Interventions to reduce domestic abuse in pregnancy: a qualitative systematic review

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Abstract
Background. Pregnant women are at an increased risk of domestic abuse, with prevalence rates of 5% to 21% during pregnancy and 13% to 21% postnatally. There is a significant threat to the health and wellbeing of the mother and baby that may lead to potential morbidity and mortality. A total of 80% of women in abusive relationships seek help at least once and, on average, seven to eight visits are made to health professionals before disclosure of abuse. Pregnant women are routinely screened for domestic abuse as part of the routine care in the UK, but we do not know what interventions work in reducing abuse in pregnancy. Recent guidelines from NICE (2008) underline the urgent need for evaluation of domestic abuse interventions.

Aim. To assess the effectiveness of interventions to reduce domestic abuse in pregnancy.

Method. The Centre for Reviews and Dissemination (CRD) Systematic reviews: CRD’s guidance for undertaking reviews in health care (CRD, 2008) and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were used to structure the review. Electronic database searches were completed in Medline, EMBASE, CINAHL, Cochrane, ASSIA and PsycINFO from inception until April 2012 and data were extracted that met inclusion/exclusion criteria. All studies were critically appraised by three independent reviewers and the Cochrane ‘Risk of Bias’ methodology was used for assessment.

Results. Five studies met the inclusion criteria. Counselling was found to be significant in reducing domestic abuse in two of the four studies, which used the Dutton’s 1992 empowerment model as the basis for their counselling intervention.

Implications. The strength of evidence for the effectiveness of counselling is promising. Interventions based on mentoring appear to be beneficial. Further research is recommended.

Key words: Domestic abuse, pregnancy, intervention, prevention, midwives, systematic review, evidence-based midwifery

Introduction
Evidence has identified pregnancy as a time of increased risk for domestic abuse (DA) (McWilliams and McKiernan, 1993; Shadigan and Bauer, 2004) either as a trigger or an escalator (Garcia-Moreno et al, 2006). Research by Campbell et al (2000) reports that DA was estimated to occur in 5% to 21% of pre-birth cases and in 13% to 21% of post-birth cases. Of those pregnant women who died in the UK between 2006 and 2008, 13% self-reported experiencing domestic abuse (Lewis, 2011).

Despite such prevalence, it is difficult to define DA because of the lack of agreement around the basic features of domestic violence (Dobash and Dobash, 1992). Therefore, the definition for this review is: ‘Threatening behaviour, violence or abuse (psychological, physical, verbal, sexual, financial or emotional) inflicted on one person by another where they are, or have been, intimate partners or family members, irrespective of gender or sexual orientation’ (DHSSPS, 2005: 10).

Abuse poses a significant threat psychologically (O’Campo et al, 2006) and physically (Coker et al, 2000) to both women and the unborn child (El Kady et al, 2005). Negative health outcomes of DA for women include physical injuries, increased rates of chronic disease and poor mental health (Campbell et al, 2000; Gottlieb, 2008). Specific outcomes, such as increased susceptibility to infections and failure to gain weight, are prevalent. Risks to the fetus include preterm birth, low birthweight and neonatal death (Coker et al, 2004; Sarkar, 2008).

For the purpose of this review, it is important to define an intervention for DA. The WHO defines an intervention as: ‘An activity or set of activities aimed at modifying a process, course of action or sequence of events in order to change one or several of their consequences such as performance or expected outcomes’ (WHO, 2001: 53).

Rationale
Research within public health has led to important DA policy initiatives at global, national and local levels (WHO, 2010; DH, 2010; DHSSPS, 2005). Each policy recommends health professionals support and respond to DA, as 80% of women in violent relationships may seek help at least once (DH, 2000) and typically make seven to eight visits before disclosure (Harris et al, 2002). As a result, sensitive routine questioning about existing abuse during the antenatal period has been introduced and offers an opportunity for women to get help (Devries et al, 2010).

Routine enquiry has been used to screen for DA since the 1990s. Renker and Tonkin (2006) reported that 97% of the women were not embarrassed or offended by routine enquiry. However, O’Campo et al (2008) found abused women refrain from spontaneous disclosure of DA due to concerns about what might occur afterwards, such as social service involvement, or their partner finding out. Steen et al (2009; 2010) are currently piloting a preventative intervention through antenatal education aimed at reducing the possibility of DA in the antenatal period.

Considerable research has already been undertaken in the area of DA, however NICE (2008) guidelines on antenatal care state:
‘Although there are effective screening tools and screening for domestic violence has been shown to be acceptable to women, there is insufficient evidence on the effectiveness of interventions in improving health outcomes for women who have been identified. Therefore, evaluation of interventions for domestic violence is urgently needed’ (NICE, 2008: 118).

Bailey (2010) reported that many healthcare providers do not screen for DA as they are unsure of procedures following disclosure, and O’Reilly et al (2010) have called for further research to provide evidence of the effectiveness of screening and resultant interventions. Clearly, the reaction of healthcare professionals when women disclose their experience can affect their ability to re-establish their life (DH, 2010).

Previous reviews, such as Ramsay et al (2009) have appraised advocacy interventions for DA. But none have focused on interventions for prevention of DA in pregnancy (a protocol has been listed in Cochrane; Jahanfar, 2011). Reviews have either focused on particular study designs or specific interventions. For example, Ramsay et al’s (2005) systematic review included evaluation studies that provided quantitative data only, and O’Reilly et al (2010) focused on screening and interventions for DA in pregnancy. This paper will provide a review of the effectiveness of interventions aiming to reduce DA in pregnant women (reported in the literature before April 2012) and add new knowledge to previous reviews such as Wathen et al (2003).

Method
A systematic review is a reliable way to evaluate evidence on the efficacy and safety of healthcare interventions ( Liberati et al, 2009). However, the structure, process and outcomes need to be clearly communicated (Lagan et al, 2006). The CRD Systematic reviews: CRD’s guidance for undertaking reviews in health care (CRD, 2008) was strictly followed. The PRISMA guidelines ( Liberati et al, 2009) were used to improve the reporting of the review, and the Cochrane handbook for systematic reviews of interventions ( Higgins and Green, 2011) was used as a guide for the risk of bias assessment.

Identifying research evidence
The search strategy focused on identification of all interventions that were tested with women who disclosed DA during pregnancy. An initial scoping search was carried out to identify key words and MeSH headings relevant to DA and pregnancy using the Participants, Interventions, and Comparators elements of PICO. Outcome was not used in case it failed to show relevant studies that did not emphasise the outcome inclusion criteria adequately. These were then used to search Medline (1948-present), EMBASE (1980-present), CINAHL, and the Cochrane Central Library, ASSIA and PsycINFO (1806-present). Key words and search terms included: ‘domestic abuse’, ‘intimate partner violence’, ‘pregnancy’, ‘intervention’, ‘advocacy’, ‘prevention’, ‘power’. Hand searching of relevant journals, grey literature such as conference abstracts identified by the database were also examined.

Study selection
All papers were screened using the title to remove those clearly irrelevant. The remaining papers were reviewed by title and abstract to identify only those that met the inclusion criteria. As translation services were unavailable, articles had to be in English. The following inclusion criteria were applied to identify the interventions tested with pregnant women who have or were experiencing DA:

- Type of participants: Healthy pregnant women ≥ 16 years old and subject to domestic abuse by a partner within 12 months of current pregnancy
- Types of interventions: Interventions that have been tested for DA in pregnant women
- Setting: Any healthcare setting that abused pregnant women may attend
- Design: Randomised controlled trials (RCTs), before and after studies, case controlled studies
- Types of outcome: A reduction in DA post intervention.

This reduced the papers from 937 to 47 papers. The full text of the remaining studies was independently reviewed by three researchers to ensure they met the inclusion/exclusion criteria. Five were deemed eligible.

Data extraction and synthesis
Three researchers extracted data from the selected studies independently. Where there were differences in the data extracted, the three researchers reached consensus through discussion. The data were extracted from each study using a template based on PRISMA guidelines:

- Participants: Inclusion criteria, age, sample size, type of DA, background, ethnicity, assessment tools for baseline measurements
- Interventions: Type, duration, intensity, timing, provider
- Comparison: With other interventions, no interventions/ usual care
- Outcomes: Reduction in DA.

Given the differing types of studies discussed in this review, the results have been reported using a narrative synthesis approach. The narrative synthesis will focus on the CRD (2008) guidelines. A meta-analysis was discussed, but due to the differing outcome measurement tools used in the papers, for example Parker et al (1999) used the Index of Spouse Abuse (ISA) and the Severity of Violence against Women Scales (SVAW), whereas Tiwari et al (2005) used a modified version of the Conflict Tactic Scale (CTS), the meta-analysis was not deemed suitable for this review.

Quality assessment
The method to assess quality of RCTs was based on the classification of ‘risk of bias’, as recommended in the Cochrane handbook (Higgins and Green, 2011). Each domain was categorised ‘yes’ for low risk of bias, ‘no’ for high risk and ‘unclear’ if there was an unclear or unknown risk due to insufficient information or lack of relevance (Higgins and Green, 2009). For those studies that are not RCTs, bias has been analysed and discussed as required.

Integrity of interventions
Assessing the integrity of interventions helps to identify if all aspects of the intervention were carried out as planned and can determine whether it succeeded or failed and why. The integrity of the included studies was assessed using Dane and Schneider’s five aspects of fidelity, which have been used extensively for measuring.
treatment integrity (Power et al, 2005; Carroll et al, 2007). The intervention intensity is an index used to assess the ‘exposure’ component of intervention intensity – frequency, duration, and concentration of the intervention. Interventions should be assessed so decisions can be made about the optimal intensity that is feasible and effective. To assign an intensity rating to the different intervention and control groups for the included studies, a classification system was created with five levels of intensity, level one representing low intensity, level five representing high. A similar classification was used in a review by Lumley et al (2009).

Results

Of the five remaining studies, four were RCTs; the other a case controlled study (Parker et al, 1999). Three studies were completed in the US (Parker et al, 1999; McFarlane et al; 2000, Kiely et al, 2010), one in Hong Kong, (Tiwari et al, 2005) and one in Australia (Taft et al, 2011). Each study implemented the intervention prenatally with three continuing into the postnatal period (Tiwari et al, 2005; Kiely et al, 2010; Taft et al, 2011).

Recruitment of participants took place in antenatal clinics, public hospitals, GP surgeries and maternal/child health services. Participants were recruited by professionals who carried out the intervention in three studies – Parker et al (1999), McFarlane et al (2000) and Tiwari et al (2005). Kiely et al (2010) combined a computer self-assisted interview with a baseline interview. The participants in Taft et al (2011) were recruited by maternal/child health nurses and GPs from 106 primary care clinics who received six hours of professional development to improve their ability to refer appropriate women. Each study participant completed the Abuse Assessment Scale (AAS).

The five studies recruited 1103 women from a variety of ethnic, educational and employment backgrounds. Only one study recruited women under the age of 18 (Taft et al, 2011). The type of DA suffered was not specified, but participants had to have experienced it within the previous 12 months.


The same counselling intervention was used by all and was based on the abuse prevention protocol developed from Dutton’s (1992) empowerment model. This model is based on the belief that women experience violence because of lack of control in their lives, and the coercive control of the abuser. Alleviation of this behaviour empowers women to take control of life situations.

The mentoring intervention (McFarlane et al, 2000; Taft et al, 2011) involved matching a woman with a non-professional mentor who was responsible for support, advice, education, future safety and financial planning. McFarlane et al (2000), in their third group, combined the non-professional mentor with the counselling intervention that was used in the counselling group. The mentor contact was by home visiting or telephone.

The MOSAIC (MOtherS’ Advocates in the Community) mother mentoring model trialled by Taft et al (2011) combined social support, (Coker et al, 2000) advocacy (Bybee and Sullivan, 2002) and Parker et al’s (1999) counselling intervention. The study aimed to reduce partner violence and improve women’s mental and physical health. Taft et al (2011) recruited non-professional women with good communication skills, provided five days’ training and regular follow-up meetings.

All studies described control groups as receiving standard prenatal care. No studies detailed what this constituted. Two studies also gave the comparison group a resource card (Parker et al, 1999; Tiwari et al, 2005). The resource cards included contact details of agencies that provide DA support, such as social services, law enforcement, and legal providers. It is likely that standard care may vary across interventions.

Reduction in DA was identified in all five studies and was the only outcome in Parker et al (1999) and McFarlane et al (2000). Types and levels of abuse being measured were detailed in most studies such as Tiwari et al (2005), who tested their intervention against mild and severe physical abuse as separate entities. Taft et al (2011) did not specify the type of abuse, but reported it as ‘partner abuse’. Two of the studies reported a significant reduction in abuse (Parker et al, 1999; Tiwari et al, 2005) with the others reporting a lesser decrease. Increase and decrease was measured by participants experiencing DA pre-intervention versus post-intervention.

One of the four RCTs was clustered (Taft et al, 2011). In the fifth study, Parker et al (1999), the authors rejected randomising DA participants into a comparison arm, deeming it unethical.

The risk of bias criteria was applied individually to each RCT study. Three satisfied at least five criteria and one study satisfied two criteria (McFarlane et al, 2000). Parker et al (1999) used a case controlled method to compare groups from the same population with and without an intervention to evaluate its outcome. Selection bias in such studies will be dependent on how the control group was selected.


Three studies provided sufficient information to be considered low risk for allocation concealment – Tiwari et al (2005), Kiely et al (2010) and Taft et al (2011). Tiwari et al (2005) used an allocation schedule that was computer generated, and concealed in consecutively numbered, sealed envelopes by a researcher not involved in the study. Kiely et al (2010) also used a computer-generated randomisation scheme with the researcher contacting the data-coordinating centre, which then determined the participant’s assignment. The cluster randomised method that Taft et al (2011) implemented was also explained. Two studies did not report allocation concealment. In McFarlane et al (2000), women were assigned to the intervention selected by the month they attended, whereas Parker et al’s (1999) case-controlled study recruited those receiving the intervention only after they had completed the comparison arm of the study.

The issue of blinding was not discussed in every study. Due to the sensitive nature of these interventions, blinding of participants can be difficult and may not have occurred. This
difficulty was highlighted by Parker et al (1999) and identified as a limitation. Blinding of the personnel was completed in two studies (Tiwari et al, 2005; Kiely et al, 2010), as the researchers were unaware of the woman’s randomisation until the follow-up data were collected. Taft et al (2011) discussed their reason for non-blinding but also highlighted this as a limitation.

All outcomes identified in the aim or method of the study were reported in the results section. The authors feel there was no indication of selective reporting in any of the studies.

Interventions by McFarlane et al (2000) and Taft et al (2011) were classified level four, as they were given regular individual support from their non-professional mentors on consecutive appointments and as needed. Parker et al (1999) gave all the participants the standardised intervention with the protocol specifically designed for the intervention. They were provided with additional support, such as help to contact agencies, therefore it was classified as level three/four intensity. Kiely et al (2010) was classified level three as no additional supports were offered and Tiwari et al (2005) was classified level two intensity as the participants received one counselling session and a brochure reinforcing the information provided. All control groups or ‘standard care’ were classified as level one intensity.

The number of sessions implemented varied in each study. The most time intensive intervention was Taft et al (2011), which involved participants having continuous support through counselling and outreach for one year. McFarlane et al (2000) allowed participants unlimited contact until delivery and reported that the majority of sessions lasted around 30 minutes, with an average of four to five sessions per woman totalling 150 minutes. Kiely et al (2010) delivered, on average, ten sessions of 30 to 35 minutes to each woman, eight antenatal and two booster sessions postnatal. Parker et al (1999) implemented three individual counselling sessions, at the beginning of the intervention, and then twice more during pregnancy. Tiwari et al (2005) offered one session at entry, lasting 20 to 30 minutes.

The duration of follow-up varied with some following the women two years postpartum. Tiwari et al (2005) stated outcomes were assessed six weeks post-delivery, Parker et al (1999) and Taft et al (2011) 12 months postnatal and 18 months post-intervention for McFarlane et al (2000). The study by Taft et al (2011) was the only study that continued to implement the intervention during the postnatal period.

Delivery of the interventions varied from non-professionals to master/doctorate level professionals (Tiwari et al, 2005; Kiely et al, 2010). Non-professionals were recruited to deliver the mentor part of the intervention in McFarlane et al (2000) and Taft et al (2011). All professionals and non-professionals received training either by the paper’s researchers or by others, with one reporting continuous support throughout their study (Taft et al, 2011).

Retention rates were addressed in each with Taft et al (2011) identifying this as a concern in their protocol (Taft et al, 2009) leading to further training for those who were recruiting to help increase retention. They retained 76% of those recruited at 12 months. Reasons for dropout included women who were lost to follow up (Parker et al, 1999; McFarlane et al, 2000).

Participant feedback on the intervention was provided in Taft et al (2011). The feedback identified areas that most information was offered on as being legal, self-care and parenting services. At the final interview, Parker et al (1999) also enquired about which components of the intervention participants went on to use. They found that women in the intervention group used significantly more safety behaviours than the comparison group.

None of the studies identified measures to ensure the integrity of the intervention. Taft et al (2011) stated that at each contact point in their study, they checked the match of mentor to women only.

Few studies had measures in place to ensure that all participants received the same intervention with no mention of training other professionals involved in the antenatal and postnatal period.

Recruitment and delivery of the intervention occurred at the same site for most, with exception of McFarlane et al (2000) and Taft et al (2011) whose mentor contact was by home visiting or telephone. All studies conducted their one-to-one sessions in private rooms with the follow-up interview either in a private room or via telephone. Each interview was carried out by a different interviewer to reduce participant bias in the Parker et al (1999) and McFarlane et al (2000) studies. Tiwari et al (2005) completed the follow-up interview using an experienced research nurse who was not involved in either the pre-intervention assessment or the intervention. Contamination bias is possible, yet most studies did not report methods to reduce this.

Discussion

This review identified five studies that implemented an intervention to reduce DA in pregnant women. Comparing the studies was difficult due to differences in the population (such as ethnicity, number of participants), length of post-intervention follow-up and nature of the intervention (exposure).

The concept of empowerment appeared to be the cornerstone of the counselling interventions, based on Dutton’s (1992) empowerment model, while the mentor programmes were tailored to the individual needs. The studies had considerable heterogeneity with the intensity of the interventions varying from one-off 30-minute sessions to one-year contact. A range of outcomes were reported, with some focusing only on physical abuse, and others focusing on DA and further behaviours, such as smoking. The length of follow-up also differed ranging from six weeks post-intervention to two years. Consequently, the review is narrative based, as meta-analysis was not possible.

Of the five studies in this review, two met the criteria for low risk of bias (Tiwari et al, 2005; Kiely et al, 2010) whereas the other three provided insufficient detail to ascertain whether they fully complied with all criteria. All studies reviewed were described as RCTs or case controlled (Parker et al, 1999), however, details of the randomisation method or allocation concealment were not always described or had insufficient detail.

Only two studies reported blinding the outcome assessors (Tiwari et al, 2005; Kiely et al, 2010). Although reduction in DA outcomes is subjective, blinding is important as this can influence results of outcome, a potential for bias that could be avoided. One study did not provide full details on the completeness of data. Drop-out rates were identified, but one study lost 24% of the recruited sample (Taft et al, 2011). Intention-to-treat analysis was discussed in Kiely et al (2010) and Taft et al (2011).

A lack of process evaluations in the studies made it difficult to adequately assess intervention integrity, including the complexity
of the interventions and details of the implementation process. Taft et al (2011) explained a comprehensive process evaluation in the protocol of the study, which was previously published. Process evaluations are essential for identifying effective key components of an intervention (Campbell et al, 2002). Reporting successful outcomes is of limited usefulness if it is not possible to identify what factors caused the positive outcomes (Steckler and Linnan, 2002). None of the studies discussed processes already in place to prevent women in the control group from receiving components of the intervention. So was it the actual intervention, or the professional delivering it that made a difference? Future studies would benefit greatly from reporting feedback on the five aspects of intervention integrity (Dane and Schneider, 1998).

The main outcome for the review was a reduction in DA in pregnant women post intervention. To date, the only studies to report significant reductions in DA post intervention are Parker et al (1999) and Tiwari et al (2005). Tiwari et al (2005) reported on mostly minor psychological and physical abuse. The other studies found a reduction in DA, which was not deemed significant (McFarlane et al, 1999; Kiely et al, 2010; Taft et al, 2011). Taft et al (2011) commented on this and recommended further study of their intervention to confirm the result gained.

Parker et al (1994) developed an abuse prevention protocol that was based on Dutton’s empowerment model (1992). To keep it consistent with their framework, each intervention session included safety components, support structures and identification of abusive behaviours. McFarlane et al (2000), Tiwari et al (2005) and Kiely et al (2010) based their intervention on this abuse prevention protocol of Parker et al (1994). Tiwari et al (2005) highlighted the items they modified to ensure cultural congruence. Parker et al (1999) and McFarlane et al (2000) used the same cultural background for their sample however, one found a ‘significant’ reduction whereas the other did not. Many reasons could be given for this varying result such as the subjectivity of DA, length of intervention. Tiwari et al (2005) also found a ‘significant’ reduction, but it is hard to know whether the modification may have had any effect on the overall outcome. More information on the exact contents of the intervention could help explain the varying outcomes.

Possible reasons for the differing outcomes have been mentioned in each paper, for example, McFarlane et al (2000) and Parker et al (1999) both felt their interventions’ effectiveness could have been limited due to the focus being prenatal. Tiwari et al (2005) reported that measuring behaviour outcomes of perpetrators not included in the study might be problematic. They also recommend that translating the AAS and the CTS into Chinese needs further validation.

Parker et al (1999) reported no difference between ethnic groups on the outcome of the intervention. This is in contrast to the impact of ethnicity and culture on outcomes suggested by Bent-Goodley (2007) who recommends the use of a culturally sensitive screening tool to ensure effective implementation of an intervention (Kataoka et al, 2004). Heterogeneity is always a factor to be considered so differences in socioeconomic status, accessible services, timing of the intervention and reliable measurement of outcomes should be accounted for.

Incorporating theory into a review remains a challenge because studies do not always have an explicit theoretical basis, may use several theories, or describe a theory without integrating it (Jackson and Waters, 2005). Theory was lacking in each study detailed in this review.

Conclusion
It is clear that the identification of effective interventions to address DA generally and particularly in pregnant women is of great public health importance. Although limited conclusions can be made from the review, the evidence indicates counselling and mentoring may be effective. Further research is necessary to identify what it is within these interventions that actually works, for whom and in what circumstances.

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