

Should health professionals screen women for domestic violence? Systematic review

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Abstract

Objective To assess the evidence for the acceptability and effectiveness of screening women for domestic violence in healthcare settings.

Design Systematic review of published quantitative studies.

Search strategy Three electronic databases (Medline, Embase, and CINAHL) were searched for articles published in the English language up to February 2001.

Included studies Surveys that elicited the attitudes of women and health professionals on the screening of women in health settings; comparative studies conducted in healthcare settings that measured rates of identification of domestic violence in the presence and absence of screening; studies measuring outcomes of interventions for women identified in health settings who experience abuse from a male partner or ex-partner compared with abused women not receiving an intervention.

Results 20 papers met the inclusion criteria. In four surveys, 43-85% of women respondents found screening in healthcare settings acceptable. Two surveys of health professionals' views found that two thirds of physicians and almost half of emergency department nurses were not in favour of screening. In nine studies of screening compared with no screening, most detected a greater proportion of abused women identified by healthcare professionals. Six studies of interventions used weak study designs and gave inconsistent results. Other than increased referral to outside agencies, little evidence exists for changes in important outcomes such as decreased exposure to violence. No studies measured quality of life, mental health outcomes, or potential harm to women from screening programmes.

Conclusion Although domestic violence is a common problem with major health consequences for women, implementation of screening programmes in healthcare settings cannot be justified. Evidence of the benefit of specific interventions and lack of harm from screening is needed.

Introduction

Violence against women by male partners and ex-partners is a major public health problem, resulting in injuries and other short term and long term health

consequences, including mental illness and complications of pregnancy. Exposure of children to domestic violence results in emotional, behavioural, and health problems.¹ The response of health services to domestic violence is an international priority.² In the United Kingdom many organisations of health professionals have published guidelines or recommendations.³⁻⁸ These guidelines are not identical, but they all emphasise the prevalence of domestic violence and advocate recognition, assessment, and referral within and beyond the health service. The Department of Health in England now recommends that health professionals should consider "routine enquiry" of some or all women patients for a history of domestic violence.⁹ This is essentially a recommendation to screen women for domestic violence in healthcare settings and echoes longstanding recommendations of organisations and accreditation bodies in North America.¹⁰

Implicit in these recommendations to undertake screening is the assumption that this will increase identification of women who are experiencing violence, lead to appropriate interventions and support, and ultimately decrease exposure to violence and its detrimental health consequences, both physical and psychological. These assumptions underlie the justification for conventional screening for the premorbid or early stage of a disease. A further assumption of the recommendations is that health professionals and female patients alike will not object to the screening process. In this review we test these assumptions.

We evaluated the evidence for screening for domestic violence in health service settings for the United Kingdom National Screening Committee.¹¹ In reviewing the evidence, we chose to focus on three of the committee's criteria for a screening programme: firstly, that the screening test should be acceptable to the population; secondly, that there should be evidence that the complete screening programme is acceptable to health professionals (although the review focused only on the screening test); and, thirdly, that there should be an effective treatment or intervention for the problem. We also reviewed evidence on whether screening programmes increase the proportion of women identified.

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Box 1: Search strategy for primary studies in the review

- For #1 through to #4 the “focus” facility was used. For #6 through to #47 the “explode” facility was used
- #1 domestic violence
- #2 battered women
- #3 partner abuse
- #4 spouse abuse
- #5 #1 or #2 or #3 or #4 or #5
- #6 communication or communication barriers or emergency medical service communication systems or hospital communication systems or persuasive communication
- #7 clinical protocols
- #8 diagnosis or nursing diagnosis
- #9 diagnostic tests, routine
- #10 evaluation studies
- #11 health services accessibility
- #12 education, medical or education, nursing, continuing
- #13 inservice training
- #14 intervention studies
- #15 interviews
- #16 confidentiality or mandatory reporting
- #17 mass screening
- #18 medical history taking
- #19 program evaluation
- #20 questionnaires
- #21 referral and consultation
- #22 self disclosure
- #23 #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22
- #24 attitude or attitude of health personnel or attitude to health
- #25 nurse-patient relations
- #26 physician-patient relations
- #27 professional-patient relations
- #28 knowledge, attitudes, practice
- #29 perception or social perception
- #30 #12 or #13 or #24 or #25 or #26 or #27 or #28 or #29
- #31 adaptation, psychological
- #32 consumer advocacy
- #33 patient advocacy
- #34 counselling
- #35 depression
- #36 emotions
- #37 follow up studies
- #38 housing or public housing
- #39 nursing care
- #40 community mental health services
- #41 crisis intervention
- #42 police or social control, formal or social work
- #43 quality of life
- #44 safety
- #45 decision support systems, clinical or decision support techniques or financial support or health planning support or life support care or social support or support, non-u.s. gov't or support, u.s. gov't, non-p.h.s. or support, u.s. gov't, p.h.s.
- #46 stress or stress disorders, post-traumatic or stress, psychological
- #47 wounds and injuries
- #48 #7 or #10 or #12 or #13 or #14 or #19 or #21 or #31 or #32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 or #41 or #42 or #43 or #44 or #45 or #46 or #47
- #49 #5 and #23
- #50 #5 and #30
- #51 #5 and #48
- #52 #49 or #50 or #51
- The above relates to the Medline search. Slightly amended versions were used for searching Embase and CINAHL

Methods**Identification of primary studies**

We used medical subject headings and text words to search for studies on three bibliographic databases: Medline, Embase, and CINAHL (from the start of the databases to February 2001). The specific search terms differed between the databases, but were comparable. Box 1 shows the search strategy for Medline. Limiting the results of the search to papers published in English and with online abstracts available yielded a total of 2520 potentially relevant studies. In addition to searching bibliographic databases we checked personal bibliographies, consulted other health service researchers studying domestic violence, and checked references from relevant reviews.

One of the reviewers applied the study inclusion criteria (table 1) to the 2520 abstracts; 2228 abstracts did not meet the criteria and were excluded at this early stage. Any abstracts that potentially fulfilled the criteria, that the reviewer was uncertain about, or that had insufficient detail went forward to the next stage of selection. Two reviewers independently read and judged the remaining 292 abstracts against the inclusion criteria. When reviewers differed, this was resolved by discussion or by a third reviewer. We obtained all papers that met the inclusion criteria or for which insufficient detail existed for inclusion or exclusion of the study. We retrieved 112 full papers: 53 reported studies of attitudes towards screening for domestic violence; 32 reported evaluations of screening programmes to increase identification of domestic violence; 23 reported intervention studies to improve outcomes related to domestic violence; and four were relevant to both the questions about increased identification and improved outcomes. Four reviewers then assessed the papers, with each paper being assessed independently by at least two reviewers. A third reviewer resolved any differences through discussion. Twenty papers (reporting on 17 studies) met the inclusion criteria¹²⁻³¹; we excluded the remaining 92 papers (table 2).

Data extraction and analysis

Four reviewers extracted data from the papers; two reviewers worked independently on each paper and then amalgamated the results. Discrepancies were resolved by referral back to the original papers and discussion. Data extracted included characteristics of the samples, interventions (where relevant), and design features that affected the quality of the study and the validity of the results. We applied the results of the studies to three review questions: Do women patients and health professionals find screening for domestic violence acceptable? Do screening programmes increase the identification of women who are experiencing domestic violence? Do interventions with women identified in healthcare settings improve outcomes? We did not combine the results of the studies because of the heterogeneity of interventions, outcomes, and populations. In our narrative analysis we consider the results in relation to the design and quality of the studies.

Results

We found few good quality studies that addressed our review questions. Weaknesses in study design were common and included lack of justification for sample

Table 1 Criteria for inclusion of primary studies in the review

Attitudes to screening	Increasing identification	Interventions to improve outcomes
Study setting and participants		
Conducted in any setting	Conducted in healthcare setting	Conducted in any setting, but woman originally identified in healthcare setting
Women in general	Women presenting for care	Women identified as experiencing domestic violence
Any health professional		
Design		
Quantitative cross sectional surveys	Fully randomised controlled trials with participants randomly allocated to intervention and control groups	
	Studies using a "before and after" matched parallel groups design, in which assignment to groups is not random	
	Studies using an "after only" matched parallel groups design, in which the process of assignment to groups is not random	
	Time series studies with different samples, in which women receiving care before intervention act as comparison group (historical controls)	
	Time series studies using the same sample, in which women receiving intervention act as their own historical controls	
	Comparison of screening versus non-screening method of identification (exclude studies comparing two screening methods)	
Objectives		
Attitudes of all women sought (not just those at high risk)	Intention of study is to screen all women (not just those thought to be at higher risk); identification of women experiencing domestic violence	Investigation of women centred interventions (behavioural, psychological, educational)
Attitudes of any health professional elicited	Investigation of any method of screening to increase identification rates (including educational interventions targeted at clinicians)	Investigation of health services interventions aiming to increase referrals, information giving, or forms of support
Types of outcome measures		
Attitudes to the screening of all women in healthcare settings	Rates of identification of domestic violence	Any of the following: <ul style="list-style-type: none"> ● Domestic violence incident rates ● Quality of life and scores on other psychosocial measures ● Use of safety behaviours ● Use of health and community resources ● Rates of domestic violence referrals ● Information giving

size, unclear sampling strategies, lack of comparability between study groups, and no monitoring of the quality of extraction of data from medical records. Some of the screening studies^{18 22 23 25} and intervention studies^{27 29-31} did adjust for potential confounding factors or for differences in baseline rates when comparing groups. Generally, details of methods, interventions, and results were poorly described in the papers we reviewed. We did not find any randomised controlled trials of interventions based in healthcare settings to improve outcomes. The range of outcomes was limited, and no studies measured potential risk to women of identification from screening in healthcare settings and subsequent management by health professionals. Another potential limitation of the primary studies, from the perspective of European healthcare policy, is their geographical distribution: most were from North America, with three papers from Australia or New Zealand.

Attitudes of women and health professionals to screening

Table 3 shows the main characteristics of the five studies assessing attitudes to screening, table 4 shows their

designs, and table 5 summarises the results.¹²⁻¹⁶ All of the studies were conducted in the United States. Four studies elicited the views of women patients about screening.¹²⁻¹⁵ In two of these studies three quarters or more of the respondents thought that routine screening was acceptable, with no significant difference between abused and non-abused respondents.^{12 13} In the other two studies just under half of all women found screening acceptable,^{14 15} with abused women in one of the studies being one and a half times more likely to favour this course of action.¹⁴ The heterogeneity of these results may be partly explained by the wording of the question about screening in the different surveys. In particular, the two studies reporting lower acceptability asked if screening at all consultations was acceptable,^{14 15} whereas the studies reporting a higher acceptability asked a more general question.^{12 13} As far as health professionals are concerned, one study of primary care physicians in New England found one third to be in favour of routine screening.¹² In a study of emergency department nurses 53% responded that nurses should routinely screen all women for a history of domestic violence.¹⁶

Table 2 Summary of papers retrieved and reasons for exclusion

	Attitudes of women and health professionals to screening for domestic violence	Identification of women experiencing domestic violence	Interventions to assist women experiencing domestic violence
No of papers retrieved for detailed evaluation	53	36*	27*
Excluded papers (single main reasons)	No specific question about acceptability of screening (n=44) Not a quantitative study (n=4)	No baseline or comparison rates (n=10) Validation study or comparison of two screening methods (n=8) Prevalence study only (n=3) Subset of high risk women (n=3) Insufficient detail (n=1) Guidance only (n=1)	Not initiated in a healthcare setting (n=11) No baseline or comparison rates (n=3) Background information only (n=2) Main outcomes relate to health professionals (n=1) Intervention not specific to domestic violence (n=1)
No of papers included in review	5	10*	9*

*Four papers applicable to both identification and intervention questions.

Table 3 Characteristics of attitude studies

Author(s)	Country	Setting	Inclusion criteria	Question on attitude to screening	Age range of sample	Ethnicity of sample	Socioeconomic status of sample
Asking women							
Friedman et al (1992) ¹²	USA	Primary care divisions of one private and one public hospital	All female and male primary care patients aged ≥18 with ability to understand English	Attitude to physicians screening for DV, where perpetrator is member of household or immediate family or any relative	52% aged ≤50	55% white, 30% African-American, 6% hispanic, 4% Caribbean, 5% other	52% >high school education
Caralis and Musialowski (1997) ¹³	USA	Primary care (ambulatory clinics)	All female patients who came daily during designated 4 hour time blocks	Attitude to doctors routinely screening for DV in their practices, where perpetrator is partner or relative	34-66	26% black, 16% hispanic, 58% non-hispanic or white	33% <\$10 000 pa, 9% >\$25 000 pa; 40% employed, 30% retired, 8% homemaker; 41% high school graduate, 19% college or beyond
Gielen et al (2000) ¹⁴	USA	Primary care (HMO provider)	Female patients aged 21-55 at time of recruitment, enrolled with HMO from 1995 through 1997, who had completed an initial telephone screening interview to ascertain DV status	Policy preferences for routine screening for partner abuse, including attitude to doctors and nurses asking all women at all visits about physical and sexual abuse	55% aged ≤40	41% white (abused); 55% white (non-abused)	34% graduates (abused), 54% graduates (non-abused); 40% income ≥\$50 000 pa (abused), 57% income ≥\$50 000 pa (non-abused)
McNutt et al (1999) ¹⁵	USA	Family practice and domestic violence programmes	Female English speaking patients aged 18-44 having an obstetrics and gynaecology, general physical or other extended examination	Attitude to doctors screening all women for DV, where perpetrator is partner	From age range 18-24 to 35-44	47% white, 41% African-American, 12% other	Not stated
			Non-residential women attending support groups or an individual appointment at four DV programmes, or women residents of shelter attending group meetings		From age range 18-24 to ≥45		
Asking health professionals							
Friedman et al (1992) ¹²	USA	Primary care divisions of one private and one public hospital	Primary care attending physicians	Attitude to physicians screening for DV at annual examination, where perpetrator is member of household or immediate family or any relative	Not stated	Not stated	Not stated
Ellis (1999) ¹⁶	USA	Emergency department	Registered nurses in a level 1 trauma centre	Attitude to nurses screening all women for current and past DV, where perpetrator is partner	24-59	Not stated	All educated to at least diploma level

DV=domestic violence; HMO=health maintenance organisation.

Table 4 Design of attitude studies

Author(s)	Design	Data source	Type of sampling	No eligible	Response rate (%)	Power calculation
Asking women						
Friedman et al (1992) ¹²	Cross sectional survey	Questionnaire (self completed or administered if unable to read)	Consecutive	Not stated	63 (preliminary response at public hospital, full response rate not stated) Not stated for the private hospital Overall, 164 patients completed questionnaires (64% female)	No
Caralis and Musialowski (1997) ¹³	Cross sectional survey	Interview using questionnaire	Consecutive	516	79	No
Gielen et al (2000) ¹⁴	Cross sectional case-control survey	Telephone interview using standardised questions	Consecutive for abused group	231	87	No
			Random selection for non-abused group	264	91	
McNutt et al (1999) ¹⁵	Cross sectional survey	Self report survey and individual interviews	Consecutive for family practice patients	124	65	No
			Not clear for domestic violence programme attendees or shelter residents	94	98	
Asking health professionals						
Friedman et al (1992) ¹²	Cross sectional survey	Self completed questionnaire	Consecutive	33 physicians	82	No
Ellis (1999) ¹⁶	Cross sectional survey	Self completed questionnaire	Not clear	101 nurses	40	No

Table 5 Results of attitude studies

Author(s)	Outcomes	Odds ratios or relative risks and confidence intervals	Multivariate analysis, adjustment for confounders
Asking women			
Friedman et al (1992) ¹²	75% of women favoured routine inquiry (and 83% of men)	None	Stratifying all patients on basis of <ul style="list-style-type: none"> ● Victimization status (victims or non-victims)—victims no more in favour of routine inquiry (81%) than non-victims (77%) ● Age—older patients (>50 years) more in favour of routine inquiry (88%) than younger patients (68%), P=0.003 ● Education—patients with <high school education more in favour of routine inquiry (86%) than those with more education (69%), P=0.01 ● Sex—no significant differences between men and women
Caralis and Musialowski (1997) ¹³	85% of women agreed that doctors should routinely screen in their practices (and 50% strongly agreed)	None	Stratified on basis of <ul style="list-style-type: none"> ● Experience of domestic violence—70% of abused and 77% of non-abused women favoured routine enquiry (not significant) ● No significant differences in ethnicity or socioeconomic status between abused and non-abused women
Gielen et al (2000) ¹⁴	49% of total sample favoured healthcare providers routinely screening all women at all visits (55% of abused women and 42% of non-abused women)	Relative to non-abused women, abused women more likely to support screening: odds ratio 1.53 (95% CI 1.02 to 2.3)	Multiple logistic regression models allowed adjustment for variables on which the two groups differed: ethnicity, education, income, and marital status—no significant effect on percentage of women favouring routine screening of all women at all visits
McNutt et al (1999) ¹⁵	70 (43%) of all women favoured routine inquiry; 16 (10%) favoured doctors saying nothing unless woman brought it up	None	Stratified on basis of <ul style="list-style-type: none"> ● Setting—37% of patients and 49% of women attending domestic violence programmes or residing in shelters favoured routine enquiry for domestic violence ● Abuse status (abused or not abused)—44% of abused and 42% of non-abused women favoured routine inquiry for domestic violence
Asking health professionals			
Friedman et al (1992) ¹²	33% favoured routine inquiry at annual examinations	None	None
Ellis (1999) ¹⁶	53% felt nurses should routinely screen all women	None	None

Identification of women experiencing domestic violence

Our conclusions regarding identification of women experiencing domestic violence are drawn from nine studies (10 papers).^{17–26} Tables 6, 7, and 8 show the characteristics, design, and results of these studies. The studies were mostly based in the United States, with one each in Australia, New Zealand, and Canada. Most of the studies tested the effect of applying a screening protocol containing up to five questions about abuse to all women presenting in emergency departments, primary care facilities, or antenatal clinics. Baseline rates of identification were mostly in a range of 0–3%.

Screening produced an increase in rates of identification in eight of the studies, but not in the study with the strongest design.¹⁸ This cluster randomised controlled trial in primary care did not show a significant difference in identification rates between clinics using a screening protocol and those not using a protocol. This is not explained by less education of clinicians compared with other screening programmes or by differences in the numbers of screening questions asked. Screening typically resulted in doubling of identification rates, but larger effect sizes were detected in three of the studies.^{17 24 26} The most robust of the parallel group studies measured a seven-fold increase in the identification of abused women, although the small sample size resulted in wide confidence intervals for this estimate (odds ratio 6.78, 95% confidence interval 2.5 to 14.6).²⁶ Most of the

studies did not monitor identification rates beyond an initial measurement after the screening protocol or programme had been implemented. One study that did measure identification rates in an emergency department one year after implementation of a protocol found that an initial improvement in comparison with a control department was not sustained.²³ Screening programmes that provided substantial additional educational and training sessions for staff did not identify a higher proportion of women experiencing abuse.^{18 22 23} Programmes with multiple screening questions did not produce larger effects than those using single questions.^{18 24–26}

Interventions for women experiencing domestic violence

Tables 9, 10, and 11 summarise the characteristics, design, and results of the primary studies investigating interventions for women experiencing domestic violence. Six studies (nine papers) fulfilled our criteria—five from the United States^{19 26–31} and one from New Zealand.^{22 23} None was a randomised controlled trial, the method least prone to bias for testing the effectiveness of a health service intervention. The interventions in antenatal clinics,^{26 29–31} primary care,^{19 27} and emergency departments^{22 23 28} included advice about services, advocacy, and counselling. We found no relation between type of intervention or type of healthcare setting and the effect of the intervention on measured outcomes.

Table 6 Characteristics of identification studies

Author(s)	Country	Setting	Inclusion criteria	Screening method	Comparison	Who asked	Age range of sample	Ethnicity of sample	Socioeconomic status of sample
Freund et al (1996) ¹⁷	USA	Primary care	New patients attending an internal medicine practice serving female patients	Self completed health history form, including single question asking if patient has ever been physically abused by partner (question asked by healthcare provider if left unanswered)	Self completed health history form that includes no question on physical abuse	Self assessed, or asked by healthcare provider	Not stated (no differences between groups)	Not stated	Professional or managerial occupations: screened 33%, comparison 45% (P<0.01); no differences in education between groups
Thompson et al (2000) ¹⁸	USA	Primary care	Women and men aged ≥18 attending clinic at least once during study period who met one or more of four "sentinel diagnoses" (chronic pelvic pain, injuries, depression, and physical examination visits)	Local protocol, including asking two direct questions about current or past DV perpetrated by partner, parent, or an adult child	Usual no protocol assessment	Physicians, nurses	Not stated	Not stated	Not stated
Harwell et al (1998) ¹⁹	USA	Four community health centres	Women aged 15-44 attending at least once during a 6 month period	RADAR training and support package for staff, including step by step pocket guide and assessment form (no definition of DV, perpetrator not specified)	Usual pre-RADAR assessment	Physicians, nurses, social workers, psychologists	Mean=30 (no differences between groups)	52% Hispanic, 47% African-American, 1% other (no differences between groups)	97% public health insurance (no differences between groups)
Olson et al (1996) ²⁰	USA	Emergency department	All women aged 15-70 attending an urban level 1 trauma centre	Phase 1: single question prompt on medical record to ask if patient is experiencing current DV, perpetrator not specified; phase 2: prompt plus 1 hour educational lecture	Usual assessment	Unclear	15-70	Not stated	Not stated
Roberts et al (1997) ²¹	Australia	Emergency department	Women and men attending ED, self identified in separate studies as experiencing DV in previous 5 years	Educational programme to increase detection of current and past DV, perpetrator not specified	Usual pre-programme assessment	Doctors, nurses	Not stated	Not stated	Not stated
*Fanslow et al (1998) ²²	New Zealand	Emergency department	Women aged ≥15 attending ED (but 1 month post-implementation, screening conducted only if DV suspected)	Local protocol, including model questions to ask about current suspected or confirmed DV perpetrated by partner	Usual no protocol assessment	ED staff	Not stated (no differences between groups at population level)	Not stated (catchment areas: 17% Maori at screening ED, 9% Maori at comparison ED)	Not stated
*Fanslow et al (1999) ²³	New Zealand	Emergency department	All women aged ≥15 attending ED (not stated if only women with suspected DV screened at follow up)	Local protocol, including model questions to ask about current suspected or confirmed DV perpetrated by partner (1 year follow up of earlier study)	Usual no protocol assessment	ED staff	Not stated (but see above)	Not stated (but see above)	Not stated
Morrison et al (2000) ²⁴	Canada	Emergency department	Women attending ED and (screening group only) those not needing immediate treatment or those having conditions preventing participation	Structured interview, including asking five direct questions about current or past DV perpetrated by someone at home or within family	Usual assessment	Screened by research assistant; comparison by doctors, nurses, ambulance staff	Screened: mean=50; comparison not stated	Not stated	Screened: 33% unemployed; comparison not stated
Covington et al (1997) ²⁵	USA	Antenatal clinic	Medicaid eligible pregnant women participating in maternity care coordination programme	Protocol, including single question from abuse assessment screen, ²⁷ asking patient at three separate visits about DV during current pregnancy, perpetrator not specified	Usual pre-protocol assessment	Maternity care coordinator	Not stated (no differences between groups)	Not stated (no differences between groups)	Not stated, but all on Medicaid
Wiist and McFarlane (1999) ²⁶	USA	Antenatal clinics	All prenatal patients at first visit	Protocol including abuse screen questionnaire ²⁸ (asks about DV in year before being pregnant and since, perpetrator likely to be male partner but not exclusively)	Usual no protocol assessment	Nurse	Not stated	Post-protocol: 96% latina (both groups); pre-protocol: at least 97% Hispanic (both groups)	Post-protocol: 97% income <\$20 000 (both groups); pre-protocol: not stated (both groups)

DV=domestic violence; ED=emergency department.

*Same study.

Table 7 Design of identification studies

Author(s)	Design	Data source	Type of sampling	No eligible	Response rate	Justification for sample size	Health setting and population comparison
Freund et al (1996) ¹⁷	Time series	Patient generated medical records	Consecutive	Screened 508, comparison 181	Screened 98%, comparison 98%	No	Same type of setting and population: ● Same site ● Different samples (historical controls)
Thompson et al (2000) ¹⁸	Cluster randomised controlled trial	Medical records	Stratified random sampling	Screened 2962 (1372 post-protocol, 1590 pre-protocol), comparison 4225 (2020 post-protocol, 2205 pre-protocol)	Not applicable	Yes	Same type of setting and population: ● Different sites ● Different samples (parallel and historical controls)
Harwell et al (1998) ¹⁹	Time series	Medical records	Not clear	Screened 255, comparison 251	Not applicable	Yes	Same type of settings and populations: ● Same sites ● Different samples (historical controls)
Olson et al (1996) ²⁰	Time series	Medical records	Consecutive	Screened phase 1: 1444, screened phase 2: 1356, comparison: 1273	Not applicable	No	Same type of setting and population: ● Same site ● Different samples (historical controls)
Roberts et al (1997) ²¹	Time series	Medical records (and patient completed questionnaires from separate studies)	Not clear	Screened 183, comparison 141	Not applicable	No	Same type of setting and population: ● Same site ● Different samples (historical controls)
*Fanslow et al (1998) ²²	Before and after parallel groups	Medical records	Random	Screened 4563 (2287 post-protocol, 2276 pre-protocol), comparison 3488 (1720 post-protocol, 1768 pre-protocol)	Not applicable	No	Same type of settings and populations: ● Different sites ● Different samples (parallel and historical controls)
*Fanslow et al (1999) ²³	Before, after, and follow up parallel groups	Medical records	Random	10 961 across all groups	Not applicable	No	Same type of settings and populations: ● Different sites ● Different samples (parallel and historical controls)
Morrison et al (2000) ²⁴	Time series	Screened: interview; comparison: medical records	Screened: consecutive; comparison: random within stated time periods	Screened 302, comparison 1000	Screened: 99%; comparison: not applicable	Yes	Same type of setting and population: ● Same site ● Different samples (historical controls)
Covington et al (1997) ²⁵	Time series	Medical records	Consecutive	Screened 384, comparison 1056	Not applicable	Yes	Same type of setting and population: ● Same site ● Different samples (historical controls)
Wiist and McFarlane (1999) ²⁶	Before and after parallel groups	Medical records	Random	540 post-protocol, 540 pre-protocol (across both screened and comparison groups)	Not applicable	Yes	Same type of settings and populations: ● Different sites ● Different samples (parallel and historical controls)

*Same study.

Only two of the studies measured rates of domestic violence as outcomes.^{28, 31} The more robust of these, which used a parallel group design and adjusted for differences in baseline rates and potential confounding factors, detected a reduction of physical and non-physical abuse with counselling and advocacy support for women identified in antenatal clinics.³¹ The other study that measured violence as an outcome was based in an emergency department.²⁸ The investigators used a weaker (time series) design and measured visits to an emergency department for injury from domestic violence rather than reports from participants. The study did not detect a reduction in violence to participants after an advocacy based intervention.

Five studies measured referral to other agencies,^{19, 22, 26, 27} and all but one found increased referral. The study that detected no difference in referral rates was similar in design to those that did but tested a different intervention entailing home visits by public health nurses rather than interventions based in a health facility.²⁷ Two studies measured actual use of

other services by women.^{28, 29} One study, with a weak design (see above), detected increased use of shelter services after an advocacy based intervention in an emergency department.²⁸ The other study, evaluating a counselling and advice intervention in antenatal clinics, with a parallel group design and adjustment for baseline differences, found no difference in use of community resources.²⁹

Discussion

We found that about half to three quarters of women patients in primary care responding to surveys think that screening for domestic violence in healthcare settings is acceptable, with a higher proportion among women who have experienced abuse. In two surveys of health professionals only a minority of doctors and half of nurses were in favour of screening. A recent study in the United Kingdom, published after the time limit of this review, also found that a minority of health professionals wish to screen women for a history of

Table 8 Results of identification studies

Author(s)	Outcomes	Odds ratios or relative risks and confidence intervals	Multivariate analysis or adjustment for confounders
Freund et al (1996) ¹⁷	Screened: 58 (12%) cases identified; comparison: 0 (0%) cases identified	Use of screening increased identification (P<0.001): 11.6% increase (95% CI 8.8% to 14.4%)	None (significant differences in socioeconomic status between groups noted but not controlled)
Thompson et al (2000) ¹⁸	For female sample only Post-protocol: screened clinics—35 cases identified (4%); comparison clinic—30 cases identified (2%) Pre-protocol: 27 (2%) cases identified at to be screened clinics; 32 (2%) cases identified at comparison clinic	Identification at screening clinics more likely after introduction of protocol than before: odds ratio 1.5 (0.73 to 3.17)	None, but calculation of odds ratio comparing changes in screening clinic with changes in comparison clinics was adjusted for baseline rates
Harwell et al (1998) ¹⁹	Screened: 13 (5%) cases identified with confirmed abuse, 14 (6%) cases identified with suspected abuse Comparison: 5 (2%) cases identified with confirmed abuse, 5 (2%) cases identified with suspected abuse	Identification of confirmed abuse just more likely after introduction of screening: RR=1.49 (1.08 to 1.97) Identification of suspected abuse more likely after introduction of screening: RR=1.49 (1.13 to 1.99)	
Olson et al (1996) ²⁰	Screened phase 1: 49 (3%) cases identified, screened phase 2: 49 (4%) cases identified, comparison: 25 (2%) cases identified	Proportion of cases identified during screening was increased: screening phases 1 and 2 versus comparison RR=1.78 (1.15 to 2.75) But no differences between the two phases of screening: screening phase 2 versus screening phase 1 RR=1.06 (0.72 to 1.57)	None
Roberts et al (1997) ²¹	Results available only for a subset of the sample—women and men who in separate studies self reported experiencing abuse in previous 24 hours or previous week Screened: 10 (50%) reporting “abused in last 24 hours” cases identified by staff; 12 (8%) reporting “abused in last week” cases identified by staff Comparison: 10 (50%) reporting “abused in last 24 hours” cases identified by staff; 6 (0%) reporting “abused in last week” cases identified by staff	No statistics	None
*Fanslow et al (1998) ²²	Post-protocol: screened ED—34 (5%) confirmed and 19 (3%) suspected cases identified; comparison ED—13 (2%) confirmed and 32 (5%) suspected cases identified Pre-protocol: to be screened ED—21 (3%) confirmed and 36 (5%) suspected cases identified; comparison ED—26 (3%) confirmed and 28 (4%) suspected cases identified		Changes in overall proportion of women identified as having experienced physical abuse were not significant— $\chi^2=0.13$ (P=0.72)—but a significant increase at screened ED in classification of women from “suspected” to “confirmed” cases was observed— $\chi^2=7.6$ (P=0.006)—although a similar trend was also observed at comparison ED— $\chi^2=3.8$ (P=0.05)
*Fanslow et al (1999) ²³	No numbers or rates of women identified as experiencing DV		No difference between screening and comparison EDs over time (pre-protocol, post-protocol, 1 year follow up)— $\chi^2=1.8$ (P=0.41)—but a significant interaction in confirmed or suspected domestic violence cases at each ED over time— $\chi^2=12.2$ (P=0.007)—with the intervention ED having a significant increase in confirmed cases post-protocol (based on the percentage of all abused and not on the percentage of all injury presentations to ED), but no differences between EDs in classification of confirmed or suspected abuse at pre-protocol or 1 year follow up
Morrison et al (2000) ²⁴	Screened: 43 (14%) cases identified, 11 (4%) confirmed acute cases identified, 20 (7%) probable acute cases identified, 12 (4%) past abuse cases identified Comparison: 4 (0.4%) acute and past cases identified	Use of direct questioning led to a significant increase in identification (P<0.001)	None
Covington et al (1997) ²⁵	Screened: 42 (10.9%) cases identified at initial visit, 54 (14.1%) cases identified in total after three visits Comparison group: 67 (6.3%) cases identified at initial visit	Use of screening increased identification at initial visit: RR=1.75 (1.2 to 2.5) Repeated screening over subsequent visits increased identification: RR=2.2 (1.6 to 3.1)	Controlling for age and ethnicity, repeated screening increased identification above comparison levels: odds ratio 2.4 (1.6 to 3.05)
Wiist and McFarlane (1999) ²⁶	Post-protocol: screened clinics—9 (8%) cases identified at 3 months follow up, 17 (7%) cases identified at 4-15 months follow up; comparison clinic—0 (0%) cases identified at 3 months or 4-15 months follow up Pre-protocol: 3 (1%) cases identified at to be screened clinics; 1 (1%) case identified at comparison clinic	Identification at screening clinics more likely after introduction of protocol then before (P<0.0001): odds ratio 6.78 (2.35 to 19.56)	None

ED=emergency department; RR=relative risk.

*Same study.

domestic violence.³² A systematic review of studies of barriers to screening for domestic violence found that healthcare professionals gave a range of reasons for not routinely asking women about domestic violence: lack of education in or experience of screening, fear of offending or endangering patients, lack of effective interventions, patients not disclosing or not complying with screening, and limited time.¹⁰

In our review we found that screening programmes generally increased rates of identification of women experiencing domestic violence in antenatal and primary care clinics and emergency departments. This concurs with Waalen et al’s review of studies evaluating interventions designed to increase screening for domestic violence.¹⁰ That review also included interventions that consisted solely of education of

Table 9 Characteristics of intervention studies

Author(s)	Country	Setting	Inclusion criteria	Intervention	Comparison	Conducted by	Age range of sample	Ethnicity of sample	Socioeconomic status of sample
Harwell et al (1998) ¹⁹	USA	Four community health centres	Women aged 15-44 identified as abused (confirmed or suspected), perpetrator not specified	RADAR training and support package to increase referrals, including step by step and "where to turn for help" pocket guides	Usual pre-RADAR management	Physicians, nurses, social workers, psychologists	Mean=30 (no differences between groups)	52% Hispanic, 47% African-American, 1% other (no differences between groups)	97% public health insurance (no differences between groups)
Shepard et al (1999) ²⁷	USA	Homes of women	Women referred on to home visiting programme and identified by public health nurses as experiencing DV perpetrated by partner	Use of protocol to increase referrals (to shelter or women's group, arranging transport to shelter or safe housing) and information giving (DV booklet, information on community resources, calling police, seeking protection order)	Usual pre-protocol management	Nurses	Not stated	Not stated	Not stated, but much of population on low income
*Fanslow et al (1998) ²²	New Zealand	Emergency department	All women aged ≥15 identified by ED staff as "partner abuse" cases (confirmed or suspected)	Local protocol, including counselling and advice, to improve acute management of abused women	Usual no protocol management	ED staff	Not stated (no differences between groups at population level)	Not stated, but catchment areas: 17% Maori at intervention ED; 9% Maori at comparison ED	Not stated
*Fanslow et al (1999) ²³	New Zealand	Emergency department	All women aged ≥15 identified by ED staff as "partner abuse" cases (confirmed or suspected)	Local protocol, including counselling and advice, to promote discussion of emotional problems or safety behaviours and to increase referrals to community or social services	Usual no protocol management	ED staff	Not stated	Not stated	Not stated
Muellman and Feighny (1999) ²⁸	USA	Emergency department (level 1 trauma centre)	Women aged ≥18 identified by ED staff as injured by current or former partner	Advocacy given in ED to increase use of community resources, including advice on safety (shelters, police, protection orders) and counselling	Women offered information sheet with resource telephone numbers	Advocate from the domestic violence community	Mean=31 (no differences between groups)	Intervention: 75% black; comparison: 61% black	Not stated, but no group differences in mean income or education on basis of ZIP codes
**McFarlane et al (1997) ²⁵	USA	Intervention: antenatal clinic; comparison: family planning, postpartum, child clinics	Women physically or sexually abused by partner in year before or during pregnancy	Counselling and advice offering options, assistance in making safety plan, brochure listing community resources: three sessions evenly spaced throughout pregnancy	Women offered wallet sized card with information on community resources	Nurses trained by investigator	14-42	Intervention: 36% African-American, 34% Hispanic, 30% white; comparison: 33% African-American, 31% Hispanic, 36% white	All below poverty line
**McFarlane et al (1998) ³⁰	USA	Antenatal clinic	Women physically or sexually abused by partner in year before or during pregnancy	Protocol, including advocacy and information giving to increase 15 "safety behaviours": three sessions evenly spaced throughout pregnancy	Not applicable	Nurses trained by investigator	14-42	36% black, 34% hispanic, 30% white	All below poverty line
**Parker et al (1999) ³¹	USA	Intervention: antenatal clinic; comparison: women, children public health clinics	Intervention: pregnant; comparison: women <8 weeks postpartum; all physically or sexually abused by partner in year before or during pregnancy	Counselling and advice offering options, assistance in making safety plan: three sessions evenly spaced throughout pregnancy plus "reinforcement" brochure and advocacy services; half of intervention group also offered three further counselling and information sessions at local shelter	Women offered wallet sized card with information on community resources	Nurses trained by investigator	14-42 (no differences between groups)	35% African-American, 33% Hispanic, 32% white (no differences between groups)	All below poverty line (no differences between groups)
Wiist and McFarlane (1999) ²⁶	USA	Antenatal clinic	All prenatal patients identified at first visit as abused in year before or since pregnancy, perpetrator likely to be partner but not necessarily	Use of protocol to increase referrals	Usual no protocol management	Usually nurses but sometimes physicians	Not stated	Post-protocol: 96% Hispanic (both groups); pre-protocol: at least 97% Hispanic (both groups)	Post-protocol: 97% income <\$20 000 (both groups); pre-protocol: not stated (both groups)

DV=domestic violence; ED=emergency department.

*Same study.

**Same study.

professionals, without specific screening protocols or questions; educating professionals about domestic vio-

lence did not result in increased identification of women experiencing abuse. On the whole, the magni-

Table 10 Design of intervention studies

Author(s)	Design	Data source	Type of sampling	No eligible	Response rate	Justification for sample size	Health setting and population comparison
Harwell et al (1998) ¹⁹	Time series	Medical records	Not clear	Intervention: 13 confirmed, 14 suspected; comparison: 5 confirmed, 5 suspected	Not applicable	Not for this part of study	Same type of settings and populations: • Same sites • Different samples (historical controls)
Shepard et al (1999) ²⁷	Time series	Medical records	Consecutive	Intervention 41; comparison 31	Not applicable	No	Same type of settings and populations: • Same site • Different samples (historical controls)
*Fanslow et al (1998) ²²	Before and after parallel groups	Medical records	Consecutive	Intervention 110 (53 post-protocol, 57 pre-protocol); comparison 99 (45 post-protocol, 54 pre-protocol)	Not applicable	No	Same type of settings and populations: • Different sites • Different samples (parallel and historical controls)
*Fanslow et al (1999) ²³	Before and after parallel groups	Medical records	Consecutive	256 across all groups	Not applicable	No	Same type of settings and populations: • Different sites • Different samples (parallel and historical controls)
Muellman and Feighny (1999) ²⁸	Time series	Medical records, police reports, protection orders filed, shelter database	Consecutive but see "No eligible"	Intervention 210 (but advocacy offered to only 183); comparison 117	Intervention: 50% (57% for those actually offered advocacy); comparison: not applicable	No	Same type of setting and population: • Same site • Different samples (historical controls)
**McFarlane et al (1997) ²⁹	Before and after parallel groups	Interviews	Consecutive	228	87%	Yes	Different types of setting and population: • Different sites • Different samples (parallel and historical controls)
**McFarlane et al (1998) ³⁰	Time series	Interviews	Consecutive	152	97%	Yes	Same type of setting and population: • Same site • Same sample (own controls)
**Parker et al (1999) ³¹	Before and after parallel groups	Self completed questionnaires and interviews	Consecutive	228	87%	Yes	Different types of setting and population: • Different sites • Different samples (parallel and historical controls)
Wiist and McFarlane (1999) ²⁶	Before and after parallel groups	Medical records	Consecutive	Intervention 29 (26 post-protocol, 3 pre-protocol); comparison 1 (0 post-protocol, 1 pre-protocol)	Not applicable	Not for this part of study	Same type of settings and populations: • Different sites • Different samples (parallel and historical controls)

*Same study.

**Same study.

tude of improved identification as a result of a screening programme was modest, and we found no evidence that the improvements were sustained, as most of the studies did not measure rates beyond initial implementation.

We found little evidence for the effectiveness of interventions in healthcare settings with women who are identified by screening programmes. Randomised controlled trials are lacking, as are studies that measure important outcomes for participants, such as quality of life or mental health status. Rates of referral to outside agencies are not a convincing proxy. The primary studies we reviewed did not measure possible harm that may result from interventions initiated in healthcare settings.³³

Quality of primary studies

The screening studies and intervention studies that we reviewed had substantial methodological weaknesses. All but one relied on parallel group or longitudinal designs. Most were underpowered, with only five out of nine identification studies and one out of six interven-

tion studies justifying their sample size. No study considered possible bias in measuring outcomes. Generally, papers gave insufficient detail about data collection and analysis and about the content of the screening programme or intervention. Despite these weaknesses in the primary studies, we can still conclude that a screening protocol or programme will probably increase identification, at least in the short term, and that little evidence exists for the effectiveness of interventions.

Limitations of the review

Although our search of the three bibliographic databases was inclusive and was supplemented by personal bibliographies, references in reviews, and contact with other investigators, we may have missed relevant primary studies for several reasons: not ordering papers without abstracts on the databases, limiting the language to English, and not searching for unpublished reports. Is it likely that our review would have different conclusions if we had accessed this potentially wider pool of studies? This would only be the case if we

Table 11 Results of intervention studies

Author(s)	Follow up target(s)	Percentage of women completing	Intention to treat analysis	Odds ratios or relative risks and confidence intervals	Multivariate analysis or adjustment for confounders
Harwell et al (1998) ¹⁹	6 months	Not applicable	Not applicable	Percentage of women referred to community health centre staff: <ul style="list-style-type: none"> ● No difference from baseline 2% ● 4% after training (not significant) ● Relative risk 1.44 (95% CI 1.02 to 2.03) Percentage of women referred to outside agency: <ul style="list-style-type: none"> ● Increased from baseline 0% ● 4% after training (P<0.05) ● Relative risk 1.81 (1.45 to 2.28) 	
Shepard et al (1999) ²⁷	12-24 months	Not applicable	Not applicable	Percentage of women referred: <ul style="list-style-type: none"> ● No difference from baseline 3% ● 13% at 12 months (P=0.20) ● 17% at 24 months (P=0.10) Percentage of women given information: <ul style="list-style-type: none"> ● Increased from baseline 0.03% ● 74% at 12 months (P<0.001) ● 78% at 24 months (P<0.001) 	Reanalysis controlling for age gave similar effect sizes for referrals (non-significant) and information giving (P<0.001)
*Fanslow et al (1998) ²²	3 months	Not applicable	Not applicable	Increase in number of referrals at intervention ED: <ul style="list-style-type: none"> ● 13 (25%) post-protocol ● 1 (2%) pre-protocol No significant changes over time found at comparison ED (no figures stated)	
*Fanslow et al (1999) ²³	3 months plus 12 months (total 15 months)	Not applicable	Not applicable	No details specific to referrals, but implication that improved management at 3 months was not sustained over following year	
Muellman and Feighny (1999) ²⁸	Not clear (70 weeks?)	Not stated	No	Use of shelter: <ul style="list-style-type: none"> ● Intervention group used more (P=0.003) ● 29 (28%) intervention v 11% comparison (95% CI 6% to 27%) Shelter sponsored counselling: <ul style="list-style-type: none"> ● Intervention group used more (P<0.001) ● 16 (15%) intervention v 1% comparison (7% to 21%) Calls to police: <ul style="list-style-type: none"> ● No difference (P=0.14) ● 37 (35%) intervention v 29 (25%) comparison (-3% to 24%) Protection orders: <ul style="list-style-type: none"> ● No difference (P=0.58) ● 6 (6%) intervention v 10 (9%) comparison (-10% to 4%) Repeat visits to ED for domestic violence injury: <ul style="list-style-type: none"> ● No difference (P=0.63) ● 8 (8%) intervention v 13 (11%) comparison (-11% to 4%) 	
**McFarlane et al (1997) ²⁹	6 months and 12 months post-birth	92% of women agreeing to participate (87% of those eligible to participate)	No	Resource use: <ul style="list-style-type: none"> ● No differences at 6 months (P=0.23) ● At 12 months, comparison group more likely to use (P=0.01) Police use: <ul style="list-style-type: none"> ● No differences at 6 months (P=0.76) ● No differences at 12 months (P=0.70) 	Analyses adjusted for baseline differences in use of resources and police between groups
**McFarlane et al (1998) ³⁰	Two during pregnancy and at 2, 6, and 12 months after birth	90% of women agreeing to participate (87% of those eligible to participate)	No	Significant increase in adoption of each safety behaviour (P<0.0001) across time, with most behaviours showing a significant increase after first session	Results did not vary by ethnic grouping or by parity, but some evidence that older women adopted safety behaviours more readily at entry and second session
**Parker et al (1999) ³¹	Intervention: two during pregnancy and at 2, 6, and 12 months post-birth; comparison: 6 and 12 months post-birth	92% of women agreeing to participate (87% of those eligible to participate)	No	Index of spouse abuse scale: <ul style="list-style-type: none"> ● At 6 and 12 months, comparison group reported more ongoing physical and non-physical abuse (P=0.007) ● Reanalysing scores with ethnicity and age controlled gave similar effects Severity of violence against women scale: <ul style="list-style-type: none"> ● At 6 and 12 months, comparison group reported more threats and actual violence (P=0.052) ● Reanalysing scores with ethnicity controlled gave similar effect, but controlling for age increased effect (P=0.023) Safety behaviours: <ul style="list-style-type: none"> ● At 12 months, intervention group used more safety behaviours (P<0.001) 	Analyses adjusted for baseline differences in scores
Wiist and McFarlane (1999) ²⁶	3 months plus 12 months (total 15 months)	Not applicable	Not applicable	Post-protocol: intervention—6 (67%) identified cases referred at 3 months, 9 (53%) identified cases referred at 12 months; comparison—0 (0%) identified cases referred at 3 or 12 months Pre-protocol: no referrals documented at intervention or comparison clinics	

ED=emergency department.

*Same study.

**Same study.

might have found additional good quality studies from healthcare settings. We think it unlikely that those studies would be published in journals not covered by the three databases we searched.

Another limitation of our review is not extending it to the large qualitative literature on screening for domestic violence. This type of research can help to explain the attitudes of women patients and health professionals towards screening and, potentially, the variable effect of screening on identification and the variation in effect on outcomes of different interventions. Qualitative research could also help to improve the design of new interventions for responding effectively to domestic violence in healthcare settings.

In terms of developing policy for health services in the United Kingdom, our review has another potential limitation—all the studies were from North America, Australia, and New Zealand. Cultural differences may make extrapolation of the attitude surveys difficult to generalise. But our findings on the effects of screening and interventions in healthcare settings can probably be extrapolated to the United Kingdom, despite differences in the organisation and funding of health services.

Conclusions

From the studies we reviewed, even without considering all the criteria for a screening programme, we conclude that it would be premature to introduce a screening programme for domestic violence in healthcare settings. We know that introducing a programme is likely to increase the number of women experiencing domestic violence who are identified by health professionals, but not that subsequent interventions are effective. In order to base healthcare policy for domestic violence on evidence of safety and effectiveness we need to answer several research questions (box 2). In particular, research funders should give priority to randomised controlled trials of interventions in healthcare settings to test their effectiveness and safety for women and their families.

Our conclusions about the effectiveness of screening should not be interpreted as a denial of domestic violence as an important issue for healthcare providers.³⁴ Debate is taking place among physicians in the United States regarding the validity of policies on domestic violence, partly because of lack of evidence for the effectiveness of screening.³⁵ However, a strong consensus exists among healthcare organisations internationally that doctors and nurses should not abandon the goal of identifying and supporting

Box 2: Research questions

- What are the benefits and risks to women of screening for domestic violence in healthcare settings?
- What is the most effective screening interval?
- What is the effect of participation in interventions such as provision of advocacy support on women experiencing domestic violence identified in healthcare settings?
- What are the training needs of health professionals in relation to domestic violence?
- How can we promote better multi-agency working in this area?

What is already known on this topic

Around one quarter of women in the United Kingdom have been physically assaulted by a current or former male partner

Screening for domestic violence in healthcare settings is the policy of many health professional bodies in the United States

The Department of Health recommends that health professionals should consider “routine enquiry” of women patients about whether they have experienced domestic violence

What this study adds

Screening by health professionals increases the identification of domestic violence, and many women do not object to being asked

Most health professionals surveyed do not agree with screening of women in healthcare settings

Insufficient evidence exists to show whether screening and intervention can lead to improved outcomes for women identified as abused

Implementation of screening programmes in healthcare settings is not justified by current evidence

women experiencing domestic violence. The high prevalence and severity of the problem and the views of women themselves require a response from health services. Health professionals need education and training to remain aware of the problem if they are to recognise women who experience domestic violence.^{36–40} Health services, local authorities, and the police need to coordinate their responses to domestic violence, but research is essential to develop and evaluate interagency policies. Finally, women's organisations have been instrumental in raising public and institutional awareness of domestic violence. These organisations should be involved in future policy decisions and the development of health service based interventions.

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