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Early maladaptive schemas and intimate partner violence victimization and perpetration: A systematic review and meta-analysis

Pamela D. Pilkington[1] | Clare Noonan[1] | Tamara May[4] | Rita Younan[2] |
Ruth A. Holt[3]

[1]School of Behavioural and Health Sciences, Faculty of Health Sciences, Australian Catholic University, Fitzroy, Victoria, Australia

[2]Schema Therapy Institute, Carlton, Victoria, Australia

[3]Schema Therapy Canberra, Canberra, Australian Capital Territory, Australia

[4]Department of Paediatrics, Monash University, Clayton, Victoria, Australia

Correspondence
Dr. Pam Pilkington, School of Behavioural and Health Sciences, Faculty of Health Sciences, Australian Catholic University, Locked Bag 4115, Fitzroy, Victoria, 3065, Australia.
Email: pam.pilkington@acu.edu.au

Abstract

Young's early maladaptive schemas represent a possible pathway between childhood adversity and Intimate Partner Violence (IPV). The aim of this review was to synthesize the evidence on early maladaptive schemas and IPV. PubMed, PsycInfo, and CINAHL databases were searched, in compliance with PRISMA, to identify peer reviewed studies that reported on the relationship between schema or schema domain scores and IPV victimization or perpetration. Based on nine included studies, meta-analyses indicated that IPV victimization showed a moderate association with the Disconnection and Rejection and Impaired Autonomy domains, and a small association with Other-Directedness. The Mistrust Abuse and Vulnerability to Harm schemas were moderately correlated with victimization. Mistrust Abuse was also implicated in perpetration but insufficient data were available for meta-analysis. The evidence suggests that being a victim of IPV is associated with an expectation that one's needs for love and safety will not be met and doubt regarding one's capacity to handle responsibilities or succeed in life.

KEYWORDS
early maladaptive schemas, intimate partner violence, meta-analysis

1 | INTRODUCTION

Intimate Partner Violence (IPV) is a severe and pervasive public health problem prevalent across socio-economic and cultural groups. IPV refers to violence by a current or former intimate partner and encompasses physical, psychological, and sexual violence (Breiding et al., 2015). The World Health Organization (2013) estimates that IPV affects approximately 35% of the global population. IPV is associated with adverse personal, social, and economic outcomes (Spencer, Keilholtz, & Stith, 2020). These include increased risk of Post-Traumatic Stress Disorder, substance use, and depression (Bacchus et al., 2018; Spencer, Mallory, et al., 2019), and intergenerational trauma, which perpetuates emotional and attachment problems in children who witness IPV (Cannon et al., 2009; Noonan &

Pilkington, 2020). Given the short and long-term adverse effects associated with IPV (Costa et al., 2015), this review sought to examine predictors of both IPV victimization and perpetration.

Understanding the precursors and correlates of IPV underpins prevention, treatment, and rehabilitation efforts (Eckhardt, 2011; Spencer, Stith, & Cafferky, 2019; Spencer, Stith, & Cafferky, 2020). Risk factors have been grouped into three levels: the exosystem (social structures such as work-places), microsystem (the immediate setting in which the abuse takes place), and the ontogenetic level (the individual's cognitions and affective responses learned in their family of origin) (Dutton, 2011). Both partners in the couple dyad bring developmental characteristics, beliefs, and behavioural patterns to the relationship (ontogenetic factors) that shape their responses to stressors in the exosystem and microsystem (Spencer, Stith, &

Cafferky, 2019; Stith et al., 2004). Dominant theories on the aetiology of IPV have identified important social and cultural risk factors within the exosystem and microsystem (Chesworth, 2018; Kelly, 2011) but have given less theoretical and research attention to ontogenetic factors, such as cognitions (Senkans et al., 2020). Cognitive factors may be implicated in both IPV victimization and perpetration and are ideal targets for intervention as they are modifiable (Spencer, Stith, & Cafferky, 2019; Stith et al., 2004). To contribute to addressing this gap, we completed the current review on early maladaptive schemas as ontogenetic risk factors for IPV victimization and perpetration.

Early maladaptive schemas (herein referred to as schemas) are dysfunctional internal working models encompassing cognitive, affective, somatic and memory-based components (Young et al., 2003). These mental templates are internalized from early attachment experiences. Specifically, schemas are theorized to form in childhood when core emotional needs, such as safety and emotional nurturance, are not met. These adverse early experiences contribute to the development of cognitive biases (Pilkington et al., 2020), which in turn increase vulnerability to psychological disorders in adulthood (Barazandeh et al., 2016; Hawke & Provencher, 2011; Janovsky et al., 2020).

Young et al. (2003) identified 18 early maladaptive schemas, grouped into five domains corresponding to the unmet childhood needs (see On-line Supplement 1 for full list and definitions): Disconnection and Rejection (lack of safety, stability, and nurturance), Impaired Autonomy and Performance (lack of autonomy, competence, and sense of identity), Impaired Limits (lack of realistic limits and self-control), Other Directedness (lack of freedom to express valid needs and emotions), and Over-vigilance and Inhibition (lack of relaxation, spontaneity, and play). Recent findings from factor analyses of the Young Schema Questionnaire (e.g., Bach et al., 2018; Yalcin et al., 2020) have prompted calls for the schemas to be reorganized into four domains. However, as the literature on schemas and IPV thus far has only reported on the original five domains, it was necessary to adopt this domain structure for the current review.

Previous meta-analyses have established that exposure to childhood maltreatment is a risk factor for IPV revictimization and perpetration (Godbout et al., 2019; Li et al., 2019, 2020). The link between traumatic early experiences and IPV can be understood in terms of social learning theory (Bandura, 1978). Adults develop expectations of how others will treat them based on how they were treated in childhood. Experiencing a lack of safety in the caregiver relationship is associated with schema formation, particularly schemas in the Disconnection and Rejection domain, which increases the person's likelihood of relational problems in adulthood (Janovsky et al., 2020). Schemas are, therefore, conceptualized as mediators of the relationship between childhood experiences of violence and IPV in adulthood (Gay et al., 2013; LaMotte et al., 2016).

Schemas are theorized to contribute to both IPV victimization and perpetration. Schema activation in adulthood biases how social information is encoded and prevents adaptive processing of information. Ambiguous social and interpersonal cues may be misinterpreted, resulting in negative affect and triggering maladaptive coping: schema

> **Key Practitioner Message**
> - Individuals experiencing intimate partner violence are more likely to present with early maladaptive schemas relating to an expectation that their needs for love and safety will not be met.
> - Individuals who experience intimate partner violence are more likely to endorse early maladaptive schemas relating to self-doubt about their capacity to handle everyday responsibilities or succeed in life.
> - Mistrust of others appears to be implicated in both perpetrating and experiencing intimate partner violence, suggesting enhancing capacity to trust is an important therapeutic focus.

surrender, avoidance, or over-compensation (Shorey et al., 2017). For example, an individual with the Mistrust Abuse schema ("Other people will harm, abuse, or take advantage of me") may surrender to this schema by selecting or tolerating partners that are abusive or untrustworthy (Hassija et al., 2018; Young et al., 2003). Alternatively, individuals with this schema may perpetrate violence if they perceive their partners as having hostile intentions and over-compensate by using controlling and abusive behaviours (Hassija et al., 2018; Senkans et al., 2020; Young et al., 2003).

This is consistent with the Social Information Processing (SIP) theory (Murphy et al., 2014): how an individual responds to relational anger or frustration depends on how they encode and interpret the social context and cues, and their repertoire of possible coping responses learned from previous experiences. From this perspective, difficulties with trust may contribute to biased interpretations of the intentions of others, which can increase the risk of a violent or aggressive response (Murphy et al., 2014). In support of this argument, Senkans et al. (2020) recently completed a conceptual review that applied SIP to IPV perpetration and proposed that perpetrators possess aggressive-relational schemas (e.g., others are hostile and untrustworthy) that predispose them to perceiving that the other person is intending to provoke them or cause them harm.

Despite the theoretical links between schemas and IPV, the empirical support for these associations is unclear. A review focused on the relationships between schemas and IPV victimization and perpetration is needed. Several recent systematic reviews and meta-analyses have examined risk factors for IPV victimization and perpetration (Spencer & Stith, 2020; Spencer, Stith, & Cafferky, 2019; Spencer et al., 2020; Stith et al., 2004). These reviews have provided insights into the broad array of ontogenetic, microsystem, and exosystem risk markers associated with IPV, such as illicit drug use, mental health status, and marital dissatisfaction. However, these reviews have not comprehensively examined cognitive-affective vulnerabilities, such as schemas. Cognitive risk markers in these reviews were limited to approval of violence and belief in traditional sex-roles. A focus on early maladaptive schemas can provide an in-depth

analysis of the evidence base that can be translated into recommendations for schema therapy and prevention efforts.

A recent systematic review and multi-level meta-analysis by Janovsky et al. (2020) examined the relationship between early maladaptive schemas and interpersonal problems. Schemas in the Disconnection and Rejection (r = .39 95% CI [.24, .52]) and the Impaired Autonomy and Performance (r = .40 95% CI [.19, .57]) domains showed the strongest correlations with interpersonal problems (Janovsky et al., 2020). Abuse victimization and perpetration of violence were investigated as moderators, but the analyses combined violence within the partner relationship and other relationships (e.g., bullying, peer relationships, and relationship satisfaction) into a single variable. Therefore, the specific relationships between IPV victimization and perpetration have yet to be synthesized.

1.1 | The current review

The aim of this systematic review and meta-analysis was to evaluate the evidence on the associations between early maladaptive schemas and IPV victimization and perpetration. The evidence base in this area is emerging, and studies have thus far reported mixed findings. For example, some studies have found that experiencing IPV is similarly associated with the full array of schema domains (e.g., Pietri & Bonnet, 2017), while others have reported stronger correlations with schemas clustered in the Disconnection Rejection domain (e.g., Atmaca & Gencoz, 2016). A meta-analysis is needed to compare and synthesize the primary study findings. Estimating the pooled effect sizes can clarify which schemas and schema domains are most strongly associated with IPV victimization and perpetration. Based on Young's Schema Theory and Janovsky's (2020) meta-analytic findings on schemas and interpersonal problems, it was anticipated that early maladaptive schemas in the Disconnection and Rejection and Impaired Autonomy domains would demonstrate the strongest pooled correlations with IPV victimization and perpetration. The findings have implications for screening, safety planning, intervention, and prevention, and can elucidate the directions for future research in this area.

2 | METHOD

In compliance with the PRISMA protocol (Moher et al., 2009), we completed a systematic review and meta-analysis of the associations between Young's early maladaptive schemas and Intimate Partner Violence (IPV) victimization and perpetration in adulthood. The PRISMA checklist is provided in On-line Supplement 2.

2.1 | Search strategy

The electronic databases CINAHL, PsycInfo, and MEDLINE, were searched on 26 November 2019 using the string "Young AND

Schema". A broad search string was intentionally used as the evidence base on early maladaptive schemas is relatively small. Search terms could appear anywhere in the full text. Where possible, searches were limited to peer-reviewed articles and articles written in English, but no publication date limits were applied. Further studies eligible for inclusion were identified by manually searching the reference lists of studies included from the initial search. In addition, Web of Science was used to identify studies that had cited included articles. These searches were completed on 15 June 2020.

2.2 | Selection criteria

Included studies were required to fulfil the following criteria: (a) employed a case–control, longitudinal, cross-sectional, or retrospective study design; (b) published in a peer-reviewed journal; (c) recruited a sample with a mean age of 18 years or older; (d) analysed one or more of the 18 early maladaptive schemas (e.g., Abandonment) or domains (e.g., Disconnection and Rejection) as a predictor variable; (e) analysed IPV victimization or perpetration as an outcome variable; and (f) reported association/s in sufficient detail for unadjusted bivariate effect sizes to be calculated.

Studies were excluded if: (a) the article did not report original data (e.g., the article was a review paper, meta-analysis, or discussion paper); (b) the article was not written in English; (c) measures were administered following exposure to an intervention; or (d) the predictor was schema modes (e.g., the Schema Mode Inventory) or the YSQ total score. The first author screened all potential studies for inclusion based on title and abstract. Articles included based on their title and abstract were subsequently screened based on their full text. The third author confirmed that included studies warranted inclusion.

2.3 | Data extraction and management

Data were independently extracted by two authors using a standardized spreadsheet. Data extraction was completed by PP and CN then collated by PP. Discrepancies were resolved through discussion. The data extracted included descriptive information about the sample, details of the predictor and outcome variables, and the effect size and direction. Authors of studies that reported adjusted associations between the relevant variables were contacted via email and asked to provide the unadjusted data. Two authors responded with this information.

Where articles reported associations on both psychological and physical IPV, only the data on psychological IPV were included in the meta-analyses to avoid double counting (Senn, 2009). Psychological IPV was prioritized over physical IPV as more data was available on this outcome. Where studies reported separate associations for men and women, the point estimate for females only were included within the meta-analysis, as most studies used female samples.

2.3.1 | Quality assessment

The quality of included studies was assessed using the Newcastle-Ottawa Scale (Wells et al., 2015) adapted for cross-sectional studies by Modesti et al. (2016). Studies were rated independently by PP and CN using these criteria: (1) Representativeness of the sample: (a) truly representative of the average in the target population (all subjects or random sampling), (b) somewhat representative of the average in the target population (non-random sampling), and (c) unclear or no description of the sampling strategy; (2) Sample size: (a) justified and satisfactory and (b) not justified ($N < 100$); (3) Ascertainment of the exposure (risk factor): (a) validated measurement tool, (b) non-validated measurement tool, but the tool is available or described, and (c) no description of the measurement tool; and (4) Assessment of outcome: (a) independent blind assessment, (b) record linkage, (c) self-report, and (d) no description.

2.4 | Meta-analyses

Separate meta-analyses were completed to examine schema domain and individual schema scores as predictors of IPV victimization and perpetration using the Meta-Essentials software (Suurmond et al., 2017). As considerable heterogeneity was expected a random-effects model was used for all analyses. Cumming (2013) and Borenstein et al. (2011) argue that meta-analyses with as few as two or three studies have utility. Therefore, we completed meta-analyses if at least two independent studies were available.

Given that more than two-thirds of the primary data were correlation coefficients, r was selected as the summary effect size metric. Effect sizes other than correlation coefficients (e.g., M and SDs) were converted to r using the on-line Practical Meta-Analysis Effect Size Calculator (Wilson, 2001). Effect sizes were categorized as small, medium, or large using Cohen (1992) thresholds (0.1 is small, 0.3 medium, and 0.5 large).

Heterogeneity was assessed using the I^2 statistic. An I^2 value of 0% indicates no observed heterogeneity, and higher values indicate greater heterogeneity (greater than 75% is considered substantial) (Higgins et al., 2019). The minimum number of studies required for subgroup analyses and publication bias tests to be meaningful is 10 per meta-analysis (Higgins et al., 2019). These tests are not reported as none of the meta-analyses included more than 10 effect sizes.

3 | RESULTS

A total of nine studies sampling 2145 participants met inclusion criteria (Atmaca & Gencoz, 2016; Falahatdoost et al., 2013; Gay et al., 2013; Hassija et al., 2018; Kachadourian et al., 2013; LaMotte et al., 2016; Pietri & Bonnet, 2017; Shorey et al., 2017; Taşkale & Soygüt, 2016). Figure 1 presents the PRISMA flow-diagram showing the screening and selection of studies for inclusion. The characteristics of the included studies, their methodological quality, and the meta-analytic findings are summarized below.

3.1 | Characteristics of the included studies

Of the nine included studies, seven were correlational, and two used a case–control design (see Table 1 for characteristics of included studies) (Pietri & Bonnet, 2017; Taşkale & Soygüt, 2016). Samples ranged from 80 to 435 participants ($Mdn\ N = 197$). Most studies recruited female participants only ($k = 6$), two studies recruited both genders (LaMotte et al., 2016; Shorey et al., 2017), and one study recruited men only (Kachadourian et al., 2013). Participants' mean age ranged from 18.7 ($SD = 1.6$) to 41.5 years ($SD = 9.83$). Approximately half of the studies recruited participants from the general community, such as undergraduate students (Atmaca & Gencoz, 2016; Gay et al., 2013; Hassija et al., 2018; LaMotte et al., 2016; Shorey et al., 2017). Falahatdoost et al. (2013) recruited women from the Family Courts system in Tehran. Kachadourian et al. (2013) recruited men in the *Common Purpose* programme, a "state-certified domestic-abuser intervention." Pietri and Bonnet (2017) used a case–control design. They recruited women with and without a history of IPV via an emergency housing unit for distressed mothers and the authors' university and professional networks. (Taşkale & Soygüt, 2016) also used a case–control design by recruiting women residing in shelters identified as victims of physical and sexual violence and educationally matched non-victims recruited via snowball sampling. Of the nine studies, five were completed in the United States (Gay et al., 2013; Hassija et al., 2018; Kachadourian et al., 2013; LaMotte et al., 2016; Shorey et al., 2017), two in Turkey (Atmaca & Gencoz, 2016; Taşkale & Soygüt, 2016), one in Iran (Falahatdoost et al., 2013), and one in France (Pietri & Bonnet, 2017). The quality assessment ratings are presented in On-line Supplement 3.

3.2 | Quality assessment

The nine studies obtained similar quality ratings as there was little heterogeneity in study design and measure selection. All studies used samples rated as "somewhat representative of the average in the target population." Of the nine studies, all but two (LaMotte et al., 2016; Pietri & Bonnet, 2017) used samples greater than 100 participants. Given the inclusion criteria required that studies examined early maladaptive schemas as defined by Young et al., all studies used versions of the YSQ and were thus rated as using a "validated measurement tool" to assess the risk factor. All but two studies used a version of the Conflict Tactics Scale (CTS) to assess IPV. Taşkale and Soygüt (2016) used a study-specific self-report measure on physical, psychological, verbal, sexual, and economic IPV victimization. Pietri and Bonnet (2017) used individual interviews to assess the presence of IPV victimization.
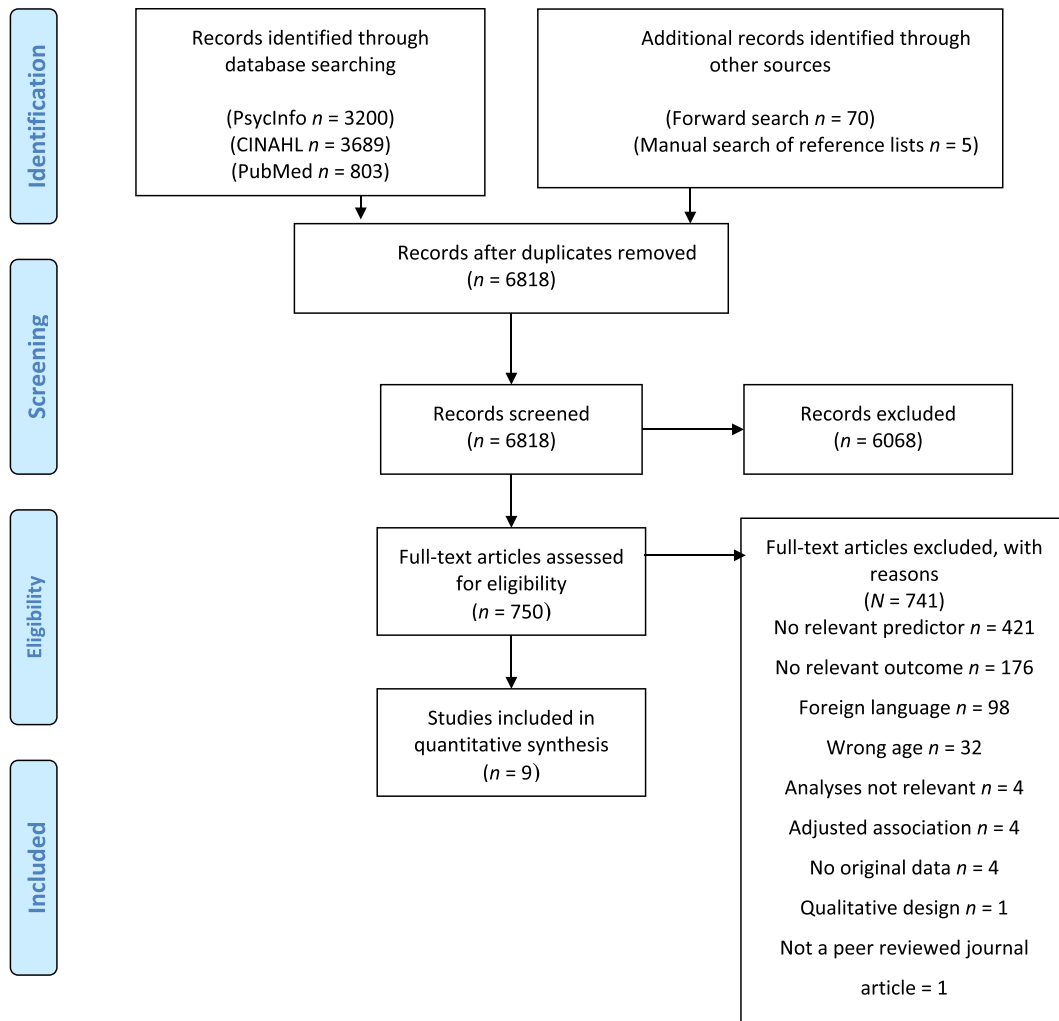
FIGURE 1 PRISMA flow-diagram

3.3 | Meta-analytic and primary study findings

The findings from the meta-analyses are provided in Table 2. The primary study findings are summarized in Table 3. Given the volume of meta-analyses, only those showing significant effects (i.e., pooled effect sizes with confidence intervals with a lower bound of .10 or larger) are reported in the text below and indicated in bold in Table 2.

3.4 | IPV victimization and early maladaptive schemas

Based on five studies (Atmaca & Gencoz, 2016; Falahatdoost et al., 2013; Gay et al., 2013; Pietri & Bonnet, 2017; Taşkale & Soygüt, 2016), both Disconnection and Rejection and Impaired Autonomy domain scores were moderately positively correlated with IPV victimization. Other-directedness scores demonstrated a small positive association with IPV. These meta-analyses demonstrated moderate to substantial heterogeneity. A meta-analysis based on four studies (Atmaca & Gencoz, 2016; Hassija et al., 2018;

LaMotte et al., 2016; Pietri & Bonnet, 2017) indicated that the Mistrust Abuse schema was moderately correlated with IPV victimization, with zero heterogeneity. Based on three studies (Atmaca & Gencoz, 2016; Pietri & Bonnet, 2017; Taşkale & Soygüt, 2016), the Vulnerability to Harm schema was moderately correlated with IPV victimization, with some heterogeneity detected. Based on four studies (Atmaca & Gencoz, 2016; Hassija et al., 2018; Pietri & Bonnet, 2017; Taşkale & Soygüt, 2016), the Entitlement schema demonstrated a small correlation with IPV victimization, with zero heterogeneity present.

3.5 | IPV perpetration and early maladaptive schemas

There were insufficient data to complete meta-analyses examining IPV perpetration. Gay et al. (2013) and Shorey et al. (2017) reported five correlations between IPV perpetration and Disconnection and Rejection domain scores from three samples (range: $r = 0.09$ to 23). Gay et al. (2013), Shorey et al. (2017), and Kachadourian et al. (2013)

TABLE 1 Characteristics of included studies

Author and year	Country	Sample description	Sample size	% female	Age, years M (SD)	IV	DV	IPV type	Victimization/ perpetration
Atmaca and Gencoz (2016)	Turkey	Women married for at least 1 year via convenience sampling.	222	100%	35.7 (7.8)	YSQ-S3	CTS-2	Composite[a]	Victimization
Falahatdoost et al. (2013)	Iran	Women married for at least 1 year with no alcohol or psychological problems or any serious illnesses, recruited via the Family Courts.	197	100%	NR	YSQ	CTS-2	Composite[a]	Victimization
Gay et al. (2013)	USA	Female undergraduate psychology students.	409	100%	19.1 (1.4)	YSQ-SF	CTS-2	Composite[a]	Both
Hassija et al. (2018)	USA	Female undergraduate psychology students in a romantic relationship for at least 1 year.	305	100%	24.3 (7.6)	YSQ-SF	CTS-2	Composite[a]	Both
Kachadourian et al. (2013)	USA	Men in the "Common Purpose" state-certified domestic-abuser intervention programme.	174	0%	33.5 (1.7)	YSQ-S3	CTS-2	Psychological physical	Perpetration
LaMotte et al. (2016)	USA	Male–female couples in a heterosexual relationship, either married or cohabitating for >6 months.	166 (83 men; 83 women)	50%	Males 37.4 (12.2) females 35.4 (11.7)	YSQ-S3	CTS-2	Psychological[a] physical	Both
Pietri and Bonnet (2017)	France	Women who were living or had lived as a couple recruited from an emergency housing unit for distressed mothers, and the authors' university and professional networks. Grouped into women with no history of domestic violence and women who identified as victims of chronic domestic violence.	80 (40 IPV; 40 control)	100%	34.5 (12.2)	YSQ-S3	SS	Composite[a]	Victimization
Shorey et al. (2017)	USA	Undergraduate students.	435 (193 men; 242 women)	50%	18.7 (1.6)	YSQ-L3	CTS-2	Psychological physical	Perpetration
Taşkale and Soygüt (2016)	Turkey	Women residing in shelters identified as victims of physical and sexual violence and educationally matched non-victims recruited via snowball sampling.	157 (79 IPV; 78 control)	100%	IPV 31.68 (7.2) control 41.5 (9.83)	YSQ-S3	SS	Composite[a]	Victimization

Note: CTS, Conflict Tactics Scale; SS, Study Specific measure; YSQ, Young Schema Questionnaire (L3 = Long form; S3 = Short form).

[a]Included in meta-analyses.

TABLE 2 Meta-analyses examining the relationship between early maladaptive schemas and intimate partner violence victimization

	Mean r	95% CI	I²	k	Pooled N
Domain scores					
Disconnection and rejection	.42	.16, .62	90%	5	1052
Impaired autonomy	.36	.18, .52	80%	5	1052
Impaired limits	.15	.08, .21	0%	4	656
Other directedness	.25	.14, .35	52%	5	1052
Over-vigilance and inhibition	.23	.04, .41	3%	3	499
Schema scores					
Emotional deprivation	.52	−.14, .86	90%	3	459
Abandonment	.29	.04, .50	73%	4	764
Mistrust abuse	.33	.28, .39	0%	4	690
Social isolation	.27	−.08, .57	67%	3	607
Defectiveness shame	.17	−.19, .49	59%	3	459
Failure	.15	−.47, .67	86%	3	459
Dependence incompetence	.20	−.50, .74	2%	2	302
Vulnerability to harm	.36	.10, .58	38%	3	459
Enmeshment	.25	−.54, .80	93%	3	459
Subjugation	.27	−.12, .59	70%	3	607
Self-sacrifice	.25	−.01, .48	79%	4	764
Emotional inhibition	.28	−.02, .54	47%	3	459
Unrelenting standards	.05	−.32, .41	70%	3	459
Insufficient self-control	.12	−.09, .32	64%	4	764
Entitlement	.18	.16, .20	0%	4	764
Approval seeking	.06	−.29, .40	59%	3	459
Negativity pessimism	.25	−.10, .54	58%	3	459
Punitiveness	.19	.04, .33	70%	3	459

Note: Bold indicates the pooled effect size is significant (lower bound of the confidence interval is 0.10 or greater).

reported seven correlations between IPV perpetration and Impaired Autonomy from four samples (range: r = −.03 to .24). One study (Shorey et al., 2017) reported two small correlations between Impaired Limits and male physical and psychological IPV perpetration, one small correlation with female psychological IPV perpetration, but no correlation with female physical IPV perpetration (range r = .03 to .25). Gay et al. (2013) and Shorey et al. (2017) reported five correlations examining IPV perpetration and Other-directedness in three samples and found no significant associations. Shorey et al. (2017) reported four associations between Over-vigilance and Inhibition scores and IPV perpetration in men and women and found no significant correlations, except female perpetration of psychological IPV (r = .17).

Hassija et al. (2018) and LaMotte et al. (2016) reported five small to moderate correlations between IPV perpetration and Mistrust Abuse (range: r = .22 to .41). A single study (Hassija et al., 2018) found a moderate correlation between IPV perpetration and Subjugation, small correlations with the Abandonment, Social Isolation, Insufficient Self-control, and Entitlement schemas, and no correlation with Self-Sacrifice.

4 | DISCUSSION

The aim of this systematic review and meta-analysis was to summarize the evidence on early maladaptive schemas and IPV victimization and perpetration. There were small to medium pooled associations between IPV victimization and the Disconnection and Rejection, Impaired Autonomy, and Other-Directedness schema domains. Regarding the 18 individual schemas, only the Mistrust Abuse and Vulnerability to Harm schemas were found to be moderately correlated to IPV victimization. There was limited research available on IPV perpetration, and this data could not be meta-analysed. This highlights a significant gap in the IPV literature. However, two studies examined the association between the Mistrust Abuse schema and IPV perpetration, and reported five small to medium correlations. Despite the small evidence base and some heterogeneity across studies, the findings provide preliminary correlational evidence for the associations between schemas and IPV and highlight directions for future research.

As anticipated based on Young's (2003) schema theory, the Disconnection and Rejection domain demonstrated the strongest correlation with IPV victimization (r = .42, 95% CI [.16, .62]). Janovsky

TABLE 3 Primary study findings organized by intimate partner violence outcome

Author and year	IPV	Domains					Schemas																	
		DR	IA	IL	OD	OV	ED	AB	MA	SI	DS	FA	DI	VH	ENM	SUB	SS	EI	US	ISC	ENT	AS	NP	PU
Victimization																								
Hassija et al. (2018)	C							.25	.31	.27						.37	.06			.25	.18			
LaMotte et al. (2016)—M	Ph								.32															
LaMotte et al. (2016)—M	Ps								.42															
LaMotte et al. (2016)—F	Ph								.30															
LaMotte et al. (2016)—F	Ps								.39															
Pietri and Bonnet (2017)	C	.27	.21	.21	.24	.17	.29	.12	.38	.09	−.03	−.17	.10	.24	−.07	.06	.44	.11	−.11	−.08	.21	−.13	.07	.08
Gay et al. (2013)	C	.23	.23		.12																				
Falahatdoost et al. (2013)	C	.41	.46	.14	.31	.18																			
Taşkale and Soygüt (2016)	C	.67	.53	.10	.30		.71	.48			.22	.32		.45	.55		.31	.36	.02	.10	.19	.09	.36	.21
Atmaca and Gencoz (2016)	C	.45	.35	.16	.29	.30	.49	.26	.36	.39	.25	.25	.23	.35	.18	.30	.24	.30	.20	.11	.17	.16	.25	.15
Perpetration																								
Hassija et al. (2018)	C							.22	.29	.25						.30	.02			.25	.18			
LaMotte et al. (2016)—M	Ph								.40															
LaMotte et al. (2016)—M	Ps								.41															
LaMotte et al. (2016)—F	Ph								.22															
LaMotte et al. (2016)—F	Ps								.35															
Shorey et al. (2017)—M	Ps	.09	−.03	.20	.05	.06																		
Shorey et al. (2017)—M	Ph	.06	.05	.23	.01	.03																		
Shorey et al. (2017)—F	Ps	.23	.24	.25	.09	.17																		
Shorey et al. (2017)—F	Ph	.09	.15	.03	.03	.05																		

TABLE 3 (Continued)

Author and year	IPV	Domains					Schemas																	
		DR	IA	IL	OD	OV	ED	AB	MA	SI	DS	FA	DI	VH	ENM	SUB	SS	EI	US	ISC	ENT	AS	NP	PU
Kachadourian et al. (2013)	Ps		.13																					
Kachadourian et al. (2013)	Ph		.21																					
Gay et al. (2013)	C	.18	.14			.04																		

Note: C = Composite; M = Males; Ph = Physical; Ps = Psychological; F = Females. Schema and Domains: DR = Disconnection and Rejection; IA = Impaired Autonomy; IL = Impaired Limits; OD = Other Directedness; OV = Over-vigilance; ED = Emotional Deprivation; AB = Abandonment; MA = Mistrust Abuse; SI = Social Isolation; DS = Defectiveness Shame; FA = Failure; DI = Dependence Incompetence; VH = Vulnerability to Harm; ENM = Enmeshment; SUB = Subjugation; SS = Self-sacrifice; EI = Emotional Inhibition; US = Unrelenting Standards; ISC = Insufficient Self-control; ENT = Entitlement; AS = Approval Seeking; NP = Negativity Pessimism; PU = Punitiveness. Correlations in bold were included in meta-analyses.

et al. (2020) similarly found a medium correlation between interpersonal problems and Disconnection and Rejection domain scores. Our findings suggest that individuals who have experienced IPV tend to expect that others (e.g., romantic partners) will not fulfil their basic emotional needs for safety, security, stability, empathy, acceptance, and respect. Mistrust Abuse was the only individual schema within this domain with sufficient data to be meta-analysed and showed a moderate correlation with IPV victimization ($r = .33$, 95% CI [.29, .37]). This finding supports the theory that those with experiences and beliefs related to a lack of safety in relationships may select or endure partners that are abusive or untrustworthy (Hassija et al., 2018; Young et al., 2003). The findings also align with the argument that the Mistrust Abuse schema is an important link between lifetime exposure to traumatic events and experiences of both physical and psychological aggression (LaMotte et al., 2016). Traumatic experiences can deeply disrupt one's trust in others, and this reduced trust may be perpetuated by increased vulnerability to future trauma (Taft et al., 2016). In support of this, Crawford and Wright (2007) found that the Mistrust abuse schema mediated the relationship between child psychological maltreatment and IPV victimization in adulthood.

Impaired Autonomy domain scores also demonstrated a moderate correlation with IPV victimization ($r = .36$, 95% CI [.18, .52]). This effect size was similar in magnitude to the moderate pooled association between interpersonal problems and Impaired Autonomy scores reported by Janovsky et al. (2020). Given the small number of available studies, all of which were correlational, the evidence needs to be interpreted with caution. The findings suggest individuals who lack confidence in their ability to function independently in daily life and succeed in areas of achievement are more likely to have experienced IPV. Schemas in the Impaired Autonomy domain are also associated with doubt about one's capacity to protect oneself from harm, difficulty functioning without help from others, and feelings of helplessness (Young et al., 2003). Therefore, this schema domain may be implicated in victimization because individuals feel unable to protect themselves from partner violence or unable to end the relationship because they lack confidence in their capacity to function independently. However, the Vulnerability to Harm schema was the only specific schema in this domain significantly correlated to IPV victimization, and only three studies contributed to this meta-analysis ($r = .36$, 95% CI [.10, .58]). The predominant feeling associated with Vulnerability to Harm is fear as it encompasses the expectation that catastrophe could strike at any moment and a perception that "the world is a dangerous place" where "bad things happen". It therefore has some similarities with the Mistrust Abuse schema in that both schemas encompass fear that one's safety is under threat, but Vulnerability to Harm is more global or generalized (e.g., environmental disasters). Senkans et al. (2020) similarly observed that many aggressive relational schemas relate to "dangerous world" beliefs, not just perceptions of self-other. More research is needed to elucidate the role of this schema in IPV.

We found a small correlation between Other-directedness domain scores and IPV victimization ($r = .25$, 95% CI [.14, .35]). Janovsky et al. (2020) similarly found a small association between

interpersonal problems and scores in this domain. Schemas within the Other-directedness domain relate to feeling coerced, suppressing preferences, desires, and opinions to avoid anger, retaliation, or abandonment, and focusing on others' needs at the expense of one's own. Therefore, those who have experienced IPV may be more likely to have challenges related to voicing and upholding appropriate limits and boundaries. This finding is consistent with Young's (2006) theory that individuals with the Subjugation schema are attracted to dominating partners, thus perpetuating their schema, while partner relationships characterized by reciprocity are schema-healing.

Emerging findings on Mistrust Abuse and IPV perpetration consistently showed positive associations (range: r = .22 to .41) but need to be interpreted with caution given that only two studies, contributing five associations, were available. Nonetheless, the evidence thus far suggests that a sense of a lack of safety in relationships is important in understanding risk factors for perpetrators. This provides some justification for the theory that those who are violent may be overcompensating for unmet needs related to relational trust and safety (Young et al., 2003) and aligns with meta-analytic evidence that IPV is associated with attachment insecurity (Spencer et al., 2020). In fact, both perpetrators and victims of IPV may be operating from similar schema activation, but different coping styles. Individuals with complementary schemas may enter into partner relationships together due to schema chemistry: "the tendency to be most attracted to partners who trigger a core schema" (Young et al., 2003, p. 22). Given that partner violence inherently occurs within a couple relationship, and there is evidence of victim-offender overlap (Richards et al., 2017), more theoretical and empirical attention is needed on the dynamic dyadic processes involved in IPV. This is consistent with recent calls for IPV be conceptualized in terms of how cognitions influence moment-to-moment interactions between perpetrators and victims (Senkans et al., 2020).

4.1 | Clinical implications

The findings of this review can inform approaches to minimizing and preventing violence in intimate relationships and the associated intergenerational trauma (Cannon et al., 2009; Gay et al., 2013). The findings provide clinicians with preliminary support for the conceptualization that those who perpetrate violence may be overcompensating for a lack of relational safety and suggest areas for exploration and intervention. This review also suggests that the ideas of schema chemistry and schema perpetuation may be helpful areas to explore with both victims and perpetrators of IPV. The cognitive bias within the Mistrust Abuse schema may both create a sense of threat in intimate relationships and perpetuate the schema by having a perpetrator create a threatening environment (Young et al., 2003). This also suggests a potential preventative approach that can empower survivors to be alert to ontogenetic factors that put them at risk and provide a powerful therapeutic approach to addressing distress triggered in intimate relationships for both survivors and perpetrators.

Schema therapy has been shown to modify schemas (Nordahl et al., 2005), and is effective in treating individuals with personality disorders (e.g., Farrell et al., 2009), and chronic mental illness (Bakos et al., 2015). Although not yet examined empirically, it is possible that schema modification in IPV victims and perpetrators could be effective in reducing partner violence. By using therapy to address and alter schemas in the relevant domains, specifically the Mistrust Abuse and Vulnerability to Harm schemas, clinicians can provide vital tools to reducing the impact of those schemas resulting in adult IPV and intergenerational harm (Gay et al., 2013). Future research could seek to investigate whether Schema Therapy focused on enhancing an individual's capacity to honour their emotional needs for stability, safety, and healthy expression of needs and boundaries is effective in reducing or addressing partner violence. Preliminary evidence suggests that the experiential aspects of Schema Therapy, such as imagery rescripting, can facilitate a couples' sense of closeness (e.g., Roediger et al., 2020). However, individual work, rather than couples therapy, may be more appropriate when there is risk of violence.

Results obtained with previously "difficult to treat" populations, such as individuals with forensic issues (Bernstein et al., 2019), provide some justification for utilizing Schema Therapy techniques (Young et al., 2003) to reduce early maladaptive schemas and, subsequently, IPV perpetration. As evidence of the role of schemas in IPV grows, this may open avenues for prevention and intervention programmes for violent behaviour.

4.2 | Limitations

The results need to be interpreted in the context of several limitations. An obvious limitation is the small number of available studies and their reliance on cross-sectional designs. It is possible that relevant studies published in theses and dissertations were omitted, as we restricted inclusion to peer-reviewed journal articles indexed in academic databases. Given our reliance on a small pool of correlational studies, the temporal order of early maladaptive schemas resulting in IPV victimization or perpetration could not be established. The issue of "temporal ambiguity" has presented challenges when describing the risk factors associated with IPV victimization (Friedman & Loue, 2007; Khalifeh & Dean, 2010) and perpetration (Senkans et al., 2020). Senkans et al. (2020). observed that cognitive-affective factors can be predictors, correlates, and outcomes of partner violence, as cognitions can represent "excuse-making" or "post-hoc justifications." Although schemas are conceptualized as trait-like, they are elaborated upon over time (Young et al., 2003), and thus, experiences of violence and abuse within a partner relationship may strengthen schemas. Furthermore, there is some overlap between some IPV measure items and items in the YSQ (e.g., "I feel that I cannot let my guard down in the presence of other people, or else they will intentionally hurt me"). Therefore, in the absence of longitudinal studies, the directionality of the relationship remains unclear.

The small number of studies may have contributed to the high heterogeneity in some analyses and may have weakened some of

the present findings. However, there were too few studies to complete subgroup analyses to explore gender and other possible moderators. Most studies on victimization recruited women, while most studies on perpetration recruited men. Investigating each type of IPV in both men and women is required, as is exploring IPV and schemas in non-heterosexual populations. Similarly, the different sample types (community and forensic/clinical samples) were grouped into single analyses, and it was not possible to investigate sample type as a moderator. Although there was little heterogeneity in the outcome measure (seven of nine studies used the revised version of the CTS), the CTS has been critiqued for not assessing coercion and includes acts that may be self-defensive (Taft et al., 2001). Furthermore, few studies differentiated between types of violence (e.g., physical, sexual, or psychological). Although forms of violence often co-occur (Sullivan et al., 2012), isolating how IPV subtypes are correlated to schemas could have theoretical and clinical implications (Cascardi et al., 2020).

Another methodological issue is that studies in this area have focused on schema domains rather than examining specific schemas. Schema domain scores lack specificity. For example, elevated scores in the Disconnection Rejection and Impaired Autonomy and Competence domains are evident in a range of clinical presentations (Yalcin et al., 2020). In addition, Janovsky et al. (2020) observed that high schema domain scores can result from the accumulation of lower scores, without the individual necessarily rating any of the specific schemas highly. Finally, there is increasing support for a four-factor, rather than five-factor, structure for schema domains (Bach et al., 2018; Yalcin et al., 2020). Given the recency of these factor analytic findings this domain structure has not yet been used in studies on IPV. It is recommended that future studies investigate individual schemas, rather than restricting their analyses to domain scores.

4.3 | Conclusion

In conclusion, the findings from this systematic review and meta-analysis indicate emerging support for the association between early maladaptive schemas and IPV victimization and perpetration. The evidence thus far supports the contention that early maladaptive schemas relating to the expectation that needs for love and safety will not be met, the suppression of needs, and doubt about one's capacity to function and succeed in life are associated with increased risk of partner violence. Distrust of others' intentions was implicated in both perpetration and victimization. However, the evidence base was small and correlational. Longitudinal studies are required to evaluate these etiological hypotheses and whether the risk of IPV can be mitigated by targeting these schemas in therapy.

CONFLICT OF INTEREST

AUTHOR CONTRIBUTIONS

Pam Pilkington had the idea for the article and performed the literature search and meta-analyses. All authors contributed to the design of the review (e.g., inclusion and exclusion criteria). Data extraction was completed by Clare Noonan and Pam Pilkington. The first draft of the manuscript was written by Pam Pilkington and Ruth Holt. All authors contributed to critically revising drafts and read and approved the final manuscript.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analysed in this study.

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