AAQ = Adult Attachment Style Questionnaire, ASQ = Attachment Style Questionnaire, ASQ-S = ASQ Short Form (ASQ-SF), RSQ = Relationship Style Questionnaire, AAS = Adult Attachment Scale, R-AAS = Revised Adult Attachment Scale; R<sub>av-ax</sub> = correlation coefficient between attachment avoidance and attachment anxiety; R = correlation coefficient between adult attachment and mental health indicate; NR = not reported.

**Figure 2**  
*Funnel Plot of the Relation Adult Attachment and Depression*



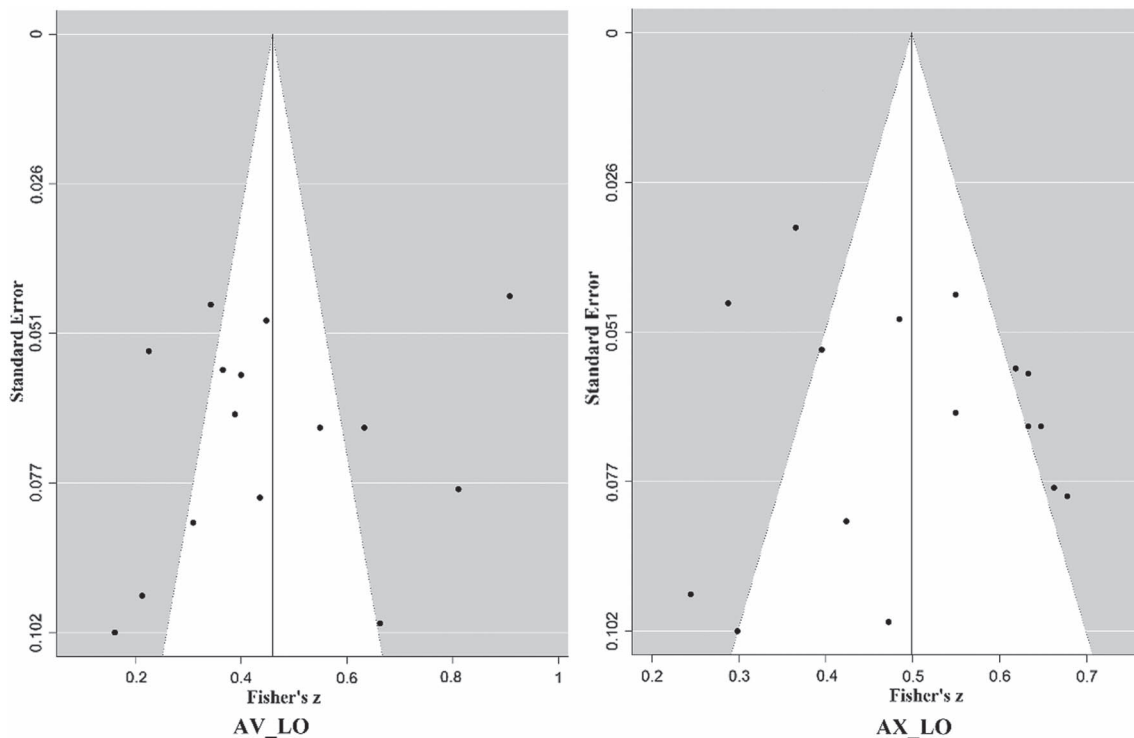
Note. AV = attachment avoidance; AX = attachment anxiety; DP = depression.

**Figure 3**  
*Funnel Plot of the Relation Adult Attachment and Generalized Anxiety*



Note. AV = attachment avoidance; AX = attachment anxiety; AN = generalized anxiety.

**Figure 4**  
*Funnel Plot of the Relation Adult Attachment and Loneliness*



Note. AV = attachment avoidance; AX = attachment anxiety; LO = loneliness.

### **Associations Between Attachment and Specific Mental Health Outcomes Depression**

We found that depression was statistically significantly correlated with both attachment avoidance ( $r = .28, p < .01$ ) and attachment anxiety ( $r = .40, p < .01$ ). In terms of moderators, publication year, relationship status, race, age, study type, participant type, and attachment measures did not significantly moderate the effects of attachment avoidance on depression ( $p \geq .05$ ). In contrast, gender *did* moderate the association between attachment avoidance and depression,  $t(1, 55.3) = -2.440, p = .018$  (see Table 5), such that as the proportion of women in a sample increased, the correlation between attachment avoidance and depression tended to decrease. None of the other moderating variables moderated the association between attachment anxiety and depression. Furthermore, we tested whether depression correlated more strongly with attachment anxiety or avoidance. Results indicated that depression correlated more strongly with attachment anxiety than it did with avoidance,  $t(1, 120.0) = 6.56, p < .01$ . Specifically, the mean effect of attachment anxiety ( $r = .40$ ) on depression was larger than that of attachment avoidance ( $r = .28$ ).

### **Generalized Anxiety**

Generalized anxiety was positively correlated with both attachment avoidance ( $r = .24, p < .001$ ) and attachment anxiety ( $r = .39, p < .001$ ). Moderator analyses showed that publication year, relationship status, race, gender, age, study types, participant types,

and attachment measures did not significantly moderate the associations between either attachment dimension. Finally, we found that the mean effect of attachment anxiety ( $r = .39$ ) on generalized anxiety was substantially larger than that of attachment avoidance ( $r = .24$ ),  $t(1, 55.7) = 6.91, p < .001$  (see Table 6).

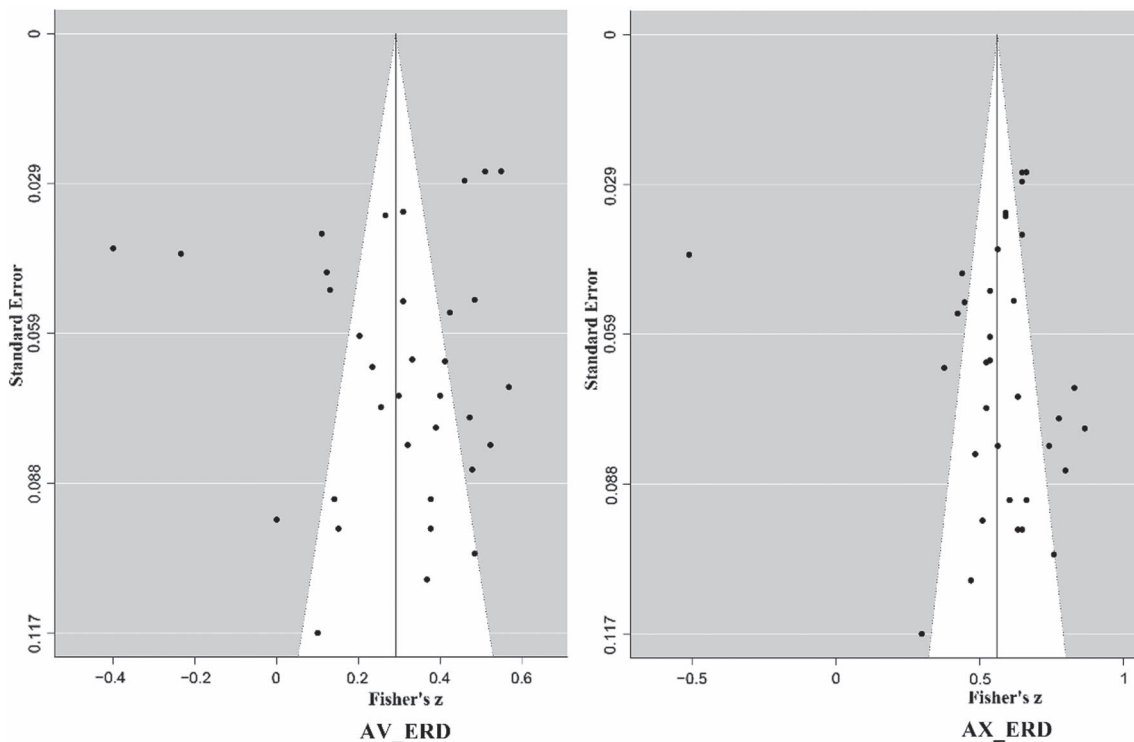
### **Loneliness**

Loneliness was positively correlated with both attachment avoidance ( $r = .44, p < .001$ ) and attachment anxiety ( $r = .46, p < .001$ ). None of the moderators included in the study moderated the associations between loneliness and attachment; likewise, anxiety and avoidance did not have significantly different correlations with loneliness,  $t(1, 11.9) = 0.058, p = .910$ .

### **Emotion Regulation Difficulty**

Emotion regulation difficulty was positively correlated with both avoidance ( $r = .29, p < .01$ ) and attachment anxiety ( $r = .51, p < .01$ ). None of the moderators included in our study significantly moderated the associations between emotion regulation difficulty and the attachment dimensions. Finally, the mean effect of attachment anxiety ( $r = .51$ ) on emotion regulation difficulty was substantially larger than that of attachment avoidance ( $r = .29$ ),  $t(1, 28.9) = 6.84, p < .01$  (see Table 7).

**Figure 5**  
*Funnel Plot of the Relation Adult Attachment and Emotion Regulation Difficulty*



Note. AV = attachment avoidance; AX = attachment anxiety; ERD = emotion regulation difficulty.

### Negative Affect

Negative affect was positively correlated with both attachment avoidance ( $r = .21, p < .001$ ) and anxiety ( $r = .34, p < .001$ ). None of the included moderators statistically significantly moderated the associations between negative affect and the attachment domains. Finally, the mean effect of attachment anxiety ( $r = .34$ ) on negative affect was substantially larger than that of attachment avoidance ( $r = .21$ ),  $t(1, 12.7) = 4.83, p < .001$ , (see Table 8).

### Borderline Personality Disorder

Borderline personality disorder was positively correlated with both attachment avoidance ( $r = .23, p < .001$ ) and anxiety ( $r = .52, p < .001$ ). The number of studies did not meet the criteria for testing moderation effects.

### Life Satisfaction

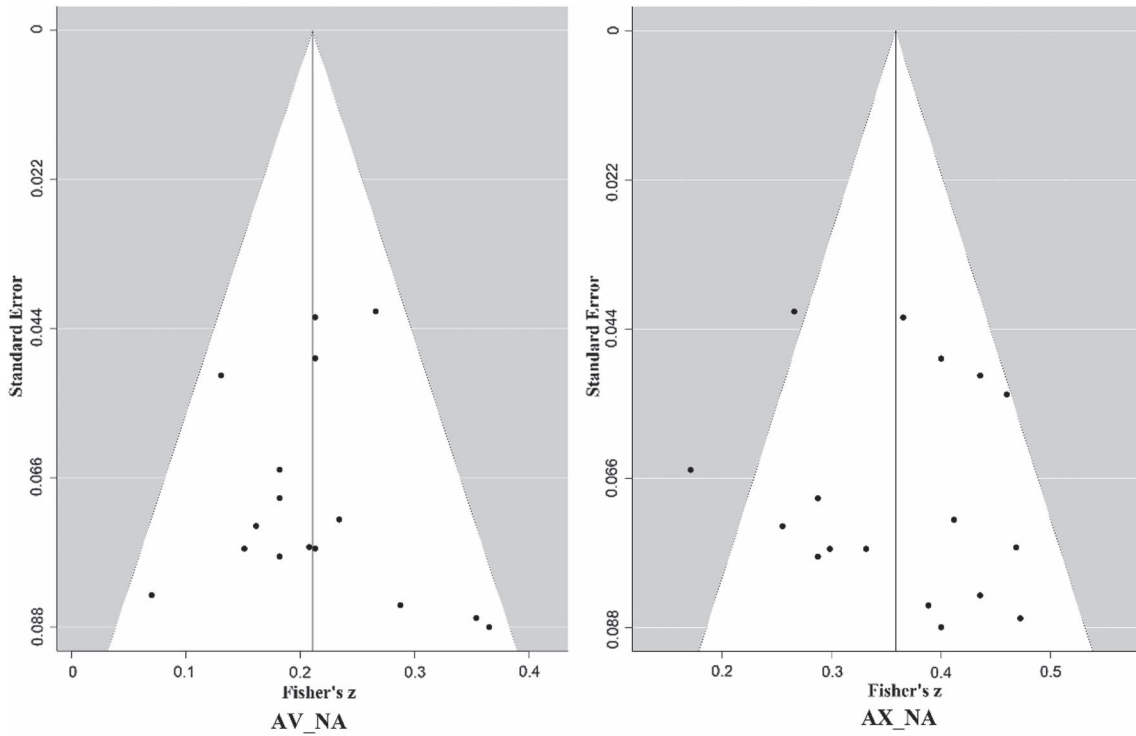
Life satisfaction was negatively correlated with both attachment avoidance ( $r = -.28, p < .001$ ) and anxiety ( $r = -.27, p < .001$ ). In terms of moderators, three effects were statistically significant: age,  $t(1, 10.65) = -2.521, p = .029$ , and study types,  $t(1, 9.44) = 2.569, p = .029$ , moderated the association between attachment avoidance and life satisfaction; the participant types moderated the association between attachment anxiety and life

satisfaction,  $t(1, 9.16) = 4.315, p = .002$  (see Table 9). Simple effect analyses revealed that attachment avoidance had a larger correlation with life satisfaction among older adults (i.e., participant mean age at 1 *SD* above the mean;  $r = -.32$ ) than that among younger adults (i.e., participant mean age at 1 *SD* below the mean;  $r = -.05$ ; e.g., Aiken & West, 1991). However, the findings of the last two moderating variables (i.e., study types and participant types) should be considered with caution since both have only one study included in the meta-analysis. Finally, there was no difference in the extent to which life satisfaction was correlated with avoidance, as opposed to anxiety,  $t(1, 31.8) = 0.650, p = .521$ .

### Positive Affect

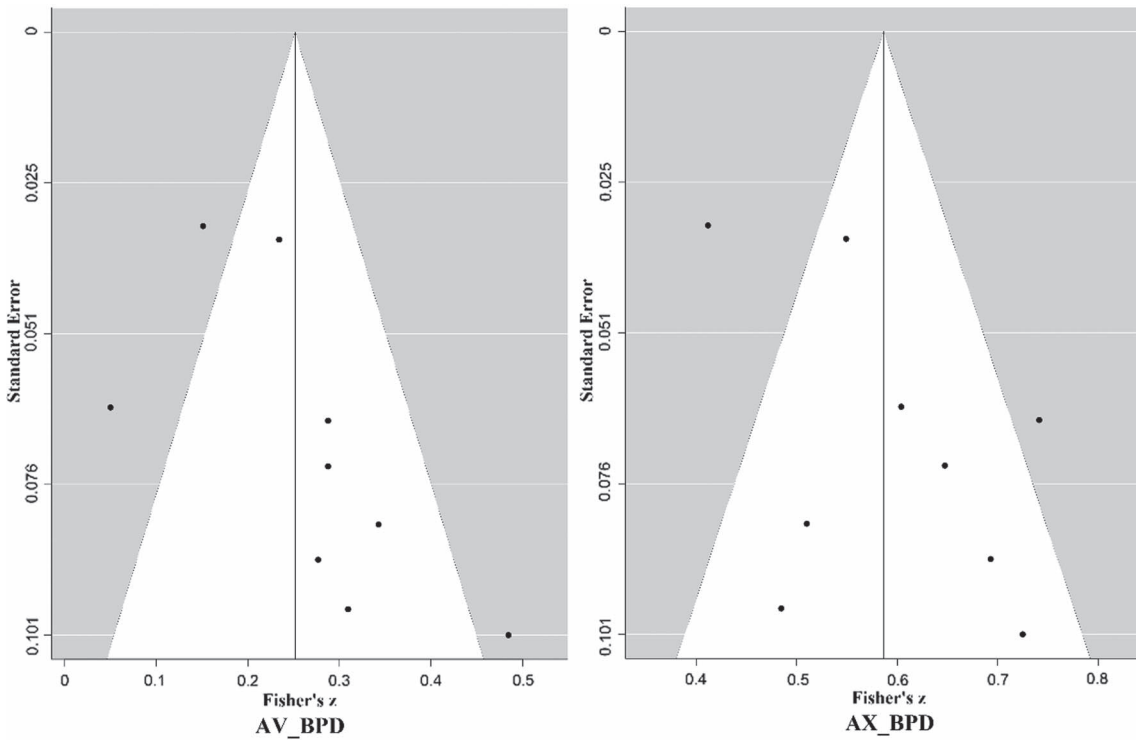
Positive affect was negatively correlated with both attachment avoidance ( $r = -.19, p < .001$ ) and anxiety ( $r = -.23, p < .001$ ). In terms of moderators, two moderating variables had a statistically significant effect: race,  $t(1, 4.83) = -2.739, p = .042$ , and age,  $t(1, 3.39) = -3.121, p = .044$ , moderated the association between attachment anxiety and positive affect (see Table 10). That is, as the proportion of White or Caucasian in a sample increased, the correlation between attachment anxiety and positive affect tended to decrease. However, due to low degrees of freedom (3.46), the moderating effect of age should be approached with caution. Finally, positive affect had similar-sized correlations with both attachment anxiety and avoidance,  $t(1, 14.0) = -0.63, p = .538$ .

**Figure 6**  
*Funnel Plot of the Relation Adult Attachment and Negative Affect*



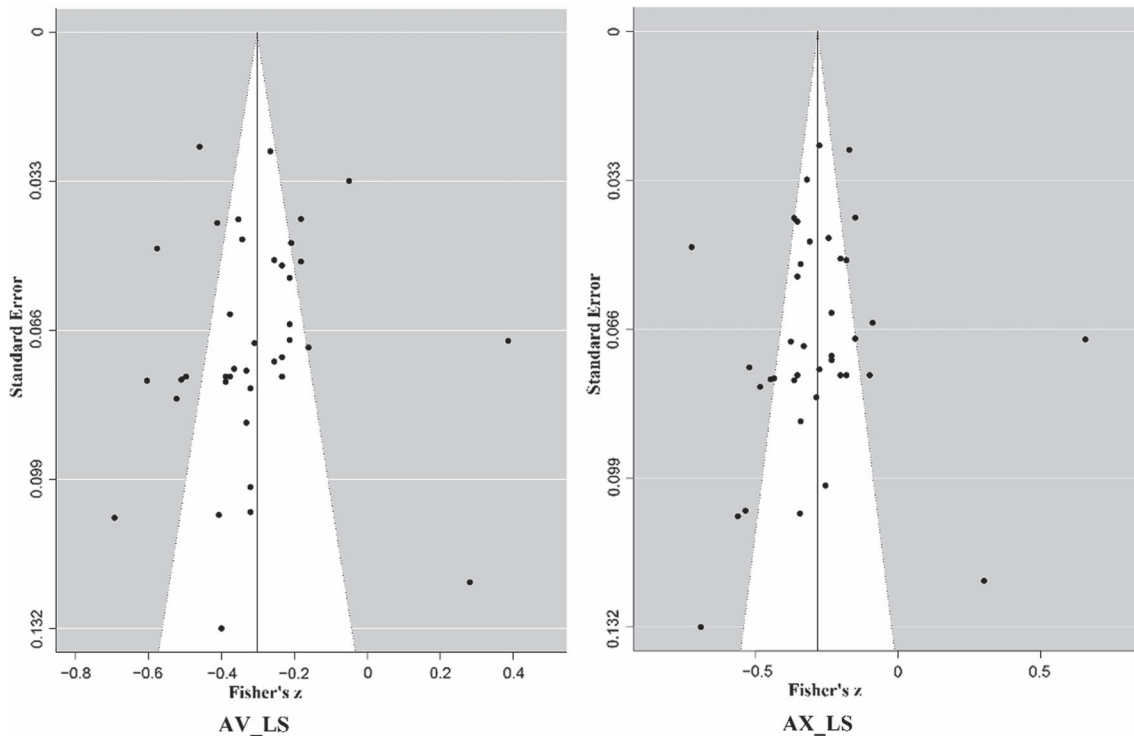
Note. AV = attachment avoidance; AX = attachment anxiety; NA = negative affect.

**Figure 7**  
*Funnel Plot of the Relation Adult Attachment and Borderline Personality Disorder*



Note. AV = attachment avoidance; AX = attachment anxiety; BPD = borderline personality disorder.

**Figure 8**  
*Funnel Plot of the Relation Adult Attachment and Life Satisfaction*



Note. AV = attachment avoidance; AX = attachment anxiety; LS = life satisfaction.

### Psychological Well-Being

Psychological well-being was negatively correlated with both attachment avoidance ( $r = -.29, p < .001$ ) and anxiety ( $r = -.39, p < .001$ ). The number of studies did not meet the criteria for testing moderation effects.

### Self-Esteem

Self-esteem was negatively correlated with both attachment avoidance ( $r = -.21, p < .001$ ) and anxiety ( $r = -.29, p < .001$ ). None of the included moderating variables statistically significantly moderated the association between self-esteem and attachment; likewise, self-esteem had similar correlations with avoidance and anxiety,  $t(1,23.9) = -1.92, p = .067$ .

### Summary

To summarize, meta-analytic estimates of the bivariate associations between adult attachment and mental health outcomes can be found in Table 11. We report effect sizes both (a) corrected for measurement unreliability ( $r^+$ ; Hunter & Schmidt, 2004) and (b) without this correction ( $r$ ). As can be seen from Table 11,  $I^2$  for most uncorrected effect sizes ranged from 51.08% to 97.08%, indicating substantial variance due to variability in true effects rather than sampling error.

### Multivariate Associations Between Adult Attachment and Mental Health

Table 12 displays the bivariate and the unique associations of attachment avoidance and anxiety with mental health (i.e., mutually controlling for one another). Estimates of the bivariate relations from the MASEM approach were comparable in magnitude to the estimates from the RVE approach presented in Table 11. As expected, all relations between a focal adult attachment and mental health outcomes decreased when controlling for the other attachment dimension. All associations between adult attachment and the 10 mental health outcomes remained statistically significant in the multivariate analyses (see Table 12).

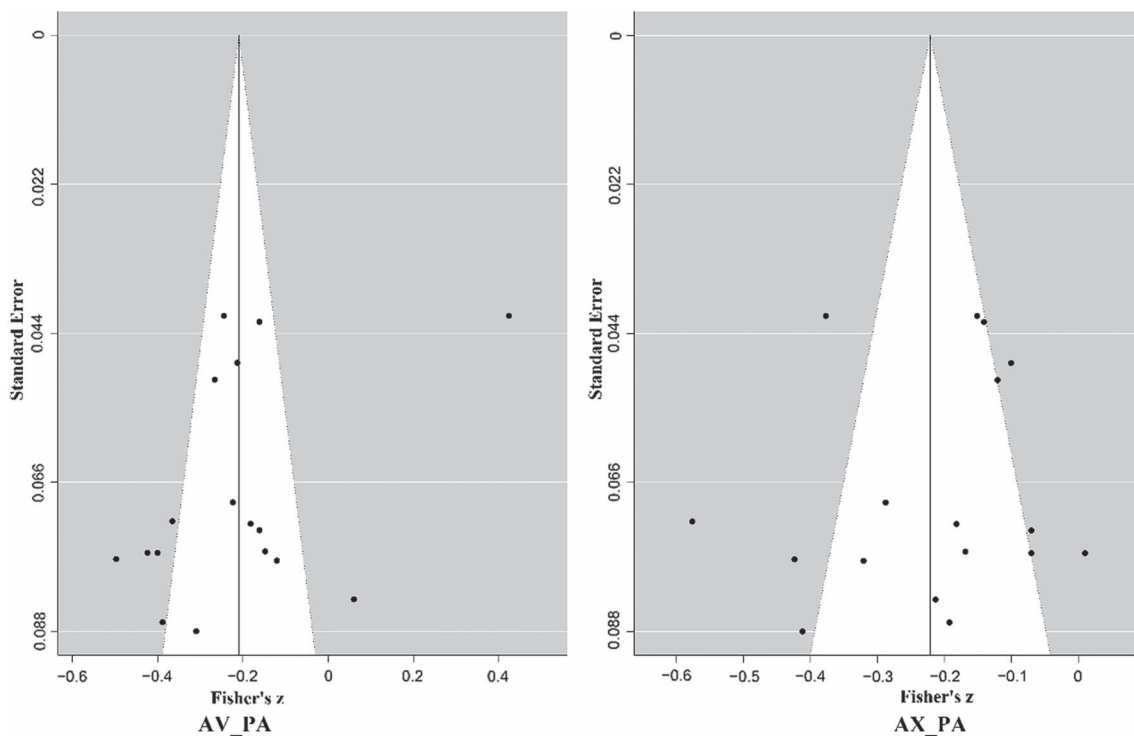
### Discussion

The primary aim of the present meta-analysis was to estimate the overall associations between adult attachment orientations and both positive and negative indicators of mental health. A second goal of this study was to assess potential moderators of the links between attachment and mental health. We review and discuss our findings in the sections that follow.

### Overall Associations Between Adult Attachment and Mental Health

In general, higher levels of both attachment anxiety and avoidance were moderately associated with higher levels of negative indicators

**Figure 9**  
*Funnel Plot of the Relation Adult Attachment and Positive Affect*



*Note.* AV = attachment avoidance; AX = attachment anxiety; PA = positive affect.

of mental health, which included depression, anxiety, loneliness, emotion regulation difficulty, negative affect, and borderline personality disorder. Likewise, both attachment dimensions predicted lower levels of positive indicators of mental health, including life satisfaction, positive affect, psychological well-being, and self-esteem. By applying multivariate SEM, we were able to estimate the unique associations of each attachment dimension with mental health, controlling for the other attachment dimension. All associations between adult attachment and the 10 mental health outcomes included in our study remained statistically significant in these multivariate analyses. These findings suggest that adult attachment is robustly related to a wide range of indicators of mental health—which seems to underscore the importance of personality differences in how people approach intimate relationships on mental health in adulthood.

Indeed, previous studies have shown that attachment security (i.e., low levels of both anxiety and avoidance) is associated with lower levels of mental health symptoms (i.e., depression, generalized anxiety disorder symptoms, and emotion dysregulation; Marganska et al., 2013; Mikulincer & Shaver, 2007; Widom et al., 2018). Consistent with these previous studies, our meta-analysis also found that attachment orientation is related to a wide swath of mental health outcomes, which includes both positive and negative indicators of mental health.

Taken in whole, our meta-analysis suggests that attachment insecurity is an important risk factor for poorer mental health. This may be attributable to the emotional regulation strategies used by people with high levels of attachment anxiety and/or avoidance. For example, Mikulincer et al. (2003) suggested that,

when a person perceives a threat, seeking proximity to an attachment figure can assuage negative affect and produce feelings of well-being. Attachment insecurity may undermine the ability of individuals to successfully utilize relational resources to improve their well-being. In particular, attachment anxiety leads individuals to use hyperactivating strategies, characterized by proximity-seeking efforts to elicit support, care, and attention. Oftentimes, anxiety is characterized by clinging or controlling behaviors, which can undermine felt support and satisfaction with relationships (e.g., Hudson & Fraley, 2017).

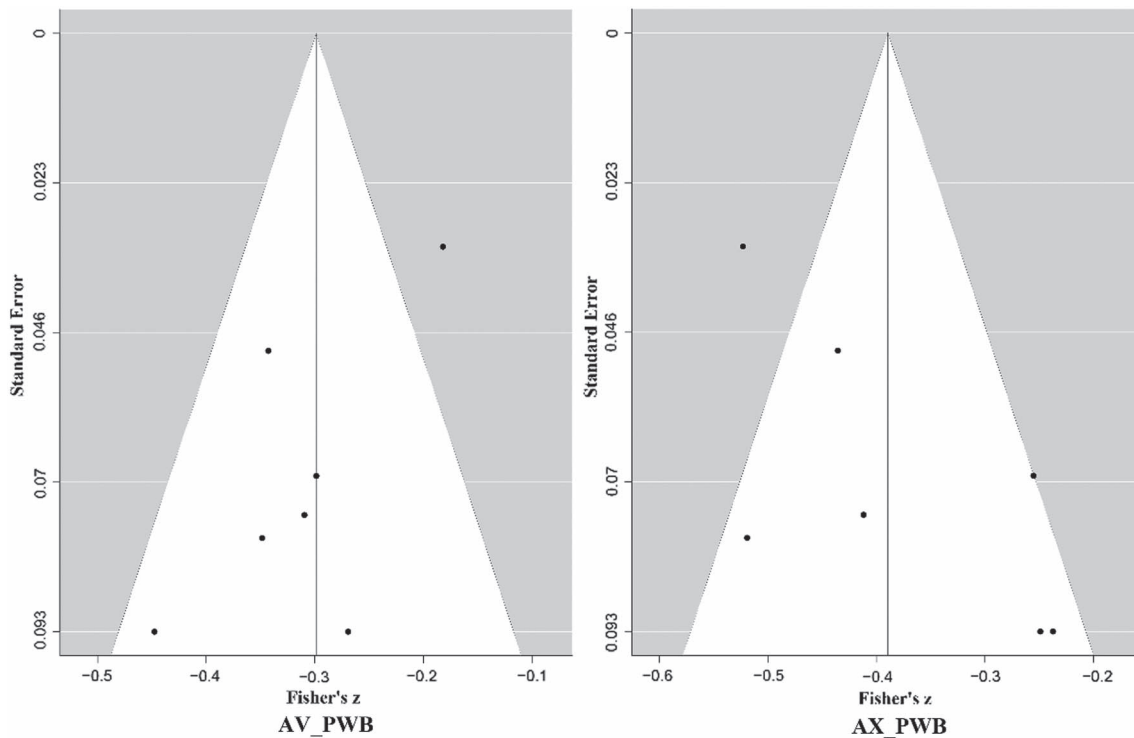
In contrast, individuals with high attachment avoidance tend to use deactivating strategies, which involve denial of fear, avoidance of closeness and intimacy, and an emphasis on self-reliance and independence (Mikulincer et al., 2003). This can undermine the variety of benefits that close relationships and reliance on attachment figures can bring.

In contrast to individuals with high levels of attachment anxiety or avoidance, relatively secure individuals (e.g., those who are low in both attachment anxiety and avoidance) tend to have optimistic beliefs about their ability to handle distress (Mikulincer & Orbach, 1995). Indeed, attachment insecurity has been linked to various psychological problems, such as social anxiety (Mennin et al., 2009; Turk et al., 2005), deliberate self-harm (Slee et al., 2008), posttraumatic stress symptoms (Tull et al., 2007), and other forms of psychopathology (Fortuna & Roisman, 2008).

In addition to negative indicators of mental health, consistent with many previous studies (Corcoran & McNulty, 2018; Cronin et al., 2019; Dan et al., 2014; Gnilka et al., 2013; Goodall, 2015; Kafetsios



**Figure 10**  
*Funnel Plot of the Relation Adult Attachment and Psychological Well-Being*



Note. AV = attachment avoidance; AX = attachment anxiety; PWB = psychological well-being.

& Sideridis, 2006), the present meta-analysis also found that adult attachment was closely related to numerous positive indicators of mental health.

### Moderating Effects of Study Characteristics and Attachment Dimensions

The current meta-analysis examined the effects of potential moderators of the links between attachment and mental health, including gender, age, race, relationship status, clinical versus nonclinical sample, longitudinal versus cross-sectional study design, and attachment measures used. In general, very few of the tested moderators actually moderated the links between attachment and mental health. Additionally, we tested whether attachment anxiety or avoidance was more closely correlated with mental health.

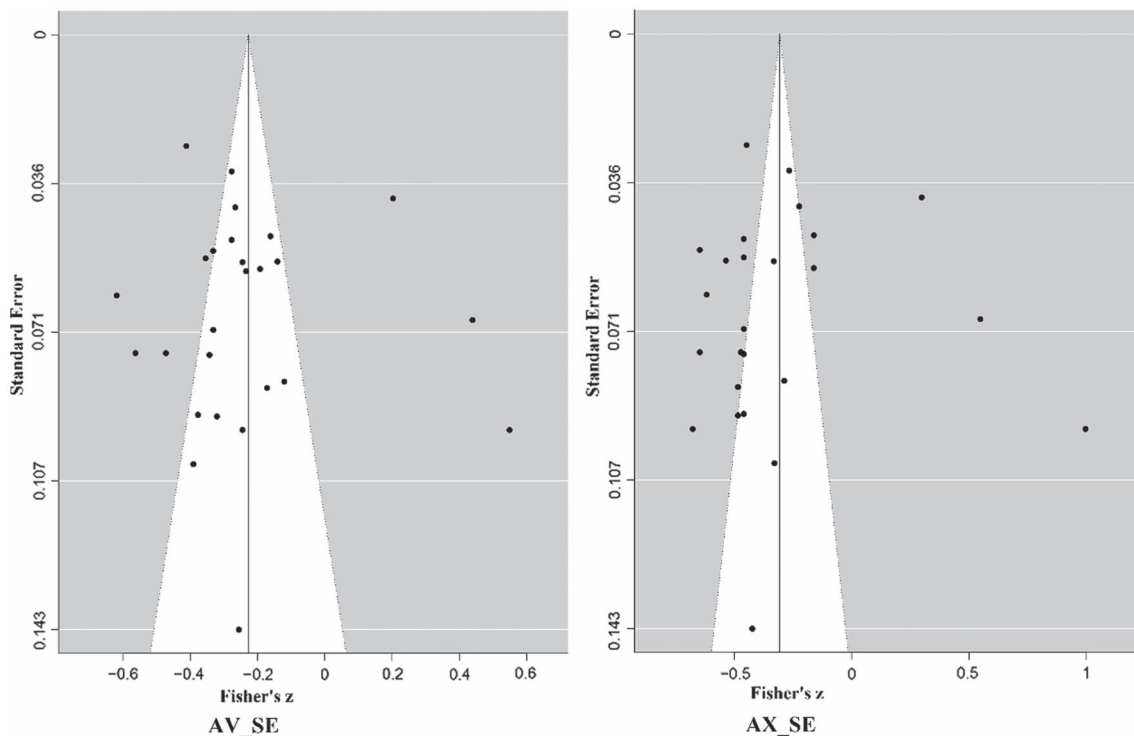
First, our study found that gender moderated one of the associations between attachment domains and mental health. These may represent a true population effect. Alternatively, given the sheer number of moderators tested and the very few (and haphazard) moderation effects that were statistically significant, the moderation effects found in our study may be attributable to sampling error. That said, in our meta-analysis, gender moderated the association between attachment avoidance and depression. As the proportion of women in the sample increased, the correlation between attachment avoidance and depression tended to decrease. This finding

seems to indicate that attachment avoidance may have a lesser effect on depression in women than it does in men.

This finding may be due to the fact that avoidance tends to present differently in men and women (Bartholomew & Horowitz, 1991; Brennan et al., 1991). That is, women tend to have a fearful avoidance style (i.e., high anxiety and high avoidance), which is characterized by wanting closeness but being fearful of trusting and depending on others. In contrast, men tended to have a dismissive avoidance style (i.e., low anxiety and high avoidance), characterized by self-reliance and not wanting close relationships. Thus, compared with avoidantly attached women, avoidantly attached men may limit distress disclosure to a greater degree. Furthermore, individuals high in avoidance may be more likely to attempt to conceal their depression (Burke et al., 2014). In other words, avoidance may predict depression for men and women to a similar extent, but more avoidant men may simply conceal their depressive symptoms (Kahn & Garrison, 2009).

Second, age moderated the association between attachment avoidance and life satisfaction, such that avoidance and life satisfaction were more strongly related to one another among older individuals. Theoretically, according to socioemotional selectivity theory, persons regulate their social networks so as to optimize the emotional experience in their relationships during middle and late adulthood (Carstensen, 1992; Carstensen et al., 2000). Although they tend to have smaller support networks, older adults tend to establish closer relationships (e.g., marital and familial relationships). Thus, older adults may be affected more by the negative effects of attachment

**Figure 11**  
*Funnel Plot of the Relation Adult Attachment and Self-Esteem*



*Note.* AV = attachment avoidance; AX = attachment anxiety; SE = self-esteem.

avoidance. Additionally, we found that the study types—longitudinal versus cross-sectional study design—may moderate the association between avoidance and life satisfaction. However, only one of the included studies assessed the association between adult attachment and life satisfaction using a longitudinal study design; thus, the robustness of this finding is questionable. Future studies might consider further exploring the longitudinal links between attachment and mental health.

Fourth, we found that attachment anxiety and life satisfaction were more strongly related in clinical samples than in nonclinical samples. However, only one of the included studies explored the relationship between attachment anxiety and life satisfaction in a clinical sample. Thus, again, the robustness of this finding is questionable.

Fifth, we found that race may moderate the association between attachment anxiety and positive affect. As the proportion of White or Caucasian in the sample increased, the correlation between attachment anxiety and positive affect tended to decrease. This suggests that the impact of attachment anxiety on positive emotions may be smaller in White populations.

Finally, we found that the average correlation between attachment anxiety and indicators of mental health was substantially larger than the correlations between attachment avoidance and mental health. These findings suggest that, compared with attachment avoidance, attachment anxiety may have a greater negative impact on mental health. This may be attributable to the distinct cognitive and emotional strategies associated with attachment anxious (hyperactivation) and attachment avoidance (deactivation). Specifically,

attachment anxiety is associated with hyperreactivity to threats and catastrophic beliefs about potentially aversive situations (Bartholomew & Horowitz, 1991; Mikulincer & Florian, 1998). Moreover, those with high levels of attachment anxiety tend to report higher subjective levels of psychological stress and a stronger tendency to ruminate in response to stressful events (Mikulincer & Florian, 1998). In contrast, those with high attachment avoidance tend to use defensive regulation mechanisms, which allow them to control emotional stressful situations (Dozier & Kobak, 1992; Fraley & Shaver, 1997; Mikulincer et al., 1990; Mikulincer & Orbach, 1995). In sum, the finding that attachment anxiety is more strongly linked with mental health than is attachment avoidance dovetails nicely with prior theory and research.

In this vein, numerous prior studies have also found stronger links between attachment anxiety and mental health as opposed to those between attachment avoidance and mental health among both nonclinical (Feeney & Ryan, 1994; Rapoza et al., 2016; Stanton & Campbell, 2014; Tasca & Balfour, 2014; Woodhouse et al., 2015) and clinical populations (Kidd et al., 2016; Korver-Nieberg et al., 2015). Moreover, there may be biochemical mechanisms underlying the effects of attachment anxiety on mental health. For example, Jaremka et al. (2013) suggested that attachment anxiety may function as a chronic social stressor that is related to alterations in cortisol levels and cellular immunity.

Finally, it is worth comparing the present findings with those from meta-analyses that defined attachment styles using categorical measures. Although the current research defined attachment styles

**Table 4**  
The Results of Egger's Test for Publication Bias

Domain of outcomes	df	t value	p value
Attachment avoidance—depression	33.7	0.10	.918
Attachment anxiety—depression	30.0	0.53	.417
Attachment avoidance—generalized anxiety	14.5	0.15	.887
Attachment anxiety—generalized anxiety	13.5	0.22	.827
Attachment avoidance—loneliness	5.1	-0.26	.805
Attachment anxiety—loneliness	5.41	0.51	.633
Attachment avoidance—emotion regulation difficulty	12.6	0.48	.639
Attachment anxiety—emotion regulation difficulty	13.2	0.62	.546
Attachment avoidance—negative affect	7.16	0.05	.963
Attachment anxiety—negative affect	7.78	0.33	.754
Attachment avoidance—borderline personality disorder	3.28	2.81	.061
Attachment anxiety—borderline personality disorder	3.17	1.10	.349
Attachment avoidance—life satisfaction	9.88	-0.15	.884
Attachment anxiety—life satisfaction	9.54	0.06	.954
Attachment avoidance—positive affect	7.60	-1.10	.307
Attachment anxiety—positive affect	7.85	-1.07	.319
Attachment avoidance—psychological well-being	2.77	-2.09	.135
Attachment anxiety—psychological well-being	2.31	2.220	.140
Attachment avoidance—self-esteem	6.97	0.164	.874
Attachment anxiety—self-esteem	6.51	-0.132	.899

as a combination of two continuous traits—anxiety and avoidance—many previous studies have used categorical operationalizations of attachment. For example, numerous meta-analytic studies using categorical operationalizations of adult attachment found that people with insecure attachment styles have more severe mental health problems (i.e., depression, anxiety, posttraumatic stress disorder) than do those with secure attachment styles (Dagan et al., 2018;

Woodhouse et al., 2015). Indeed, other studies have found that people with an insecure-preoccupied attachment style (i.e., high anxiety and low avoidance) had higher mental health symptoms than did individuals with an insecure-dismissing attachment style (i.e., low anxiety and high avoidance; Dagan et al., 2018, 2020; Woodhouse et al., 2015). These findings from previous studies utilizing categorical operationalizations of attachment are thus consistent with our findings.

Our study also found that attachment anxiety and avoidance were significantly correlated with negative indicators of mental health (i.e., depression, anxiety, difficulty regulating emotions, loneliness, negative emotions), which also may reflect to a certain extent that insecurely attached individuals have more severe mental health problems than securely attached individuals. Furthermore, the findings that the associations between several negative indicators of mental health and attachment anxiety were larger than that of attachment avoidance also align with previous studies (e.g., Dagan et al., 2018; Woodhouse et al., 2015). In sum, our meta-analysis aligns with and supports previous meta-analyses that used categorical measures of attachment.

Nevertheless, more research is needed to further clarify the links between adult attachment and mental health. For example, although attachment anxiety may be more detrimental to mental health than is attachment avoidance, those high in attachment anxiety may be more likely to seek mental health resources (Adams et al., 2018; Wadman et al., 2019). This apparent contradiction—that highly anxious individuals are more likely to seek mental health care yet experience worse mental health outcomes than do their highly avoidant peers—should be explored in future research.

## Limitations

The main strength of the present study is its contribution to understanding the links between adult attachment and mental health.

**Table 5**  
Moderator Analyses for the Relation Between Adult Attachment and Depression

Variable	Correlation	$\beta$ -coefficient	Standard error	t value (df)	p value
$R_{av-dp}$	.28***				
Publication year		0.004	0.003	1.045 (47.1)	.302
Relationship status		0.000	0.001	0.258 (66.6)	.797
Race		0.000	0.001	0.105 (50.8)	.917
Gender		-0.002	0.001	-2.440 (55.3)	<b>.018</b>
Age		-0.000	0.000	-0.293 (36.9)	.771
Study types		-0.041	0.041	-1.000 (14.0)	.334
Participant types		0.003	0.044	0.079 (42.3)	.938
Attachment measures		-0.011	0.041	-0.256 (38.5)	.799
$R_{ax-dp}$	.40***				
Publication year		-0.006	0.004	-1.574 (48.9)	.122
Relationship status		-0.000	0.001	-0.286 (72.5)	.775
Race		-0.000	0.001	-0.236 (53.1)	.814
Gender		-0.001	0.001	-0.955 (57.9)	.344
Age		0.001	0.001	1.192 (38.8)	.241
Study types		0.018	0.037	0.484 (14.0)	.636
Participant types		0.043	0.033	1.289 (46.9)	.204
Attachment measures		0.023	0.032	0.711 (45.9)	.481
Attachment dimensions		0.132	0.020	6.56 (120.0)	<b>.000</b>

Note.  $R_{av-dp}$  = relation between attachment avoidance and depression;  $R_{ax-dp}$  = relation between attachment anxiety and depression. Significant ( $p < .05$ ) moderating effects are listed in boldface font. \*\*\*  $p < .001$ .

**Table 6**  
Moderator Analyses for the Relation Between Adult Attachment and Generalized Anxiety

Variable	Correlation	$\beta$ -coefficient	Standard error	<i>t</i> value ( <i>df</i> )	<i>p</i> value
<i>R</i> <sub>av-an</sub>	<b>.24***</b>				
Publication year		0.002	0.005	0.462 (13.00)	.652
Relationship status		-0.001	0.002	-0.518 (20.25)	.610
Race		-0.000	0.002	-0.180 (23.52)	.859
Gender		-0.002	0.001	-1.016 (26.06)	.319
Age		-0.000	0.001	-0.334 (18.69)	.742
Study types		0.065	0.050	1.313 (2.77)	.288
Participant types		0.019	0.066	0.294 (16.24)	.772
Attachment measures		-0.055	0.067	-0.825 (18.90)	.420
<i>R</i> <sub>ax-an</sub>	<b>.39***</b>				
Publication year		0.002	0.005	0.363 (13.81)	.722
Relationship status		-0.002	0.003	-0.801 (20.69)	.432
Race		-0.004	0.002	-1.816 (24.43)	.082
Gender		0.001	0.002	0.851 (28.09)	.402
Age		-0.000	0.001	-0.241 (19.58)	.812
Study types		0.135	0.070	1.923 (2.78)	.157
Participant types		0.031	0.069	0.450 (17.50)	.658
Attachment measures		0.014	0.081	0.168 (19.29)	.868
Attachment dimensions		0.168	0.024	6.91 (55.7)	<b>.000</b>

Note. *R*<sub>av-an</sub> = relation between attachment avoidance and generalized anxiety; *R*<sub>ax-an</sub> = relation between attachment anxiety and generalized anxiety. Significant ( $p < .05$ ) moderating effects are listed in boldface font. \*\*\*  $p < .001$ .

Namely, our meta-analysis provides precise point-estimates of the correlations between attachment anxiety and avoidance and numerous indices of mental health. Nevertheless, our study suffers from several limitations that are worth noting.

First, our meta-analysis only included dimensional measures of attachment. Although dimensional measures of attachment are psychometrically superior to categorical ones (Fraleley et al., 2015; Fraley & Spieker, 2003; Zhang et al., 2018), omitting studies with categorical measures provides a less-than-comprehensive view of the attachment literature.

Second, the measures in included studies—primarily the ECR—contain questions that ask people how they approach romantic relationships in general. However, scholars have emphasized the idea that attachment working models can vary across levels of specificity (Collins & Read, 1994; Sibley & Overall, 2008, 2010). The present study did not compare the effects of global attachment and relationship-specific attachment on mental health. Future research might explore whether relationship-specific attachment has different links to mental health as compared to global attachment.

**Table 7**  
Moderator Analyses for the Relation Between Adult Attachment and Emotion Regulation Difficulty

Variable	Correlation	$\beta$ -coefficient	Standard error	<i>t</i> value ( <i>df</i> )	<i>p</i> value
<i>R</i> <sub>av-erd</sub>	<b>.29***</b>				
Publication year		0.011	0.027	0.418 (9.16)	.686
Relationship status		0.006	0.012	0.465 (13.65)	.649
Race		-0.000	0.007	-0.057 (11.11)	.956
Gender		0.003	0.003	1.399 (7.02)	.204
Age		0.010	0.007	1.581 (8.23)	.152
Participant types		0.101	0.158	0.640 (7.54)	.541
Attachment measures		0.042	0.152	0.277 (5.58)	.792
<i>R</i> <sub>ax-erd</sub>	<b>.51***</b>				
Publication year		0.004	0.018	0.212 (9.40)	.837
Relationship status		-0.002	0.009	-0.184 (14.27)	.857
Race		0.001	0.006	0.201 (11.97)	.844
Gender		0.005	0.003	1.660 (7.08)	.140
Age		0.011	0.007	1.506 (9.14)	.166
Participant types		0.373	0.216	1.725 (7.59)	.125
Attachment measures		0.137	0.223	0.614 (5.55)	.564
Attachment dimensions		0.262	0.038	6.84 (28.9)	<b>.000</b>

Note. *R*<sub>av-erd</sub> = relation between attachment avoidance and emotion regulation difficulty; *R*<sub>ax-erd</sub> = relation between attachment anxiety and emotion regulation difficulty. Significant ( $p < .05$ ) moderating effects are listed in boldface font. \*\*\*  $p < .001$ .

**Table 8**  
Moderator Analyses for the Relation Between Adult Attachment and Negative Affect

Variable	Correlation	$\beta$ -coefficient	Standard error	<i>t</i> value ( <i>df</i> )	<i>p</i> value
<i>R</i> <sub>av-na</sub>	.21***				
Publication year		0.009	0.008	1.142 (2.48)	.352
Relationship status		-0.000	0.015	-0.034 (3.99)	.975
Race		-0.002	0.012	-0.162 (4.28)	.879
Gender		-0.004	0.007	-0.627 (3.75)	.567
Age		-0.002	0.012	-0.151 (3.19)	.889
Study types		0.030	0.079	0.376 (3.61)	.728
Attachment measures		0.006	0.069	0.091 (2.08)	.936
<i>R</i> <sub>ax-na</sub>	.34***				
Publication year		-0.017	0.007	-2.422 (2.61)	.107
Relationship status		-0.010	0.009	-1.135 (4.35)	.315
Race		-0.010	0.011	-0.870 (4.78)	.426
Gender		0.006	0.008	0.824 (4.11)	.455
Age		0.006	0.007	0.792 (4.06)	.472
Study types		0.136	0.061	2.232 (4.10)	.088
Attachment measures		-0.009	0.128	-0.069 (2.96)	.950
Attachment dimensions		0.157	0.032	4.83 (12.7)	<b>.000</b>

Note. *R*<sub>av-na</sub> = relation between attachment avoidance and negative affect; *R*<sub>ax-na</sub> = relation between attachment anxiety and negative affect.

Significant ( $p < .05$ ) moderating effects are listed in bold face font. \*\*\*  $p < .001$ .

Third, we considered many moderators in this meta-analysis. We found very few statistically significant moderation relationships in our data. Thus, it is possible that the few moderation effects reported are attributable to sampling error (i.e., they are Type I errors) rather than representing true population effects. Along these lines, there may exist other important moderators of the links between attachment and mental health, which were not included in the present meta-analysis.

Finally, as in any meta-analysis, although we attempted to conduct a comprehensive review of studies containing relevant variables—and although funnel plots suggested little reason to suspect publication bias in the selected studies—inevitably unpublished data exist that we could not obtain and thus were not included in the present meta-analysis.

### Implications for Clinical Practice and Research

The findings from present study may have some implications for clinical practice and research. The current meta-analysis includes data from many existing studies and further supports the idea that attachment may play a role in determining a wide range of mental health outcomes. Consequently, maintaining a high-quality, secure attachment bond with close others could promote individuals' mental health and well-being. In addition, the findings that individuals with high attachment anxiety are more likely to report higher risk of several mental health problems than individuals with high attachment avoidance may also have some clinical significance. Namely, screening for and addressing anxious attachment prior to

**Table 9**  
Moderator Analyses for the Relation Between Adult Attachment and Life Satisfaction

Variable	Correlation	$\beta$ -coefficient	Standard error	<i>t</i> value ( <i>df</i> )	<i>p</i> value
<i>R</i> <sub>av-ls</sub>	-.28***				
Publication year		0.001	0.010	0.121 (12.21)	.906
Relationship status		-0.000	0.005	-0.056 (9.22)	.957
Race		-0.006	0.005	-1.192 (13.09)	.255
Gender		-0.000	0.002	-0.175 (4.76)	.868
Age		-0.010	0.004	-2.521 (10.65)	<b>.029</b>
Study types		0.248	0.096	2.569 (9.44)	<b>.029</b>
Participant types		0.112	0.842	1.325 (9.12)	.217
Attachment measures		0.042	0.100	0.417 (3.37)	.702
<i>R</i> <sub>ax-ls</sub>	-.27***				
Publication year		-0.002	0.013	-0.143 (12.16)	.888
Relationship status		0.001	0.008	0.134 (9.25)	.896
Race		-0.007	0.007	-1.055 (13.23)	.310
Gender		-0.003	0.003	-0.951 (4.74)	.388
Age		-0.009	0.006	-1.548 (10.70)	.151
Study types		0.209	0.120	1.741 (9.59)	.114
Participant types		0.497	0.115	4.315 (9.16)	<b>.002</b>
Attachment measures		0.080	0.149	0.541 (3.34)	.623
Attachment dimensions		0.015	0.023	0.650 (31.8)	.521

Note. *R*<sub>av-ls</sub> = relation between attachment avoidance and life satisfaction; *R*<sub>ax-ls</sub> = relation between attachment anxiety and life satisfaction.

Significant ( $p < .05$ ) moderating effects are listed in bold face font. \*\*\*  $p < .001$ .

**Table 10**  
Moderator Analyses for the Relation Between Adult Attachment and Positive Affect

Variable	Correlation	$\beta$ -coefficient	Standard error	<i>t</i> value ( <i>df</i> )	<i>p</i> value
$R_{av-pa}$	-.19***				
Publication year		0.029	0.027	1.057 (3.23)	.363
Relationship status		-0.008	0.021	-0.368 (4.04)	.731
Race		-0.024	0.020	-1.181 (4.90)	.292
Gender		0.001	0.002	0.444 (3.06)	.687
Age		-0.014	0.015	-0.915 (3.40)	.420
Study types		0.061	0.096	0.640 (3.66)	.560
Attachment measures		-0.013	0.292	-0.046 (3.70)	.966
$R_{ax-pa}$	-.23***				
Publication year		0.009	0.012	0.756 (3.32)	.500
Relationship status		-0.015	0.011	-1.310 (4.05)	.260
Race		0.027	0.010	2.739 (4.83)	<b>.042</b>
Gender		0.001	0.001	0.680 (3.05)	.545
Age		-0.022	0.007	-3.121 (3.39)	<b>.045</b>
Study types		0.164	0.061	2.661 (3.69)	.061
Attachment measures		0.180	0.145	1.241 (3.87)	.285
Attachment dimensions		-0.045	0.071	-0.631 (14.0)	.538

Note.  $R_{av-pa}$  = relation between attachment avoidance and positive affect;  $R_{ax-pa}$  = relation between attachment anxiety and positive affect.  
Significant ( $p < .05$ ) moderating effects are listed in bold face font. \*\*\*  $p < .001$ .

**Table 11**  
Meta-Analytic Estimates of the Bivariate Relations Between Adult Attachment and Mental Health Outcomes With and Without Correction for Measurement

MH	<i>j</i>	<i>k</i>	<i>df</i>	Estimates corrected for measurement error				Uncorrected estimates				
				$r^+$	95% CI	$I^2$	$\tau^2$	<i>r</i>	95% CI	$I^2$	$\tau^2$	
DP												
AV	119	145	114.24	0.311	[0.282, 0.340]	85.169	0.022	0.278	[0.253, 0.304]	85.066	0.018	
AX	124	150	121.07	0.442	[0.411, 0.472]	90.862	0.039	0.400	[0.371, 0.428]	90.693	0.031	
AN												
AV	54	61	51.49	0.265	[0.222, 0.306]	89.789	0.031	0.236	[0.197, 0.274]	89.639	0.025	
AX	56	63	54.08	0.427	[0.386, 0.466]	92.407	0.045	0.386	[0.347, 0.425]	92.622	0.038	
LO												
AV	12	15	10.98	0.475	[0.347, 0.586]	93.147	0.064	0.442	[0.320, 0.550]	93.340	0.055	
AX	13	16	11.76	0.493	[0.420, 0.559]	81.305	0.018	0.455	[0.387, 0.518]	81.006	0.014	
ERD												
AV	29	34	27.94	0.311	[0.224, 0.394]	96.014	0.073	0.287	[0.207, 0.364]	96.177	0.064	
AX	30	35	28.94	0.544	[0.466, 0.614]	95.541	0.066	0.508	[0.437, 0.573]	96.111	0.064	
NA												
AV	14	16	9.95	0.233	[0.189, 0.276]	15.692	0.001	0.206	[0.170, 0.241]	6.667	0.000	
AX	15	17	13.12	0.388	[0.330, 0.444]	63.676	0.009	0.343	[0.297, 0.387]	51.075	0.004	
BPD												
AV	8	9	6.45	0.272	[0.168, 0.371]	73.116	0.012	0.234	[0.147, 0.317]	66.457	0.006	
AX	8	9	6.75	0.582	[0.492, 0.660]	86.944	0.028	0.520	[0.442, 0.589]	78.070	0.011	
LS												
AV	33	39	31.74	-0.313	[-0.380, -0.242]	89.614	0.039	-0.280	[-0.341, -0.217]	88.972	0.030	
AX	33	39	31.84	-0.297	[-0.381, -0.209]	91.836	0.050	-0.266	[-0.342, -0.187]	91.789	0.041	
PA												
AV	15	17	13.99	-0.216	[-0.336, -0.090]	94.857	0.084	-0.191	[-0.305, -0.071]	94.610	0.064	
AX	15	17	13.87	-0.253	[-0.331, -0.171]	79.635	0.018	-0.231	[-0.309, -0.149]	82.648	0.017	
PWB												
AV	6	7	4.61	-0.321	[-0.416, -0.218]	57.834	0.006	-0.286	[-0.37, -0.197]	59.754	0.005	
AX	6	7	4.83	-0.437	[-0.537, -0.324]	69.556	0.010	-0.388	[-0.490, -0.275]	73.619	0.010	
SE												
AV	25	26	23.91	-0.262	[-0.376, -0.141]	94.570	0.077	-0.221	[-0.322, -0.115]	94.347	0.053	
AX	24	25	22.97	-0.335	[-0.484, -0.167]	97.082	0.144	-0.293	[-0.436, -0.136]	97.084	0.106	

Note. MH = mental health; *j* = number of studies; *k* = number of effect sizes; *df* = degrees of freedom;  $r^+$  = meta-analytic correlation corrected for measurement error; 95% CI = 95% confidence interval;  $\tau^2$  = measure of heterogeneity;  $I^2$  = proportion of variance due to variability in true effects rather than sampling error; *r* = meta-analytic correlation without correction; AV = attachment avoidance; AX = attachment anxiety; DP = depression; AN = generalized anxiety; LO = loneliness; ERD = emotion regulation difficulty; NA = negative affect; BPD = borderline personality disorder; LS = life satisfaction; PA = positive affect; PWB = psychological well-being; SE = self-esteem.

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**Table 12**  
*Meta-Analytic Estimates of the Bivariate and Multivariate Relations Between Adult Attachment and Mental Health Using MASEM*

MH	Bivariate		Multivariate	
	ES	95% CI	ES	95% CI
DP				
AV	0.278	[0.260, 0.309]	0.165	[0.138, 0.192]
AX	0.405	[0.400, 0.46]	0.345	[0.315, 0.374]
AN				
AV	0.236	[0.204, 0.279]	0.125	[0.085, 0.164]
AX	0.394	[0.372, 0.459]	0.344	[0.305, 0.382]
LO				
AV	0.429	[0.353, 0.566]	0.304	[0.219, 0.389]
AX	0.461	[0.431, 0.566]	0.361	[0.299, 0.422]
ERD				
AV	0.283	[0.218, 0.364]	0.134	[0.055, 0.211]
AX	0.509	[0.485, 0.637]	0.455	[0.380, 0.530]
NA				
AV	0.208	[0.180, 0.242]	0.113	[0.078, 0.148]
AX	0.344	[0.317, 0.400]	0.307	[0.265, 0.349]
BPD				
AV	0.245	[0.177, 0.323]	0.086	[0.012, 0.159]
AX	0.526	[0.509, 0.661]	0.486	[0.420, 0.551]
LS				
AV	-0.294	[-0.362, -0.243]	-0.225	[-0.285, -0.165]
AX	-0.276	[-0.354, -0.213]	-0.199	[-0.266, -0.131]
PA				
AV	-0.207	[-0.311, -0.108]	-0.151	[-0.258, -0.043]
AX	-0.217	[-0.292, -0.151]	-0.165	[-0.242, -0.087]
PWB				
AV	-0.289	[-0.365, -0.229]	-0.193	[-0.269, -0.118]
AX	-0.372	[-0.479, -0.303]	-0.307	[-0.397, -0.218]
SE				
AV	-0.224	[-0.479, -0.303]	-0.142	[-0.250, -0.035]
AX	-0.297	[-0.454, -0.158]	-0.246	[-0.387, -0.105]

*Note.* MASEM = meta-analytic structural equation modeling; ES = meta-analytic effect size; 95% CI = 95% confidence interval; MH = mental health; AV = attachment avoidance; AX = attachment anxiety; DP = depression; AN = generalized anxiety; LO = loneliness; ERD = emotion regulation difficulty; NA = negative affect; BPD = borderline personality disorder; LS = life satisfaction; PA = positive affect; PWB = psychological well-being; SE = self-esteem. Multivariate ES reflects the association between adult attachment dimensions and mental health when controlling for the other one attachment dimension.

treatment of negative symptoms may improve treatment outcomes. In addition, the findings from the present also highlight the importance of secure attachment, promoting secure attachment orientation (e.g., low attachment anxiety and low attachment avoidance) may be valuable in developing strategies for population-level health promotion (see Hudson et al., 2020; Hudson & Fraley, 2018).

## Conclusion

In conclusion, our meta-analysis provides one of the most comprehensive reviews to-date of the associations between adult attachment and mental health outcomes. Overall, results indicated that adult attachment insecurity (i.e., attachment anxiety and avoidance) predicted worse mental health—across both positive and negative indicators of mental health. Moreover, the links between attachment anxiety and mental health were stronger than the links between attachment avoidance and mental health. The findings of the present study may open avenues for more focused research in the

future and may also have some implications for the clinical work and mental health practice.

## References

References marked with single asterisks indicate studies included in the meta-analysis. References marked with double asterisks indicate the citation for the OSF repository link of the present meta-analysis.

- \*Aarts, F., Hinnen, C., Gerdes, V. E., Acherman, Y., & Brandjes, D. P. (2014). Psychologists' evaluation of bariatric surgery candidates influenced by patients' attachment representations and symptoms of depression and anxiety. *Journal of Clinical Psychology in Medical Settings, 21*(1), 116–123. <https://doi.org/10.1007/s10880-014-9385-4>
- Adams, G. C., Wrath, A. J., & Meng, X. (2018). The relationship between adult attachment and mental health care utilization: A systematic review. *Canadian Journal of Psychiatry, 63*(10), 651–660. <https://doi.org/10.1177/0706743718779933>
- Agishtein, P., & Brumbaugh, C. (2013). Cultural variation in adult attachment: The impact of ethnicity, collectivism, and country of origin. *Journal of Social, Evolutionary, and Cultural Psychology, 7*(4), 384–405. <https://doi.org/10.1037/h0099181>
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. SAGE Publications.
- \*Akdoğan, R. (2017). A model proposal on the relationships between loneliness, insecure attachment, and inferiority feelings. *Personality and Individual Differences, 111*, 19–24. <https://doi.org/10.1016/j.paid.2017.01.048>
- Antonucci, T. C., Akiyama, H., & Takahashi, K. (2004). Attachment and close relationships across the life span. *Attachment and Human Development, 6*(4), 353–370. <https://doi.org/10.1080/1461673042000303136>
- \*Arcuri, A. (2009). *Attachment dimensions and depressive symptoms: Mediating effects of social support seeking and loneliness among first year undergraduate students* [Unpublished master's thesis]. University of Windsor, Canada.
- \*Atabay, Y. (2017). *The moderator role of self-discrepancy on the relationship between attachment and depression* [Unpublished doctoral thesis]. İstanbul Bilgi Üniversitesi, Turkey.
- \*Axfors, C., Sylven, S., Ramklint, M., & Skalkidou, A. (2017). Adult attachment's unique contribution in the prediction of postpartum depressive symptoms, beyond personality traits. *Journal of Affective Disorders, 222*, 177–184. <https://doi.org/10.1016/j.jad.2017.07.005>
- Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2009). The first 10,000 Adult Attachment Interviews: Distributions of adult attachment representations in clinical and non-clinical groups. *Attachment and Human Development, 11*(3), 223–263. <https://doi.org/10.1080/14616730902814762>
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*(2), 226–244. <https://doi.org/10.1037/0022-3514.61.2.226>
- \*Beeney, J. E., Stepp, S. D., Hallquist, M. N., Scott, L. N., Wright, A. G. C., Ellison, W. D., Nolf, K. A., & Pilkonis, P. A. (2015). Attachment and social cognition in borderline personality disorder: Specificity in relation to antisocial and avoidant personality disorders. *Personality Disorders, 6*(3), 207–215. <https://doi.org/10.1037/per0000110>
- \*Bekker, M. H., & Croon, M. A. (2010). The roles of autonomy-connectedness and attachment styles in depression and anxiety. *Journal of Social and Personal Relationships, 27*(7), 908–923. <https://doi.org/10.1177/0265407510377217>
- \*Berlin, L. J., Whiteside-Mansell, L., Roggman, L. A., Green, B. L., Robinson, J., & Spieker, S. (2011). Testing maternal depression and attachment style as moderators of early head start's effects on parenting. *Attachment and Human Development, 13*(1), 49–67. <https://doi.org/10.1080/14616734.2010.488122>

- \*Besser, A., Luyten, P., & Mayes, L. C. (2012). Adult attachment and distress: The mediating role of humor styles. *Individual Differences Research, 10*(3), 153–164.
- Biddle, S. J., Ciaccioni, S., Thomas, G., & Vergeer, I. (2019). Physical activity and mental health in children and adolescents: An updated review of reviews and an analysis of causality. *Psychology of Sport and Exercise, 42*, 146–155. <https://doi.org/10.1016/j.psychsport.2018.08.011>
- Bifulco, A., Mahon, J., Kwon, J.-H., Moran, P. M., & Jacobs, C. (2003). The Vulnerable Attachment Style Questionnaire (VASQ): An interview-based measure of attachment styles that predict depressive disorder. *Psychological Medicine, 33*(6), 1099–1110. <https://doi.org/10.1017/S0033291703008237>
- \*Bishop, J. L., Norona, J. C., Roberson, P. N., Welsh, D. P., & McCurry, S. K. (2019). Adult attachment, role balance, and depressive symptoms in emerging adulthood. *Journal of Adult Development, 26*(1), 31–40. <https://doi.org/10.1007/s10804-018-9295-z>
- \*Blair, J. M. (2015). *The impact of student involvement, spiritual well-being and attachment style on college student success and satisfaction* [Unpublished master's thesis]. California State University, Long Beach, United States.
- \*Boldero, J. M., Hulbert, C. A., Bloom, L., Cooper, J., Gilbert, F., Mooney, J. L., & Salinger, J. (2009). Rejection sensitivity and negative self-beliefs as mediators of associations between the number of borderline personality disorder features and self-reported adult attachment. *Personality and Mental Health, 3*(4), 248–262. <https://doi.org/10.1002/pmh.93>
- Borenstein, M., Hedges, L. V., Higgins, J. P., & Rothstein, H. R. (2011). *Introduction to meta-analysis*. Wiley. <https://doi.org/10.1002/9780470743386>
- Borenstein, M., Higgins, J. P., Hedges, L. V., & Rothstein, H. R. (2017). Basics of meta-analysis:  $I^2$  is not an absolute measure of heterogeneity. *Research Synthesis Methods, 8*(1), 5–18. <https://doi.org/10.1002/jrsm.1230>
- Bowlby, J. (1969). Attachment and loss: Vol. 1. *Attachment*. Basic Books.
- Bowlby, J. (1973). Attachment and loss: Vol. 2. *Separation: Anxiety and anger*. Basic Books.
- Bowlby, J. (1979/2005). *The making and breaking of affectional bonds*. Routledge (1st ed. pub. 1979, 2nd ed. pub. 2005). <https://doi.org/10.4324/9780203441008>
- \*Bradford, A. B., Burningham, K. L., Sandberg, J. G., & Johnson, L. N. (2017). The association between the parent–child relationship and symptoms of anxiety and depression: The roles of attachment and perceived spouse attachment behaviors. *Journal of Marital and Family Therapy, 43*(2), 291–307. <https://doi.org/10.1111/jmft.12190>
- \*Bradstreet, S., Dodd, A., & Jones, S. (2018). Internalised stigma in mental health: An investigation of the role of attachment style. *Psychiatry Research, 270*, 1001–1009. <https://doi.org/10.1016/j.psychres.2018.03.047>
- \*Brandão, T., Matias, M., Ferreira, T., Vieira, J., Schulz, M. S., & Matos, P. M. (2020). Attachment, emotion regulation, and well-being in couples: Intrapersonal and interpersonal associations. *Journal of Personality, 88*(4), 748–761. <https://doi.org/10.1111/jopy.12523>
- \*Braunstein-Bercovitz, H., Benjamin, B. A., Asor, S., & Lev, M. (2012). Insecure attachment and career indecision: Mediating effects of anxiety and pessimism. *Journal of Vocational Behavior, 81*(2), 236–244. <https://doi.org/10.1016/j.jvb.2012.07.009>
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). The Guilford Press.
- Brennan, K. A., Shaver, P. R., & Tobey, A. E. (1991). Attachment styles, gender and parental problem drinking. *Journal of Social and Personal Relationships, 8*(4), 451–466. <https://doi.org/10.1177/026540759184001>
- \*Brenning, K., Soenens, B., Braet, C., & Bosmans, G. (2011). The role of depressogenic personality and attachment in the intergenerational similarity of depressive symptoms: A study with early adolescents and their mothers. *Personality and Social Psychology Bulletin, 37*(2), 284–297. <https://doi.org/10.1177/0146167210393533>
- \*Brownlee, A. V. (2016). *Depression, childhood adverse experiences, and mentalizing as predictors of attachment anxiety and avoidance* [Unpublished doctoral thesis]. Alliant International University.
- \*Buller, C. J. (2016). *Dispositional mindfulness and emotion regulation as mediators of the attachment and psychological distress relationship* [Unpublished master's thesis]. University of Newcastle, Australia.
- Burke, S. E., Wang, K., & Dovidio, J. F. (2014). Witnessing disclosure of depression: Gender and attachment avoidance moderate interpersonal evaluations. *Journal of Social and Clinical Psychology, 33*(6), 536–559. <https://doi.org/10.1521/jscp.2014.33.6.536>
- \*Burnette, J. L., Davis, D. E., Green, J. D., Worthington Jr, E. L., & Bradfield, E. (2009). Insecure attachment and depressive symptoms: The mediating role of rumination, empathy, and forgiveness. *Personality and Individual Differences, 46*(3), 276–280. <https://doi.org/10.1016/j.paid.2008.10.016>
- \*Cantazaro, A., & Wei, M. (2010). Adult attachment, dependence, self-criticism, and depressive symptoms: A test of a mediational model. *Journal of Personality, 78*(4), 1135–1162. <https://doi.org/10.1111/j.1467-6494.2010.00645.x>
- \*Carmichael, C. L., & Reis, H. T. (2005). Attachment, sleep quality, and depressed affect. *Health Psychology, 24*(5), 526–531. <https://doi.org/10.1037/0278-6133.24.5.526>
- \*Carnelley, K. B., Bejinaru, M. M., Otway, L., Baldwin, D. S., & Rowe, A. C. (2018). Effects of repeated attachment security priming in outpatients with primary depressive disorders. *Journal of Affective Disorders, 234*, 201–206. <https://doi.org/10.1016/j.jad.2018.02.040>
- Carr, S., Colthurst, K., Coyle, M., & Elliott, D. (2013). Attachment dimensions as predictors of mental health and psychosocial well-being in the transition to university. *European Journal of Psychology of Education, 28*(2), 157–172. <https://doi.org/10.1007/s10212-012-0106-9>
- Carstensen, L. L. (1992). Social and emotional patterns in adulthood: Support for socioemotional selectivity theory. *Psychology and Aging, 7*(3), 331–338. <https://doi.org/10.1037/0882-7974.7.3.331>
- Carstensen, L. L., Pasupathi, M., Mayr, U., & Nesselroade, J. R. (2000). Emotional experience in everyday life across the adult life span. *Journal of Personality and Social Psychology, 79*(4), 644–655. <https://doi.org/10.1037/0022-3514.79.4.644>
- Charles, S. T., Reynolds, C. A., & Gatz, M. (2001). Age-related differences and change in positive and negative affect over 23 years. *Journal of Personality and Social Psychology, 80*(1), 136–151. <https://doi.org/10.1037/0022-3514.80.1.136>
- Chatzioannidis, S., Andreou, C., Agorastos, A., Kaprinis, S., Malliaris, Y., Garyfallos, G., & Bozikas, V. P. (2019). The role of attachment anxiety in the relationship between childhood trauma and schizophrenia-spectrum psychosis. *Psychiatry Research, 276*, 223–231. <https://doi.org/10.1016/j.psychres.2019.05.021>
- \*Cheche, R. E. (2017). *Emotion dysregulation as a mediator between insecure attachment and psychological aggression in couples* [Unpublished master's thesis]. Virginia Tech, United States.
- \*Cheche Hoover, R., & Jackson, J. B. (2021). Insecure attachment, emotion dysregulation, and psychological aggression in couples. *Journal of Interpersonal Violence, 36*(19–20), NP10908–NP10936. <https://doi.org/10.1177/0886260519877939>
- Cheung, M. W. L. (2015a). *Meta-analysis: A structural equation modeling approach*. Wiley. <https://doi.org/10.1002/9781118957813>
- Cheung, M. W. L. (2015b). metaSEM: An R package for meta-analysis using structural equation modeling. *Frontiers in Psychology, 5*, Article 1521. <https://doi.org/10.3389/fpsyg.2014.01521>
- Cheung, M. W. L., & Cheung, S. F. (2016). Random-effects models for meta-analytic structural equation modeling: Review, issues, and illustrations. *Research Synthesis Methods, 7*(2), 140–155. <https://doi.org/10.1002/jrsm.1166>
- Chopik, W. J., Edelstein, R. S., & Fraley, R. C. (2013). From the cradle to the grave: Age differences in attachment from early adulthood to old age.



- Journal of personality*, 81(2), 171–183. <https://doi.org/10.1111/j.1467-6494.2012.00793.x>
- \*Chow, C. M., & Ruhl, H. (2014). Friendship and romantic stressors and depression in emerging adulthood: Mediating and moderating roles of attachment representations. *Journal of Adult Development*, 21(2), 106–115. <https://doi.org/10.1007/s10804-014-9184-z>
- \*Clear, S. J., Gardner, A. A., Webb, H. J., & Zimmer-Gembeck, M. J. (2020). Common and distinct correlates of depression, anxiety, and aggression: Attachment and emotion regulation of sadness and anger. *Journal of Adult Development*, 27(3), 181–191. <https://doi.org/10.1007/s10804-019-09333-0>
- Cohen, J. (1983). The cost of dichotomization. *Applied Psychological Measurement*, 7(3), 249–253. <https://doi.org/10.1177/014662168300700301>
- Collins, N. L., & Read, S. J. (1994). Cognitive representations in attachment: The structure and function of working models. In K. Bartholomew & D. Perlman (Eds.), *Attachment processes in adulthood* (pp. 53–90). Jessica Kingsley Publishers.
- \*Conradi, H. J., Kamphuis, J. H., & de Jonge, P. (2018). Adult attachment predicts the seven-year course of recurrent depression in primary care. *Journal of Affective Disorders*, 225, 160–166. <https://doi.org/10.1016/j.jad.2017.08.009>
- \*Cook, S. H., Valera, P., Calebs, B. J., & Wilson, P. A. (2017). Adult attachment as a moderator of the association between childhood traumatic experiences and depression symptoms among young Black gay and bisexual men. *Cultural Diversity and Ethnic Minority Psychology*, 23(3), 388–397. <https://doi.org/10.1037/cdp0000119>
- \*Cooke, J. E., Racine, N., Plamondon, A., Tough, S., & Madigan, S. (2019). Maternal adverse childhood experiences, attachment style, and mental health: Pathways of transmission to child behavior problems. *Child Abuse and Neglect*, 93, 27–37. <https://doi.org/10.1016/j.chiabu.2019.04.011>
- Cooper, M. L., Shaver, P. R., & Collins, N. L. (1998). Attachment styles, emotion regulation, and adjustment in adolescence. *Journal of Personality and Social Psychology*, 74(5), 1380–1397. <https://doi.org/10.1037/0022-3514.74.5.1380>
- \*Corcoran, M., & McNulty, M. (2018). Examining the role of attachment in the relationship between childhood adversity, psychological distress and subjective well-being. *Child Abuse and Neglect*, 76, 297–309. <https://doi.org/10.1016/j.chiabu.2017.11.012>
- \*Crockett, J. E. (2014). *Investigating the relationships among breathing, attachment, and emotion-regulation* [Unpublished doctoral thesis]. The University of North Carolina at Greensboro, United States.
- \*Cronin, T. J., Pepping, C. A., & Lyons, A. (2019). Internalized transphobia and well-being: The moderating role of attachment. *Personality and Individual Differences*, 143, 80–83. <https://doi.org/10.1016/j.paid.2019.02.018>
- \*Crow, T. M., & Levy, K. N. (2019). Adult attachment anxiety moderates the relation between self-reported childhood maltreatment and borderline personality disorder features. *Personality and Mental Health*, 13(4), 239–249. <https://doi.org/10.1002/pmh.1468>
- \*Cusimano, A. M., & Riggs, S. A. (2013). Perceptions of interparental conflict, romantic attachment, and psychological distress in college students. *Couple and Family Psychology*, 2(1), 45–59. <https://doi.org/10.1037/a0031657>
- Dagan, O., Facompré, C. R., & Bernard, K. (2018). Adult attachment representations and depressive symptoms: A meta-analysis. *Journal of Affective Disorders*, 236, 274–290. <https://doi.org/10.1016/j.jad.2018.04.091>
- Dagan, O., Facompré, C. R., Nivison, M. D., Roisman, G. I., & Bernard, K. (2020). Preoccupied and dismissing attachment representations are differentially associated with anxiety in adolescence and adulthood: A meta-analysis. *Clinical Psychological Science*, 8(4), 614–640. <https://doi.org/10.1177/2167702620917455>
- \*Dagnino, P., Pérez, C., Gómez, A., Gloger, S., & Krause, M. (2017). Depression and attachment: How do personality styles and social support influence this relation? *Research in Psychotherapy: Psychopathology, Process, and Outcome*, 20(1), 53–62. <https://doi.org/10.4081/ripppo.2017.237>
- \*Dan, O., Bar Ilan, O., & Kurman, J. (2014). Attachment, self-esteem and test anxiety in adolescence and early adulthood. *Educational Psychology*, 34(6), 659–673. <https://doi.org/10.1080/01443410.2013.814191>
- \*Davidson, A. (2014). *Adult attachment and generalized social anxiety disorder: Implications for affective functioning, interpersonal schemas, and functional impairment* [Unpublished doctoral thesis]. Palo Alto University, United States.
- Deeks, J. J., Higgins, J. P. T., & Altman, D. G. (2008). Analysing data and undertaking meta-analyses. In J. P. T. Higgins & S. Green (Eds.), *Cochrane handbook for systematic reviews of interventions: Cochrane book series* (pp. 243–296). Wiley. <https://doi.org/10.1002/9780470712184.ch9>
- Del Giudice, M. (2011). Sex differences in romantic attachment: A meta-analysis. *Personality and Social Psychology Bulletin*, 37(2), 193–214. <https://doi.org/10.1177/0146167210392789>
- \*Demirli, A., & Demir, A. (2014). The role of gender, attachment dimensions, and family environment on loneliness among Turkish university students. *Australian Journal of Guidance and Counselling*, 24(1), 62–75. <https://doi.org/10.1017/jgc.2013.11>
- Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*, 55(1), 34–43. <https://doi.org/10.1037/0003-066X.55.1.34>
- \*Dilmaç, B., Hamarta, E., & Arslan, C. (2009). Analysing the Trait anxiety and locus of control of undergraduates in terms of attachment styles. *Kuram ve Uygulamada Eğitim Bilimleri*, 9(1), 143–159.
- \*Dodd, Z., Driver, S., Warren, A. M., Riggs, S., & Clark, M. (2015). Effects of adult romantic attachment and social support on resilience and depression in individuals with spinal cord injuries. *Topics in Spinal Cord Injury Rehabilitation*, 21(2), 156–165. <https://doi.org/10.1310/sci2102-156>
- Dolan, P., Peasgood, T., & White, M. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. *Journal of Economic Psychology*, 29(1), 94–122. <https://doi.org/10.1016/j.joep.2007.09.001>
- Donner, N. C., & Lowry, C. A. (2013). Sex differences in anxiety and emotional behavior. *Pflügers Archiv-European Journal of Physiology*, 465(5), 601–626. <https://doi.org/10.1007/s00424-013-1271-7>
- \*Downing, V. L. (2008). *Attachment style, relationship satisfaction, intimacy, loneliness, gender role beliefs, and the expression of authentic self in romantic relationships* [Unpublished doctoral thesis]. University of Maryland, United States.
- Dozier, M., & Kobak, R. R. (1992). Psychophysiology in attachment interviews: Converging evidence for deactivating strategies. *Child Development*, 63(6), 1473–1480. <https://doi.org/10.2307/1131569>
- Edelstein, R. S., & Gillath, O. (2008). Avoiding interference: Adult attachment and emotional processing biases. *Personality and Social Psychology Bulletin*, 34(2), 171–181. <https://doi.org/10.1177/0146167207310024>
- Egger, M., Smith, G. D., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *British Medical Journal*, 315(7109), 629–634. <https://doi.org/10.1136/bmj.315.7109.629>
- \*Elwood, L. S., & Williams, N. L. (2007). PTSD-related cognitions and romantic attachment style as moderators of psychological symptoms in victims of interpersonal trauma. *Journal of Social and Clinical Psychology*, 26(10), 1189–1209. <https://doi.org/10.1521/jscp.2007.26.10.1189>
- \*English, L. H., Wisener, M., & Bailey, H. N. (2018). Childhood emotional maltreatment, anxiety, attachment, and mindfulness: Associations with facial emotion recognition. *Child Abuse and Neglect*, 80, 146–160. <https://doi.org/10.1016/j.chiabu.2018.02.006>
- \*Espeleta, H. C., Palasciano-Barton, S., & Messman-Moore, T. L. (2017). The impact of child abuse severity on adult attachment anxiety and avoidance in college women: The role of emotion dysregulation. *Journal of Family Violence*, 32(4), 399–407. <https://doi.org/10.1007/s10896-016-9816-0>

- \*Falgares, G., Lo Gioco, A., Verrocchio, M. C., & Marchetti, D. (2019). Anxiety and depression among adult amputees: The role of attachment insecurity, coping strategies and social support. *Psychology, Health and Medicine*, 24(3), 281–293. <https://doi.org/10.1080/13548506.2018.1529324>
- Fariborz, A., Thomas, L., Richard, L., Alan, L., Gordon, B., Teresa, M., & Schiff, E. Z. (1996). Affect, attachment, memory: Contributions toward psychobiologic integration. *Psychiatry*, 59(3), 213–239. <https://doi.org/10.1080/00332747.1996.11024764>
- Feeney, J., Alexander, R., Noller, P., & Hohaus, L. (2003). Attachment insecurity, depression, and the transition to parenthood. *Personal Relationships*, 10(4), 475–493. <https://doi.org/10.1046/j.1475-6811.2003.00061.x>
- Feeney, J. A., & Ryan, S. M. (1994). Attachment style and affect regulation: Relationships with health behavior and family experiences of illness in a student sample. *Health Psychology*, 13(4), 334–345. <https://doi.org/10.1037/0278-6133.13.4.334>
- \*Felton, L., & Jowett, S. (2013). Attachment and well-being: The mediating effects of psychological needs satisfaction within the coach–athlete and parent–athlete relational contexts. *Psychology of Sport and Exercise*, 14(1), 57–65. <https://doi.org/10.1016/j.psychsport.2012.07.006>
- \*Felton, L., & Jowett, S. (2015). On understanding the role of need thwarting in the association between athlete attachment and well/ill-being. *Scandinavian Journal of Medicine and Science in Sports*, 25(2), 289–298. <https://doi.org/10.1111/sms.12196>
- \*Ferenczi, N., & Marshall, T. C. (2016). Meeting the expectations of your heritage culture: Links between attachment orientations, intragroup marginalization and psychological adjustment. *Journal of Social and Personal Relationships*, 33(1), 101–121. <https://doi.org/10.1177/0265407514562565>
- Fisher, Z., & Tipton, E. (2015). *Robumeta: An R-package for robust variance estimation in meta-analysis*. arXiv preprint arXiv.
- Fortuna, K., & Roisman, G. I. (2008). Insecurity, stress, and symptoms of psychopathology: Contrasting results from self-reports versus interviews of adult attachment. *Attachment and Human Development*, 10(1), 11–28. <https://doi.org/10.1080/14616730701868571>
- Fraley, R. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review*, 6(2), 123–151. [https://doi.org/10.1207/S15327957PSPR0602\\_03](https://doi.org/10.1207/S15327957PSPR0602_03)
- Fraley, R. C., Hudson, N. W., Heffernan, M. E., & Segal, N. (2015). Are adult attachment styles categorical or dimensional? A taxometric analysis of general and relationship-specific attachment orientations. *Journal of Personality and Social Psychology*, 109(2), 354–368. <https://doi.org/10.1037/pspp0000027>
- Fraley, R. C., & Shaver, P. R. (1997). Adult attachment and the suppression of unwanted thoughts. *Journal of Personality and Social Psychology*, 73(5), 1080–1091. <https://doi.org/10.1037/0022-3514.73.5.1080>
- Fraley, R. C., & Spieker, S. J. (2003). Are infant attachment patterns continuously or categorically distributed? A taxometric analysis of strange situation behavior. *Developmental Psychology*, 39(3), 387–404. <https://doi.org/10.1037/0012-1649.39.3.387>
- Fraley, R. C., & Waller, N. G. (1998). Adult attachment patterns: A test of the typological model. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 77–114). Guilford Press.
- Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*, 78(2), 350–365. <https://doi.org/10.1037/0022-3514.78.2.350>
- \*Gallagher, H. C., Lusher, D., Gibbs, L., Pattison, P., Forbes, D., Block, K., Harms, L., MacDougall, C., Kellett, C., Ireton, G., & Bryant, R. A. (2017). Dyadic effects of attachment on mental health: Couples in a postdisaster context. *Journal of Family Psychology*, 31(2), 192–202. <https://doi.org/10.1037/fam0000256>
- \*Gallagher, J. A. (2015). *An exploration of maternal attachment style as related to motherhood strivings, parenting behaviors, and well-being* [Unpublished doctoral thesis]. Biola University, United States.
- \*Garrison, A. M. (2014). *Testing a model of maladaptive perfectionism and depression symptoms: The roles of emotional disclosure, emotion regulation strategies, adult attachment, and shame* [Unpublished doctoral thesis]. Western Michigan University, United States.
- \*Garrison, A. M., Kahn, J. H., Sauer, E. M., & Florczak, M. A. (2012). Disentangling the effects of depression symptoms and adult attachment on emotional disclosure. *Journal of Counseling Psychology*, 59(2), 230–239. <https://doi.org/10.1037/a0026132>
- \*Gilchalan, S. S. (2015). *The relationship between trait anxiety, attachment, sexism, relationship satisfaction and life satisfaction among Iranian couples* [Unpublished master's thesis]. Eastern Mediterranean University.
- \*Gillath, O., Johnson, D. K., Selcuk, E., & Teel, C. (2011). Comparing old and young adults as they cope with life transitions: The links between social network management skills and attachment style to depression. *Clinical Gerontologist*, 34(3), 251–265. <https://doi.org/10.1080/07317115.2011.554345>
- \*Gimarc, C. (2019). *The relationship between attachment style, perceived partner support, and anxiety for individuals in committed relationships* [Unpublished master's thesis]. Texas Tech University, United States.
- \*Givertz, M., & Safford, S. (2011). Longitudinal impact of communication patterns on romantic attachment and symptoms of depression. *Current Psychology*, 30(2), 148–172. <https://doi.org/10.1007/s12144-011-9106-1>
- \*Givertz, M., Wozidlo, A., Segrin, C., & Knutson, K. (2013). Direct and indirect effects of attachment orientation on relationship quality and loneliness in married couples. *Journal of Social and Personal Relationships*, 30(8), 1096–1120. <https://doi.org/10.1177/0265407513482445>
- \*Gnilka, P. B., Ashby, J. S., & Noble, C. M. (2013). Adaptive and maladaptive perfectionism as mediators of adult attachment styles and depression, hopelessness, and life satisfaction. *Journal of Counseling and Development*, 91(1), 78–86. <https://doi.org/10.1002/j.1556-6676.2013.00074.x>
- \*Göbel, A., Barkmann, C., Arck, P., Hecher, K., Schulte-Markwort, M., Diemert, A., & Mudra, S. (2019). Couples' prenatal bonding to the fetus and the association with one's own and partner's emotional well-being and adult romantic attachment style. *Midwifery*, 79, Article 102549. <https://doi.org/10.1016/j.midw.2019.102549>
- \*Goldstein, A. L., Haller, S., Mackinnon, S. P., & Stewart, S. H. (2019). Attachment anxiety and avoidance, emotion dysregulation, interpersonal difficulties and alcohol problems in emerging adulthood. *Addiction Research and Theory*, 27(2), 130–138. <https://doi.org/10.1080/16066359.2018.1464151>
- \*Good, J. (2019). The effects of attachment anxiety on trait anxiety and borderline personality symptoms through specific pathways of emotion regulation. *Honors Theses*, Article 3106. [https://scholarworks.wmich.edu/honors\\_theses/3106](https://scholarworks.wmich.edu/honors_theses/3106)
- \*Goodall, K. (2015). Individual differences in the regulation of positive emotion: The role of attachment and self esteem. *Personality and Individual Differences*, 74, 208–213. <https://doi.org/10.1016/j.paid.2014.10.033>
- \*Gormley, B., & McNiel, D. E. (2010). Adult attachment orientations, depressive symptoms, anger, and self-directed aggression by psychiatric patients. *Cognitive Therapy and Research*, 34(3), 272–281. <https://doi.org/10.1007/s10608-009-9267-5>
- \*Green, B., Norman, P., & Reuber, M. (2017). Attachment style, relationship quality, and psychological distress in patients with psychogenic non-epileptic seizures versus epilepsy. *Epilepsy and Behavior*, 66, 120–126. <https://doi.org/10.1016/j.yebeh.2016.10.015>
- Greenspoon, P. J., & Saklofske, D. H. (2001). Toward an integration of subjective well-being and psychopathology. *Social Indicators Research*, 54(1), 81–108. <https://doi.org/10.1023/A:1007219227883>

- \*Gülüm, I. V., & Dağ, I. (2014). The mediator role of the cognitive features in the relationship between adult attachment patterns and psychopathology symptoms: The locus of control and repetitive thinking. *Turkish Journal of Psychiatry*, 25(4), 244–252.
- \*Guzmán-González, M., Barrientos, J., Cárdenas, M., Espinoza, M. F., Quijada, P., Rivera, C., & Tapia, P. (2016). Romantic attachment and life satisfaction in a sample of gay men and lesbians in Chile. *International Journal of Sexual Health*, 28(2), 141–150. <https://doi.org/10.1080/19317611.2016.1153014>
- \*Guzmán-González, M., Lafontaine, M. F., & Levesque, C. (2016). Romantic attachment and physical intimate partner violence perpetration in a Chilean sample: The mediating role of emotion regulation difficulties. *Violence and Victims*, 31(5), 854–868. <https://doi.org/10.1891/0886-6708.VV-D-14-00114>
- \*Hairston, I. S., Handelzalts, J. E., Assis, C., & Kovo, M. (2018). Postpartum bonding difficulties and adult attachment styles: The mediating role of postpartum depression and childbirth-related PTSD. *Infant Mental Health Journal*, 39(2), 198–208. <https://doi.org/10.1002/imhj.21695>
- \*Haller, S. L. (2016). *An examination of the role of emotion dysregulation and affect regulation motives in the relationship between attachment and alcohol use and consequences in emerging adults* [Unpublished masters thesis]. University of Toronto, Canada.
- \*Han, S. (2017). Attachment insecurity and openness to diversity: The roles of self-esteem and trust. *Personality and Individual Differences*, 111, 291–296. <https://doi.org/10.1016/j.paid.2017.02.033>
- \*Haner, M. L. (2018). *Adult attachment and mental health: The mediation role of emotion regulation* [Unpublished Doctoral dissertation]. The University of Texas at Austin.
- \*Hankin, B. L., Kassel, J. D., & Abela, J. R. (2005). Adult attachment dimensions and specificity of emotional distress symptoms: Prospective investigations of cognitive risk and interpersonal stress generation as mediating mechanisms. *Personality and Social Psychology Bulletin*, 31(1), 136–151. <https://doi.org/10.1177/0146167204271324>
- Hedges, L. V., Tipton, E., & Johnson, M. C. (2010). Robust variance estimation in meta-regression with dependent effect size estimates. *Research Synthesis Methods*, 1(1), 39–65. <https://doi.org/10.1002/jrsm.5>
- \*Heene, E. L., Buysse, A., & Van Oost, P. (2005). Indirect pathways between depressive symptoms and marital distress: The role of conflict communication, attributions, and attachment style. *Family Process*, 44(4), 413–440. <https://doi.org/10.1111/j.1545-5300.2005.00070.x>
- \*Herbster, K. (2016). *Attachment styles and depressive symptoms in college students: Exploring the roles of interpersonal problems and coping* [Unpublished doctoral thesis]. Marywood University, United States.
- Herrman, H., Saxena, S., & Moodie, R. (2005). *Promoting mental health: Concepts, emerging evidence, practice: A report of the World Health Organization, Department of Mental Health and Substance Abuse in collaboration with the Victorian Health Promotion Foundation and the University of Melbourne*. World Health Organization.
- \*Hiebler-Ragger, M., Falthansl-Scheinecker, J., Birnhuber, G., Fink, A., & Unterrainer, H. F. (2016). Facets of spirituality diminish the positive relationship between insecure attachment and mood pathology in young adults. *PLOS ONE*, 11(6), Article e0158069. <https://doi.org/10.1371/journal.pone.0158069>
- Higgins, J. P. T., & Thompson, S. G. (2002). Quantifying heterogeneity in a meta-analysis. *Statistics in Medicine*, 21(11), 1539–1558. <https://doi.org/10.1002/sim.1186>
- \*Hinnen, C., Sanderman, R., & Sprangers, M. A. (2009). Adult attachment as mediator between recollections of childhood and satisfaction with life. *Clinical Psychology and Psychotherapy*, 16(1), 10–21. <https://doi.org/10.1002/cpp.600>
- \*Homa, J. K., & Chow, C. M. (2014). Effects of attachment representations, rumination, and trait depression on co-rumination in friendships: A dyadic analysis. *Journal of Relationships Research*, 5, Article e10. <https://doi.org/10.1017/jrr.2014.10>
- Hu, T., Zhang, D., & Wang, J. (2015). A meta-analysis of the trait resilience and mental health. *Personality and Individual Differences*, 76, 18–27. <https://doi.org/10.1016/j.paid.2014.11.039>
- \*Huang, Y. L., Chen, S. H., & Tseng, H. H. (2019). Attachment avoidance and fearful prosodic emotion recognition predict depression maintenance. *Psychiatry Research*, 272, 649–654. <https://doi.org/10.1016/j.psychres.2018.12.119>
- Hudson, N. W., Chopik, W. J., & Briley, D. A. (2020). Volitional change in adult attachment: Can people who want to become less anxious and avoidant move closer towards realizing those goals? *European Journal of Personality*, 34(1), 93–114. <https://doi.org/10.1002/per.2226>
- Hudson, N. W., & Fraley, R. C. (2017). Adult attachment and perceptions of closeness. *Personal Relationships*, 24(1), 17–26. <https://doi.org/10.1111/per.12166>
- Hudson, N. W., & Fraley, R. C. (2018). Moving toward greater security: The effects of repeatedly priming attachment security and anxiety. *Journal of Research in Personality*, 74, 147–157. <https://doi.org/10.1016/j.jrp.2018.04.002>
- Hudson, N. W., Lucas, R. E., & Donnellan, M. B. (2019). Healthier and happier? A 3-year longitudinal investigation of the prospective associations and concurrent changes in health and experiential well-being. *Personality and Social Psychology Bulletin*, 45(12), 1635–1650. <https://doi.org/10.1177/0146167219838547>
- Hunter, J. E., & Schmidt, F. L. (2004). *Methods of meta-analysis: Correcting error and bias in research findings* (2nd ed.). Sage Publications. <https://doi.org/10.4135/9781412985031>
- Hunter, J. J., & Maunder, R. G. (2001). Using attachment theory to understand illness behavior. *General Hospital Psychiatry*, 23(4), 177–182. [https://doi.org/10.1016/S0163-8343\(01\)00141-4](https://doi.org/10.1016/S0163-8343(01)00141-4)
- \*Itzhaky, L., Stein, J. Y., Levin, Y., & Solomon, Z. (2017). Posttraumatic stress symptoms and marital adjustment among Israeli combat veterans: The role of loneliness and attachment. *Psychological Trauma: Theory, Research, Practice, and Policy*, 9(6), 655–662. <https://doi.org/10.1037/tra0000259>
- \*Jakovina, T., Crnković Batista, M., Ražić Pavičić, A., Žurić Jakovina, I., & Begovac, I. (2018). Emotional dysregulation and attachment dimensions in female patients with bulimia nervosa. *Psychiatria Danubina*, 30(1), 72–78. <https://doi.org/10.24869/psyd.2018.72>
- Jaremka, L. M., Glaser, R., Loving, T. J., Malarkey, W. B., Stowell, J. R., & Kiecolt-Glaser, J. K. (2013). Attachment anxiety is linked to alterations in cortisol production and cellular immunity. *Psychological Science*, 24(3), 272–279. <https://doi.org/10.1177/0956797612452571>
- \*Jin, L., & Wang, C. D. (2018). International students' attachment and psychological well-being: The mediation role of mental toughness. *Counselling Psychology Quarterly*, 31(1), 59–78. <https://doi.org/10.1080/09515070.2016.1211510>
- \*Jinyao, Y., Xiongzhao, Z., Auerbach, R. P., Gardiner, C. K., Lin, C., Yuping, W., & Shuqiao, Y. (2012). Insecure attachment as a predictor of depressive and anxious symptomatology. *Depression and Anxiety*, 29(9), 789–796. <https://doi.org/10.1002/da.21953>
- \*Joeng, J. R., Turner, S. L., Kim, E. Y., Choi, S. A., Kim, J. K., & Lee, Y. J. (2017). Data for Korean college students' anxious and avoidant attachment, self-compassion, anxiety and depression. *Data in Brief*, 13, 316–319. <https://doi.org/10.1016/j.dib.2017.06.006>
- \*Jurgensen, M. (2019). *The mediating role of resilience in the relationship between attachment style and symptoms of depression and anxiety*. University of Central Florida.
- \*Kafetsios, K., & Sideridis, G. D. (2006). Attachment, social support and well-being in young and older adults. *Journal of Health Psychology*, 11(6), 863–875. <https://doi.org/10.1177/1359105306069084>

- Kahn, J. H., & Garrison, A. M. (2009). Emotional self-disclosure and emotional avoidance: Relations with symptoms of depression and anxiety. *Journal of counseling psychology*, 56(4), 573–584. <https://doi.org/10.1037/a0016574>
- \*Kankotan, Z. Z. (2008). *The role of attachment dimensions, relationship status, and gender in the components of subjective well-being* [Unpublished master's thesis]. Middle East Technical University, Ankara, Turkey.
- \*Katz, J., Petracca, M., & Rabinowitz, J. (2009). A retrospective study of daughters' emotional role reversal with parents, attachment anxiety, excessive reassurance-seeking, and depressive symptoms. *The American Journal of Family Therapy*, 37(3), 185–195. <https://doi.org/10.1080/01926180802405596>
- \*Keleher, J., Wei, M., & Liao, K. Y. H. (2010). Attachment, positive feelings about being a lesbian, perceived general support, and well-being. *Journal of Social and Clinical Psychology*, 29(8), 847–873. <https://doi.org/10.1521/jscp.2010.29.8.847>
- \*Keough, M. T., Penniston, T. L., Vilhena-Churchill, N., Michael Bagby, R., & Quilty, L. C. (2018). Depression symptoms and reasons for gambling sequentially mediate the associations between insecure attachment styles and problem gambling. *Addictive Behaviors*, 78, 166–172. <https://doi.org/10.1016/j.addbeh.2017.11.018>
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 593–602. <https://doi.org/10.1001/archpsyc.62.6.593>
- \*Kidd, T., Poole, L., Ronaldson, A., Leigh, E., Jahangiri, M., & Steptoe, A. (2016). Attachment anxiety predicts depression and anxiety symptoms following coronary artery bypass graft surgery. *British Journal of Health Psychology*, 21(4), 796–811. <https://doi.org/10.1111/bjhp.12191>
- \*Kim, D. H., Kang, N. R., & Kwack, Y. S. (2019). Differences in parenting stress, parenting attitudes, and parents' mental health according to parental adult attachment style. *Journal of the Korean Academy of Child and Adolescent Psychiatry*, 30(1), 17–25. <https://doi.org/10.5765/jkacap.180014>
- \*Kim, E., & Koh, E. (2018). Avoidant attachment and smartphone addiction in college students: The mediating effects of anxiety and self-esteem. *Computers in Human Behavior*, 84, 264–271. <https://doi.org/10.1016/j.chb.2018.02.037>
- Kirkpatrick, L. A., & Hazan, C. (1994). Attachment styles and close relationships: A four-year prospective study. *Personal Relationships*, 1(2), 123–142. <https://doi.org/10.1111/j.1475-6811.1994.tb00058.x>
- \*Kohlhoff, J., & Barnett, B. (2013). Parenting self-efficacy: Links with maternal depression, infant behaviour and adult attachment. *Early Human Development*, 89(4), 249–256. <https://doi.org/10.1016/j.earlhumdev.2013.01.008>
- \*Kormas, C., Karamali, G., & Anagnostopoulos, F. (2014). Attachment anxiety, basic psychological needs satisfaction and depressive symptoms in university students: A mediation analysis approach. *International Journal of Psychological Studies*, 6(2), 1–10. <https://doi.org/10.5539/ijps.v6n2p1>
- \*Korver-Nieberg, N., Berry, K., Meijer, C., de Haan, L., & Ponizovsky, A. M. (2015). Associations between attachment and psychopathology dimensions in a large sample of patients with psychosis. *Psychiatry Research*, 228(1), 83–88. <https://doi.org/10.1016/j.psychres.2015.04.018>
- \*Kuan Mak, M. C., Bond, M. H., Simpson, J. A., & Rholes, W. S. (2010). Adult attachment, perceived support, and depressive symptoms in Chinese and American cultures. *Journal of Social and Clinical Psychology*, 29(2), 144–165. <https://doi.org/10.1521/jscp.2010.29.2.144>
- \*Kvrgic, S., Beck, E. M., Cavelti, M., Kossowsky, J., Stieglitz, R. D., & Vauth, R. (2012). Focusing on the adult attachment style in schizophrenia in community mental health centres: Validation of the Psychosis Attachment Measure (PAM) in a German-speaking sample. *The International Journal of Social Psychiatry*, 58(4), 362–373. <https://doi.org/10.1177/0020764011399004>
- \*Land, M. L. (2012). *Rumination as a mediator of attachment anxiety and symptoms of depression and anxiety among women* [Unpublished doctoral thesis]. The Pennsylvania State University, United States.
- \*Landen, S. M., & Wang, C. C. D. (2010). Adult attachment, work cohesion, coping, and psychological well-being of firefighters. *Counselling Psychology Quarterly*, 23(2), 143–162. <https://doi.org/10.1080/09515071003776028>
- \*Lane, J. A. (2016). Attachment, well-being, and college senior concerns about the transition out of college. *Journal of College Counseling*, 19(3), 231–245. <https://doi.org/10.1002/jocc.12046>
- \*Lane, J. A., & Fink, R. S. (2015). Attachment, social support satisfaction, and well-being during life transition in emerging adulthood. *The Counseling Psychologist*, 43(7), 1034–1058. <https://doi.org/10.1177/0011000015592184>
- \*Lane, J. A., Leibert, T. W., & Goka-Dubose, E. (2017). The impact of life transition on emerging adult attachment, social support, and well-being: A multiple-group comparison. *Journal of Counseling and Development*, 95(4), 378–388. <https://doi.org/10.1002/jcad.12153>
- \*Langston, S. C. (2014). *Understanding and quantifying the roles of perceived social support, pet attachment, and adult attachment in adult pet owners' sense of well-being* [Unpublished doctoral thesis]. Washington State University, United States.
- \*LaTulip, S. E. (2013). *Depression, social anxiety, and attachment as predictors of the use and quality of cyber communication* [Unpublished master's thesis]. Old Dominion University, United States.
- \*Lavy, S., & Littman-Ovadia, H. (2011). All you need is love? Strengths mediate the negative associations between attachment orientations and life satisfaction. *Personality and Individual Differences*, 50(7), 1050–1055. <https://doi.org/10.1016/j.paid.2011.01.023>
- \*Lecce, S. (2008). *Attachment and subjective well-being: The mediating role of emotional processing and regulation* [Unpublished doctoral thesis]. University of Toronto, Canada.
- \*Levesque, C., Lafontaine, M. F., & Bureau, J. F. (2017). The mediating effects of emotion regulation and dyadic coping on the relationship between romantic attachment and non-suicidal self-injury. *Journal of Youth and Adolescence*, 46(2), 277–287. <https://doi.org/10.1007/s10964-016-0547-6>
- \*Levi-Belz, Y., Gvion, Y., Horesh, N., & Apter, A. (2013). Attachment patterns in medically serious suicide attempts: The mediating role of self-disclosure and loneliness. *Suicide and Life-Threatening Behavior*, 43(5), 511–522. <https://doi.org/10.1111/sltb.12035>
- \*Lewczuk, K., Kobylińska, D., Marchlewska, M., Krysztofiak, M., Glica, A., & Moiseeva, V. (2021). Adult attachment and health symptoms: The mediating role of emotion regulation difficulties. *Current Psychology*, 40(4), 1720–1733. <https://doi.org/10.1007/s12144-018-0097-z>
- \*Li, T., Li, J., & Dai, Q. (2008). Adult attachment, social support, and depression level of poststroke patients. *Social Behavior and Personality*, 36(10), 1341–1351. <https://doi.org/10.2224/sbp.2008.36.10.1341>
- \*Li, X., & Zheng, X. (2014). Adult attachment orientations and subjective well-being: Emotional intelligence and self-esteem as moderators. *Social Behavior and Personality*, 42(8), 1257–1265. <https://doi.org/10.2224/sbp.2014.42.8.1257>
- \*Liao, K. Y.-H., Wei, M., & the LIAO. (2015). Insecure attachment and depressive symptoms: Forgiveness of self and others as moderators. *Personal Relationships*, 22(2), 216–229. <https://doi.org/10.1111/pe.re.12075>
- \*Lilly, M. M., & Hong (Phyllice) Lim, B. (2013). Shared pathogenesis of posttrauma pathologies: Attachment, emotion regulation, and cognitions. *Journal of Clinical Psychology*, 69(7), 737–748. <https://doi.org/10.1002/jclp.21934>
- \*Lin, C. C. S. (2006). *Adult romantic attachment style, global self-esteem, and specific self-views as predictors of feedback preference in potential*

- romantic relationships [Unpublished doctoral thesis]. Utah State University Logan, United States.
- \*Liu, C., & Ma, J. L. (2019). Adult attachment style, emotion regulation, and social networking sites addiction. *Frontiers in Psychology, 10*, Article 2352. <https://doi.org/10.3389/fpsyg.2019.02352>
- \*Liu, Q. Q., Yang, X. J., Zhu, X. W., & Zhang, D. J. (2021). Attachment anxiety, loneliness, rumination and mobile phone dependence: A cross-sectional analysis of a moderated mediation model. *Current Psychology, 40*(10), 5134–5144. <https://doi.org/10.1007/s12144-019-00464-x>
- \*Lopez, F. G., & Fons-Scheyd, A. (2008). Role balance and depression among college students: The moderating influence of adult attachment orientations. *Journal of College Counseling, 11*(2), 133–146. <https://doi.org/10.1002/j.2161-1882.2008.tb00030.x>
- \*MacDonald, C. L. (2011). *Adult attachment anxiety and avoidance as mediators of the relationship between child sexual abuse and complete mental health in adulthood* [Unpublished doctoral thesis]. University of Manitoba, Canada.
- \*Mackintosh, K., Power, K., Schwannauer, M., & Chan, S. W. (2018). The relationships between self-compassion, attachment and interpersonal problems in clinical patients with mixed anxiety and depression and emotional distress. *Mindfulness, 9*(3), 961–971. <https://doi.org/10.1007/s12671-017-0835-6>
- \*Majstorovic, J. (2015). *Effortful control as a moderator of attachment insecurity's association with generalized anxiety disorder symptoms* [Unpublished undergraduate research thesis]. The Ohio State University, United States.
- Marganska, A., Gallagher, M., & Miranda, R. (2013). Adult attachment, emotion dysregulation, and symptoms of depression and generalized anxiety disorder. *American Journal of Orthopsychiatry, 83*(1), 131–141. <https://doi.org/10.1111/ajop.12001>
- \*Marques, R., Monteiro, F., Canavarro, M. C., & Fonseca, A. (2018). The role of emotion regulation difficulties in the relationship between attachment representations and depressive and anxiety symptoms in the postpartum period. *Journal of Affective Disorders, 238*, 39–46. <https://doi.org/10.1016/j.jad.2018.05.013>
- \*Marrero-Quevedo, R. J., Blanco-Hernández, P. J., & Hernández-Cabrera, J. A. (2019). Adult attachment and psychological well-being: The mediating role of personality. *Journal of Adult Development, 26*(1), 41–56. <https://doi.org/10.1007/s10804-018-9297-x>
- \*Marsh, A. (2014). *Coping with catastrophe: Emotion regulation, adult attachment security, and mindfulness as predictors of posttraumatic stress among mental health disaster responders* [Unpublished doctoral thesis]. University of North Carolina at Greensboro, United States.
- \*Matyja, A. (2014). *Adult attachment and psychopathology: The mediating role of emotion regulation and cognitive factors* [Unpublished doctoral thesis]. Southern Illinois University Carbondale, United States.
- Maunder, R. G., & Hunter, J. J. (2001). Attachment and psychosomatic medicine: Developmental contributions to stress and disease. *Psychosomatic Medicine, 63*(4), 556–567. <https://doi.org/10.1097/00006842-200107000-00006>
- \*Maunder, R. G., Lancee, W. J., Hunter, J. J., Greenberg, G. R., & Steinhart, A. H. (2005). Attachment insecurity moderates the relationship between disease activity and depressive symptoms in ulcerative colitis. *Inflammatory Bowel Diseases, 11*(10), 919–926. <https://doi.org/10.1097/01.mib.0000179468.78876.2d>
- \*Mauricio, A. M., Tein, J. Y., & Lopez, F. G. (2007). Borderline and antisocial personality scores as mediators between attachment and intimate partner violence. *Violence and Victims, 22*(2), 139–157. <https://doi.org/10.1891/088667007780477339>
- \*McCampbell, D. S. (2012). *Relationships between attachment and psychological well-being in Hispanic American and non-Hispanic White college students* [Unpublished doctoral thesis]. Fordham University, United States.
- \*McDermott, R. C., Cheng, H. L., Wright, C., Browning, B. R., Upton, A. W., & Sevig, T. D. (2015). Adult attachment dimensions and college student distress: The mediating role of hope. *The Counseling Psychologist, 43*(6), 822–852. <https://doi.org/10.1177/0011000015575394>
- \*McDonagh, A. (2019). *Attachment styles and levels of self-esteem, perceived social support and stress during first year* [Unpublished higher diploma thesis]. Dublin Business School, Ireland.
- \*McDonald, H. M., Sherman, K. A., Petocz, P., Kangas, M., Grant, K. A., & Kasparian, N. A. (2016). Mindfulness and the experience of psychological distress: The mediating effects of emotion regulation and attachment anxiety. *Mindfulness, 7*(4), 799–808. <https://doi.org/10.1007/s12671-016-0517-9>
- Mennin, D. S., McLaughlin, K. A., & Flanagan, T. J. (2009). Emotion regulation deficits in generalized anxiety disorder, social anxiety disorder, and their co-occurrence. *Journal of Anxiety Disorders, 23*(7), 866–871. <https://doi.org/10.1016/j.janxdis.2009.04.006>
- \*Meredith, P. J., Bailey, K. J., Strong, J., & Rappel, G. (2016). Adult attachment, sensory processing, and distress in healthy adults. *The American Journal of Occupational Therapy, 70*(1), 7001250010p1–7001250010p8. <https://doi.org/10.5014/ajot.2016.017376>
- Merz, E.-M., & Consedine, N. S. (2012). Ethnic group moderates the association between attachment and well-being in later life. *Cultural Diversity and Ethnic Minority Psychology, 18*(4), 404–415. <https://doi.org/10.1037/a0029595>
- \*Meuwly, N., & Davila, J. (2019). Feeling bad when your partner is away: The role of dysfunctional cognition and affect regulation strategies in insecurely attached individuals. *Journal of Social and Personal Relationships, 36*(1), 22–42. <https://doi.org/10.1177/0265407517718389>
- Mikulincer, M., & Florian, V. (1998). The relationship between adult attachment styles and emotional and cognitive reactions to stressful events. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 143–165). Guilford Press.
- Mikulincer, M., Florian, V., & Tolmacz, R. (1990). Attachment styles and fear of personal death: A case study of affect regulation. *Journal of Personality and Social Psychology, 58*(2), 273–280. <https://doi.org/10.1037/0022-3514.58.2.273>
- Mikulincer, M., & Orbach, I. (1995). Attachment styles and repressive defensiveness: The accessibility and architecture of affective memories. *Journal of Personality and Social Psychology, 68*(5), 917–925. <https://doi.org/10.1037/0022-3514.68.5.917>
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. Guilford Press.
- Mikulincer, M., & Shaver, P. R. (2012). An attachment perspective on psychopathology. *World Psychiatry, 11*(1), 11–15. <https://doi.org/10.1016/j.wpsyc.2012.01.003>
- Mikulincer, M., Shaver, P. R., & Pereg, D. (2003). Attachment theory and affect regulation: The dynamics, development, and cognitive consequences of attachment-related strategies. *Motivation and Emotion, 27*(2), 77–102. <https://doi.org/10.1023/A:1024515519160>
- \*Molero, F., Shaver, P. R., Fernández, I., & Recio, P. (2017). Attachment insecurities, life satisfaction, and relationship satisfaction from a dyadic perspective: The role of positive and negative affect. *European Journal of Social Psychology, 47*(3), 337–347. <https://doi.org/10.1002/ejsp.2276>
- \*Monti, J. D., & Rudolph, K. D. (2014). Emotional awareness as a pathway linking adult attachment to subsequent depression. *Journal of Counseling Psychology, 61*(3), 374–382. <https://doi.org/10.1037/cou0000016>
- Mroczek, D. K., & Spiro, A., III. (2005). Change in life satisfaction during adulthood: Findings from the veterans affairs normative aging study. *Journal of Personality and Social Psychology, 88*(1), 189–202. <https://doi.org/10.1037/0022-3514.88.1.189>
- \*Myers, S. G., & Wells, A. (2015). Early trauma, negative affect, and anxious attachment: The role of metacognition. *Anxiety, Stress, and Coping, 28*(6), 634–649. <https://doi.org/10.1080/10615806.2015.1009832>
- \*Necel, I. (2014). *International students' homesickness and depression associations with mood regulation expectancies, acculturation and*

- attachment [Unpublished master's thesis]. California State University, Fullerton, United States.
- \*Neumann, C. (2016). *Attachment insecurity, emotion regulation difficulties, and mindfulness deficits in personality pathology* [Unpublished doctoral thesis]. University of North Texas, United States.
- \*Neumann, E. (2017). Emotional abuse in childhood and attachment anxiety in adult romantic relationships as predictors of personality disorders. *Journal of Aggression, Maltreatment and Trauma*, 26(4), 430–443. <https://doi.org/10.1080/10926771.2017.1299826>
- \*Ng, S. M., & Hou, W. K. (2017). Contentment duration mediates the associations between anxious attachment style and psychological distress. *Frontiers in Psychology*, 8, Article 258. <https://doi.org/10.3389/fpsyg.2017.00258>
- \*Nielsen, S. K. K., Hageman, I., Petersen, A., Daniel, S. I. F., Lau, M., Winding, C., Wolitzky-Taylor, K. B., Steele, H., & Vangkilde, S. (2019). Do emotion regulation, attentional control, and attachment style predict response to cognitive behavioral therapy for anxiety disorders?—An investigation in clinical settings. *Psychotherapy Research*, 29(8), 999–1009. <https://doi.org/10.1080/10503307.2018.1425933>
- Nielsen, S. K. K., Lønfeldt, N., Wolitzky-Taylor, K. B., Hageman, I., Vangkilde, S., & Daniel, S. I. F. (2017). Adult attachment style and anxiety—The mediating role of emotion regulation. *Journal of Affective Disorders*, 218, 253–259. <https://doi.org/10.1016/j.jad.2017.04.047>
- \*O'Neill, J. J. (2015). *A correlational study examining the relationship between attachment styles and emotion regulation in adult inpatient marijuana users* [Unpublished doctoral thesis]. Grand Canyon University Phoenix, United States.
- \*O'Neill, L. P., & Murray, L. E. (2016). Perceived parenting styles fail to mediate between anxiety and attachment styles in adult siblings of individuals with developmental disabilities. *Journal of Autism and Developmental Disorders*, 46(9), 3144–3154. <https://doi.org/10.1007/s10803-016-2859-5>
- Overall, N. C., Fletcher, G. J., & Friesen, M. D. (2003). Mapping the intimate relationship mind: Comparisons between three models of attachment representations. *Personality and Social Psychology Bulletin*, 29(12), 1479–1493. <https://doi.org/10.1177/0146167203251519>
- \*Øverup, C. S., McLean, E. A., Brunson, J. A., & Coffman, A. D. (2017). Belonging, burdensomeness, and self-compassion as mediators of the association between attachment and depression. *Journal of Social and Clinical Psychology*, 36(8), 675–703. <https://doi.org/10.1521/jscp.2017.36.8.675>
- \*Owens, G. P., Held, P., Hamrick, L., & Keller, E. (2018). The indirect effects of emotion regulation on the association between attachment style, depression, and meaning made among undergraduates who experienced stressful events. *Motivation and Emotion*, 42(3), 429–437. <https://doi.org/10.1007/s11031-018-9688-0>
- Pallini, S., Chirumbolo, A., Morelli, M., Baiocco, R., Laghi, F., & Eisenberg, N. (2018). The relation of attachment security status to effortful self-regulation: A meta-analysis. *Psychological Bulletin*, 144(5), 501–531. <https://doi.org/10.1037/bul0000134>
- \*Pandeya, N. (2017). A comparative study of attachment, loneliness and depression among male and female college students. *International Journal of Education and Management Studies*, 7(4), 602–604.
- \*Patel, S. (2008). *Well-being and negative mood of South Asian American college students: contributions of adult attachment, acculturation, and racial identity* [Unpublished doctoral thesis]. University of Maryland, United States.
- Peng, P., Namkung, J., Barnes, M., & Sun, C. (2016). A meta-analysis of mathematics and working memory: Moderating effects of working memory domain, type of mathematics skill, and sample characteristics. *Journal of Educational Psychology*, 108(4), 455–473. <https://doi.org/10.1037/edu0000079>
- \*Pepping, C. A., Davis, P. J., & O'Donovan, A. (2013). Individual differences in attachment and dispositional mindfulness: The mediating role of emotion regulation. *Personality and Individual Differences*, 54(3), 453–456. <https://doi.org/10.1016/j.paid.2012.10.006>
- \*Pereira, M. G., Taysi, E., Orcan, F., & Fincham, F. (2014). Attachment, infidelity, and loneliness in college students involved in a romantic relationship: The role of relationship satisfaction, morbidity, and prayer for partner. *Contemporary Family Therapy*, 36(3), 333–350. <https://doi.org/10.1007/s10591-013-9289-8>
- Pietromonaco, P. R., Uchino, B., & Dunkel Schetter, C. (2013). Close relationship processes and health: Implications of attachment theory for health and disease. *Health Psychology*, 32(5), 499–513. <https://doi.org/10.1037/a0029349>
- \*Pote, S. C. (2016). *The moderating effect of anticipatory grief on the relationship between attachment and perceived closeness with satisfaction of life and marriage for spousal caregivers of individuals with dementia* [Unpublished doctoral thesis]. University of Northern Colorado, United States.
- \*Potter, D. (2011). *The role of attachment in the relation of trauma to posttraumatic stress and borderline personality disorder* [Unpublished master's thesis]. Carleton University Ottawa, Canada. <https://doi.org/10.2215/etd/2011-07070>
- Prince, M., Patel, V., Saxena, S., Maj, M., Maselko, J., Phillips, M. R., & Rahman, A. (2007). No health without mental health. *Lancet*, 370(9590), 859–877. [https://doi.org/10.1016/S0140-6736\(07\)61238-0](https://doi.org/10.1016/S0140-6736(07)61238-0)
- \*Psouni, E., & Eichbichler, A. (2020). Feelings of restriction and incompetence in parenting mediate the link between attachment anxiety and paternal postnatal depression. *Psychology of Men and Masculinities*, 21(3), 416–429. <https://doi.org/10.1037/men0000233>
- \*Quinn, A. C. (2005). *An examination of the relations between human attachment, pet attachment, depression, and anxiety* [Unpublished doctoral thesis]. Iowa State University, United States. <https://doi.org/10.31274/rtid-180813-16451>
- \*Ramos, K., & Lopez, F. G. (2018). Attachment security and career adaptability as predictors of subjective well-being among career transitioners. *Journal of Vocational Behavior*, 104, 72–85. <https://doi.org/10.1016/j.jvb.2017.10.004>
- Rapoza, K. A., Vassell, K., Wilson, D. T., Robertson, T. W., Manzella, D. J., Ortiz-Garcia, A. L., & Jimenez-Lazar, L. A. (2016). Attachment as a moderating factor between social support, physical health, and psychological symptoms. *SAGE Open*, 6(4), 1–13. <https://doi.org/10.1177/2158244016682818>
- R Core Team. (2016). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. <http://www.R-project.org/>
- \*Reiser, S. J. (2013). *Childhood abuse and health anxiety: The roles of attachment and emotion regulation* [Unpublished masters thesis]. University of Regina, Canada.
- \*Reizer, A. (2015). Influence of employees' attachment styles on their life satisfaction as mediated by job satisfaction and burnout. *The Journal of Psychology*, 149(4), 356–377. <https://doi.org/10.1080/00223980.2014.881312>
- \*Rendina, J. (2018). *Attachment and parental invalidation contributes to borderline personality disorder symptoms in a college-aged sample* [Doctoral dissertation]. California Lutheran University, United States.
- \*Rholes, W. S., Simpson, J. A., Kohn, J. L., Wilson, C. L., Martin, A. M. III, Tran, S., & Kashy, D. A. (2011). Attachment orientations and depression: A longitudinal study of new parents. *Journal of Personality and Social Psychology*, 100(4), 567–586. <https://doi.org/10.1037/a0022802>
- Richard, F. D., Bond, C. F., Jr., & Stokes-Zoota, J. J. (2003). One hundred years of social psychology quantitatively described. *Review of General Psychology*, 7(4), 331–363. <https://doi.org/10.1037/1089-2680.7.4.331>
- \*Riggs, S. (2010). *Effects of adult romantic attachment and social support on resilience and depression in patients with acquired disabilities* [Unpublished doctoral thesis]. University of North Texas, United States.
- Riggs, S. A., & Han, G. (2009). Predictors of anxiety and depression in emerging adulthood. *Journal of Adult Development*, 16(1), 39–52. <https://doi.org/10.1007/s10804-009-9051-5>

- \*Riggs, S. A., Vosvick, M., & Stallings, S. (2007). Attachment style, stigma and psychological distress among HIV+ adults. *Journal of Health Psychology, 12*(6), 922–936. <https://doi.org/10.1177/1359105307082457>
- \*Ringer, J. M., Buchanan, E. E., Olessek, K., & Lysaker, P. H. (2014). Anxious and avoidant attachment styles and indicators of recovery in schizophrenia: Associations with self-esteem and hope. *Psychology and Psychotherapy: Theory, Research and Practice, 87*(2), 209–221. <https://doi.org/10.1111/papt.12012>
- \*Rodin, G., Walsh, A., Zimmermann, C., Gagliese, L., Jones, J., Shepherd, F. A., Moore, M., Braun, M., Donner, A., & Mikulincer, M. (2007). The contribution of attachment security and social support to depressive symptoms in patients with metastatic cancer. *Psycho-Oncology, 16*(12), 1080–1091. <https://doi.org/10.1002/pon.1186>
- \*Rodrigues, S., Canavarro, M. C., & Fonseca, A. (2018). Attachment representations and maternal confidence: The mediating role of postnatal depressive symptoms and negative thoughts. *Journal of Child and Family Studies, 27*(11), 3585–3597. <https://doi.org/10.1007/s10826-018-1182-5>
- Rosenfield, S., Vertefuille, J., & McAlpine, D. D. (2000). Gender stratification and mental health: An exploration of dimensions of the self. *Social Psychology Quarterly, 63*(3), 208–223. <https://doi.org/10.2307/2695869>
- Rosenthal, R. (1986). Meta-analytic procedures for social science research sage publications: Beverly Hills, 1984, 148 pp. *Educational Researcher, 15*(8), 18–20. <https://doi.org/10.3102/0013189X015008018>
- \*Sabuncuoğlu, O., & Berkem, M. (2006). Relationship between attachment style and depressive symptoms in postpartum women: Findings from Turkey. *Türk Psikiyatri Dergisi, 17*(4), 252–258.
- \*Sandoval, E. L. (2008). *Secure attachment, self-esteem, and optimism as predictors of positive body image in women* [Unpublished doctoral thesis]. Texas A&M University, United States.
- \*Sandusky, B. (2016). *The predictive nature of anxiety, adult attachment, and counseling experience on counseling self-efficacy* [Unpublished doctoral thesis]. Auburn University, United States.
- \*Sato, M., Fonagy, P., & Luyten, P. (2020). Rejection sensitivity and borderline personality disorder features: The mediating roles of attachment anxiety, need to belong, and self-criticism. *Journal of Personality Disorders, 34*(2), 273–288. [https://doi.org/10.1521/pedi\\_2019\\_33\\_397](https://doi.org/10.1521/pedi_2019_33_397)
- Scammacca, N., Roberts, G., & Stuebing, K. K. (2014). Meta-analysis with complex research designs: Dealing with dependence from multiple measures and multiple group comparisons. *Review of Educational Research, 84*(3), 328–364. <https://doi.org/10.3102/0034654313500826>
- \*Schierholz, A., Krüger, A., Barenbrügge, J., & Ehring, T. (2016). What mediates the link between childhood maltreatment and depression? The role of emotion dysregulation, attachment, and attributional style. *European Journal of Psychotraumatology, 7*(1), Article 32652. <https://doi.org/10.3402/ejpt.v7.32652>
- Segal, D. L., Needham, T. N., & Coolidge, F. L. (2009). Age differences in attachment orientations among younger and older adults: Evidence from two self-report measures of attachment. *International Journal of Aging and Human Development, 69*(2), 119–132. <https://doi.org/10.2190/AG.69.2.c>
- \*Segele-Karpas, D., Bamberger, P. A., & Bacharach, S. B. (2013). Income decline and retiree well-being: The moderating role of attachment. *Psychology and Aging, 28*(4), 1098–1107. <https://doi.org/10.1037/a0034672>
- \*Selwood, E. (2013). *The role of attachment in adult mental health difficulties following the experience of childhood abuse* [Unpublished doctoral thesis]. University of Southampton, United Kingdom.
- \*Şenkal, İ., & Işıklı, S. (2015). Childhood traumas and attachment style-associated depression symptoms: The mediator role of alexithymia. *Turkish Journal of Psychiatry, 26*(4), 261–267. <https://doi.org/10.5080/u12256>
- \*Set, Z. (2019). Potential regulatory elements between attachment styles and psychopathology: Rejection sensitivity and self-esteem. *Nöro Psikiyatri Arşivi, 56*(3), 205–212. <https://doi.org/10.29399/npa.23451>
- Shadish, W. R., & Haddock, C. K. (2009). Combining estimates of effect size. In H. Cooper, L. V. Hedges, & J. C. Valentine (Eds.), *The handbook of research synthesis and meta-analysis* (pp. 257–277). Sage Publications.
- \*Shakory, S., Van Exan, J., Mills, J. S., Sockalingam, S., Keating, L., & Taube-Schiff, M. (2015). Binge eating in bariatric surgery candidates: The role of insecure attachment and emotion regulation. *Appetite, 91*, 69–75. <https://doi.org/10.1016/j.appet.2015.03.026>
- Shaver, P., & Hazan, C. (1987). Being lonely, falling in love. *Journal of Social Behavior and Personality, 2*(2), 105–124.
- \*Shaver, P. R., Schachner, D. A., & Mikulincer, M. (2005). Attachment style, excessive reassurance seeking, relationship processes, and depression. *Personality and Social Psychology Bulletin, 31*(3), 343–359. <https://doi.org/10.1177/0146167204271709>
- \*Shea, A. M. (2014). *Attachment avoidance and depressive symptoms: A test of moderation by cognitive abilities* [Unpublished doctoral thesis]. Purdue University, United States.
- \*Shorey, H. S., Snyder, C. R., Yang, X., & Lewin, M. R. (2003). The role of hope as a mediator in recollected parenting, adult attachment, and mental health. *Journal of Social and Clinical Psychology, 22*(6), 685–715. <https://doi.org/10.1521/jscp.22.6.685.22938>
- Sibley, C. G., & Overall, N. C. (2008). Modeling the hierarchical structure of attachment representations: A test of domain differentiation. *Personality and Individual Differences, 44*(1), 238–249. <https://doi.org/10.1016/j.paid.2007.08.003>
- Sibley, C. G., & Overall, N. C. (2010). Modeling the hierarchical structure of personality-attachment associations: Domain diffusion versus domain differentiation. *Journal of Social and Personal Relationships, 27*(1), 47–70. <https://doi.org/10.1177/0265407509346421>
- \*Simon, H. L. M., DiPlacido, J., & Conway, J. M. (2019). Attachment styles in college students and depression: The mediating role of self-differentiation. *Mental Health and Prevention, 13*, 135–142. <https://doi.org/10.1016/j.mhp.2019.01.011>
- Slee, N., Garnefski, N., Spinhoven, P., & Arensman, E. (2008). The influence of cognitive emotion regulation strategies and depression severity on deliberate self-harm. *Suicide and Life-Threatening Behavior, 38*(3), 274–286. <https://doi.org/10.1521/suli.2008.38.3.274>
- \*Smagur, K. E. (2017). *Attachment style as a mechanism from intimate partner violence to depressive symptoms: An information processing approach* [Unpublished doctoral thesis]. Michigan State University, United States.
- \*Smagur, K. E., Bogat, G. A., & Levendosky, A. A. (2018). Attachment insecurity mediates the effects of intimate partner violence and childhood maltreatment on depressive symptoms in adult women. *Psychology of Violence, 8*(4), 460–469. <https://doi.org/10.1037/vio0000142>
- \*Smith, V. E. (2009). *The relevance of adult attachment classification to African Americans' relationship quality and subjective well-being* [Unpublished doctoral thesis]. The City University of New York, United States.
- Sroufe, L. A. (2005). Attachment and development: A prospective, longitudinal study from birth to adulthood. *Attachment and Human Development, 7*(4), 349–367. <https://doi.org/10.1080/14616730500365928>
- Sroufe, L. A., Egeland, B., Carlson, E. A., & Collins, W. A. (2005a). Placing early attachment experiences in developmental context. In K. E. Grossmann, K. Grossmann, & E. Waters (Eds.), *Attachment from infancy to adulthood: The major longitudinal studies* (pp. 48–70). Guilford Publications.
- Sroufe, L. A., Egeland, B., Carlson, E. A., & Collins, W. A. (2005b). *The development of the person: The Minnesota study of risk and adaptation from birth to adulthood*. Guilford Publications.
- Stanton, S. C. E., & Campbell, L. (2014). Perceived social support moderates the link between attachment anxiety and health outcomes. *PLOS ONE, 9*(4), Article e95358. <https://doi.org/10.1371/journal.pone.0095358>
- Stovall-McClough, K. C., & Dozier, M. (2016). Attachment states of mind and psychopathology in adulthood. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 715–738). Guilford Press.

- \*Stroud, C. B., Hershenberg, R., Cardenas, S., Greiter, E., & Richmond, M. (2016). US College students' sexual activity: The unique and interactive effects of emotion regulation difficulties and attachment style. *International Journal of Sexual Health, 28*(1), 37–49. <https://doi.org/10.1080/19317611.2015.1073824>
- Suldo, S. M., & Shaffer, E. J. (2008). Looking beyond psychopathology: The dual-factor model of mental health in youth. *School Psychology Review, 37*(1), 52–68. <https://doi.org/10.1080/02796015.2008.12087908>
- Sümer, N., & Yetkili, O. (2018). Cultural aspects of attachment anxiety, avoidance, and life satisfaction: Comparing the U.S. and Turkey. In M. Demir & N. Sümer (Eds.), *Close relationships and happiness across cultures* (pp. 165–184). Springer. [https://doi.org/10.1007/978-3-319-89663-2\\_10](https://doi.org/10.1007/978-3-319-89663-2_10)
- \*Sutin, A. R., & Gillath, O. (2009). Autobiographical memory phenomenology and content mediate attachment style and psychological distress. *Journal of Counseling Psychology, 56*(3), 351–364. <https://doi.org/10.1037/a0014917>
- \*Tammy Lin, J. H. (2019). Permanently online and permanently connected: Taiwanese university students' attachment style, mobile phone usage, and well-being. *Chinese Journal of Communication, 12*(1), 44–65. <https://doi.org/10.1080/17544750.2018.1511606>
- Tanner-Smith, E. E., & Tipton, E. (2014). Robust variance estimation with dependent effect sizes: Practical considerations including a software tutorial in Stata and SPSS. *Research Synthesis Methods, 5*(1), 13–30. <https://doi.org/10.1002/jrsm.1091>
- Tasca, G. A., & Balfour, L. (2014). Attachment and eating disorders: A review of current research. *International Journal of Eating Disorders, 47*(7), 710–717. <https://doi.org/10.1002/eat.22302>
- \*Tasca, G. A., Kowal, J., Balfour, L., Ritchie, K., Virley, B., & Bissada, H. (2006). An attachment insecurity model of negative affect among women seeking treatment for an eating disorder. *Eating Behaviors, 7*(3), 252–257. <https://doi.org/10.1016/j.eatbeh.2005.09.004>
- \*Tasca, G. A., Szadkowski, L., Illing, V., Trinneer, A., Grenon, R., Demidenko, N., Krysanski, V., Balfour, L., & Bissada, H. (2009). Adult attachment, depression, and eating disorder symptoms: The mediating role of affect regulation strategies. *Personality and Individual Differences, 47*(6), 662–667. <https://doi.org/10.1016/j.paid.2009.06.006>
- \*Taube-Schiff, M., Van Exan, J., Tanaka, R., Wnuk, S., Hawa, R., & Sockalingam, S. (2015). Attachment style and emotional eating in bariatric surgery candidates: The mediating role of difficulties in emotion regulation. *Eating behaviors, 18*, 36–40. <https://doi.org/10.1016/j.eatbeh.2015.03.011>
- Tipton, E. (2015). Small sample adjustments for robust variance estimation with meta-regression. *Psychological Methods, 20*(3), 375–393. <https://doi.org/10.1037/met0000011>
- \*Tomac, M. M. (2011). *The influence of mindfulness on resilience in context of attachment style, affect regulation, and self-esteem* [Unpublished doctoral thesis]. Walden University.
- Tull, M. T., Barrett, H. M., McMillan, E. S., & Roemer, L. (2007). A preliminary investigation of the relationship between emotion regulation difficulties and posttraumatic stress symptoms. *Behavior Therapy, 38*(3), 303–313. <https://doi.org/10.1016/j.beth.2006.10.001>
- Turk, C. L., Heimberg, R. G., Luterek, J. A., Mennin, D. S., & Fresco, D. M. (2005). Emotion dysregulation in generalized anxiety disorder: A comparison with social anxiety disorder. *Cognitive Therapy and Research, 29*(1), 89–106. <https://doi.org/10.1007/s10608-005-1651-1>
- \*Ty, M., & Francis, A. J. (2013). Insecure attachment and disordered eating in women: The mediating processes of social comparison and emotion dysregulation. *Eating Disorders: The Journal of Treatment and Prevention, 21*(2), 154–174. <https://doi.org/10.1080/10640266.2013.761089>
- \*Van Assche, L., Van de Ven, L., Vandenbulcke, M., & Luyten, P. (2020). Ghosts from the past? The association between childhood interpersonal trauma, attachment and anxiety and depression in late life. *Aging and Mental Health, 24*(6), 898–905. <https://doi.org/10.1080/13607863.2019.1571017>
- \*Vilchinsky, N., Dekel, R., Asher, Z., Leibowitz, M., & Mosseri, M. (2013). The role of illness perceptions in the attachment-related process of affect regulation. *Anxiety, Stress, and Coping, 26*(3), 314–329. <https://doi.org/10.1080/10615806.2012.682649>
- \*Vilchinsky, N., Dekel, R., Revenson, T. A., Liberman, G., & Mosseri, M. (2015). Caregivers' burden and depressive symptoms: The moderational role of attachment orientations. *Health Psychology, 34*(3), 262–269. <https://doi.org/10.1037/hea0000121>
- Wadman, R., Webster, L., Mawn, L., & Stain, H. J. (2019). Adult attachment, psychological distress and help-seeking in university students: Findings from a cross-sectional online survey in England. *Mental Health and Prevention, 13*, 7–13. <https://doi.org/10.1016/j.mhp.2018.11.003>
- \*Walsh, J., Hepper, E. G., & Marshall, B. J. (2014). Investigating attachment, caregiving, and mental health: A model of maternal-fetal relationships. *BMC Pregnancy and Childbirth, 14*(1), Article 383. <https://doi.org/10.1186/s12884-014-0383-1>
- \*Wang, C.-C. D. C., & Ratanasiripong, P. (2010). Adult attachment, cultural orientation, and psychosocial functioning of Chinese American college students. *Cultural Diversity and Ethnic Minority Psychology, 16*(2), 101–109. <https://doi.org/10.1037/a0018634>
- \*Wang, J. (2017). *The contributions of parental socialization of emotion and adult attachment orientation to maladaptive emotion regulation and eating disorders* [Unpublished doctoral thesis]. University of Houston, United States.
- \*Wardrope, A., Green, B., Norman, P., & Reuber, M. (2019). The influence of attachment style and relationship quality on quality of life and psychological distress in carers with epileptic and nonepileptic seizures. *Epilepsy and Behavior, 93*, 16–21. <https://doi.org/10.1016/j.yebeh.2019.01.028>
- \*Waring, A. (2015). *The influence of attachment and grit on life satisfaction and romantic relationship satisfaction* [Unpublished doctoral dissertation]. University of La Verne, United States.
- \*Weaver, A. C. (2011). *Investigating the role of God attachment, adult attachment and emotion regulation in binge eating* [Unpublished doctoral thesis]. Liberty University, United States.
- \*Wei, M., Heppner, P. P., & Mallinckrodt, B. (2003). Perceived coping as a mediator between attachment and psychological distress: A structural equation modeling approach. *Journal of Counseling Psychology, 50*(4), 438–447. <https://doi.org/10.1037/0022-0167.50.4.438>
- \*Wei, M., Liao, K. Y. H., Ku, T. Y., & Shaffer, P. A. (2011). Attachment, self-compassion, empathy, and subjective well-being among college students and community adults. *Journal of Personality, 79*(1), 191–221. <https://doi.org/10.1111/j.1467-6494.2010.00677.x>
- \*Wei, M., Mallinckrodt, B., Larson, L. M., & Zakalik, R. A. (2005). Adult attachment, depressive symptoms, and validation from self versus others. *Journal of Counseling Psychology, 52*(3), 368–377. <https://doi.org/10.1037/0022-0167.52.3.368>
- \*Wei, M., Mallinckrodt, B., Russell, D. W., & Abraham, W. T. (2004). Maladaptive perfectionism as a mediator and moderator between adult attachment and depressive mood. *Journal of Counseling Psychology, 51*(2), 201–212. <https://doi.org/10.1037/0022-0167.51.2.201>
- \*Wei, M., Shaffer, P. A., Young, S. K., & Zakalik, R. A. (2005). Adult attachment, shame, depression, and loneliness: The mediation role of basic psychological needs satisfaction. *Journal of Counseling Psychology, 52*(4), 591–601. <https://doi.org/10.1037/0022-0167.52.4.591>
- Wei, M., Vogel, D. L., Ku, T.-Y., & Zakalik, R. A. (2005). Adult attachment, affect regulation, negative mood, and interpersonal problems: The mediating roles of emotional reactivity and emotional cutoff. *Journal of Counseling Psychology, 52*(1), 14–24. <https://doi.org/10.1037/0022-0167.52.1.14>
- \*Weng, W. C. (2016). *Adult attachment, acculturation, and psychological well-being in Chinese/Taiwanese immigrants* [Unpublished doctoral thesis]. Columbia University, United States.
- \*Whiffen, V. E. (2005). The role of partner characteristics in attachment insecurity and depressive symptoms. *Personal Relationships, 12*(3), 407–423. <https://doi.org/10.1111/j.1475-6811.2005.00123.x>



- \*White, C. (2015). *Attachment anxiety, attachment avoidance, generalized anxiety, and social anxiety predict attractiveness devaluation: How individuals in relationships manage the relationship threat posed by attractive alternatives* [Unpublished doctoral thesis]. University of Manitoba, Canada.
- White, R. L., Babic, M. J., Parker, P. D., Lubans, D. R., Astell-Burt, T., & Lonsdale, C. (2017). Domain-specific physical activity and mental health: A meta-analysis. *American Journal of Preventive Medicine*, 52(5), 653–666. <https://doi.org/10.1016/j.amepre.2016.12.008>
- \*Widom, C. S., Czaja, S. J., Kozakowski, S. S., & Chauhan, P. (2018). Does adult attachment style mediate the relationship between childhood maltreatment and mental and physical health outcomes? *Child Abuse and Neglect*, 76, 533–545. <https://doi.org/10.1016/j.chiabu.2017.05.002>
- \*Williams, N. L., & Riskind, J. H. (2004). Adult romantic attachment and cognitive vulnerabilities to anxiety and depression: Examining the interpersonal basis of vulnerability models. *Journal of Cognitive Psychotherapy*, 18(1), 7–24. <https://doi.org/10.1891/jcop.18.1.7.28047>
- \*Wiltgen, A., Arbona, C., Frankel, L., & Frueh, B. C. (2015). Interpersonal trauma, attachment insecurity and anxiety in an inpatient psychiatric population. *Journal of Anxiety Disorders*, 35, 82–87. <https://doi.org/10.1016/j.janxdis.2015.07.010>
- \*Winham, K. M., Engstrom, M., Golder, S., Renn, T., Higgins, G. E., & Logan, T. K. (2015). Childhood victimization, attachment, psychological distress, and substance use among women on probation and parole. *American Journal of Orthopsychiatry*, 85(2), 145–158. <https://doi.org/10.1037/ort0000038>
- \*Wix, R. A. (2012). *Attachment anxiety and internalized heterosexism as mediators of discrimination and depression, anxiety, and well-being in college same sex attracted women* [Unpublished doctoral thesis]. The Pennsylvania State University, United States.
- Woodhouse, S., Ayers, S., & Field, A. P. (2015). The relationship between adult attachment style and post-traumatic stress symptoms: A meta-analysis. *Journal of Anxiety Disorders*, 35, 103–117. <https://doi.org/10.1016/j.janxdis.2015.07.002>
- World Health Organization Department of Mental Health and Substance Abuse. (2004). *Promoting mental health: Concepts, emerging evidence, practice: Summary report*.
- \*Worsley, J. D., McIntyre, J. C., Bentall, R. P., & Corcoran, R. (2018). Childhood maltreatment and problematic social media use: The role of attachment and depression. *Psychiatry Research*, 267, 88–93. <https://doi.org/10.1016/j.psychres.2018.05.023>
- \*Wright, S. L., Firsick, D. M., Kacmarski, J. A., & Jenkins-Guarnieri, M. A. (2017). Effects of attachment on coping efficacy, career decision self-efficacy, and life satisfaction. *Journal of Counseling and Development*, 95(4), 445–456. <https://doi.org/10.1002/jcad.12159>
- \*Wu, C. H. (2009). The relationship between attachment style and self-concept clarity: The mediation effect of self-esteem. *Personality and Individual Differences*, 47(1), 42–46. <https://doi.org/10.1016/j.paid.2009.01.043>
- Xie, F., Zhang, L., Chen, X., & Xin, Z. (2020). Is spatial ability related to mathematical ability: A meta-analysis. *Educational Psychology Review*, 32(1), 113–155. <https://doi.org/10.1007/s10648-019-09496-y>
- Yang, Y., Shields, G. S., Guo, C., & Liu, Y. (2018). Executive function performance in obesity and overweight individuals: A meta-analysis and review. *Neuroscience and Biobehavioral Reviews*, 84, 225–244. <https://doi.org/10.1016/j.neubiorev.2017.11.020>
- \*Yarkovsky, N. (2016). *Experiences of dating violence in emerging adult couples: The role of attachment style and emotion regulation* [Unpublished doctoral thesis]. University of Windsor, Canada.
- \*You, J., Huang, J. L., Ho, M. Y., Leung, H., Li, C., & Bond, M. H. (2015). Perceived support and relational conflict as mediators linking attachment orientations with depressive symptoms: A comparison of dating individuals from Hong Kong and the United States. *Personality and Individual Differences*, 73, 50–55. <https://doi.org/10.1016/j.paid.2014.09.004>
- \*Zakalik, R. A., & Wei, M. (2006). Adult attachment, perceived discrimination based on sexual orientation, and depression in gay males: Examining the mediation and moderation effects. *Journal of Counseling Psychology*, 53(3), 302–313. <https://doi.org/10.1037/0022-0167.53.3.302>
- \*Zech, E., De Ree, F., Berenschot, F., & Stroebe, M. (2006). Depressive affect among health care seekers: How it is related to attachment style, emotional disclosure, and health complaints. *Psychology Health and Medicine*, 11(1), 7–19. <https://doi.org/10.1080/13548500500344255>
- \*Zeynep, S. E. T. (2019). Potential regulatory elements between attachment styles and psychopathology: Rejection sensitivity and self-esteem. *Archives of Neuropsychiatry*, 56(3), 205–212. <https://doi.org/10.29399/npa.23451>
- \*Zhang, H., Chan, D. K., & Teng, F. (2011). Transfer of attachment functions and adjustment among young adults in China. *The Journal of Social Psychology*, 151(3), 257–273. <https://doi.org/10.1080/00224545.2010.481685>
- \*Zhang, L., Zhang, S., Yang, Y., & Li, C. (2017). Attachment orientations and dispositional gratitude: The mediating roles of perceived social support and self-esteem. *Personality and Individual Differences*, 114, 193–197. <https://doi.org/10.1016/j.paid.2017.04.006>
- \*\*Zhang, X. (2022, July 18). *The relationship between adult attachment and mental health: A meta-analysis*. <https://osf.io/aycdn>
- \*Zhang, X., Chen, X., Ran, G., & Ma, Y. (2016). Adult children's support and self-esteem as mediators in the relationship between attachment and subjective well-being in older adults. *Personality and Individual Differences*, 97, 229–233. <https://doi.org/10.1016/j.paid.2016.03.062>
- Zhang, X., Deng, M., Ran, G., Tang, Q., Xu, W., Ma, Y., & Chen, X. (2018). Brain correlates of adult attachment style: A voxel-based morphometry study. *Brain Research*, 1699, 34–43. <https://doi.org/10.1016/j.brainres.2018.06.035>
- \*Zhu, W., Wang, C. D., & Chong, C. C. (2016). Adult attachment, perceived social support, cultural orientation, and depressive symptoms: A moderated mediation model. *Journal of Counseling Psychology*, 63(6), 645–655. <https://doi.org/10.1037/cou0000161>

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