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The effectiveness of interventions to prevent recidivism in perpetrators of intimate partner violence: A systematic review and meta-analysis

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Abstract

Background: Previous reviews of interventions to prevent recidivistic intimate partner violence (IPV) have cited minimal benefits and have been critical of interventions adopting a 'one-size-fits-all' approach to a heterogenous category of offenders. The present systematic review and meta-analysis assesses evidence for interventions situated in a risk-need-responsivity framework, in comparison with the more traditional 'one-size-fits-all' intervention approach. **Method:** Six databases (PsycINFO, Web of Science, PubMed, EMBASE, SCOPUS, PILOTS) were searched for studies examining effectiveness of IPV interventions. **Results:** Thirty-one studies met the inclusion criteria. Studies were analysed separately depending on whether they compared two treatments (n = 17) or used a no-treatment control group (n = 14). In the meta-analysis, overall effect sizes were *OR* = 0.52, 95% *CI* [0.35 – 0.78] for interventions with follow-up of ≤ one year ($p < .001$) and OR = .60, 95% *CI* [0.46 – 0.78] for interventions with follow-up between one and two years ($p < .001$). The pooled effects from the studies using follow-up of greater than two years did not reach statistical significance. Subgroup analyses suggested that effect sizes differed across treatment types, with risk-need-responsivity treatments performing well against other modalities. **Conclusions:** Risk-need-responsivity treatments showed promise in the short-to-medium term, but the challenge of sustaining effects into the longer term remains.

Keywords: intimate partner violence; domestic violence; partner abuse; batterer intervention; gender-based violence; violent recidivism

Introduction

Intimate partner violence (IPV) is defined as physical, sexual, psychological or economic abuse perpetrated against a current or former partner (Tavares and Wodon, 2018). The consequences of IPV are serious and wide-ranging, including profound disruption to victims' lives socially and economically, chronic and debilitating physical and mental health sequelae and, in some cases, death (Campbell, 2002; Ellsberg et al., 2008). Because of a tendency for surveys to use unreliable measures or to neglect to survey men (Walby et al., 2017), there are few reliable estimates of the prevalence of IPV across the sexes. However, epidemiological research (*n* = 16,000; Tjaden & Thoennes, 2000) surveying both women and men suggests that women are disproportionately victimised at a rate of about 3:1, with 7.3% of men and 21.7% of women reporting any lifetime IPV. Besides arrest and punitive sanctions such as incarceration, criminal justice responses to the problem now also typically include a rehabilitative element, such as therapeutic and/or psychoeducational interventions for perpetrators (Crowley, 2017).

IPV intervention programmes differ from intervention programmes for more indiscriminate violence in most jurisdictions. Overall, interventions for physically violent behaviour are founded on a less-developed theoretical and empirical basis than programmes for other types of crime, such as sex offending (Gilbert and Daffern, 2010). This is particularly true of IPV intervention, the beginnings of which date back to the 1970s, growing out of the feminist movement of that decade (Radatz and Wright, 2016). IPV intervention developing from a branch of political activism in this way has resulted in a body of research that has often been somewhat fragmented by ideological disputes (Banks, Kini and Babcock, 2013). For example, some theorists have been highly critical of the feminist, so-called Duluth treatment model, whereas others disagree with attending to psychological or individual level factors, arguing that this shifts responsibility away from the perpetrator (e.g. Dutton & Corvo, 2006).

In general, the IPV intervention effectiveness debate thus far has primarily focused on the two most common interventions: the Duluth-style approach (Pence and Paymar, 1993) and cognitive behavioural therapy (CBT; Beck, 1976). Broadly, Duluth-style interventions take a psychoeducational approach, attending to gender dynamics of power and control in relationships. CBT interventions, on the other hand, tend to focus more on skill-building and challenging dysfunctional thoughts and behaviours. Both interventions are normally carried out in groups, enabling perpetrators to observe, challenge and learn from their peers (Saunders, 2008). However, the Duluth vs CBT dichotomy has become less meaningful over time, with the two approaches 'borrowing' from one another, to the extent that they are now often indistinguishable (Babcock, Green and Robie, 2004).

Soon after their inception, the effectiveness of IPV intervention programmes in preventing recidivistic violence became subject to criticism (e.g. Rosenfeld, 1992). Some claimed that the programmes are no more effective in preventing recidivism than arrest alone (Stover, Meadows and Kaufman, 2009), others suggested that some programmes even produced a small negative effect (Feder and Wilson, 2005). Still others disagreed, countering that existing interventions were working well (Davis and Taylor, 1999; Gondolf, 2011). A widely cited meta-analysis (Babcock, Green and Robie, 2004) concluded that interventions do produce small positive effects on recidivism that equates approximately to a 5% reduction in offending. Although this is not an insignificant reduction, comparable to other types of intervention where the outcome of interest is abstinence (Babcock, Green and Robie, 2004), this figure nonetheless indicated potential for improvement in IPV interventions. There are some indications that better tailoring of interventions may produce superior results (e.g. Saunders, 1996) through attending more closely to known risk factors for recidivistic violence, such as anger and hostility (Birkley and Eckhardt, 2015) or trauma history (Siegel, 2013; LaMotte and Taft, 2017). Other proposals for newer directions for IPV

interventions include tailoring intervention to offending patterns (Saunders, 2008; Arias et al., 2013), personality styles (Stover, Meadows and Kaufman, 2009) or readiness to change (Babcock et al., 2016; Daniels and Murphy, 1997; Alexander and Morris, 2008).

One method of tailoring intervention formats is delivery of interventions according to the risk-need-responsivity (RNR) framework (Andrews & Bonta, 2010). The RNR framework provides principles for organising the delivery of forensic intervention. In the RNR model, the risk principle requires targeting treatment intensity based on an individual's risk, whereby the higher risk perpetrators receive the highest-intensity treatment. The RNR model focuses on eight central risk factors that have been empirically associated with general criminal offending. These are: 1) history of antisocial behaviour, 2) antisocial personality pattern, 3) antisocial cognition, 4) antisocial associates, 5) family/marital circumstances, 6) school/work, 7) leisure/recreation problems and 8) substance abuse (pp. 58-60, Andrews & Bonta, 2010). The 'need' principle entails attending to what are termed 'criminogenic needs' which are needs that the perpetrator presents with that are potentially related to the maintenance of their offending behaviours. Finally, the 'responsivity' principle necessitates taking factors into account that may impact an individual's adherence to treatment, such as their level of motivation, abilities, learning styles etc. The extent to which principles of risk, need and responsivity have been adhered to has been shown to be an important moderator of treatment outcomes for correctional programmes generally (Levesque et al., 2012).

The aims of the present systematic review and meta-analysis, therefore, are: 1) to comprehensively describe the types of interventions being used to prevent IPV recidivism from the last decade and 2) to provide a quantitative analysis of the effectiveness of those programmes, comparing the effectiveness of RNR-style treatments to more traditional 'one-size-fits-all' formats. There have been some reviews of IPV interventions published in recent years (e.g. Arias et al., 2013; Karakurt et al., 2019; Cheng et al., 2019). These reviews tend to either group all treatments

together (e.g. Cheng et al., 2019) or categorise them according to whether they adhere to Duluth, CBT, or 'other' treatment types (e.g. Arias et al., 2013). In their analysis of controlled studies, each of these reviews have found that evidence for treatment effectiveness is inconclusive. However, in 2004, Babcock et al. noted that distinctions between treatments were becoming increasingly unclear, particularly between Duluth and CBT. The present study presents a novel means of grouping studies according to their degree of adherence to RNR principles. RNR treatment design is at the forefront of evidence in forensic intervention, but the originators of the approach have expressed the view that far less research has focused on identifying elements of effective treatment for IPV perpetrators compared with other types of offending (Andrews & Bonta, 2010). Thus, it is not clear whether application of the approach has potential to significantly enhance IPV intervention.

Method

Eligibility criteria

The initial search included all studies assessing the effectiveness of an intervention for IPV perpetrators to prevent recidivistic violence published in the last ten years. The ten-year period was specified since the focus of the present systematic review is on examining how the newer, more individualised intervention formats have been performing in comparison with more traditional 'one-size-fits-all' approaches in the years since the RNR modality has gained prominence. However, the search was updated twice and hence encompasses a 12-year period. Exclusion criteria were applied to omit any study that 1) used self-reported violence as the only outcome measure; 2) included no control or an inadequate control condition, such as comparing treatment drop-outs with completers; 3) did not use either an experimental or rigorous quasi-experimental design; 4) were conducted on samples not comprised solely of perpetrators e.g. 'at-risk populations' or under-18s; 5) were not

peer-reviewed English language studies or official evaluations; 6) used any outcome other than recidivism, thereby excluding studies measuring only, for example, therapist-assessed level of risk or scales measuring concepts such as 'readiness to change'.

The criterion excluding self-report as an outcome measure was applied due to validity concerns; self-report is likely to provide a distorted metric of success, influenced by perpetrators' tendencies towards denial and minimisation of their offences (e.g. Craig, 2003; Henning & Holdford, 2006; Babcock, Robie and Green, 2004; Gibbons, Collins & Reid, 2011). Quasi-experimental designs were included due to the difficulty associated with achieving true randomisation in forensic contexts. Active treatment conditions were treated as acceptable control conditions, however, those studies using active treatment conditions were analysed separately to those utilising a no-treatment control.

Literature search

The systematic review was registered with PROSPERO (Reg. ID: CRD42018098580). A systematic search of PsycINFO, Web of Science, PubMed, EMBASE, SCOPUS, PILOTS was conducted in June 2018 and updated in May 2019, and again in October 2020. The search included titles/abstracts and subjects or keywords, depending on the search options of each database. The search terms domestic violence, domestic abuse, partner violence, partner abuse, partner aggression, spouse abuse, batterer, family violence, domestic assault, dating violence and dating abuse were cross-referenced with the terms treatment, intervention, therapy, psychotherapy, Duluth, psychoeducation, and with the terms evaluation, effectiveness, evidence, efficacy, outcome, trial, RCT and experiment. The language requirement was not included in the search criteria but was applied during the article screening process.

The UK National Offender Management System (NOMS) was contacted to request any potentially unpublished research on the state-accredited programme Building Better Relationships (BBR) or other programmes. One included study was obtained in this way (Bloomfield and Dixon, 2015), but that study pertained to IDAP and the Community Domestic Violence Programme (CDVP), and not BBR. Corresponding authors of included studies were contacted to enquire about other recent publications in the area, or in relation to studies that could not be accessed via the researchers' university databases. Three studies were obtained in this way (Taft et al., 2016; Musser et al., 2008; Morrel et al., 2003), two of which were included in the final analysis (Musser et al., 2008; Taft et al., 2016). The third (Morrel et al., 2003) was excluded on the basis that it was conducted outside the specified timeframe for inclusion. Finally, the reference lists of included studies and other reviews of IPV interventions were studied to identify any additional articles. Three further articles were identified in this way (Pitts et al., 2009; Stover et al., 2011; Schumacher et al., 2011).

The database search returned 23,640 studies, which was reduced to 16,033 when duplicates were removed and additional studies obtained by other means were included. The references of these studies were first transferred to Endnote, and then exported to the systematic review web application Rayyan. Studies were first screened by titles and abstracts. One hundred and sixty-four studies were screened in full-text to assess their eligibility for inclusion. Rating was carried out independently by the first and second author. A total of thirty-one studies met the inclusion criteria. See Fig. 1 for further detail of the screening process.

>insert Fig.1 PRISMA diagram<

Quality assessment

The quality assessment of each article was carried out first, to minimise bias when recording other design and results-related information. This is presented in *Table 1*. The quality criteria were based on the principles of the Cochrane Risk of Bias Tool (Higgins et al., 2011), but were adapted to capture important design elements for rigorous studies in the field of IPV intervention. Although randomisation can be difficult to achieve in forensic contexts, we maintained this as a quality criterion, given that systematic bias relating to treatment allocation effects have been cited as a frequently confounding factor in IPV intervention studies (e.g. Wathen & MacMillan, 2003). Another persistent challenge that has stymied the progress of developing the evidence base for IPV interventions is a lack of precise descriptions of programme content in the relevant articles (e.g. Andrews & Bonta, 2010). Therefore, this was used as a quality criterion for the present study. The criteria on analysis and reporting of results relate to the Cochrane areas of concern of attrition bias and reporting bias. Based on the specific nature of the outcome under investigation, we specified that the inclusion of collateral reports of violence from partners in addition to official data is a useful way to enhance validity, and so we introduced this as a quality criterion. In forensic interventions, however, blinding is not usually a relevant aspect of design, and so this criterion was excluded.

>Insert Quality Table (Table 1)<

Narrative synthesis

A narrative synthesis of all 31 included studies was carried out to provide a descriptive outline of all interventions being rigorously tested in recent years. The studies included in the narrative synthesis only are presented in *Table 2*. These are the studies that compared two active treatments. Such studies were excluded from the meta-analysis of weighted effect sizes since it is not possible to estimate the true effect size in the absence of a no-treatment control condition; effect

sizes in such cases would only represent the difference between alternative treatments (Babcock, Green and Robie, 2004). All studies were analysed based on their adherence to RNR-principles. For this analysis, a study was allocated one 'point' if it reported that the intensity of treatment was based on assessment of perpetrators' level of risk, another point was allocated if the study described any process of attending to empirically-derived criminogenic needs, and a third point allocated if there was some description of efforts to enhance treatment responsivity. The total possible score of 3 equates to the study being categorised as having 'full adherence' to RNR principles. Scores of 1 or 2 resulted in studies being categorised as being 'partially adherent', while a score of 0 resulted in the study being categorised as having 'no adherence' to RNR principles.

>*Insert Table 2*<

Meta-analysis

Following narrative synthesis of all included studies, those studies utilising a no-treatment control group were analysed quantitatively. These studies are presented in *Table 3*. The meta-analysis was carried out using the Cochrane Review Manager software, RevMan (Version 5; 2014). Effect sizes were calculated using odds ratios. Odds ratios were selected as the unit of effect size because they are particularly suited to measuring dichotomous outcomes such as 'recidivism' vs 'no recidivism' (Wilson, 2011). An odds ratio of $OR = 1$ indicates equivalent odds of success in each group, i.e. no effect of treatment.

>*Insert Table 3*<

Prior to the analyses of effect sizes, a random effects model was specified. The random effects model is more conservative than a fixed effects model, but due to apparent variability between included studies, it was judged that the underlying populations could not naturally be assumed to be homogenous. However, efforts were made to ensure fair comparison between studies

with respect to the key component of follow-up time. Therefore, for the meta-analysis, studies were grouped according to their follow-up periods such that the first group included studies with follow-up periods of ≤1 year, the second group included those with follow-up of 13-24 months, and the third included those with follow-up longer than 2 years.

In studies that measured recidivism using official data, such as police-recorded re-arrest or re-conviction, the least conservative measure was used (e.g. re-arrest instead of re-conviction), due to under-reporting bias and the documented difficulty of achieving conviction in IPV cases (Garcia-Moreno, 2001). If statistics were provided for general re-arrests separate to IPV re-arrests, the statistics specific to IPV were used.

Results

Narrative synthesis

A full description of all included studies is provided in the results tables (*Tables 2* and *3*). The following text provides a narrative synthesis of all included studies, before outlining the analysis of weighted effect sizes in the meta-analysis.

Thirty-one studies met the inclusion criteria for this systematic review, based on a total of 19,309 participants (M = 622.87; range = 23 - 6,695; SD = 1310.02). Seventeen of these studies compared two or more active treatment conditions (studies 1-17) and the remainder compared a treatment group to no-treatment controls (studies 18-31). Most samples were male-only (n = 28) apart from four; one study included 39.6% women (n = 61; study 2) where women were provided with a modified intervention format. The remainder of studies with women participants tested couples' interventions (studies 16, 20 and 26). The total proportion of women (n = 474) represents 2.5% of total participants.

Sixteen studies employed a randomised experimental design (studies 1-3, 7,8, 10-16, 20, 24, 26, 31). All the non-randomised studies employed some means of matching groups, comparing for similarities or controlling for baseline characteristics. Among those studies using a no-treatment control group, no-treatment conditions included individuals eligible or referred for the same treatment (e.g. studies 19, 21, 25, 27, 28, 30), standard community supervision or monitoring (e.g. studies 18 and 24), outward referral to other resources or provision of information for other services (e.g. studies 20, 26, 31) or no contact at all (e.g. study 29). Because of the nature of these control conditions therefore, it was often not possible to determine whether controls had had other treatments during the study period. Rather, studies within this group are characterised by the absence of an intervention provided systematically to all control participants.

Study attrition is less of a problem where official data is the outcome measure since there is no reliance on participants to provide follow-up data. However, included studies relying on self- and partner reports were significantly affected by this problem. In one study (study 1), drop-out of partner informants reached 83%. Follow up periods ranged from post-treatment only (study 5) to 5 years (studies 17 and 23). In terms of treatment dropout, the rate of attrition for most studies was around 20-35%. However, some studies were affected by notably high rates (50%+) of treatment dropout (e.g. studies 6, and 28).

Most studies examined the effectiveness of group-based interventions, but some assessed individualised or couples' formats, or some combination of group and individual treatment. Assessing which treatment type is being studied in each article is sometimes problematic. Most included studies adopted a combination of theoretical and therapeutic approaches, rather than a 'pure' delivery of only one modality. Several investigated group interventions involving elements of Duluth and/or CBT (e.g. studies 2, 5, 8, 10, 11, 13, 18, 19, 21-26). Other combinations included various mixtures of Duluth, CBT, Stages of Change (SoC) and motivational interviewing. There

was one study examining mindfulness (study 15), emotion-focused therapy (study 27) and Acceptance and Commitment Therapy (ACT; study 17). Most included studies assessed community or clinic-based treatment, apart from two (studies 23 and 27) which were prison-based. Most studies tailored or adapted treatment to attend to risk level or specific criminogenic needs, or described adapting the delivery style to individual learning styles, abilities, motivations etc. Based on the descriptions of the interventions as described in the article texts, it appeared that just four studies applied a solely 'one-size-fits-all' approach (studies 5, 10, 24 and 25).

Most programmes screened potential participants for suitability, and eligibility criteria varied substantially across studies. Ten studies described some form of risk assessment as an entry criterion (studies 2, 16, 18-23, 29, 30), usually requiring an assessment of medium to high-risk of re-offending for eligibility, apart from two of the couples' interventions which screened to include only lower-risk perpetrators (studies 16 and 20). In one of the couples' interventions (study 20), the authors referred to a procedure involving screening for various relationship dynamics as well as type and severity of violence. Two studies included more than one treatment intensity, with participants allocated to these on the basis of pre-entry risk (studies 2 and 30). Several studies excluded individuals with serious psychiatric disorders, particularly psychosis, as well as suicidality, ongoing substance dependence issues and cognitive impairment (e.g. studies 7, 9, 10, 13, 14, 26 and 31). For the most part, little reason was given for the exclusion of such individuals, but it is possible that this practice may bias the results in favour of treatment by selecting for a lower-risk sample, or at least for samples with less complex needs.

Some programmes (e.g. study 22) did not accept perpetrators of sexual violence, while others (studies 3, 11, 23, 26, 27) specified that they did. Some required participants to be in a relationship at intake (studies 8, 11, 12, 16, 20); these should be compared with caution to those that do not apply such a stipulation, since the risk of recidivism would likely be higher for those in a

relationship. Eleven studies included in this systematic review utilised a version of the Conflict Tactics Scale (CTS; Straus et al., 1996) to measure recidivistic violence (studies 1, 4-6, 8-10, 13, 16, 20, 31).

Comparing two active treatments

Among those studies that compared two interventions (n = 17), in a few cases there were treatments which out-performed others with significant follow-up periods. For example, study 2 demonstrated superior results of a CBT intervention over a Duluth model with an average follow-up time of approximately three years. However, the Duluth condition in study 2 was also affected by a high rate of dropout (47.6%). Study 17 demonstrated a significantly better performance of a treatment entitled Achieving Change through Values-Based Behaviour (ACTV; Zarling, Bannon and Berta, 2019), a therapy based on Acceptance and Commitment Therapy (ACT), compared with Duluth/CBT at five-year follow-up. The ACTV study was a follow-up on a previously published evaluation of the ACTV programme (Zarling, Bannon & Berta, 2019).

For the other tests comparing two active treatments, interpretation of the evidence was hindered by certain design features that could potentially introduce bias into the results. For example, some studies provided very limited follow-up data, precluding analysis of whether any immediate effects could be sustained (e.g. studies 5 and 13). Study 8 produced a significant effect, which was contrary to the authors' expectations, finding that group CBT produced effects equal to or greater than an individual CBT intervention, up to 1-year follow-up.

No significant differences in recidivism between groups were found with respect to the newer or 'alternative' approaches of a mindfulness intervention entitled Mind-Body Bridging (study 15), nor was there any difference between groups in relation to a head-to-head test of mindfulness-based stress reduction and group CBT (study 10). There was no significant effect of case

management delivered with a gender-based cognitive behavioural programme (study 4) or of the addition of a brief motivational enhancement intervention with treatment as usual (study 3) or delivering motivational enhancement interventions with CBT treatment (studies 7 and 9). Two studies (studies 12 and 14) examined the effectiveness of motivational interviewing for perpetrators with alcohol problems and these too found no significant difference between the groups in relation to recidivism. Aside from these tests of motivational enhancement and motivational interviewing techniques, some other approaches originating from the Transtheoretical Model of Behaviour Change (TTM; Prochaska and DiClemente, 1983) were also applied. One such programme was entitled 'Journey to Change' (study 6). The addition of 'Journey to Change' into an existing psychoeducation programme produced a reduction in recidivistic partner-reported violence. However, this reduction was based on analysis of only 27% of partners and did not translate into any significant difference in police involvement between the groups. Similarly, another 'Stages of Change' approach (study 1), when compared with a 'CBT gender re-education' programme, found a reduction in partner reported aggression, but with only 17% of partners surveyed. Study 16 did find a significant reduction in male perpetrated physical aggression at 9-month follow-up using a motivational interviewing intervention for dating couples, but this sample was pre-selected to be low-risk.

Meta-analysis of studies with control groups

In terms of individual effect sizes, the flexible, RNR-informed programmes demonstrated effect sizes suggesting potential reductions in recidivism of 65-79% at ≤ 1-year follow up (see *Figure 2* for forest plot), whereas those which did not adhere to RNR principles or only partially adhered to the principles (studies 21, 24, 26, 27, 31) indicated no effect. The pooled effect size for studies with follow-up of 1 year or less indicated a positive overall effect of treatment *OR* 0.52 95% *CI* 0.35 - 0.78. This effect was significantly different from zero (Z=3.15, p<0.001). I^2 was equal to

55%, indicating some probability of heterogeneity between the studies in this group. Subgroup analyses were carried out to assess whether outcomes were influenced by the degree to which the treatments adhered to principles of RNR (fully, partially or not at all). Subgroup analyses suggested that the results did differ according to the type of treatment as defined in this way χ^2 =13.48, *df*=2 (*p*<0.001).

>*Insert Figure 2*<

In the medium follow-up group (13-24 months, see *Figure 3*), the two RNR-adhering intervention formats produced effects of *OR* = 0.36 (0.18 – 0.72) and *OR* = 0.19 (0.06 – 0.60) respectively. The New South Wales DAP (study 18), and study 19, the UK IDAP and Community Domestic Violence Programme (CDVP), also emerged as effective in this group, producing identical effect sizes of *OR* 0.58, with a 95% *CI* of (0.48-0.71) and (0.52-0.65) respectively. Studies 18 and 19 were both rated as partially adherent to RNR principles. Overall, the studies with follow-up of 13-24 months also demonstrated a positive effect of treatment, *OR* 0.60 95% *CI* [0.46 – 0.78]. This effect was significant (*Z*=8.83, *p*<0.001).

>*Insert Figure 3*<

In the longer follow-up group (see *Figure 4*) no treatment demonstrated effectiveness, with all confidence intervals including 1, indicating the possibility of no effect. The overall pooled effect size for this group was *OR* 0.75, 95% *CI* [0.45 – 1.26], *Z* = 1.09 (*p* = 0.28). These studies included a test of the CBT/psychoeducation-based IDAP (study 22) with partial adherence to RNR principles, the Relating Without Violence intervention (study 27) and the RNR-style ‘care package’ intervention described in study 23.

The available data for the couples’ intervention described in study 20 was insufficient to determine an effect size; the data reported in that case was at the level of the couple, not the

individual, and based on Likert-style CTS scores. Additionally, information pertaining to the follow-up period for the intervention outlined in study 28 was unavailable, and so although an effect size was calculated for this study (*OR* = 0.08, 95% *CI* = 0.03-0.19), it is not included in the forest plots.

>Insert Figure 4<

Discussion

The present systematic review aimed to describe the types of interventions being used to prevent IPV recidivism from the last decade and to provide a quantitative analysis of the effectiveness of those programmes. The analysis included a focus on comparing interventions based on their degree of adherence to RNR principles to broadly examine the assumption that treatments individualised in this manner perform better than 'one-size-fits-all' standard group intervention alone. The search returned 31 relevant studies, and these were further divided into those testing a treatment against another intervention (*n* = 17), and those utilising a no-treatment control condition (*n* = 14).

From the studies comparing two active treatments, the Acceptance and Commitment Therapy (ACT)-based approach (ACTV) demonstrated significantly fewer new state-level IPV charges up to 5-year follow-up. The ACTV study was a follow-up to an earlier evaluation that showed the treatment to outperform the standard treatment up to one year (Zarling, Bannon & Berta, 2019). Study 2 demonstrated fewer re-convictions at three-year follow-up in participants who had undergone CBT treatment, compared with participants who undertook a Duluth-style treatment. Studies 4, 10, 14 and 15 also used significant follow-up (12+ months), but none found significant results in relation to an objective measure of IPV recidivism. Studies 1 and 6 used follow-up to one year, and did find significant change in partner-reported violence, but these outcomes were based on

low response rates from partners (17 and 27% respectively). Study 8 utilised a one-year follow-up and found significant results, albeit not in the expected direction. In the context of these results, the findings in relation to the ACTV intervention are certainly promising. Also promising were the results from the three-year follow-up study (study 2; Cotti et al., 2019) that showed superior results of a CBT programme over a Duluth intervention. However, the sample in study 2 was relatively small, and the authors note in the limitations that the lack of variety in therapists delivering each intervention may have acted as a confound (i.e. some of the benefit may be attributable to therapist skill level rather than intervention content). Further research will be useful to further examine this potential effect. Both the ACTV intervention and the interventions described in study 2 were categorised as partially adhering to RNR principles, as they described some means of either adapting treatment intensity to offender risk levels, attending to specific criminogenic needs, or enhancing treatment responsivity. In the conclusions of the ACTV article, Zarling et al. (2020) identify the application of the RNR model as a future direction for the enhancement of IPV intervention.

The meta-analysis demonstrates interesting results in relation to interventions rated as applying all three principles of RNR. Subgroup analyses conducted on the short follow-up group (one year or less) produced a significant pooled effect on recidivism. Those studies rated as partially adhering to RNR principles in the one-year follow-up group also produced a significant pooled effect, although no single study taken alone in that subgroup demonstrated clear effectiveness. A similar pattern is observed in the medium follow-up group, although with studies 18 and 19 demonstrating individually positive effects.

The creators of the RNR model have suggested that CBT-style programmes are the preferred option for integration within this framework (Andrews & Bonta, 2010), although they have acknowledged that the evidence for IPV intervention is under-developed and hampered by

methodological flaws including those expanded upon earlier in the present article. Additionally, it should be acknowledged that the flexibility of the RNR approach can be construed as both a strength and a weakness. The problem identified by Andrews and Bonta (2010) whereby it can be difficult to determine exactly what treatments are being delivered within RNR frameworks still stands, based on the present findings. Without more detailed information about exactly how risk should be measured, which criminogenic needs should be targeted in IPV offenders, and how treatment responsivity should be improved, it will be difficult for other studies to reliably replicate these results.

More evidence in this area with respect to how to tailor treatments to offenders presenting with different degrees of risk and with specific criminogenic and responsivity needs will be important in the coming years. Specifically, a common responsivity factor addressed in the present review was offender motivation. As already described, several studies employed various styles of motivational enhancement interventions without producing reliable effects on recidivism. This appears to suggest a need to investigate alternative strategies for enhancing responsivity in IPV offenders. However, some promising lines of inquiry in relation to treatment components that may be usefully integrated into RNR treatments for IPV offenders are outlined in the present systematic review. For example, there are some indications that treatments focused on substance abuse may produce additional benefits (e.g. Satyanarayana et al., 2016). There is also a wider body of evidence which did not meet the inclusion criteria for the present review, but that is well-designed and provides guidance on attending to IPV-related risk factors, including substance abuse (e.g. Fals-Stewart et al., 2002; Easton, Crane & Mandel, 2018).

The findings of our meta-analysis suggest modest effects for some of the more traditional ‘one-size-fits-all’ style treatments when taken individually, although most treatments did report taking at least some measures to enhance treatment responsivity and/or attend to individual risk and

need. The results in relation to the more standard traditional treatment modalities are broadly consistent with previous findings in relation to traditional IPV interventions which have concluded either small but significant effects (e.g. Babcock, Green and Robie, 2004; Murphy and Ting, 2010) or no discernible effect (Stover, Meadows and Kaufman, 2008). The mixed results for more traditional programmes in the present review appears to indicate scope for improvement to such interventions, and it appears that the RNR model may provide a useful framework for doing so.

However, despite the apparent success of RNR interventions in the present analysis, it should be noted that the only RNR-adhering treatment included in the long follow-up group did not demonstrate a significant effect past this point. RNR interventions encourage focus on 'dynamic' risk factors, or those that are thought to be modifiable (Andrews, Bonta and Wormith, 2006). However, the field of criminal psychology, and particularly IPV, continues to evolve to incorporate a more complex interplay of static and dynamic risk factors into its explanatory framework (e.g. Birkley and Eckhardt, 2015). It may be the case that augmenting the RNR framework to incorporate such evidence could have potential to improve the sustainability of its results. However, more research with longer follow-up is needed to reliably examine the current sustainability of effects of the RNR model for IPV, particularly past the two-year mark.

Besides broadening conceptions of risk, there is also potential scope for improvement in the enhancement of treatment responsivity. Developers of the RNR framework have referenced the TTM (Prochaska and DiClemente, 1983) as a means of monitoring offender motivation during intervention (Andrews, Bonta and Wormith, 2011). However, the results of the present review suggest that the addition of motivational enhancement techniques to standard treatment is not sufficient to reliably exert an influence on IPV recidivism. Some included studies described other motivational strategies that may warrant future investigation. For example, the ACTV intervention

describes the positioning of the offender's personal values as a positive motivator for behavioural change.

The apparent success of RNR-style interventions in the present review should also be qualified by mention of some issues relating to implementation and design. The promising results of the intervention described in study 23 should be assessed bearing in mind the confounding factor of very high rates of drop-out (approximately 40%), and the fact that participants could be asked to leave the programme due to 'insufficient progress' as deemed by programme staff. This suggests that this sample is likely to be biased towards those who are more highly motivated and potentially lower risk. The three studies described as RNR-based were all quasi-experimental and one of the control groups included some treatment drop-outs (study 30). Indeed, of the four experimental designs in the meta-analysis, one study did not allow for effect sizes to be calculated (study 20), and the others did not demonstrate significant effects of treatment (studies 24, 26 and 31). This suggests, as identified by Babcock, Green and Robie (2004), that more rigorously designed studies are less likely to find effects, due to elements of systematic bias in favour of the intervention that are often present in quasi-experimental designs.

In general, treatment drop-out is a problem that also deserves further consideration, particularly in those interventions with a very high rate. Notably, study 6 (Levesque et al., 2012) recorded a 50% drop-out rate. The study by Levesque et al. (2012) tested an intervention based on TTM (Prochaska and DiClemente, 1983). However, those authors also noted that enrollees were required to pay fees to participate, which may be one factor contributing to the high attrition. Similarly, a study by Taft and colleagues (2016; Study 12) reported a 45% drop-out rate with a trauma-focused intervention. Perhaps it may be the case that interventions requiring offenders to tolerate unpleasant internal experiences are too aversive for some, contributing to especially high rates of attrition in such cases.

Clinical implications

RNR is already recognised as one of the most empirically supported interventions across general criminal recidivism (Banks, Kini and Babcock, 2013), and has been implemented to a significant degree in Canada, the UK, Australia and New Zealand (Ward and Brown, 2004). The findings of the present review and meta-analysis appear to provide support for this approach for IPV, but with potential scope for improvement to promote longer-lasting impacts. RNR is a treatment framework, rather than an intervention *per se*, and as such, requires evidence-based intervention components targeting all relevant risk factors for IPV offending. This necessitates more research on risk factors and criminogenic needs in relation to IPV, an area which is very much under-developed in comparison with general criminality. Intervention studies must also test new methods of enhancing treatment responsivity, particularly in light of the mixed results in relation to motivational enhancement and related techniques identified in the present review.

Limitations

Several limitations to the present review should be noted. Because of different methods of operationalising violent recidivism across studies, it was necessary to compare different measures with varying sensitivity. For example, percentage recidivism in some studies may be based on incidents reported to the police, while others may be based on arrests or convictions. Additionally, some studies used general recidivism, rather than IPV-specific recidivism, as the outcome measure. Although we endeavoured to use IPV-specific outcomes where available, in some instances the available data may have resulted in general and IPV-specific outcomes being compared with one another. The method of categorising treatments according to their adherence to RNR principles, although we endeavoured to do this in the most objective way possible, necessarily included an element of subjectivity. Additionally, because this categorisation was based only on what was

explicitly described in the articles, it is possible that some instances where the treatments in reality may have incorporated elements to enhance responsivity or attendance to risk or criminogenic need, but not described these due to space constraints. Finally, we included only studies which used an objective measure of IPV as the outcome measure, in an effort to enhance the validity of the findings. However, there are also several issues inherent in the use of those measures specified here as 'objective', including a high likelihood of systematic under-reporting associated with official data sources (Walby et al., 2017). It is possible that the inclusion of self-report data may have produced other potentially useful insights.

Conclusions, challenges and future directions

Most studies included in the present systematic review were rated as having 'partial' adherence to RNR principles. This suggests that efforts have been made in the last decade to enhance and adapt treatment to individuals, particularly with respect to targeting criminogenic needs. However, more research is needed to develop evidence in relation to each of the RNR principles relating to IPV. For example, few studies in the present review described clear methods of targeting more intensive treatment towards higher risk offenders. Doing so in an effective and reliable way will require more attention on the area of IPV risk assessment. Although several actuarial and structured clinical tools exist to assess risk of IPV recidivism (e.g. Kropp, Hart & Belfrage, 2005; Campbell, Webster & Glass, 2009), more research is needed to determine how such tools can effectively guide the intensity of IPV treatment delivery (e.g. Stewart, Flight & Slavin-Stewart, 2013).

As well as findings in relation to intervention effectiveness, the present review highlights methodological and design issues that continue to impede interpretation of research in this field. Clarity is still lacking in relation to what constitutes success, or 'desistance' from violent behaviour.

Several studies provided very limited follow-up data. Because victims may feel more empowered to report violence in the shorter term following enrolment of the perpetrator in a programme, (Gondolf, 2001; Lilley-Walker et al., 2018), those studies that provided post-treatment data only, or data from just a few months, are limited in their assessment of treatment success or otherwise.

Additionally, current measurement practice and reliance on the CTS means studies are often unable to measure facets of violence beyond acts alone. This reflects a general problem in the field of a focus on counting abusive acts while failing to measure the impact of those acts and their associated harms (Dobash et al., 1999; Walby et al., 2017). It is suggested that future research should incorporate more reliable measures of violence severity than those available in the CTS, including consideration of the harm caused to the victim, and their safety, wellbeing and autonomy following the enrolment of a violent partner or ex-partner in an intervention programme.

As identified by other reviews (e.g. Smedslund et al., 2006; Akoensi et al., 2013) most of the RCTs on interventions are conducted in the US. This is problematic as there are cultural and other particularities about that context that may have a bearing on interventions and their outcomes. For example, in the US, offenders are usually required to pay for their own treatment (Feder and Wilson, 2005), a potential confound which could affect treatment adherence particularly among economically disadvantaged populations. Additionally, there have been developments at the European level, such as the introduction of the state-accredited BBR programme in the UK, that are still lacking empirical investigation.

In general, there are still very few studies on IPV intervention effectiveness. Only 31 studies from the last twelve years met the inclusion criteria for the present review. The creators of the RNR model have noted that it is “truly astounding” how little research has been dedicated to the investigation of risk factors for partner violence, compared with general crime (p. 463, Andrews &

Bonta, 2010). Although the RNR model shows promise, there is significant work to be done in the coming years to identify the specific components that should be situated within it to exert the maximum impact on IPV recidivism.

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