



## REVIEW ARTICLE

# Parental conditional regard: A meta-analysis

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## Abstract

**Introduction:** Parental conditional regard involves parents giving or withdrawing affection and approval, depending on children's and adolescents' compliance with parental expectations, to shape behaviors and traits. Research grounded in self-determination theory suggests parental conditional regard harms psychological development. Using self-determination theory as a theoretical foundation for investigating outcomes associated with parental conditional regard, the present study consolidated meta-analytic associations between parental conditional regard and four theoretically important individual difference correlates: introjected self-regulation, contingent self-esteem, depressive symptoms, and relatedness.

**Methods:** Following PRISMA guidelines, a systematic literature search was conducted using the PsycINFO, ProQuest, and EBSCO databases for English-language, peer-reviewed published studies and unpublished studies. Eligible studies reported an association between parental conditional regard and the four theoretically derived correlates or another correlate of interest in pre-adolescent children, adolescents, or young adults. The results were based on a random-effects model for meta-analyses and the Q statistic for moderator analyses.

**Results:** Across 31 samples in total, greater parental conditional regard was significantly associated with more introjected regulation ( $r = .33$ ), contingent self-esteem ( $r = .29$ ), and level of depressive symptoms ( $r = .22$ ); and less relatedness ( $r = -.24$ ). Moderator results for parental conditional regard type found parental conditional regard's association with introjected regulation was significantly stronger for studies measuring giving regard (parental conditional positive regard) than withdrawing regard (parental conditional negative regard). The association of parental conditional regard with depressive symptoms was significantly stronger for studies measuring parental conditional negative regard than parental conditional positive regard.

**Conclusions:** The meta-analytic results provide theoretical and empirical support for the connections between self-determination and the impact of parental conditional regard.

## KEYWORDS

depression, introjected regulation, parental conditional regard, relatedness, self-determination theory, self-esteem

## 1 | INTRODUCTION

Parental conditional regard is a socialising strategy through which parents give or withdraw affection and approval, depending on their child or teenager complying with parental expectations (Assor et al., 2004). For example, when a child suppresses anger, parents might give more hugs than usual, or when a child loses at sport, parents might ignore the child.

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Parental conditional regard is a common practice, with evidence suggesting it can elicit desired behavior change (Assor et al., 2004; Roth et al., 2009). The conceptualisation of parental conditional regard proposed by Assor et al. (2004) is the theoretical basis for the present research and incorporates components of theories proposed by Rogers (1959) and Ryan and Deci (2017). Historically, Rogers (1959) argued that experiencing conditional regard from significant others produces conditions of worth, beliefs that one's self-worth and love-worthiness depend on meeting certain conditions, which undermine self-development. Over the past two decades, research grounded in Assor et al.'s (2004) conceptualisation of parental conditional regard and self-determination theory (Ryan & Deci, 2000, 2017) has found that parental conditional regard correlates with maladaptive outcomes for children's psychological functioning and relationships (Ryan & Deci, 2017). For example, parental conditional regard is significantly correlated with children having more anxiety symptoms, lower global self-esteem, emotional dysregulation, perfectionism, resentment of parents, and lower attachment security (Assor et al., 2004; Curran, 2018; Mendi & Eldeleklioglu, 2016; Moller et al., 2019; Roth & Assor, 2012; Smiley et al., 2020). Assor and Roth (2005) distinguished between parental conditional positive regard and parental conditional negative regard. Parental conditional regard functions through reward contingencies when parents give affection and approval to reinforce desired child behaviors, known as parental conditional positive regard, or through negative punishment when parents withdraw affection and approval to decrease unwanted child behaviors, known as parental conditional negative regard (Roth et al., 2009). Parental conditional regard can be applied generally; however, to obtain preciser measurements, researchers often measure regard in specific domains; these domains are typically academic, sport, prosocial, and emotion regulation (Assor et al., 2004).

Parental conditional regard is conceptualised from children's, not parents', perception of parental regard. Parents might perceive their regard as unconditional; yet, children who perceive that their self-worth or parental love depends on enacting certain behaviors are said to experience conditional regard (Assor & Tal, 2012; Roth et al., 2016). Parental conditional regard is conceptually related to psychological control, which uses shame, blame, and love-withdrawal to manipulate another's behavior (Soenens & Vansteenkiste, 2010). Even though parental conditional regard involves control, parental conditional regard is distinct from the concept of psychological control (Assor et al., 2004). Psychological control has multiple facets, including personal attack, and invalidating feelings (Romm et al., 2020), differentiating the nature of the construct from parental conditional regard. Further, the two concepts have different correlates, indicating conceptual distinctiveness (Assor & Tal, 2012). Regard-withdrawal characterising parental conditional negative regard is similar to love-withdrawal, which also correlates with adverse outcomes for children (Otterpohl et al., 2020; Romm et al., 2020).

At a theoretical level, parental conditional regard can be understood through a self-determination theory framework. According to this theory, optimal psychological functioning, well-being, and relationship quality come through satisfaction of three innate basic psychological needs—autonomy, competence, and relatedness (Ryan & Deci, 2017). Parental conditional regard is linked to less satisfaction of all three needs (Moller et al., 2019). Central to reactions to parental conditional regard are autonomy and relatedness (Ryan & Deci, 2017). Autonomy involves feeling that one's behavior is freely chosen and self-endorsed. Relatedness involves feeling closely connected to and unconditionally accepted by significant others (Ryan & Deci, 2017). Autonomy and relatedness are interdependent and complementary; satisfying one need helps satisfy the other, contributing to psychological well-being and enhancing relationship quality (La Guardia et al., 2000; Soenens et al., 2017).

Self-determination theory proposes that parental conditional regard is a social controlling practice that directly thwarts and undermines optimal satisfaction of autonomy and relatedness needs through pitting these needs against each other, pressuring children to forego autonomy to satisfy relatedness or forego relatedness to maintain a sense of autonomy (Ryan & Deci, 2017). Even when children forego autonomy to satisfy relatedness needs, the resulting satisfaction of relatedness needs may be only partial and diluted (Assor et al., 2004; Assor et al., 2014; Assor, 2018). Thus, parental conditional regard is predicted to promote maladaptive intrapersonal and interpersonal outcomes for children (Ryan & Deci, 2017). Individual difference outcomes of theoretical importance associated with parental conditional regard are introjected regulation, contingent self-esteem, depressive symptoms, and outcomes connected to relationship quality. The theoretical basis for positing these outcomes relates to the emotional and relational costs for children that result from parental conditional regard (Assor, 2018; Assor et al., 2004, 2014). The following sections define these outcomes and provide an explanation of the theory-based links between parental conditional regard and the outcomes.

## 1.1 | Introjected regulation

Self-determination theory describes human motivation on an autonomy continuum ranging from amotivation (no autonomy) to extrinsic motivation to intrinsic motivation (full autonomy). Introjected regulation is a type of extrinsic motivation that involves internalising—without fully accepting—other people's expectations to behave, feel, or think in certain ways. In introjected regulation, behavior is controlled by a desire to avoid guilt, shame, and anxiety, or to maintain feelings of self-worth (Ryan & Deci, 2000). Introjected regulation correlates with adverse outcomes for children, including

lower well-being, lower vitality, negative affect, anxiety, and depressive symptoms (Assor et al., 2009; Duchesne & Ratelle, 2016).

Parental conditional regard can promote introjected regulation. A child may internalise parental expectations to maintain parental regard and self-worth, not because the child freely accepts and values these expectations. Thus, the child would not experience autonomous behavior when meeting parental expectations, but behavior controlled by maintenance of self-worth and parental esteem (Assor et al., 2004; Ryan & Deci, 2017). Moreover, such behavior is characterised as rigid, suboptimal, and accompanied by feelings of internal compulsion and pressure (Assor et al., 2004).

The small number of past studies examining retrospective recollected parental conditional regard and introjected regulation (for behaviors targeted by the parental regard) among young adults have tended to find weak to strong positive associations within academic, sport, prosocial, or emotion regulation domains, and these findings involved conditional regard from mothers and fathers (e.g., Assor et al., 2004; Roth, 2008). Studies with adolescents have found differences between parental conditional positive regard and parental conditional negative regard. Results showed mostly moderate positive associations between positive regard and introjected regulation, that is, greater perceived positive regard was associated with more introjected regulation, while negative regard had mostly weak positive associations with introjected regulation (Israeli-Halevi et al., 2015; Roth et al., 2009). Overall, evidence suggests an association between more parental conditional regard and greater introjected regulation, but the magnitude is unclear. Further, positive regard may explain more variance in this relationship than does negative regard. Children may experience positive conditional regard as somewhat supportive, facilitating internalisation of parental expectations and subsequent introjected motivation, compared to negative conditional regard, which may create resentment, leading to amotivation (Roth et al., 2009).

## 1.2 | Contingent self-esteem

Contingent self-esteem involves one's sense of self-worth depending on satisfying or failing to satisfy expectations or standards imposed by others or oneself. As expectations or standards cannot always be met, self-worth fluctuates (Crocker & Wolfe, 2001). For example, a child whose self-worth depends on academic success feels high self-worth when successful and lower self-worth when experiencing academic failure (Crocker & Wolfe, 2001). Contingent self-esteem correlates with negative outcomes including depressive symptoms (Schöne et al., 2015), anxiety (Bos et al., 2010), low subjective well-being (Wang & Li, 2018), and suicidal behavior (Lakey et al., 2014).

Parental conditional regard may promote development of contingent self-esteem underlying introjected regulation. Because parental regard is conditional, children may learn they are only worthy of love when meeting parental expectations. Thus, children experiencing parental conditional regard may esteem themselves insofar as they meet these expectations (Ryan & Deci, 2017). Further, contingent self-esteem might be reinforced as children satisfy relatedness needs through, for example, seeking social approval on which they hinge self-worth (Ryan & Deci, 2017).

Studies examining parental conditional regard and contingent self-esteem in adolescent or young adult populations found positive associations ranging from weak to strong. Magnitudes varied depending on domain measured and whether conditional regard came from mothers or fathers (Assor et al., 2004; Curran, 2018; Kollat, 2007). Similarly, studies distinguishing positive conditional regard from negative conditional regard found positive associations but inconsistent magnitudes (Otterpohl et al., 2019, 2020, 2021; Wouters et al., 2018). For example, among adolescents, Wouters et al. (2018) found weak positive associations for positive regard and negative regard with contingent self-esteem; however, Otterpohl et al. (2020) found these had strong positive associations. Overall, more parental conditional regard appears to be related to greater contingent self-esteem, but the magnitude is unclear.

## 1.3 | Depressive symptoms

Parental conditional regard may promote depressive symptoms in children. This may occur because control and rejection inherent in parental conditional regard thwart autonomy and relatedness needs (Ryan & Deci, 2017). Research on controlling and rejecting parenting and childhood depression found a moderate meta-analytic association of 0.28 (McLeod et al., 2007). Additionally, research on parents' use of psychological control found love-withdrawal was moderately associated with more depressive symptoms in children (Cheah et al., 2019; Levitt et al., 2020; Romm et al., 2020).

Similarly, parental conditional regard research with adolescents and children found moderate to strong associations between more parental conditional negative regard and a higher level of depressive symptoms, while parental conditional positive regard had weak and mostly positive associations with depressive symptoms (Otterpohl et al., 2020; Smiley et al., 2020; Wouters et al., 2018). Among adolescents, a study measuring overall parental conditional regard found that positive associations with depressive symptoms varied across academic, sport, prosocial, and emotion regulation domains (Proctor et al., 2020). Thus, although evidence suggests more parental conditional regard correlates with more depressive

symptoms, the magnitude is unclear. Further, as rejection characterises negative conditional regard, it possibly explains more variance in this relationship than does positive conditional regard.

## 2 | Relatedness

Feeling a sense of relatedness or close connection with parents is vital for children's optimal development (Ryan & Deci, 2017). For example, children's feelings of close connection to parents are linked to children's secure attachment (La Guardia et al., 2000), high self-worth (McAdams et al., 2017), and social competency shown through empathic and prosocial behavior (Yoo et al., 2013). When parental affection and approval are conditional, children may experience parental love as unstable and unassured, and may not feel loved for who they are. Thus, parental conditional regard may prevent feelings of close connection, leading to poorer parent-child relationships (Ryan & Deci, 2017).

Parental conditional regard research has examined variables indicating parent-child relationship quality. These variables included relationship satisfaction and quality (Kanat-Maymon et al., 2016; Saeed & Hanif, 2014), feelings of closeness towards parents (Kanat-Maymon et al., 2016; Segrin et al., 2019; Smiley et al., 2020), attachment security (Moller et al., 2019), parent-child relationship problems (Segrin et al., 2015), and resentment towards parents (Assor et al., 2004; Roth et al., 2009). Overall, results found parental conditional regard correlated with lower parent-child relationship quality, with effect sizes ranging in magnitude from weak to strong. Studies assessing conditional positive regard and conditional negative regard predominately found negative regard was more strongly associated with a given relationship quality variable than was positive regard. For example, Roth et al. (2009) found adolescents' perceived positive regard from mothers and fathers had mostly weak positive associations with resentment, while associations for negative regard were mostly moderate. Overall, parental conditional regard appears linked to poorer quality parent-child relationships, but the magnitude is unclear.

Relatedness is important in developing high-quality peer and romantic relationships, enhancing personal and relationship well-being (Patrick et al., 2007). Parental conditional regard might harm future peer and romantic relationships through generalising to these relationships attachment and emotional intimacy issues linked to childhood parental conditional regard (Moller et al., 2019; Roth & Assor, 2012). For example, young adults who experienced parental conditional regard as children or adolescents reported feeling less attachment security with current best-friends and romantic partners (Moller et al., 2019). Studies assessing the association of parental conditional regard with indices of peer or romantic relationship quality found magnitudes ranging from weak to moderate (Moller et al., 2019; Roth & Assor, 2012).

## 3 | POTENTIAL MODERATORS OF THE ASSOCIATIONS BETWEEN PARENTAL CONDITIONAL REGARD AND INTROJECTED REGULATION, CONTINGENT SELF-ESTEEM, DEPRESSIVE SYMPTOMS, AND RELATEDNESS

### 3.1 | Parental conditional regard type

Some studies found associations varied depending on parental conditional regard type. For example, parental conditional positive regard had stronger associations with introjected regulation than did parental conditional negative regard (Israeli-Halevi et al., 2015; Roth et al., 2009). Negative conditional regard had mostly stronger associations with depressive symptoms and relatedness than did positive conditional regard (Otterpohl et al., 2020; Roth et al., 2009; Smiley et al., 2020; Wouters et al., 2018). As distinguishable parental conditional regard components, understanding how positive and negative regard might explain variation in the relationship of parental conditional regard with each correlate is important.

### 3.2 | Domain type

Associations may vary depending on the domain in which parental conditional regard was measured (academic, sport, prosocial, and emotion regulation). For example, regarding conditional regard's association with introjected regulation, Assor et al. (2004) found strong effect sizes for conditional regard from mothers and fathers in the prosocial domain ( $r = .53$  and  $r = .38$ , respectively) and weak effect sizes in the sport domain ( $r = .20$  and  $r = .21$ , respectively).

### 3.3 | Parent type

Associations may vary depending on whether mothers, fathers, or both parents used conditional regard. Some studies found associations varied with parent type (e.g., Assor et al., 2004; Moller et al., 2019; Roth, 2008). This variation agrees with a

systematic review examining gender differences in parenting (Yaffe, 2020) that found a significant overall difference between mothers' and fathers' parenting practices and styles ( $d = 0.30$ ).

## 4 | MEASURES OF PARENTAL CONDITIONAL REGARD AND CORRELATES

The most widely used parental conditional regard measure is the self-reported Domain-Specific Perceptions of Parental Conditional Regard Scale (Assor et al., 2004). Effect sizes that met inclusion criteria for the present study were based on this measure, its subscales, or an adapted version (e.g., Roth et al., 2009), that differentiated conditional positive regard from conditional negative regard. The Domain-Specific Perceptions of Parental Conditional Regard Scale comprises 24 items measuring retrospective perceived parental conditional regard experienced from mothers and fathers within four domains: academic, sport, prosocial, and emotion regulation. Items measure giving and withdrawing regard. An example item is, "As a child or adolescent, I often felt that I would lose much of my father's affection if I did poorly at school." Each subscale has a Cronbach's  $\alpha$  above .79 (Assor et al., 2004). Roth et al.'s (2009) adaptation also has good internal consistency, with  $\alpha$ s above .88.

Most effect sizes concerning introjected regulation included in the present study were based on a self-report measure developed by Assor et al. (2004), or an adapted version, that operationalised introjected regulation by assessing feelings of internal compulsion to show behaviors targeted by parental conditional regard. Studies reported  $\alpha$ s ranging from .66 (Roth, 2008) to .87 (Assor et al., 2004) for this measure, indicating adequate to good internal consistency.

Effect sizes regarding contingent self-esteem included in the present study were based on psychometrically sound measures. These included the Contingent Self-Esteem Scale (Schwinger et al., 2017), which has good internal consistency ( $\alpha$ s in the .80s), and the contingent self-esteem subscale from the German Self-Esteem Inventory for Children and Adolescents (Schöne & Stiensmeier-Pelster, 2016). This subscale has good internal consistency in child ( $\alpha = .81$ ) and adolescent ( $\alpha = .87$ ) populations (Schöne & Stiensmeier-Pelster, 2016).

Effect sizes concerning depressive symptoms included in the present study were based on psychometrically sound measures. These included the Children's Depression Inventory (Kovacs, 1992), which has good internal consistency ( $\alpha = .84$ ) and test-retest reliability of 0.81 (Masip et al., 2010), and the Center for Epidemiologic Studies Depression Scale (Radloff, 1977). For an adolescent population, its internal consistency is good ( $\alpha = .83$ ) and test-retest reliability is adequate (0.71; Yang et al., 2018).

Effect sizes for parent-child, peer, or romantic relationship quality were based on various measures. Examples are the Child's Attitude Toward Mother/Father scales (Hudson, 1992) and the Experiences of Close Relationship Revised Scale (Brennan et al., 1998). Included studies with these effect sizes reported  $\alpha$ s for relationship quality measures ranging from 0.78 (Roth & Assor, 2012) to 0.95 (Kanat-Maymon et al., 2016), indicating adequate to very good internal consistency.

## 5 | THE PRESENT STUDY

To date, no meta-analysis has examined parental conditional regard's association with introjected regulation, contingent self-esteem, depressive symptoms, and relatedness. Given that correlational magnitudes have varied considerably across studies, a meta-analytic investigation could clarify the strength of the association of conditional regard with these outcomes and what might explain variance in associations. Therefore, the present study used meta-analytic techniques to address two main objectives. The first objective was to synthesise and examine the magnitude of the association of parental conditional regard with introjected regulation, contingent self-esteem, depressive symptoms, and relatedness (relatedness comprised variables measuring parent-child, peer, or romantic relationship quality), by calculating weighted mean correlation coefficients across studies for each association. The second objective was to examine potential moderators. These included the type of parental conditional regard measured, domain type, and which parent used conditional regard.

The meta-analysis tested the following four hypotheses that were grounded in self-determination theory:

- (1) Greater parental conditional regard will be associated with more introjected regulation, contingent self-esteem, and depressive symptoms.
- (2) Greater parental conditional regard will be associated with less relatedness.
- (3) The association between parental conditional regard and introjected regulation will be stronger for positive regard than for negative regard. This hypothesis is based on the theoretical distinction between positive and negative regard (Assor, 2018; Assor & Tal, 2012; Assor et al., 2014), with positive conditional regard perhaps being closer than negative conditional regard to the unconditional acceptance that children desire. As both positive and negative conditional regard may influence contingent self-esteem (Assor, 2018), no differential strength of associations was predicted for this outcome.



- (4) The associations between parental conditional regard and depressive symptoms, and parental conditional regard and relatedness will be stronger for conditional negative regard than for conditional positive regard. This hypothesis is again based on distinctions between positive and negative regard, with negative regard possibly eliciting more feelings of rejection and shame. There were no specific hypotheses for other moderator analyses.

## 6 | METHOD

### 6.1 | Registration and protocol

The meta-analysis was registered with PROSPERO before commencement. The meta-analysis protocol is available at <https://www.crd.york.ac.uk/prospero>. The registration number is CRD42021241971.

### 6.2 | Literature search

A systematic literature search was conducted using the PsycINFO, ProQuest, and EBSCO databases for English-language, peer-reviewed published studies and unpublished studies (e.g., dissertations), completed at any time. Combined search terms were “parental conditional regard” OR “parental conditional positive regard” OR “parental conditional negative regard” OR “autonomy-restrictive parenting.” These broad terms aimed to capture parental conditional regard studies measuring the four main correlates or any other correlate (see inclusion criteria). Reference lists of eligible studies were searched for other potentially relevant studies. To reduce possible publication bias, authors of eligible studies were contacted to request any relevant unpublished or in-press research findings. No additional findings were obtained from these authors. Figure 1 shows

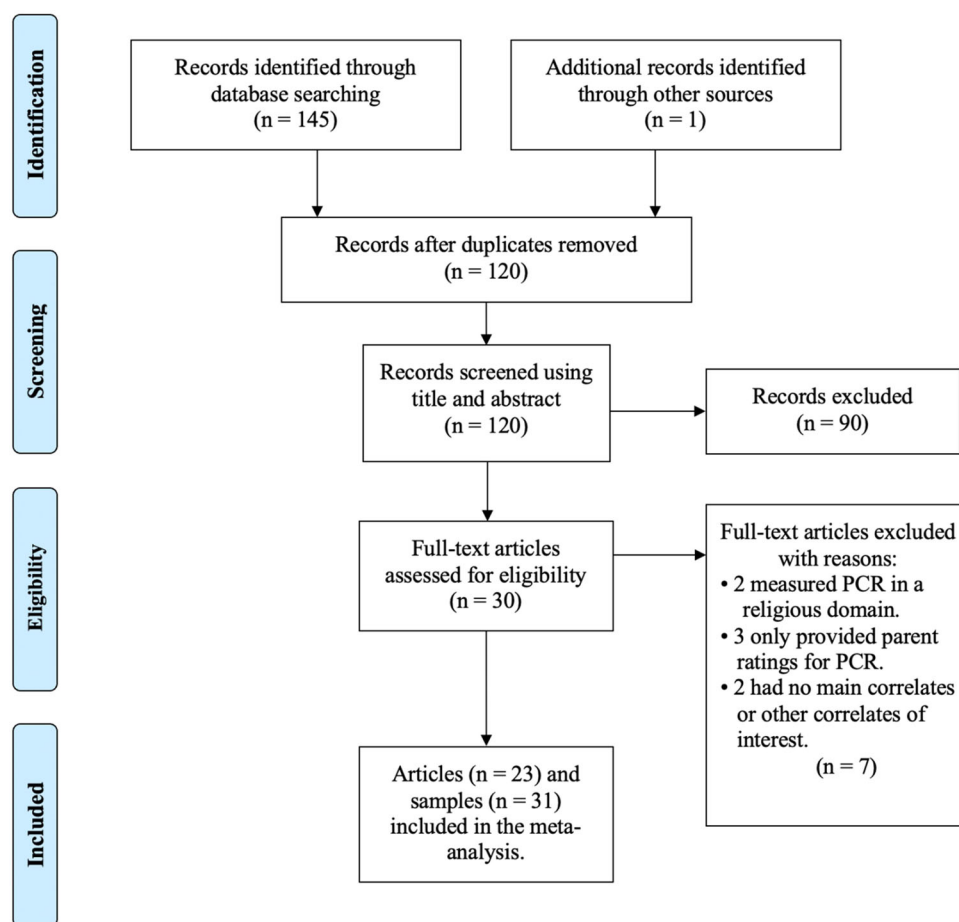


FIGURE 1 PRISMA flow diagram showing search process [Color figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com)]

a PRISMA (Moher et al., 2009) flow diagram of the search process, completed in October, 2021, and the final number of studies included in the meta-analysis.

### 6.3 | Inclusion and exclusion criteria

Included studies met the following criteria. First, studies reported an association between parental conditional regard or at least one of its components (positive or negative conditional regard) and any main intrapersonal correlate (introjected regulation, contingent self-esteem, or depressive symptoms), interpersonal correlate indicating parent-child, peer, or romantic relationship quality (resentment towards parents, parent-child relationship problems, relationship satisfaction and closeness, attachment, or intimacy capacity), or another correlate (e.g., anxiety, perfectionism, or emotional dysregulation). Including other correlates enabled their collective association with parental conditional regard to be considered in comparison to the main theoretically derived correlates. Second, associations were measured across academic, sport, prosocial, and emotion regulation domains or at least in one of these domains. Studies within a religious domain were excluded as this domain is uncommon in parental conditional regard research, and would have yielded too few effect sizes for consideration in moderator analyses for domain type. Third, studies provided an  $r$  effect size based on a zero-order correlation or statistical information that was convertible to  $r$ . Fourth, studies had pre-adolescent children, adolescents, or young adults as participants. Young adults reported retrospective parental conditional regard. Retrospective reports can be limited by memory inaccuracies (Bell & Bell, 2018). This limitation may be negligible in young adults who are temporally near childhood/adolescence, justifying including studies with young adults. Fifth, studies provided ratings by children, adolescents, or young adults. These studies could have equivalent parent ratings, but parent ratings were not used in analyses. Studies only reporting parent ratings were excluded. Parent ratings were excluded from analyses because the occurrence of parental conditional regard is conceptualised from the child's perspective. Finally, studies were published in English. There was no restriction on publication date or where studies were conducted.

### 6.4 | Coding process

Information extracted from included studies was coded into the following variables: author and publication year; country of sample; effect size and direction (effect sizes supporting hypothesised associations were coded positive; those unresponsive were coded negative); number of participants used to determine effect size; mean age of participants; percentage of females; and parental conditional regard correlate (introjected regulation, contingent self-esteem, depressive symptoms, relatedness, or other-correlates). Variables indicating relationship quality (resentment towards parents, parent-child relationship problems, relationship satisfaction and closeness, attachment, or intimacy capacity) were coded under one category, relatedness. Correlates such as anxiety, perfectionism, or emotional dysregulation were coded under one category, other-correlates.

Moderator variables coded were parental conditional regard type (positive, negative, or conditional regard not distinguishing between positive and negative), domain type (academic, sport, prosocial, emotion regulation, or all four domains inclusive), and parent type (i.e., parent who used conditional regard: mother, father, or both parents). There were no missing data crucial to analyses (e.g., effect size, sample size). Key characteristics for studies are presented in Table 1.

### 6.5 | Interrater reliability

One researcher coded all variables from 31 samples in total and another researcher independently coded variables from a third of randomly selected samples. Inter-rater reliability for overall coding was 95%. Interrater reliability for effect size coding was 100%. Disagreements were resolved through further scrutiny of information and discussion before a final consensus.

### 6.6 | Data analyses

All data analyses were conducted using Comprehensive Meta-Analysis version 3.exe (Borenstein et al., 2014). The meta-analysis used Pearson's  $r$  correlation coefficient as the effect size. A weighted mean effect size was calculated for parental conditional regard's association with all correlates (i.e., the main correlates and other-correlates). If a sample provided more than one relevant effect size, the effect sizes were averaged. This procedure satisfied the assumption of independence that required each sample to contribute one effect size to the analysis (Borenstein et al., 2009).

**TABLE 1** Key characteristics of studies included in the meta-analysis

Study sample	N	r	Mean age	% Female	Correlate	Parental conditional regard type	Domain	Parent
Assor et al. (2004) Study 2	110	−.29	NR	55	Other	PCR	Emotion	Father
Assor et al. (2004) Study 2	110	.22	NR	55	Other	PCR	Academic	Mother
Assor et al. (2004) Study 2	110	−.26	NR	55	Other	PCR	Academic	Mother
Assor et al. (2004) Study 2	110	.22	NR	55	Other	PCR	Academic	Father
Assor et al. (2004) Study 2	110	−.25	NR	55	Other	PCR	Emotion	Mother
Assor et al. (2004) Study 2	110	.22	NR	55	Other	PCR	Sport	Father
Assor et al. (2004) Study 2	110	−.07	NR	55	Other	PCR	Prosocial	Father
Assor et al. (2004) Study 2	110	.24	NR	55	CSE	PCR	Emotion	Mother
Assor et al. (2004) Study 2	110	−.05	NR	55	Other	PCR	Sport	Mother
Assor et al. (2004) Study 2	110	.25	NR	55	CSE	PCR	Academic	Father
Assor et al. (2004) Study 2	110	−.03	NR	55	Other	PCR	Academic	Father
Assor et al. (2004) Study 2	110	.26	NR	55	CSE	PCR	Prosocial	Mother
Assor et al. (2004) Study 2	110	.00	NR	55	Other	PCR	Prosocial	Mother
Assor et al. (2004) Study 2	110	.31	NR	55	Other	PCR	Emotion	Mother
Assor et al. (2004) Study 2	110	.01	NR	55	Other	PCR	Prosocial	Father
Assor et al. (2004) Study 2	110	.32	NR	55	Introjection	PCR	Emotion	Father
Assor et al. (2004) Study 2	110	.03	NR	55	Other	PCR	Prosocial	Father
Assor et al. (2004) Study 2	110	.32	NR	55	Relatedness	PCR	Academic	Father
Assor et al. (2004) Study 2	110	.05	NR	55	Other	PCR	Prosocial	Mother
Assor et al. (2004) Study 2	110	.32	NR	55	Relatedness	PCR	Sport	Father
Assor et al. (2004) Study 2	110	.06	NR	55	Other	PCR	Sport	Father
Assor et al. (2004) Study 2	110	.35	NR	55	Introjection	PCR	Academic	Father
Assor et al. (2004) Study 2	110	.06	NR	55	Other	PCR	Emotion	Father
Assor et al. (2004) Study 2	110	.36	NR	55	Other	PCR	Emotion	Mother
Assor et al. (2004) Study 2	110	.09	NR	55	Other	PCR	Academic	Mother
Assor et al. (2004) Study 2	110	.36	NR	55	Relatedness	PCR	Prosocial	Mother
Assor et al. (2004) Study 2	110	.11	NR	55	Other	PCR	Prosocial	Mother
Assor et al. (2004) Study 2	110	.38	NR	55	Introjection	PCR	Prosocial	Father
Assor et al. (2004) Study 2	110	.11	NR	55	Other	PCR	Academic	Father
Assor et al. (2004) Study 2	110	.38	NR	55	CSE	PCR	Academic	Mother
Assor et al. (2004) Study 2	110	.13	NR	55	CSE	PCR	Sport	Mother
Assor et al. (2004) Study 2	110	.40	NR	55	Relatedness	PCR	Sport	Mother
Assor et al. (2004) Study 2	110	.13	NR	55	Relatedness	PCR	Prosocial	Father
Assor et al. (2004) Study 2	110	.44	NR	55	Relatedness	PCR	Emotion	Mother
Assor et al. (2004) Study 2	110	.15	NR	55	Introjection	PCR	Academic	Mother
Assor et al. (2004) Study 2	110	.46	NR	55	Relatedness	PCR	Emotion	Father
Assor et al. (2004) Study 2	110	.15	NR	55	CSE	PCR	Prosocial	Father
Assor et al. (2004) Study 2	110	.48	NR	55	Other	PCR	Sport	Mother



TABLE 1 (Continued)

Study sample	N	r	Mean age	% Female	Correlate	Parental conditional regard type	Domain	Parent
Assor et al. (2004) Study 2	110	.17	NR	55	Other	PCR	Sport	Mother
Assor et al. (2004) Study 2	110	.51	NR	55	Introjection	PCR	Emotion	Mother
Assor et al. (2004) Study 2	110	.17	NR	55	CSE	PCR	Sport	Father
Assor et al. (2004) Study 2	110	.51	NR	55	Relatedness	PCR	Academic	Mother
Assor et al. (2004) Study 2	110	.18	NR	55	Other	PCR	Emotion	Father
Assor et al. (2004) Study 2	110	.53	NR	55	Introjection	PCR	Prosocial	Mother
Assor et al. (2004) Study 2	110	.20	NR	55	Introjection	PCR	Sport	Mother
Assor et al. (2004) Study 2	110	.20	NR	55	Other	PCR	Sport	Father
Assor et al. (2004) Study 2	110	.20	NR	55	CSE	PCR	Emotion	Father
Assor et al. (2004) Study 2	110	.21	NR	55	Introjection	PCR	Sport	Father
Assor and Tal (2012)	153	.20	17	51	Other	PCPR	Academic	Both
Assor and Tal (2012)	153	.25	17	51	Other	PCPR	Academic	Both
Assor and Tal (2012)	153	.38	17	51	Other	PCPR	Academic	Both
Assor and Tal (2012)	153	.42	17	51	Other	PCPR	Academic	Both
Assor and Tal (2012)	153	.07	17	51	Other	PCNR	Academic	Both
Assor and Tal (2012)	153	.13	17	51	Other	PCNR	Academic	Both
Assor and Tal (2012)	153	.20	17	51	Other	PCNR	Academic	Both
Assor and Tal (2012)	153	.37	17	51	Other	PCNR	Academic	Both
Curran (2018)	148	.29	15	40	Other	PCR	Sport	Both
Curran (2018)	148	.31	15	40	CSE	PCR	Sport	Both
Curran (2018)	148	.59	15	40	Other	PCR	Sport	Both
Curran et al. (2017)	316	.11	16	NR	Other	PCR	Sport	Father
Curran et al. (2017)	316	.15	16	NR	Other	PCR	Sport	Father
Curran et al. (2017)	316	.16	16	NR	Other	PCR	Sport	Mother
Curran et al. (2017)	316	.17	16	NR	Other	PCR	Sport	Mother
Curran et al. (2017)	316	.22	16	NR	Other	PCR	Sport	Mother
Curran et al. (2017)	316	.22	16	NR	Other	PCR	Sport	Mother
Curran et al. (2017)	316	.23	16	NR	Other	PCR	Sport	Father
Curran et al. (2017)	316	.23	16	NR	Other	PCR	Sport	Father
Curran et al. (2017)	316	.24	16	NR	Other	PCR	Sport	Father
Curran et al. (2017)	316	.25	16	NR	Other	PCR	Sport	Father
Curran et al. (2017)	316	.27	16	NR	Other	PCR	Sport	Mother
Curran et al. (2017)	316	.31	16	NR	Other	PCR	Sport	Mother
Curran et al. (2017)	316	.35	16	NR	Other	PCR	Sport	Father
Curran et al. (2017)	316	.36	16	NR	Other	PCR	Sport	Father
Curran et al. (2017)	316	.37	16	NR	Other	PCR	Sport	Mother
Curran et al. (2017)	316	.39	16	NR	Other	PCR	Sport	Mother

(Continues)

TABLE 1 (Continued)

Study sample	N	r	Mean age	% Female	Correlate	Parental conditional regard type	Domain	Parent
Israeli-Halevi et al. (2015) Study 1	115	.32	15	53	Introjection	PCNR	Emotion	Mother
Israeli-Halevi et al. (2015) Study 1	115	.54	15	53	Introjection	PCPR	Emotion	Mother
Kanat-Maymon et al. (2016) Study 1	125	-.42	26	72	Relatedness	PCPR	Academic	Mother
Kanat-Maymon et al. (2016) Study 1	125	-.35	26	72	Relatedness	PCPR	Academic	Father
Kanat-Maymon et al. (2016) Study 1	125	-.31	26	72	Relatedness	PCPR	Academic	Mother
Kanat-Maymon et al. (2016) Study 1	125	-.28	26	72	Relatedness	PCPR	Academic	Father
Kollat (2007) Dissertation <sup>a</sup>	89	-.46	NR	100	Other	PCR	All	Both
Kollat (2007) Dissertation <sup>a</sup>	89	.46	NR	100	CSE	PCR	All	Both
Kollat (2007) Dissertation <sup>b</sup>	66	-.20	NR	0	Other	PCR	All	Both
Kollat (2007) Dissertation <sup>b</sup>	66	.12	NR	0	CSE	PCR	All	Both
Kollat (2007) Dissertation <sup>c</sup>	52	-.29	NR	100	Other	PCR	All	Both
Kollat (2007) Dissertation <sup>c</sup>	52	.24	NR	100	CSE	PCR	All	Both
Kollat (2007) Dissertation <sup>d</sup>	57	-.35	NR	0	Other	PCR	All	Both
Kollat (2007) Dissertation <sup>d</sup>	57	.34	NR	0	CSE	PCR	All	Both
Lavrijsen et al. (2020)	3168	.10	13	50	Other	PCNR	Academic	Both
Lavrijsen et al. (2020)	3168	.15	13	50	Other	PCPR	Academic	Both
Lavrijsen et al. (2020)	3168	.28	13	50	Other	PCPR	Academic	Both
Lavrijsen et al. (2020)	3168	.37	13	50	Other	PCNR	Academic	Both
Mendi and Eldeleklioglu (2016)	500	-.42	21	67	Other	PCR	All	Both
Mendi and Eldeleklioglu (2016)	500	-.32	21	67	Other	PCR	All	Both
Mendi and Eldeleklioglu (2016)	500	.42	21	67	Other	PCR	All	Both
Moller et al. (2019) Study 1	118	-.60	NR	62	Other	PCR	All	Mother
Moller et al. (2019) Study 1	118	-.51	NR	62	Relatedness	PCR	All	Mother
Moller et al. (2019) Study 1	118	-.50	NR	62	Other	PCR	All	Father
Moller et al. (2019) Study 1	118	-.39	NR	62	Relatedness	PCR	All	Mother
Moller et al. (2019) Study 1	118	-.39	NR	62	Other	PCR	All	Father
Moller et al. (2019) Study 1	118	-.37	NR	62	Relatedness	PCR	All	Father
Moller et al. (2019) Study 1	118	-.35	NR	62	Other	PCR	All	Mother
Moller et al. (2019) Study 1	118	-.35	NR	62	Other	PCR	All	Father
Moller et al. (2019) Study 1	118	-.34	NR	62	Other	PCR	All	Mother
Moller et al. (2019) Study 1	118	-.32	NR	62	Relatedness	PCR	All	Father
Moller et al. (2019) Study 1	118	-.31	NR	62	Relatedness	PCR	All	Father
Moller et al. (2019) Study 1	118	-.20	NR	62	Relatedness	PCR	All	Mother
Moller et al. (2019) Study 2	120	-.22	NR	74	Other	PCR	All	Both

TABLE 1 (Continued)

Study sample	N	r	Mean age	% Female	Correlate	Parental conditional regard type	Domain	Parent
Moller et al. (2019) Study 2	120	-.20	NR	74	Other	PCR	All	Both
Moller et al. (2019) Study 2	120	-.18	NR	74	Relatedness	PCR	All	Both
Moller et al. (2019) Study 2	120	-.17	NR	74	Relatedness	PCR	All	Both
Moller et al. (2019) Study 3	218	-.16	NR	50	Relatedness	PCR	Emotion	Both
Otterpohl et al. (2019) Study 1	653	.29	13	49	CSE	PCNR	Academic	Both
Otterpohl et al. (2019) Study 1	653	.32	13	49	CSE	PCPR	Academic	Both
Otterpohl et al. (2019) Study 2	166	.21	21	51	CSE	PCNR	Academic	Both
Otterpohl et al. (2019) Study 2	166	.31	21	51	CSE	PCPR	Academic	Both
Otterpohl et al. (2020)	211	.16	14	58	Depressive	PCPR	Academic	Mother
Otterpohl et al. (2020)	211	.37	14	58	CSE	PCPR	Academic	Mother
Otterpohl et al. (2020)	211	.47	14	58	Depressive	PCNR	Academic	Mother
Otterpohl et al. (2020)	211	.52	14	58	CSE	PCNR	Academic	Mother
Otterpohl et al. (2021) Study 1	188	.19 <sup>e</sup>	15	NR	CSE	PCNR	Academic	Both
Otterpohl et al. (2021) Study 1	188	.28 <sup>e</sup>	15	NR	CSE	PCPR	Academic	Both
Otterpohl et al. (2021) Study 2	189	.29 <sup>f</sup>	14	54	CSE	PCPR	Academic	Both
Otterpohl et al. (2021) Study 2	189	.37 <sup>f</sup>	14	54	CSE	PCNR	Academic	Both
Øverup et al. (2014) Study 2	211	-.28	25	58	Other	PCR	All	Mother
Øverup et al. (2014) Study 2	211	-.25	25	58	Other	PCR	All	Father
Øverup et al. (2014) Study 2	211	-.21	25	58	Other	PCR	All	Father
Øverup et al. (2014) Study 2	211	-.13	25	58	Other	PCR	All	Mother
Proctor et al. (2020)	355	-.34	17	72	Other	PCR	Emotion	Both
Proctor et al. (2020)	355	-.30	17	72	Other	PCR	Academic	Both
Proctor et al. (2020)	355	-.13	17	72	Other	PCR	Prosocial	Both
Proctor et al. (2020)	355	-.12	17	72	Other	PCR	Sport	Both
Proctor et al. (2020)	355	.04	17	72	Other	PCR	Sport	Both
Proctor et al. (2020)	355	.06	17	72	Depressive	PCR	Sport	Both
Proctor et al. (2020)	355	.13	17	72	Depressive	PCR	Prosocial	Both
Proctor et al. (2020)	355	.13	17	72	Other	PCR	Prosocial	Both
Proctor et al. (2020)	355	.19	17	72	Other	PCR	Academic	Both
Proctor et al. (2020)	355	.29	17	72	Other	PCR	Emotion	Both
Proctor et al. (2020)	355	.32	17	72	Depressive	PCR	Academic	Both
Proctor et al. (2020)	355	.34	17	72	Depressive	PCR	Emotion	Both
Roth (2008)	133	-.03	23	61	Other	PCR	Prosocial	Mother
Roth (2008)	133	.03	23	61	Other	PCR	Prosocial	Father
Roth (2008)	133	.28	23	61	Introjection	PCR	Prosocial	Father
Roth (2008)	133	.39	23	61	Introjection	PCR	Prosocial	Mother
Roth and Assor (2012)	174	-.31	21	60	Relatedness	PCR	Emotion	Mother
Roth and Assor (2012)	174	-.25	21	60	Relatedness	PCR	Emotion	Father

(Continues)

TABLE 1 (Continued)

Study sample	N	r	Mean age	% Female	Correlate	Parental conditional regard type	Domain	Parent
Roth and Assor (2012)	174	-.19	21	60	Other	PCR	Emotion	Father
Roth and Assor (2012)	174	-.18	21	60	Other	PCR	Emotion	Mother
Roth and Assor (2012)	174	-.18	21	60	Relatedness	PCR	Emotion	Mother
Roth and Assor (2012)	174	-.16	21	60	Relatedness	PCR	Emotion	Father
Roth and Assor (2012)	174	-.09	21	60	Other	PCR	Emotion	Mother
Roth and Assor (2012)	174	-.03	21	60	Other	PCR	Emotion	Father
Roth and Assor (2012)	174	.09	21	60	Other	PCR	Emotion	Father
Roth and Assor (2012)	174	.15	21	60	Other	PCR	Emotion	Mother
Roth and Assor (2012)	174	.15	21	60	Other	PCR	Emotion	Mother
Roth and Assor (2012)	174	.18	21	60	Other	PCR	Emotion	Father
Roth and Assor (2012)	174	.19	21	60	Other	PCR	Emotion	Mother
Roth and Assor (2012)	174	.23	21	60	Other	PCR	Emotion	Father
Roth and Assor (2012)	174	.28	21	60	Other	PCR	Emotion	Mother
Roth and Assor (2012)	174	.28	21	60	Other	PCR	Emotion	Father
Roth et al. (2009) Study 1	169	.11 <sup>g</sup>	15	58	Relatedness	PCPR	Emotion	Mother
Roth et al. (2009) Study 1	169	.10 <sup>g</sup>	15	58	Relatedness	PCPR	Emotion	Mother
Roth et al. (2009) Study 1	169	.28 <sup>g</sup>	15	58	Introjection	PCPR	Emotion	Mother
Roth et al. (2009) Study 1	169	.26 <sup>g</sup>	15	58	Other	PCPR	Emotion	Mother
Roth et al. (2009) Study 1	169	.29 <sup>g</sup>	15	58	Other	PCPR	Emotion	Mother
Roth et al. (2009) Study 1	169	.25	15	58	Introjection	PCPR	Academic	Mother
Roth et al. (2009) Study 1	169	.33 <sup>g</sup>	15	58	Relatedness	PCNR	Emotion	Mother
Roth et al. (2009) Study 1	169	.21 <sup>g</sup>	15	58	Relatedness	PCNR	Emotion	Mother
Roth et al. (2009) Study 1	169	.21 <sup>g</sup>	15	58	Introjection	PCNR	Emotion	Mother
Roth et al. (2009) Study 1	169	.28 <sup>g</sup>	15	58	Other	PCNR	Emotion	Mother
Roth et al. (2009) Study 1	169	.13 <sup>g</sup>	15	58	Other	PCNR	Emotion	Mother
Roth et al. (2009) Study 1	169	.10 <sup>g</sup>	15	58	Relatedness	PCPR	Emotion	Father
Roth et al. (2009) Study 1	169	.16 <sup>g</sup>	15	58	Relatedness	PCPR	Emotion	Father
Roth et al. (2009) Study 1	169	.27	15	58	Introjection	PCPR	Academic	Father
Roth et al. (2009) Study 1	169	.34 <sup>g</sup>	15	58	Introjection	PCPR	Emotion	Father
Roth et al. (2009) Study 1	169	.22 <sup>g</sup>	15	58	Other	PCPR	Emotion	Father
Roth et al. (2009) Study 1	169	.12	15	58	Introjection	PCNR	Academic	Mother
Roth et al. (2009) Study 1	169	.24 <sup>g</sup>	15	58	Other	PCPR	Emotion	Father
Roth et al. (2009) Study 1	169	.15	15	58	Relatedness	PCNR	Academic	Mother
Roth et al. (2009) Study 1	169	.24 <sup>g</sup>	15	58	Relatedness	PCNR	Emotion	Father
Roth et al. (2009) Study 1	169	.36 <sup>g</sup>	15	58	Relatedness	PCNR	Emotion	Father
Roth et al. (2009) Study 1	169	.21 <sup>g</sup>	15	58	Introjection	PCNR	Emotion	Father
Roth et al. (2009) Study 1	169	.25 <sup>g</sup>	15	58	Other	PCNR	Emotion	Father
Roth et al. (2009) Study 1	169	.17 <sup>g</sup>	15	58	Other	PCNR	Emotion	Father

TABLE 1 (Continued)

Study sample	N	r	Mean age	% Female	Correlate	Parental conditional regard type	Domain	Parent
Roth et al. (2009) Study 1	169	.30	15	58	Relatedness	PCPR	Academic	Mother
Roth et al. (2009) Study 1	169	.17	15	58	Relatedness	PCPR	Academic	Mother
Roth et al. (2009) Study 1	169	.30	15	58	Relatedness	PCPR	Academic	Father
Roth et al. (2009) Study 1	169	.17	15	58	Introjection	PCNR	Academic	Father
Roth et al. (2009) Study 1	169	.30	15	58	Relatedness	PCNR	Academic	Father
Roth et al. (2009) Study 1	169	.31	15	58	Relatedness	PCPR	Academic	Father
Roth et al. (2009) Study 1	169	.33	15	58	Relatedness	PCNR	Academic	Mother
Roth et al. (2009) Study 1	169	.35	15	58	Relatedness	PCNR	Academic	Father
Roth et al. (2009) Study 2	156	-.11	15	54	Other	PCPR	Academic	Father
Roth et al. (2009) Study 2	156	-.09	15	54	Other	PCPR	Academic	Mother
Roth et al. (2009) Study 2	156	.30 <sup>h</sup>	15	54	Introjection	PCPR	Emotion	Mother
Roth et al. (2009) Study 2	156	.03 <sup>h</sup>	15	54	Other	PCPR	Emotion	Mother
Roth et al. (2009) Study 2	156	.15 <sup>h</sup>	15	54	Other	PCPR	Emotion	Mother
Roth et al. (2009) Study 2	156	.30 <sup>h</sup>	15	54	Other	PCPR	Emotion	Mother
Roth et al. (2009) Study 2	156	.08 <sup>h</sup>	15	54	Other	PCPR	Emotion	Mother
Roth et al. (2009) Study 2	156	.42 <sup>h</sup>	15	54	Introjection	PCPR	Emotion	Father
Roth et al. (2009) Study 2	156	.06 <sup>h</sup>	15	54	Other	PCPR	Emotion	Father
Roth et al. (2009) Study 2	156	.24 <sup>h</sup>	15	54	Other	PCPR	Emotion	Father
Roth et al. (2009) Study 2	156	.34 <sup>h</sup>	15	54	Other	PCPR	Emotion	Father
Roth et al. (2009) Study 2	156	.07 <sup>h</sup>	15	54	Other	PCPR	Emotion	Father
Roth et al. (2009) Study 2	156	.26	15	54	Introjection	PCPR	Academic	Mother
Roth et al. (2009) Study 2	156	.31	15	54	Introjection	PCPR	Academic	Father
Saeed and Hanif (2014)	646	-.12	20	50	Relatedness	PCR	Academic	Father
Saeed and Hanif (2014)	646	-.11	20	50	Relatedness	PCR	Emotion	Father
Saeed and Hanif (2014)	646	-.07	20	50	Relatedness	PCR	Prosocial	Father
Saeed and Hanif (2014)	646	-.06	20	50	Relatedness	PCR	Sport	Father
Saeed and Hanif (2014)	646	-.06	20	50	Relatedness	PCR	Academic	Mother
Saeed and Hanif (2014)	646	-.02	20	50	Relatedness	PCR	Sport	Mother
Saeed and Hanif (2014)	646	.01	20	50	Other	PCR	Sport	Mother
Saeed and Hanif (2014)	646	.03	20	50	Other	PCR	Emotion	Mother
Saeed and Hanif (2014)	646	.04	20	50	Relatedness	PCR	Prosocial	Mother
Saeed and Hanif (2014)	646	.05	20	50	Other	PCR	Prosocial	Father
Saeed and Hanif (2014)	646	.05	20	50	Other	PCR	Prosocial	Mother
Saeed and Hanif (2014)	646	.06	20	50	Other	PCR	Emotion	Father
Saeed and Hanif (2014)	646	.06	20	50	Other	PCR	Emotion	Father
Saeed and Hanif (2014)	646	.06	20	50	Other	PCR	Academic	Mother
Saeed and Hanif (2014)	646	.07	20	50	Other	PCR	Prosocial	Mother
Saeed and Hanif (2014)	646	.07	20	50	Other	PCR	Emotion	Mother

(Continues)



TABLE 1 (Continued)

Study sample	N	r	Mean age	% Female	Correlate	Parental conditional regard type	Domain	Parent
Saeed and Hanif (2014)	646	.08	20	50	Other	PCR	Sport	Father
Saeed and Hanif (2014)	646	.08	20	50	Other	PCR	Sport	Father
Saeed and Hanif (2014)	646	.08	20	50	Other	PCR	Sport	Mother
Saeed and Hanif (2014)	646	.09	20	50	Other	PCR	Prosocial	Father
Saeed and Hanif (2014)	646	.09	20	50	Relatedness	PCR	Emotion	Mother
Saeed and Hanif (2014)	646	.12	20	50	Other	PCR	Academic	Father
Saeed and Hanif (2014)	646	.14	20	50	Other	PCR	Academic	Mother
Saeed and Hanif (2014)	646	.18	20	50	Other	PCR	Academic	Father
Segrin et al. (2015)	477	-.44 <sup>i</sup>	NR	73	Relatedness	PCR	Academic	Both
Segrin et al. (2019)	257	-.23	21	74	Relatedness	PCR	All	Both
Segrin et al. (2019)	257	.40	21	74	Other	PCR	All	Both
Smiley et al. (2020)	106	-.15	10	49	Depressive	PCPR	Emotion	Mother
Smiley et al. (2020)	106	-.11	10	49	Relatedness	PCNR	Emotion	Mother
Smiley et al. (2020)	106	.11	10	49	Relatedness	PCPR	Emotion	Mother
Smiley et al. (2020)	106	.29	10	49	Other	PCPR	Emotion	Mother
Smiley et al. (2020)	106	.32	10	49	Other	PCNR	Emotion	Mother
Smiley et al. (2020)	106	.48	10	49	Depressive	PCNR	Emotion	Mother
Wouters et al. (2018)	1958	-.22	15	56	Other	PCNR	All	Mother
Wouters et al. (2018)	1958	-.09	15	56	Other	PCPR	All	Mother
Wouters et al. (2018)	1958	.09	15	56	Other	PCPR	All	Mother
Wouters et al. (2018)	1958	.12	15	56	Depressive	PCPR	All	Mother
Wouters et al. (2018)	1958	.18	15	56	Other	PCNR	All	Mother
Wouters et al. (2018)	1958	.20	15	56	CSE	PCNR	All	Mother
Wouters et al. (2018)	1958	.22	15	56	CSE	PCPR	All	Mother
Wouters et al. (2018)	1958	.27	15	56	Depressive	PCNR	All	Mother

Abbreviations: All, all domains (i.e., the effect size was based on a measure inclusive of academic, sport, prosocial, and emotion regulation domains, without distinguishing between domains; CSE, contingent self-esteem; Depressive, depressive symptoms; Domain, the behavioral domain targeted by PCR, PCPR, or PCNR; Emotion, emotion regulation; Introjection, introjected regulation; NR, not reported; Other, other-correlates; Parent, parent that used PCR, PCPR, or PCNR; PCR, total parental conditional regard (i.e., the effect size was based on a measure that did not distinguish positive regard from negative regard); PCNR, parental conditional negative regard; PCPR, parental conditional positive regard.

<sup>a</sup>Black females.

<sup>b</sup>Black males.

<sup>c</sup>White females.

<sup>d</sup>White males.

<sup>e</sup>Mean effect size calculated across three-time points.

<sup>f</sup>Mean effect size calculated across two time points.

<sup>g</sup>Mean effect size calculated from two emotion domain effect sizes (anger and fear).

<sup>h</sup>Mean effect size calculated from two emotion domain effect sizes (anger and fear).

<sup>i</sup>The scale's interpretation on which this effect size is based was incorrectly described in Segrin et al. (2015). The study's primary author confirmed that the correct interpretation is that higher scores reflect less severe problems with parents.

To estimate the magnitude of the association of parental conditional regard with introjected regulation, contingent self-esteem, depressive symptoms, and relatedness, weighted mean effect sizes were calculated for each association. A weighted mean effect size was also calculated for the association of parental conditional regard with other correlates. To satisfy the independence assumption in these analyses, effect sizes were averaged from samples that provided multiple effect sizes for a correlate.

Moderator analyses examined if parental conditional regard's association with each correlate varied depending on the type of conditional regard measured, the domain in which it was measured, and which parent used conditional regard. The  $Q$  statistic was used to test variation in moderator effect sizes. To retain potentially valuable information and enable exploration of all moderator subgroups, moderator analyses used each relevant effect size from samples with multiple effect sizes.

Borenstein et al. (2009) recommended that a random-effects model be used when the true effect size is expected to differ across studies. Given that included studies differed in participant groups, correlates, parental conditional regard types, and domains measured, effect size variation was expected. Thus, a random-effects model was used in this meta-analysis. This decision was confirmed by testing for heterogeneity in effect sizes using the  $Q$  and  $I^2$  statistics.

Publication bias was assessed using Orwin's (1983) fail-safe  $N$  test, funnel plots, and Duval and Tweedie's (2000) trim and fill test. Orwin's fail-safe  $N$  test indicated the number of hypothetical studies with null results that when added to the meta-analysis would produce a trivial and nonsignificant overall effect size (Orwin, 1983). Funnel plots were made by plotting a study's standard error on the  $y$ -axis and corresponding effect size (expressed as Fisher's  $z$ ) on the  $x$ -axis. Studies distributed asymmetrically about the mean effect size indicate possible publication bias (Borenstein et al., 2009). Using a funnel plot, the trim and fill test estimated the number of possible missing studies and their impact on mean effect size when included with observed studies (Duval & Tweedie, 2000).

## 7 | RESULTS

### 7.1 | Heterogeneity analyses

Heterogeneity statistics for all effect sizes included in the meta-analysis showed a significant  $Q$  statistic,  $Q(30) = 119.69$ ,  $p < .001$ , and a high  $I^2$  index of 74.94. These results indicated high variation in effect sizes across studies (Higgins & Thompson, 2002). Thus, a random-effects model was appropriate to calculate weighted mean effect sizes.

### 7.2 | Weighted mean effect size for parental conditional regard and all correlates

Across 31 samples totaling 11,404 participants, with multiple effect sizes for each sample averaged, the weighted mean effect size for the association between parental conditional regard and all correlates was positive, moderate, and significant,  $r = .27$ , 95% confidence interval [CI] [0.23, 0.31],  $SE = 0.005$ ,  $p < .001$ . Figure 2 shows statistics for each study included in the meta-analysis and the forest plot of effect sizes and confidence intervals. The effect size interpretations are based on Cohen's (1988)

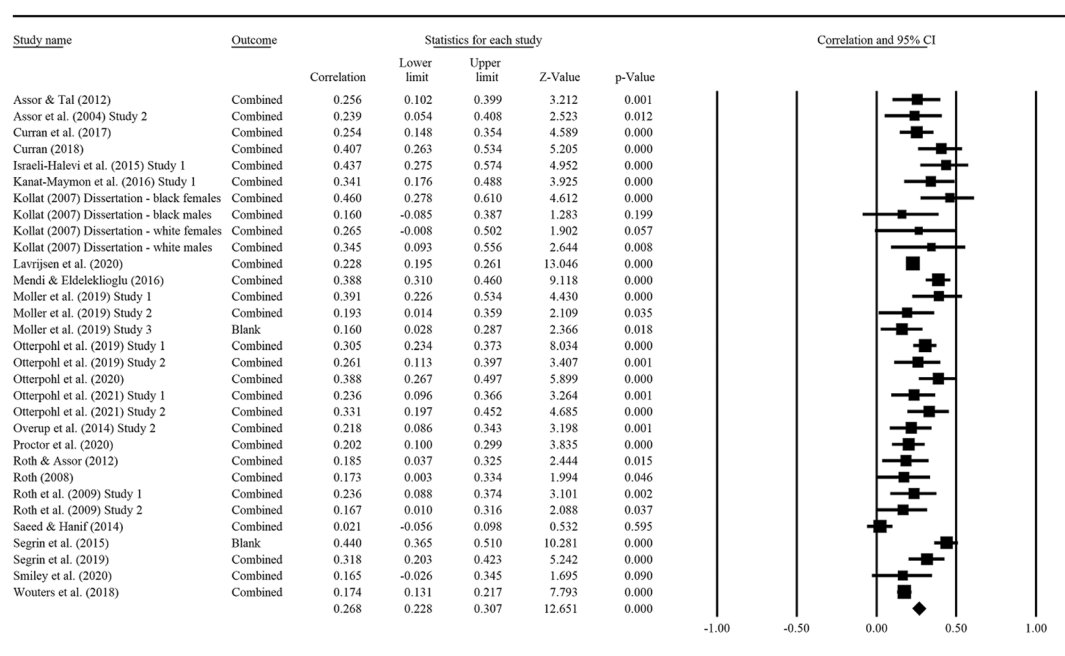


FIGURE 2 Forest plot for all correlates. Blank, one effect size from study; Combined, multiple effect sizes were averaged for study.

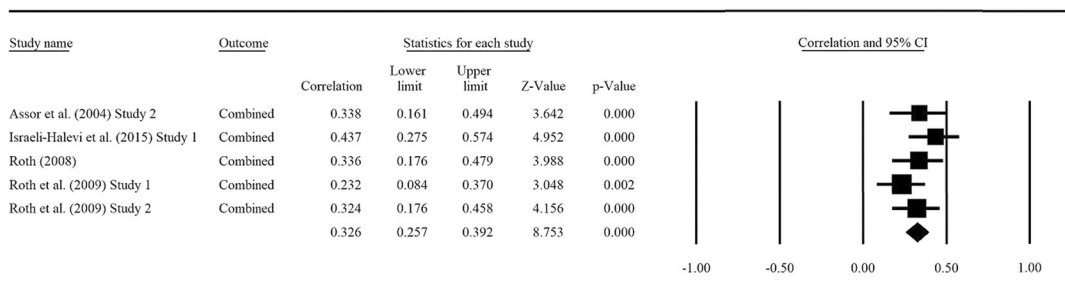


FIGURE 3 Forest plot for introjected regulation. Combined, average effect size across moderators.

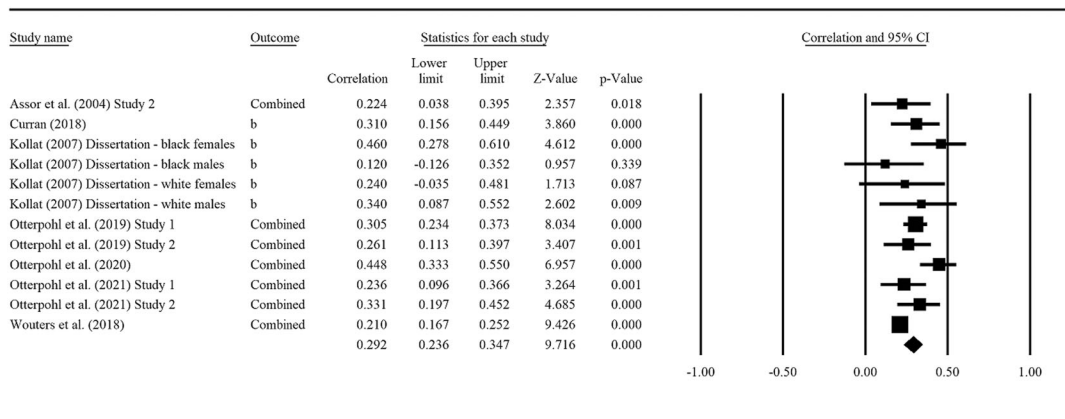


FIGURE 4 Forest plot for contingent self-esteem. b, one effect size from study; Combined, average effect size across moderators

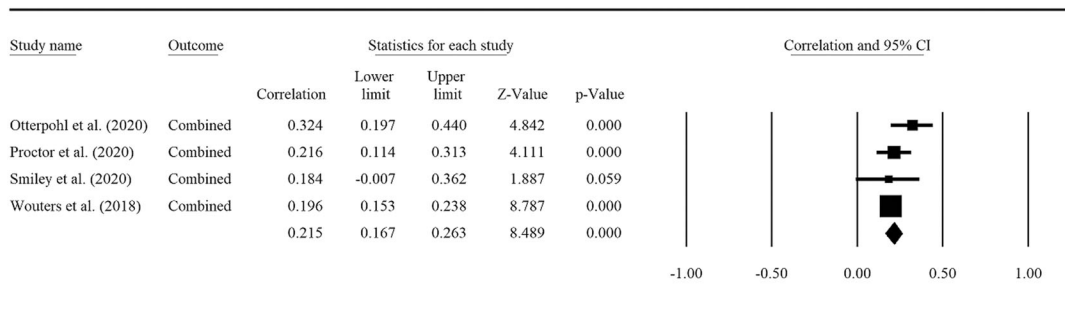
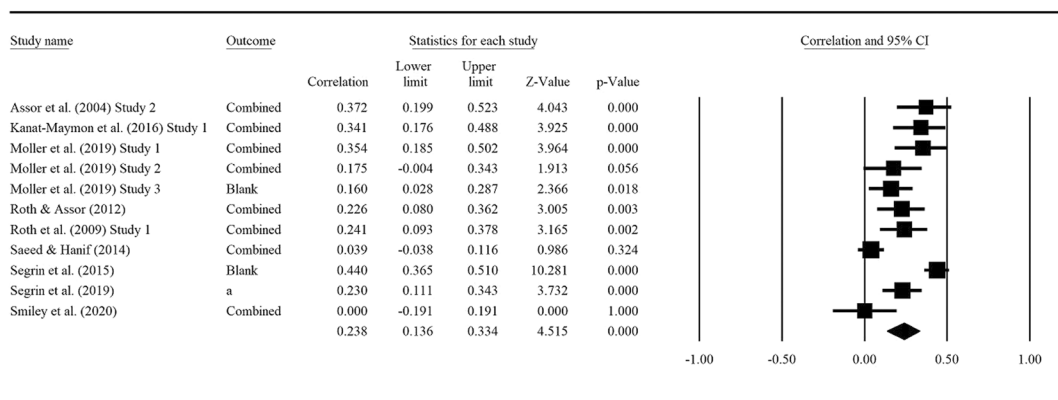


FIGURE 5 Forest plot for depressive symptoms Combined, average effect size across moderators.

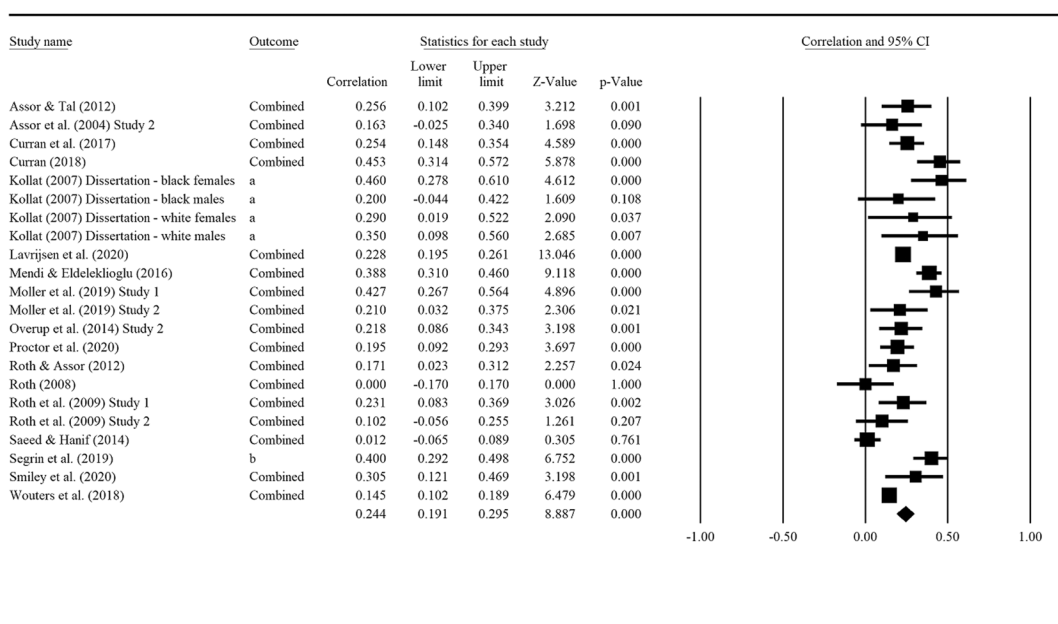
conventions that a very weak  $r$  is less than .10, a weak  $r$  is at least .10, a moderate  $r$  is between .24 and .37, and a strong  $r$  is .37 or greater.

### 7.3 | Weighted mean effect sizes for parental conditional regard and each correlate

To test hypothesis one, that greater parental conditional regard will be associated with more introjected regulation, contingent self-esteem, and depressive symptoms, and hypothesis two, that greater parental conditional regard will be associated with less relatedness, four weighted mean effect sizes were calculated for the association of parental conditional regard with each correlate. Additionally, one weighted mean effect size was calculated for the association with other-correlates. Figures 3–7 show statistics for each study included in these analyses and forest plots of effect sizes and confidence intervals.



**FIGURE 6** Forest plot for relatedness. Effect sizes were coded in a positive direction if they supported the predicted association. Accordingly, as predicted, this forest plot indicates parental conditional regard correlates with less relatedness. Blank and a, one effect size from study; Combined, average effect size across moderators.



**FIGURE 7** Forest plot for other-correlates. a and b, one effect size from study; Combined, average effect size across moderators.

### 7.3.1 | Introjected regulation

Across five samples totalling 683 participants, the weighted mean effect size for the association between parental conditional regard and introjected regulation was positive, moderate, and significant,  $r = .33$ , 95% CI: [0.26, 0.39],  $SE = 0.005$ ,  $p < .001$ .

### 7.3.2 | Contingent self-esteem

Across 12 samples totalling 3887 participants, the weighted mean effect size for the association between parental conditional regard and contingent self-esteem was positive, moderate, and significant,  $r = .29$ , 95% CI: [0.24, 0.35],  $SE = 0.005$ ,  $p < .001$ .

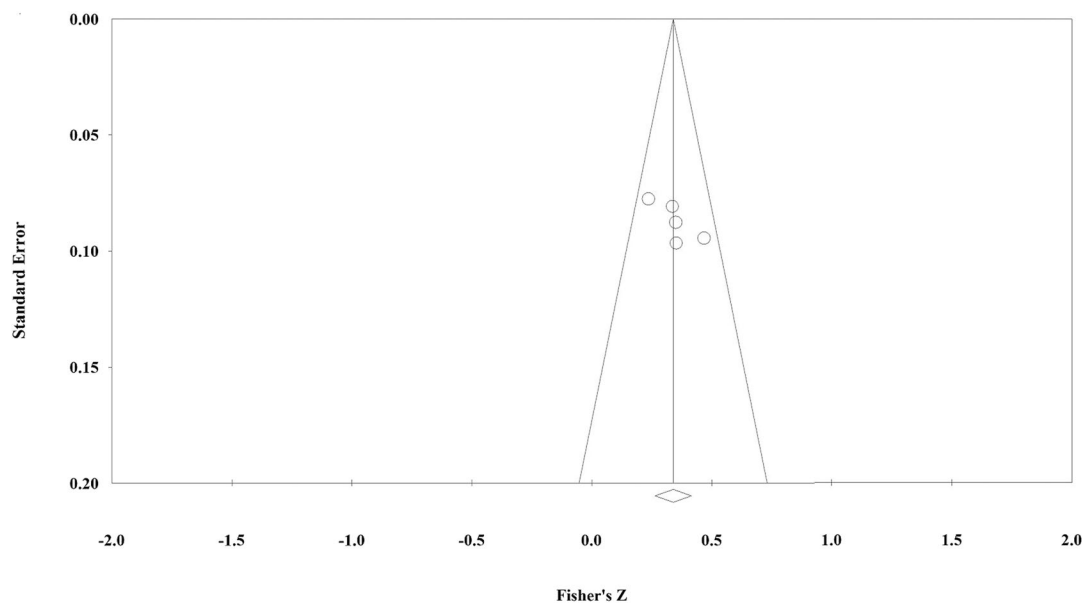


FIGURE 8 Funnel plot of standard error by Fisher's Z for introjected regulation

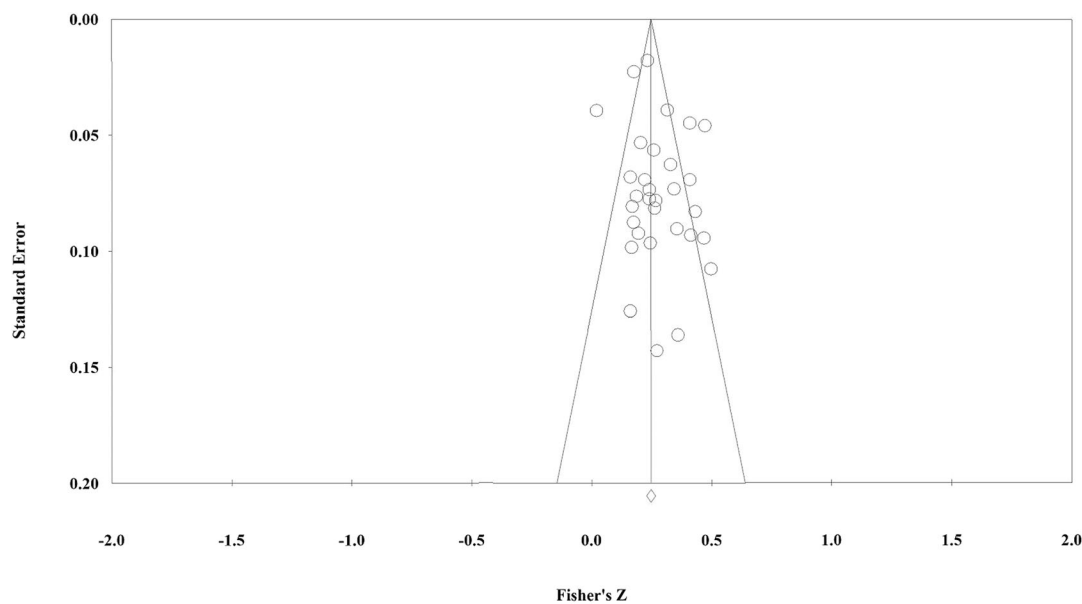


FIGURE 9 Funnel plot of standard error by Fisher's Z for all correlates

### 7.3.3 | Depressive symptoms

Across four samples totalling 2630 participants, the weighted mean effect size for the association between parental conditional regard and depressive symptoms was positive, weak, and significant,  $r = .22$ , 95% CI: [0.17, 0.26],  $SE = 0.003$ ,  $p < .001$ .

### 7.3.4 | Relatedness

Across 11 samples totalling 2520 participants, the weighted mean effect size for the association between parental conditional regard and relatedness was negative, moderate, and significant,  $r = -.24$ , 95% CI: [-0.33, -0.14],  $SE = 0.016$ ,  $p < .001$ .



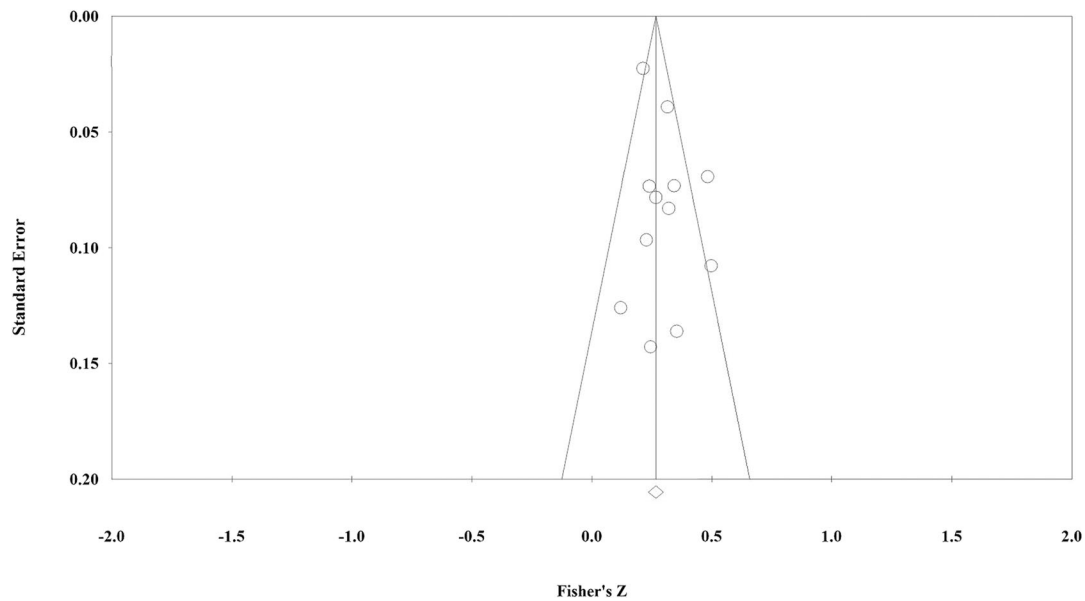


FIGURE 10 Funnel plot of standard error by Fisher's Z for contingent self-esteem

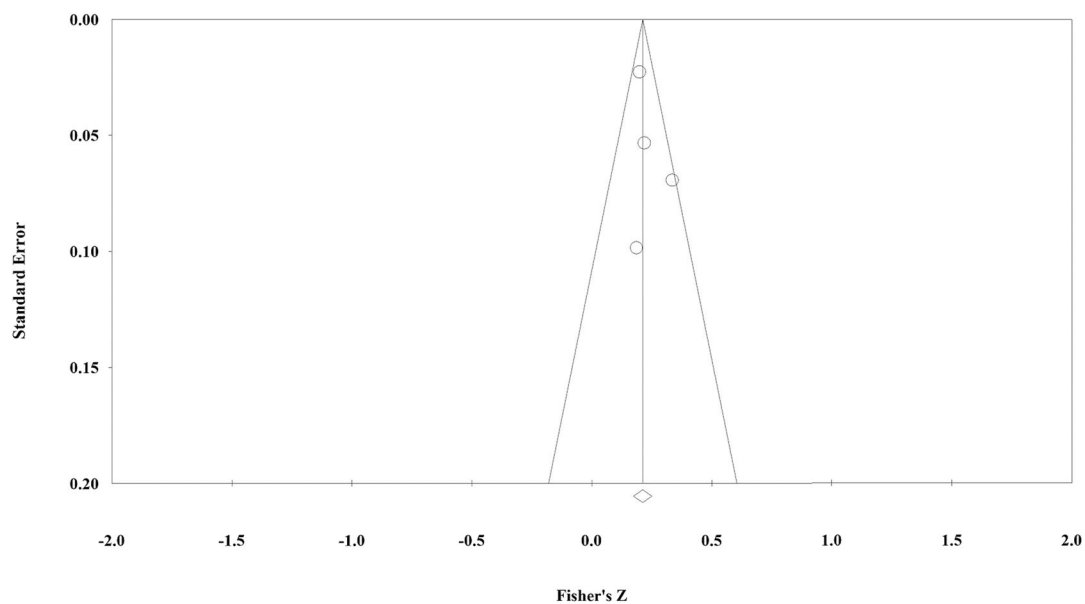


FIGURE 11 Funnel plot of standard error by Fisher's Z for depressive symptoms

### 7.3.5 | Other-correlates

Across 22 samples totalling 9062 participants, the weighted mean effect size for the association between parental conditional regard and other-correlates was positive, moderate, and significant,  $r = .24$ , 95% CI: [0.19, 0.30],  $SE = 0.007$ ,  $p < .001$ .

## 7.4 | Publication bias

Visual inspection of a funnel plot for parental conditional regard's association with introjected regulation showed slight asymmetry (see Figure 8); Duval and Tweedie's (2000) trim and fill test suggested trimming two studies. Trimming these produced an adjusted  $r$  of .29, 95% CI: [0.22, 0.36], indicating the impact of publication bias was

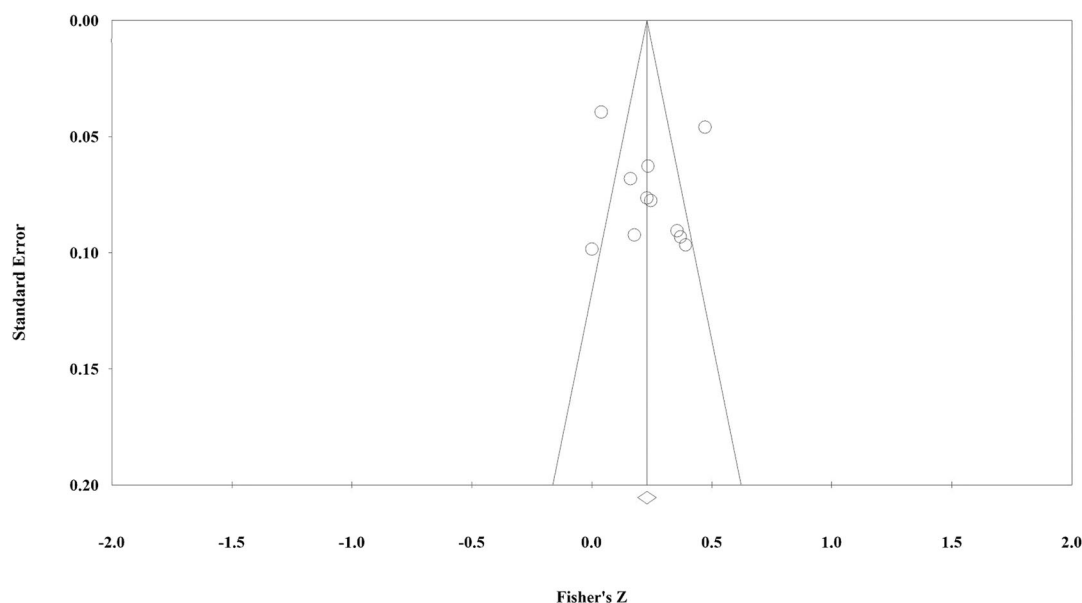


FIGURE 12 Funnel plot of standard error by Fisher's  $Z$  for relatedness

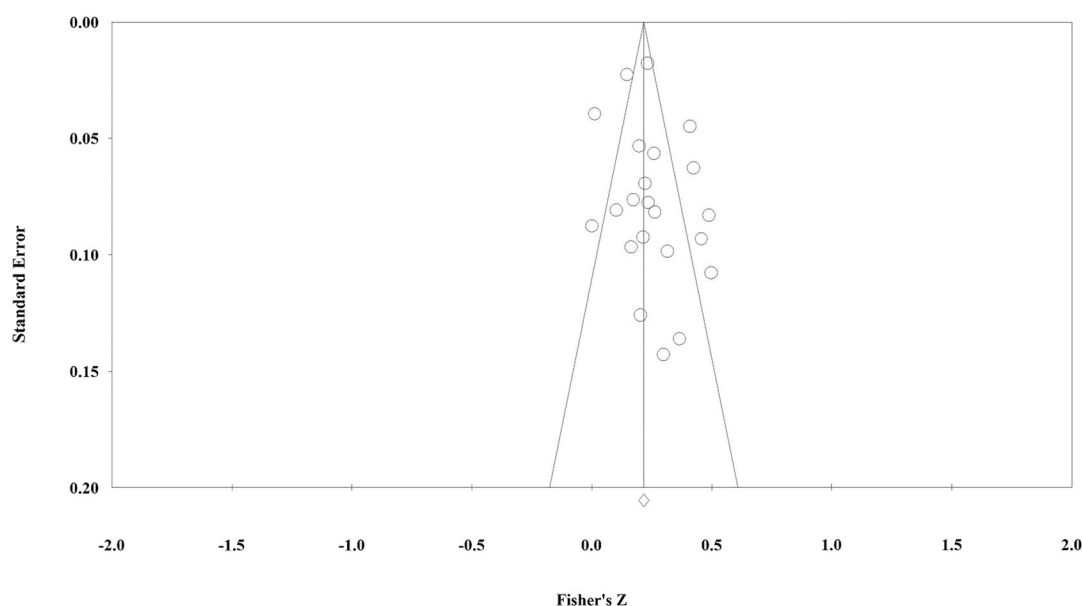


FIGURE 13 Funnel plot of standard error by Fisher's  $Z$  for other-correlates

likely negligible. Funnel plots for parental conditional regard's association with all correlates, contingent self-esteem, depressive symptoms, relatedness, and other-correlates, showed mostly symmetrically distributed studies in each plot (see Figures 9–13). This indicated no likelihood of publication bias in these analyses. Further, results of trim and fill tests for each distribution found no missing studies in the unexpected effect size direction, suggesting no publication bias that might alter meta-analytic results. Orwin's (1983) fail-safe  $N$  tests indicated the additional studies needed in each meta-analysis to reduce its meta-analytic association to a trivial  $r$  of .02. The number of additional studies needed were 353 for all correlates, 80 for introjected regulation, 148 for contingent self-esteem, 39 for depressive symptoms, 116 for relatedness, and 217 for other-correlates. Overall, publication bias findings suggested that publication bias did not influence meta-analytic associations.

**TABLE 2** Moderator analyses for parental conditional regard and introjected regulation

Moderators	<i>r</i>	95% CI	<i>Z</i>	<i>p</i>	<i>k</i>
Type (total <i>k</i> = 24), <i>Q</i> (2) = 10.05, <i>p</i> = .007					
Conditional Regard <sup>a</sup>	.34	[0.26, 0.42]	7.70	.000	10
Positive Conditional Regard	.33	[0.27, 0.39]	9.95	.000	9
Negative Conditional Regard	.20	[0.13, 0.27]	5.62	.000	5
Domain type (total <i>k</i> = 24), <i>Q</i> (3) = 11.79, <i>p</i> = .008					
Academic	.23	[0.18, 0.29]	8.18	.000	8
Sport	.21	[0.07, 0.33]	3.04	.002	2
Emotion	.34	[0.27, 0.41]	8.82	.000	10
Prosocial	.40	[0.29, 0.49]	6.77	.000	4
All	-	-	-	-	-
Parent (total <i>k</i> = 24), <i>Q</i> (1) = 0.21, <i>p</i> = .650					
Mother	.32	[0.24, 0.39]	7.58	.000	13
Father	.30	[0.25, 0.34]	11.63	.000	11
Both	-	-	-	-	-

Abbreviations: CI, confidence interval, the 95% lower and upper limits of *r*; *k*, the number of effect sizes related to *r*; *Q*, test statistic determining if the association differs significantly between the subgroups of the moderator variable; *r*, effect size (Pearson's *r*); *Z*, *z* test for *r*.

<sup>a</sup>Indicates total parental conditional regard (i.e., inclusive of positive and negative conditional regard).

## 7.5 | Moderator analyses

Results of moderator analyses for the association of parental conditional regard with introjected regulation, contingent self-esteem, depressive symptoms, relatedness, and other-correlates are displayed in Tables 2–6. These analyses prevented use of an averaged effect size for studies reporting multiple effect sizes; therefore, analyses were conducted assuming independence of effect sizes within each study. This assumption of no correlation between effect sizes is a conservative approach because it increases the *p* value, thus decreasing statistical power to find differences across effect sizes (Borenstein et al., 2009). Further, this approach may be valuable in holding constant extraneous variables, such as those arising from individual differences, when comparing effect sizes from the same participants, in that the approach reduces sampling error (Meltzoff & Cooper, 2018).

### 7.5.1 | Introjected regulation

For the association of parental conditional regard with introjected regulation, conditional regard type significantly moderated the effect size, *Q*(2) = 10.05, *p* = .007. Studies assessing positive regard had a larger effect size (*r* = .33) than those assessing negative regard (*r* = .20). Domain type was another significant moderator, *Q*(3) = 11.79, *p* = .008, with studies of the prosocial domain showing the highest effect size (*r* = .40). Parent type was not a significant moderator, *Q*(1) = 0.21, *p* = .650, suggesting no difference between conditional regard from mothers or fathers.

### 7.5.2 | Contingent self-esteem

For the association of parental conditional regard with contingent self-esteem, conditional regard type (positive or negative) did not significantly moderate the effect size, *Q*(2) = 1.08, *p* = .583. There was also no significant difference across effect sizes for domain type, *Q*(4) = 8.30, *p* = .081, and parent type, *Q*(2) = 4.45, *p* = .108.

**TABLE 3** Moderator analyses for parental conditional regard and contingent self-esteem

Moderators	<i>r</i>	95% CI	<i>Z</i>	<i>p</i>	<i>k</i>
Type (total <i>k</i> = 25), <i>Q</i> (2) = 1.08, <i>p</i> = .583					
Conditional regard <sup>a</sup>	.25	[0.20, 0.31]	8.58	.000	13
Positive conditional regard	.29	[0.23, 0.34]	9.70	.000	6
Negative conditional regard	.30	[0.20, 0.39]	5.76	.000	6
Domain type (total <i>k</i> = 25), <i>Q</i> (4) = 8.30, <i>p</i> = .081					
Academic	.32	[0.27, 0.37]	12.04	.000	12
Sport	.21	[0.10, 0.32]	3.61	.000	3
Emotion	.22	[0.09, 0.34]	3.27	.001	2
Prosocial	.21	[0.08, 0.33]	3.05	.002	2
All	.23	[0.18, 0.28]	7.95	.000	6
Parent (total <i>k</i> = 25), <i>Q</i> (2) = 4.45, <i>p</i> = .108					
Mother	.29	[0.21, 0.36]	7.13	.000	8
Father	.19	[0.10, 0.28]	4.04	.000	4
Both	.30	[0.26, 0.33]	16.00	.000	13

Abbreviations: CI, confidence interval, the 95% lower and upper limits of *r*; *r*, effect size (Pearson's *r*); *k*, the number of effect sizes related to *r*; *Q*, test statistic determining if the association differs significantly between the subgroups of the moderator variable; *Z*, *z* test for *r*.

<sup>a</sup>Indicates total parental conditional regard (i.e., inclusive of positive and negative conditional regard).

### 7.5.3 | Depressive symptoms

For the association of parental conditional regard with depressive symptoms, type of conditional regard significantly moderated the effect size, *Q*(2) = 8.96, *p* = .011. Negative conditional regard had a larger effect size (*r* = .40) than did positive conditional regard (*r* = .07). There was no difference across effect sizes for domain type, *Q*(4) = 7.60, *p* = .108, and parent type, *Q*(1) = 0.05, *p* = .830.

### 7.5.4 | Relatedness

For parental conditional regard's association with relatedness, conditional regard type did not significantly moderate effect sizes, *Q*(2) = 1.48, *p* = .477, although the effect size for conditional negative regard (*r* = −.27) was higher than that for conditional positive regard (*r* = −.22). Domain type was a significant moderator, *Q*(4) = 10.54, *p* = .032, with the academic domain showing a higher effect size (*r* = −.29) than other domains. Although studies measuring all domains had the highest effect size (*r* = −.30). There was no difference across effect sizes for parent type, *Q*(2) = 0.11, *p* = .947.

### 7.5.5 | Other-correlates

For the association of parental conditional regard with other-correlates, conditional regard type did not significantly moderate effect sizes, *Q*(2) = 0.62, *p* = .732. Domain type was a significant moderator, *Q*(4) = 60.02, *p* < .001, with the sport domain showing a higher effect size (*r* = .21) than other domains. Studies measuring all domains had the highest effect size (*r* = .30). Parent type was a significant moderator, *Q*(2) = 14.33, *p* = .001, with conditional regard from both parents having the highest effect size (*r* = .27).

**TABLE 4** Moderator analyses for parental conditional regard and depressive symptoms

Moderators	<i>r</i>	95% CI	<i>Z</i>	<i>p</i>	<i>k</i>
Type (total <i>k</i> = 10), <i>Q</i> (2) = 8.96, <i>p</i> = .011					
Conditional regard <sup>a</sup>	.22	[0.08, 0.35]	3.00	.003	4
Positive conditional regard	.07	[-0.07, 0.20]	0.98	.326	3
Negative conditional regard	.40	[0.23, 0.55]	4.37	.000	3
Domain type (total <i>k</i> = 10), <i>Q</i> (4) = 7.60, <i>p</i> = .108					
Academic	.32	[0.15, 0.47]	3.61	.000	3
Sport	.06	[-0.04, 0.16]	1.13	.260	1
Emotion	.24	[-0.10, 0.53]	1.40	.161	3
Prosocial	.13	[0.03, 0.23]	2.45	.014	1
All	.20	[0.05, 0.34]	2.54	.011	2
Parent (total <i>k</i> = 10), <i>Q</i> (1) = 0.05, <i>p</i> = .830					
Mother	.24	[0.11, 0.35]	3.62	.000	6
Father	-	-	-	-	-
Both	.22	[0.08, 0.35]	3.00	.003	4

Abbreviations: CI, confidence interval, the 95% lower and upper limits of *r*; *k*, the number of effect sizes related to *r*; *Q*, test statistic determining if the association differs significantly between the subgroups of the moderator variable; *r*, effect size (Pearson's *r*); *Z*, *z* test for *r*.

<sup>a</sup>Indicates total parental conditional regard (i.e., inclusive of positive and negative conditional regard).

## 8 | DISCUSSION

Self-determination theory provides a theoretical foundation for examining the association between parental conditional regard and the development of problematic child and adolescent characteristics, including introjected regulation, contingent self-esteem, depressive symptoms, and less relatedness. The present study's objectives included determining whether across studies parental conditional regard would be significantly associated with these characteristics and assessing the magnitude of the association of parental conditional regard with these characteristics by synthesising effect sizes for these associations reported in previous research. Across studies, significant weighted mean effect sizes indicated that greater parental conditional regard was moderately associated with more introjected regulation ( $r = .33$ ) and contingent self-esteem ( $r = .29$ ), and weakly associated with more depressive symptoms ( $r = .22$ ). Across studies, a significant weighted mean  $r$  of  $-.24$  indicated that greater parental conditional regard was moderately associated with less relatedness.

The present meta-analytic results clarify differing magnitudes reported for these associations across included studies. Publication bias analyses also indicate that the results are robust to publication bias. The results suggest that children and adolescents who experience parental conditional regard may develop an introjected motivational style, contingent self-esteem, depressive symptoms, and may have lower-quality relationships with parents, peers, or romantic partners.

Another objective of the present study was to examine potential moderators of parental conditional regard's association with each correlate. Effect sizes for type of conditional regard varied significantly; Positive parental conditional regard had a stronger association with introjected regulation than did negative parental conditional regard. This result suggests children and adolescents who experience conditional positive regard are more likely motivated through introjected regulation than are children who experience conditional negative regard. Children may experience positive regard as somewhat supportive, facilitating internalisation of parental expectations and subsequent introjected motivation. Conditional negative regard may elicit resentful feelings, leading towards amotivation (Roth et al., 2009). However, the association of conditional negative regard with introjected regulation was significant, suggesting negative regard may also promote introjected regulation.

Parental conditional negative regard was more strongly associated with depressive symptoms than was parental conditional positive regard, whose association was nonsignificant. These results suggest children and adolescents experiencing negative conditional regard may develop depressive symptoms, but that this is unlikely for children experiencing positive conditional regard. Rejection characterising negative regard may explain the association of parental negative conditional regard with depressive



**TABLE 5** Moderator analyses for parental conditional regard and relatedness

Moderators	$r^a$	95% CI	Z	p	k
Type (total $k = 53$ ), $Q(2) = 1.48, p = .477$					
Conditional regard <sup>b</sup>	-.24	[-0.29, -0.17]	7.33	.000	31
Positive conditional regard	-.22	[-0.29, -0.15]	5.77	.000	13
Negative conditional regard	-.27	[-0.33, -0.22]	9.02	.000	9
Domain type (total $k = 53$ ), $Q(4) = 10.54, p = .032$					
Academic	-.29	[-0.36, -0.22]	7.76	.000	17
Sport	-.18	[-0.33, -0.03]	2.31	.021	4
Emotion	-.19	[-0.26, -0.12]	5.06	.000	19
Prosocial	-.11	[-0.25, 0.03]	1.58	.115	4
All	-.30	[-0.37, -0.22]	7.34	.000	9
Parent (total $k = 53$ ), $Q(2) = 0.11, p = .947$					
Mother	-.23	[-0.30, -0.15]	5.82	.000	25
Father	-.24	[-0.29, -0.19]	8.94	.000	23
Both	-.25	[-0.38, -0.11]	3.44	.001	5

Abbreviations: CI, confidence interval, the 95% lower and upper limits of  $r$ ;  $k$ , the number of effect sizes related to  $r$ ;  $Q$ , test statistic determining if the association differs significantly between the subgroups of the moderator variable;  $r$ , effect size (Pearson's  $r$ );  $Z$ ,  $z$  test for  $r$ .

<sup>a</sup>Negative direction indicates greater parental conditional regard is associated with lower relatedness.

<sup>b</sup>Total parental conditional regard (i.e., inclusive of positive and negative conditional regard).

symptoms, as rejection from parents correlates with childhood depression (McLeod et al., 2007). For parental conditional regard's association with relatedness, effect sizes for conditional regard type did not vary significantly. This is inconsistent with prior findings that showed conditional negative regard had a stronger link to poorer relationship quality than did conditional positive regard (Roth et al., 2009; Smiley et al., 2020). The current results suggest positive and negative conditional regard might both harm relationship quality, with both types significantly associated with less relatedness.

Both positive and negative parental conditional regard were significantly associated with contingent self-esteem but not differently so, suggesting both types might equally promote contingent self-esteem. Domain type was a significant moderator for introjected regulation, relatedness, and other-correlates but not for contingent self-esteem and depressive symptoms. This suggests conditional regard's targeted domain may be important for some correlates but not others. Parent type was a significant moderator for other-correlates but not for each main correlate. Regarding other-correlates, effect sizes for each parent were similar; the effect size including both parents was strongest. Given this and significant effect sizes for these subgroups in each analysis, results suggest parental conditional regard may promote the correlates considered in the present study, regardless of which parent used conditional regard.

## 8.1 | Theoretical implications

The meta-analytic results align with the perspective of Assor et al. (2004) and self-determination theory (Ryan & Deci, 2017) that parental conditional regard promotes maladaptive outcomes for children. The significant mean association of parental conditional regard with all correlates ( $r = .27$ ) supports this perspective. Self-determination theory posits that maladaptive outcomes occur because parental conditional regard thwarts children's autonomy and relatedness needs, placing these needs in conflict through pressuring children to behave as expected or risk losing parental regard (Ryan & Deci, 2017). The moderate association of parental conditional regard with introjected regulation and contingent self-esteem implies support for this proposition since behavior resulting from introjected regulation is not autonomous but controlled by a need to maintain parental regard and self-worth (Ryan & Deci, 2017). If children learn through parental conditional regard that self-worth, which connects to feeling worthy of love, depends on meeting parental expectations, then this suggests thwarted relatedness and autonomy needs. Additionally, parental conditional regard's meta-

**TABLE 6** Moderator analyses for parental conditional regard and other-correlates

Moderators	<i>r</i>	95% CI	<i>Z</i>	<i>p</i>	<i>k</i>
Type (total <i>k</i> = 136), <i>Q</i> (2) = 0.62, <i>p</i> = .732					
Conditional regard <sup>a</sup>	.19	[0.16, 0.23]	11.40	.000	100
Positive conditional regard	.18	[0.13, 0.23]	6.96	.000	23
Negative conditional regard	.22	[0.14, 0.29]	5.70	.000	13
Domain type (total <i>k</i> = 136), <i>Q</i> (4) = 60.02, <i>p</i> = .000					
Academic	.18	[0.12, 0.24]	6.06	.000	26
Sport	.21	[0.16, 0.27]	7.48	.000	30
Emotion	.17	[0.13, 0.22]	7.93	.000	42
Prosocial	.03	[-0.02, 0.07]	1.22	.221	14
All	.30	[0.24, 0.35]	9.97	.000	24
Parent (total <i>k</i> = 136), <i>Q</i> (2) = 14.33, <i>p</i> = .001					
Mother	.18	[0.14, 0.21]	9.82	.000	55
Father	.15	[0.11, 0.20]	6.88	.000	49
Both	.27	[0.22, 0.32]	10.79	.000	32

Abbreviations: CI, confidence interval, the 95% lower and upper limits of *r*; *k*, the number of effect sizes related to *r*; *Q*, test statistic determining if the association differs significantly between the subgroups of the moderator variable; *r*, effect size (Pearson's *r*); *Z*, *z* test for *r*.

<sup>a</sup>Total parental conditional regard (i.e., inclusive of positive and negative conditional regard).

analytic association with contingent self-esteem supports Rogers' (1959) proposal that individuals experiencing conditional regard may develop conditions of worth. The meta-analytic association of parental conditional regard with poorer relationship quality also suggests parental conditional regard thwarts the psychological need for relatedness.

## 8.2 | Practical implications

The current results have implications for how parents socialise their children. One implication is that parents who use conditional regard might harm their child's psychological well-being and relationships. As the results suggest, even the seemingly benign strategy of giving contingent affection and approval through conditional positive regard might promote introjected regulation, contingent self-esteem, and poorer relationships. Another implication is that parenting programs designed to educate parents about optimal child development could consider including a module aimed at minimising conditional regard use. This could include teaching strategies that help satisfy children's basic psychological needs. For example, such a strategy might be offering autonomy support through understanding the child's perspective and relatedness support through giving unconditional love (Soenens et al., 2017).

## 8.3 | Limitations

The present findings are correlational, preventing causal conclusions. If parental conditional regard has causal relationships with introjected regulation, contingent self-esteem, depressive symptoms, and lower relatedness, then conditional regard may cause these associations or these correlates may elicit parental conditional regard. For example, a child with signs of depression may elicit parental responses relating to conditional regard. Additionally, relationships may be bidirectional as research suggests mutual influences between parenting and child characteristics or behavior (Otterpohl et al., 2021; Serbin et al., 2015). Such bidirectional relationships may lead to spirals of strengthening links between parental conditional regard and development of child qualities such as contingent self-esteem.

A third variable might explain both levels of parental conditional regard and these correlates. Such third factors that can influence both parents and children may include genetic predispositions. Some characteristics that traditionally have been considered to be mainly influenced by social factors have a genetic basis. These characteristics that have partial genetic origins include psychiatric disorders, such as depression (Mallard et al., 2022), a correlate of parental conditional regard and self-regulation (Karlsson Linnér et al., 2021), which may be connected to introjected regulation, another correlate of parental conditional regard. An implication of third factors influencing both parental conditional regard and child outcomes is that the actual connection between conditional regard and outcomes may be less than bi-variate associations suggest. Various third factors influencing the association of parental conditional regard with child outcomes and the importance of such third factors might be uncovered in future research.

There were no date limits on inclusion of studies. Nelson et al. (2018) suggested that research expectations have changed over time. Thus, older studies may have adhered to different standards than more recent studies. Most participants for studies included in the present meta-analysis were adolescents or young adults who reported recollected parental conditional regard from childhood or adolescence. The lapse of time may have influenced accuracy of recollection.

Many included studies provided multiple effect sizes for the same participants, violating the independence assumption in moderator analyses. Although this violation was justified, moderator results should be interpreted with caution as this violation may have introduced some error into the derived statistics (Lipsey & Wilson, 2001). Analyses for the meta-analytic association of parental conditional regard with introjected regulation and depressive symptoms had few samples, limiting generalisability of findings from these analyses (Lipsey & Wilson, 2001).

## 8.4 | Future directions

There are few longitudinal and experimental intervention studies investigating causal connections between parental conditional regard and each main correlate considered in the present study. Future research could use longitudinal designs to examine the connections between parental conditional regard and child outcomes, including reciprocal relationships, taking into consideration domain and parental conditional regard type. In conjunction with longitudinal research or in other designs, potential covariates that might influence the association of parental conditional regard with correlates could be examined. For example, covariates might include intrapersonal characteristics such as children's big five personality characteristics or interpersonal factors such as grandparents' levels of conditional regard. The extent to which parents' self-esteem is linked to their children's achievement can interact with parental conditional regard (Steffgen et al., 2022). Such parental characteristics and perceptions can be further explored in both longitudinal and experimental research.

Experimental intervention research in child and adolescent populations could investigate causality through parent training intended to reduce parental conditional regard, with the effects of such parent training on children assessed. Child outcomes could include the theoretically based outcomes that were the focus of this meta-analysis, as well as other outcomes. For example, Assor et al. (2020) found in a longitudinal study that mothers' conditional regard predicted their young children's coping behaviors at later times. Children's coping behaviors could be among other outcomes investigated in experimental intervention research.

## 9 | CONCLUSION

The current meta-analytic investigation clarified the strength of parental conditional regard's association with introjected regulation, contingent self-esteem, depressive symptoms, and relatedness; and examined potential moderators. Supporting hypotheses, parental conditional regard was moderately associated with more introjected regulation and contingent self-esteem, weakly associated with more depressive symptoms, and moderately associated with less relatedness. Moderator analyses found that the association of conditional positive regard with introjected regulation was significantly stronger than the association of conditional negative regard with introjected regulation. The association of conditional negative regard with depressive symptoms was significantly stronger than the association for conditional positive regard; and for parental conditional regard's association with relatedness, effect sizes for type of conditional regard did not significantly differ. Overall, the results supported self-determination theory propositions concerning detrimental effects of parental conditional regard. Conditional regard may seem to parents an effective socialisation strategy; yet, its associated psychological and relationship costs for children suggest it may be a strategy best avoided.

## ACKNOWLEDGMENTS

Open access publishing facilitated by University of New England, as part of the Wiley - University of New England agreement via the Council of Australian University Librarians.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

## DATA AVAILABILITY STATEMENT

The data included in the meta-analysis is presented in Table 1 of the manuscript.

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

## ETHICS STATEMENT

This meta-analytic review did not require ethics approval.

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**How to cite this article:** Haines, J. E., & Schutte, N. S. (2022). Parental conditional regard: A meta-analysis. *Journal of Adolescence*, 1–29. <https://doi.org/10.1002/jad.12111>