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Screening for Intimate Partner Violence, Elder Abuse, and Abuse of Vulnerable Adults: An Evidence Review for the U.S. Preventive Services Task Force

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The information in this report is intended to help health care decisionmakers—patients and clinicians, health system leaders, and policymakers, among others—make well-informed decisions and thereby improve the quality of health care services. This report is not intended to be a substitute for the application of clinical judgment. Anyone who makes decisions concerning the provision of clinical care should consider this report in the same way as any medical reference and in conjunction with all other pertinent information, (i.e., in the context of available resources and circumstances presented by individual patients).

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Structured Abstract

Purpose: To systematically review the evidence on screening for intimate partner violence (IPV), elder abuse, and abuse of vulnerable adults for populations and settings relevant to primary care in the United States.

Data Sources: PubMed/MEDLINE, the Cochrane Library, Embase, and trial registries through October 4, 2017; reference lists of retrieved articles; outside experts; reviewers; and active surveillance of literature since August 2018.

Study Selection: Two investigators independently selected English-language studies using a priori criteria. Eligible studies included randomized, controlled trials (RCTs) of screening or treatment for abuse victimization, studies evaluating accuracy of screening tests to detect abuse, and cohort studies with a concurrent control group assessing the harms of screening or treatment for abuse.

Data Extraction: One investigator extracted data and a second checked accuracy. Two reviewers independently rated quality for all included studies using predefined criteria.

Data Synthesis: Thirty studies (14,959 participants) were included. Three RCTs (3,759 participants) compared IPV screening (with brief intervention and information about referral options for screen positive women) with no screening; none found significant improvements in any outcome over 3 to 18 months (e.g., IPV, quality of life, or depression) and two RCTs (1,051 participants) reported no harms associated with screening. Fifteen studies assessed the accuracy of one or more abuse screening tools (1,051 participants); studies reported on different measures (e.g., current, past-year, or lifetime IPV). Nine studies assessed tools to detect any past-year or current IPV in women; for past-year IPV (5 studies; n=6,331), sensitivity of five tools ranged from 65 to 87 percent, and specificity ranged from 80 to 95 percent. The accuracy of five tools (4 studies; n=1,795) for detecting current abuse varied widely; sensitivity ranged from 46 to 94 percent, and specificity ranged from 38 to 95 percent. Eleven RCTs (6,740 participants) evaluated interventions for adult women with screen-detected IPV or who were considered at risk for IPV. Eight reported on the incidence of any category of IPV; two of these (575 participants) found a statistically significant benefit in favor of the intervention, one home visiting intervention (standardized mean difference [SMD] -0.34; 95% CI, -0.59 to -0.08) and one behavioral counseling intervention addressing multiple risk factors (SMD -0.40; 95% CI, -0.68 to -0.12). Of the six other RCTs reporting on measures of any IPV exposure, one home visiting intervention (N=643) found an association with reduced IPV, but differences were not statistically significant (SMD -0.04; 95% CI, -0.23 to 0.14), and five RCTs (7,283 participants) found similar rates of IPV in both groups with no statistically significant differences between groups. Two RCTs (210 participants) reported on subtypes of violence only and found mixed results. One RCT assessing a behavioral counseling intervention targeted at multiple risk factors (IPV, smoking, depression, tobacco exposure) reported on birth outcomes among the subgroup of women who screened positive for IPV at baseline (306 of 1,044 enrolled participants) and found no significant difference between groups in rates of low birth weight neonates (<2,500 g) or preterm birth (<37 weeks) or very low birth weight neonates (<1,500 g); however, significantly fewer women in the intervention group had very preterm neonates (≤33 weeks) (2

vs. 9 women; p=0.03). Five RCTs assessing interventions for women with IPV reported on depression outcomes and found inconsistent results (3 found benefit and 2 did not). Three RCTs (506 participants) measured quality of life, two found no difference between groups on SF-12 scores, and one found mixed results across SF-36 subdomains. No studies evaluated screening for elder abuse or abuse of vulnerable adults. We identified one study assessing a screening tool for elder abuse that had poor accuracy (sensitivity 46% and specificity 73% for detecting physical or verbal abuse). We found no RCTs of treatment specific to populations with elder abuse or abuse in vulnerable adults.

Limitations: RCTs of IPV screening and treatment interventions were heterogeneous in terms of setting, intervention content, and intensity. We were not able to pool study results due to heterogeneity. Strength of evidence was low or insufficient for benefits of treatment (depending on the outcome); evidence was graded as insufficient for birth outcomes because of imprecision, unknown consistency, few events from one subgroup analysis, and uncertainty about whether results could be attributed to IPV counseling. No studies assessed screening or treatment for elder abuse and abuse of vulnerable adults. Most screening tools were assessed in only one study; several enrolled participants from emergency department settings and may have unclear applicability to primary care settings.

Conclusions: Although available screening tools may reasonably identify women experiencing past 12-month IPV, RCTs of screening in adult women do not show a reduction in IPV exposure or improvement in quality of life over 3 to 18 months. Interventions for women with screen-detected IPV show inconsistent results; limited evidence from some RCTs suggested that home visiting interventions and behavioral counseling interventions that address multiple risk factors may lead to reduced IPV among pregnant or postpartum women. No eligible studies assessed screening or treatment for elder abuse and abuse of vulnerable adults.

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Chapter 1. Introduction

Scope and Purpose

The U.S. Preventive Services Task Force (USPSTF) will use this report to inform an update of its 2013 recommendation on screening for intimate partner violence (IPV), elder abuse, and abuse of vulnerable adults.[1] In 2013, the USPSTF recommended screening women of childbearing age for IPV, such as domestic violence, and providing or referring women who screen positive to intervention services (B recommendation). For asymptomatic older and vulnerable adults, the USPSTF concluded that evidence was insufficient to assess the balance of benefits and harms of screening for abuse and neglect (I statement). The purpose of this report is to systematically evaluate the current evidence on screening for IPV, elder abuse, and abuse of vulnerable adults for populations and settings relevant to primary care in the United States. This report focuses on screening individuals who do not have symptoms, complaints, or obvious signs of abuse, such as physical injuries.

Condition Definition

IPV refers to physical violence, sexual violence, psychological aggression (including coercive tactics, such as limiting access to money), or stalking by a person with whom one has a close personal relationship,[2] such as a current or former boyfriend/girlfriend, dating partner, ongoing sexual partner, or spouse. **Appendix A Table 1** shows the categories of IPV recognized by the Centers for Disease Control and Prevention (CDC).[3]

CDC defines elder abuse as "an intentional act or failure to act by a caregiver or another person in a relationship involving an expectation of trust that causes or creates a serious risk of harm to an older adult."[4, p. 28] An older adult is considered to be age 60 years or older. For this update review, abuse and neglect of vulnerable adults is also considered with elder abuse. A vulnerable adult is a person age 18 years or older whose ability to perform the normal activities of daily living or to provide his or her own care or protection is impaired because of a mental, emotional, long-term physical, or developmental disability or dysfunction or brain damage.[5] **Appendix A Table 2** shows CDC's definitions of categories of elder abuse; these apply also to abuse of vulnerable adults. The legal definition of "vulnerable adult" varies by State.[6]

Prevalence and Burden

Prevalence

Estimates of IPV prevalence vary because of nonstandardized definitions, differences in reporting requirements, and other factors. In addition, prevalence estimates are believed to underrepresent true rates of abuse because of underreporting.[7] Victims may be reluctant to report IPV for many reasons, including economic dependence on the abuser, shame, embarrassment,

and fear of reprisal.[8] The CDC conducts a periodic nationally representative random survey of U.S. adults to obtain estimates of IPV prevalence, the National Intimate Partner and Sexual Violence Survey (NISVS). The 2015 NISVS (N=10,081) estimated that 5.4 percent of women and 5.1 percent of men experienced any past-year contact sexual violence, physical violence, and/or stalking by an intimate partner.[9] The prevalence of past-year psychological victimization was not reported in the 2015 NISVS; however, NISVS data from 2011 (N=12,727) estimated that 14.2 percent of women and 18.0 percent of men experienced past-year psychological victimization.[10] In terms of lifetime prevalence of abuse, 2015 NISVS data estimated that 36.4 percent of women and 33.4 percent of men had experienced contact sexual violence, physical violence, and/or stalking.[9] Rates of lifetime psychological abuse were similar: 36.4 percent in women and 34.3 in men.

Rates of IPV prevalence vary by age, ethnicity, and household income. For example, according to 2011 NISVS estimates, reported rates of lifetime physical violence are higher among American Indian/Alaskan Native women (51.7%), multiracial women (51.3%), and non-Hispanic black women (41.2%) than non-Hispanic white women (30.5%) and Hispanic women (29.7%).[10] Results from the 2010 NISVS survey (N=16,507) found reported rates of intimate partner rape, physical violence, or stalking victimization decline as women age from 14.8 percent among women ages 18 to 25 years, 4.1 percent among women ages 45 to 54 years, and 1.4 percent among women age 55 years or older.[11] In addition, the 12-month prevalence of rape, physical violence, or stalking by an intimate partner was 9.7 percent among women with a combined household income of less than $25,000 versus 2.8 percent for women with a combined household income over $75,000.[11] Few nationally representative surveys report recent data on IPV victimization among adolescents and other subgroups. Among respondents to the 2015 Youth Risk Behavior Survey who dated or went out with someone during the prior 12 months, 11.7 percent of girls and 7.4 percent of boys in 9th through 12th grade reported physical dating violence (being hit, slapped, or physically hurt on purpose by a boyfriend or girlfriend) and 15.6 percent of girls and 5.4 percent of boys reported sexual dating violence (defined as forced to kiss, touch, or have sexual intercourse they did not want to do).[12]

Prevalence estimates of elder abuse and abuse of vulnerable adults vary for many of the reasons noted for IPV estimates (e.g., nonstandardized definitions, differences in reporting requirements); in addition, features of study design, such as exclusion of the cognitively impaired, may result in underestimation of prevalence.[13] A 2004 nationally representative survey (N=3,005) of past-year abuse among community-residing adults ages 57 to 85 years estimated 9 percent for verbal mistreatment, 3.5 percent for financial mistreatment, and 0.2 percent for physical mistreatment by a family member.[14] In data from a 2008 nationwide telephone survey (N=5,777), 4.6 percent of respondents reported past-year emotional abuse, 1.6 percent physical abuse, 0.6 percent sexual abuse, 5.1 percent potential neglect, and 5.2 percent current financial abuse by a family member.[15] Ten percent of respondents reported emotional, physical, or sexual mistreatment or potential neglect in the previous year.[15] Among older adults, intimate partners constitute a minority of perpetrators in substantiated reports of elder abuse; according to data from a 2004 national survey of Adult Protective Services (APS) agencies, across all substantiated abuse reports involving a known perpetrator among adults over 60 (N=2,074), approximately 11 percent involved a spouse or intimate partner.[16] The most common perpetrators of elder abuse are adult children (33% of cases) and other family members (20% of cases).[16]

We identified few studies reporting recent estimates of the prevalence of abuse among populations of vulnerable adults. The 1995–1996 National Violence Against Women Survey (N=6,273) found that women with severe disability impairments were four times more likely to experience sexual assault in the past year than women without disabilities,[17] whereas analysis of data from the National Longitudinal Study of Adolescent Health (collected from 1994 through 2008) concluded that the odds of experiencing forced sex were about 1.5 times greater for female respondents ages 26 to 32 years with a physical disability compared with those without disabilities.[18] In results from a 2004 survey of State APS, APS tallied 40,848 substantiated reports of vulnerable adult (ages 18 to 59 years) abuse in 19 States.[6]

Burden

Abuse (IPV, elder abuse, and abuse of vulnerable adults) can cause adverse physical and mental outcomes. These outcomes can be immediate effects of violent episodes (e.g., acute physical injury, distress, or death), as well as long-term consequences that may result from one or more episodes of violence (e.g., development of post-traumatic stress disorder [PTSD]).[19] In addition to adverse health outcomes, IPV can lead to adverse social consequences such as homelessness and isolation from social networks.[19] IPV is also associated with significant economic burden due to direct medical and mental health care services and indirect costs from lost productivity.[20]

Approximately 15 percent of women who experienced IPV on the 2010 NISVS had been injured in violent episodes.[11] Among postmenopausal participants in the Women's Health Initiative, all types of abuse exposure were found to be associated with reductions in physical functioning scores;[21] in the same cohort, women who reported physical, verbal, or both types of abuse in the previous year had a higher adjusted risk for mortality than women who did not report abuse.[22] IPV also has adverse consequences on the reproductive health of women. IPV victimization is linked to higher rates of sexually transmitted infection[23] and unintended pregnancy.[24] Violence during pregnancy is associated with preterm birth, low birth weight, and decreased mean gestational age;[25] its adverse effects on maternal and infant health include perinatal mental health problems[26] and neonatal and post-neonatal hospitalization.[27] The literature on health outcomes in male victims of IPV is sparse; in general, men are considered to have less severe physical consequences associated with IPV than women.[10] Multivariate analysis of data from the Behavioral Risk Factor Surveillance System (BRFSS) 2006 survey (N=13,765) showed that IPV increased the odds of depression fourfold for nonveteran men and doubled them for veterans.[28] In a study using data from two survey waves of the National Longitudinal Study of Adolescent Health (Add Health), both male and female young adults who reported experiencing IPV in the form of threats, physical violence, or sexual violence had more depressive symptoms and poorer self-rated health status, even after controlling for childhood abuse, an important confounder that both confers increased risk of IPV and is associated with adverse health outcomes.[29]

Among older adults, in a study of 5-year all-cause mortality for five types of elder abuse, caregiver neglect and financial exploitation were associated with the highest mortality rates.[30] Among community-dwelling elders in the Chicago Health and Aging Project, abuse reported to social services agencies was associated with increased risk of overall mortality (hazard ratio [HR], 1.39; 95% confidence interval [CI], 1.07 to 1.84).[31] Other consequences of elder abuse include a higher risk of nursing home placement[32] among victims referred to APS, increased

rates of hospitalization,[33] and adverse psychological consequences (distress, anxiety and depression).[33]

Risk Factors

A variety of factors at the individual, relationship, community, and societal levels contribute to the risk of IPV and other forms of interpersonal violence.[7, 34, 35] Risk factors at various levels (e.g., individual and relationship) often overlap and are risks of both future victimization and perpetration. For example, multiple studies have concluded that exposure to violence as a child (directly or as a witness) is a predictor of future violence exposure as an adolescent or adult, as well as the perpetration of violence as an adolescent or adult.[36-38] Systematic reviews of IPV risk factors have concluded that multiple demographic factors are associated with increased risk of IPV (either victimization or perpetration), including younger age (late adolescents to young adulthood), unemployment, and developmental or behavioral problems (e.g., antisocial behavior, poor impulse control).[34] One systematic review[39] that examined longitudinal predictors of IPV victimization in adults reported many of the same risk factors as above; specifically, they reported significant associations between IPV victimization and child and adolescent maltreatment, childhood family risks (e.g., family structure, quality of family relationships), child and adolescent behavioral problems, adolescent peer difficulties (e.g., not dating, poor friendship quality), and sociodemographic risks. Risk factors for elder abuse victimization specifically include isolation and a lack of social support, functional impairment and poor physical health (regardless of the cause), and age (increased risk among adults in their 50s and 60s compared with older adults).[14, 40] For older adults, lower income and living in a shared living environment with a large number of household members (other than a spouse) is associated with an increased risk of financial and physical abuse.[41]

Rationale for Screening

Routine screening in populations without signs or symptoms of abuse could identify abuse not otherwise known, prevent future abuse from occurring, and reduce morbidity and mortality. Because of fear, intimidation, and lack of support, many individuals do not disclose abuse unless directly questioned, and many who are directly questioned will not disclose. For older adults, many victims do not seek help from the police, APS, or social and health service providers, especially when the perpetrators are their children.[42, 43] Preventing, identifying, and stopping abuse may prevent both short- and long-term serious health outcomes.[44]

There is no consensus regarding the most acceptable screening setting or modality.[45] Many screening questionnaires are available that could be used in primary care settings, these include the Humiliation, Afraid, Rape, Kick (HARK); Hurt/Insult/Threaten/Scream (HITS); Woman Abuse Screening Tool (WAST); and others. **Appendix G Table 1** details the questions they include, their score ranges, and interpretation. For older adults, there is uncertainty about how to conduct screening when potential victims may be accompanied by perpetrators or may be unable to answer questions themselves due to physical or cognitive disability.[41]

Several types of interventions are available for victims of IPV and other forms of interpersonal abuse, such as advocacy (e.g., assistance finding safe housing), counseling, home visits, referrals to community services, provision of education and resources, mentoring support, or combinations of intervention components.[45] Interventions may be provided by clinicians, nurses, social workers, nonclinician mentors, or community workers. For older or vulnerable adults, interventions may also include money management, out-of-home placement, or conservatorship (a court-appointed guardian to manage financial and other affairs). Some interventions for older adults identified with abuse (or at risk for abuse) may include components targeted toward perpetrators (e.g., family members or other caregivers).[46] The availability and accessibility of services vary by community. Potential harms of interventions may include increased abuse, shame, guilt, self-blame, loss of privacy, and fear of retaliation by perpetrators.

Recommendations and Clinical Practice in the United States

Appendix A Table 3 summarizes recommendations from other organizations on screening for IPV in clinical settings. There is some disagreement among guidelines on screening for IPV. Similar to the current (2013) USPSTF recommendation, the American Academy of Family Physicians, American Academy of Obstetricians and Gynecologists, and others recommend screening. However, both the Canadian Task Force on Preventive Health Care and World Health Organization (WHO) indicate that current evidence does not justify universal screening.

Recommendations of other groups about screening for elder abuse in health care settings are summarized in **Appendix A Table 4**. Health care organizations have mixed recommendations about screening for elder and vulnerable adult abuse. The American Academy of Neurology, American College of Emergency Physicians, and the American Congress of Obstetricians and Gynecologists all specifically suggest screening for elder abuse. The USPSTF, American Academy of Family Physicians, WHO, the American Geriatrics Society, and the Canadian Task Force on Preventive Health Care conclude that the current evidence is insufficient to warrant a recommendation to screen.

A recent systematic review focused on screening and counseling practices for IPV among women in clinical settings.[47] Across all included studies (k=35), rates of routine screening were variable and typically low, ranging from 2 to 50 percent of providers reporting "always" or "almost always" routinely screening for IPV.[47] Definitions of "routine screening" varied; in some studies, this meant at every visit, and in others, this meant at every annual exam (or first prenatal visit for obstetricians).

The clinical practice implications of identifying abuse in some populations may require reporting by health care professionals. For example, some States require clinicians (including primary care physicians) to report abuse to legal authorities, and most require reporting of injuries resulting from firearms, knives, or other weapons.[48] For elder abuse specifically, mandatory reporting laws and regulations also vary by State; however, most require reporting.[49] For IPV, by Federal law (through the passage of the 1994 Violence Against Women Act and the 2005 reauthorization),[50] shelter workers and other advocates are not mandatory reporters, unless they hold a clinical license that otherwise requires them to report abuse, thereby making it easier for women to seek

refuge from abuse without fear of losing their children. There is significant controversy in the field over whether legal reporting for IPV should be mandatory to ensure victim safety.

Chapter 2. Methods

Key Questions and Analytic Framework

The Evidence-based Practice Center (EPC) investigators, USPSTF members, and Agency for Healthcare Research and Quality (AHRQ) Medical Officers developed the scope and key questions (KQs). **Figures 1** and **2** show the analytic framework and KQs that guided the review. KQs for IPV (**Figure 1**) are the following:

1. Does screening for current, past, or increased risk for intimate partner violence (IPV) in adults and adolescents reduce exposure to IPV, physical or mental morbidity, or mortality?
2. What is the accuracy of screening questionnaires or tools for identifying adults and adolescents with current, past, or increased risk for IPV?
3. What are the harms of screening for IPV in adults and adolescents?
4. How well do interventions reduce exposure to IPV, physical or mental morbidity, or mortality among screen-detected adults and adolescents with current, past, or increased risk for IPV?
5. What are the harms of interventions for IPV in adults and adolescents?

KQs for elder abuse and abuse of vulnerable adults (**Figure 2**) are the following:

1. Does screening in health care settings for current, past, or increased risk for abuse and neglect in older and vulnerable adults reduce exposure to abuse and neglect, physical or mental morbidity, or mortality?
2. How effective are screening questionnaires or tools in identifying older and vulnerable adults with current, past, or increased risk for abuse and neglect?
3. What are the harms of screening for abuse and neglect in older and vulnerable adults?
4. How well do interventions reduce exposure to abuse and neglect, physical or mental morbidity, or mortality among screen-detected older and vulnerable adults with current, past, or increased risk for abuse and neglect?
5. What are the harms of interventions for abuse and neglect in older and vulnerable adults?

In addition to addressing our KQs, we also looked for evidence related to two Contextual Questions (CQs) that focused on the factors that limit the applicability of IPV and older/vulnerable adult screening and treatment studies conducted in emergency department settings to primary care settings. These CQs were not a part of our systematic review. They are intended to provide additional background information. Literature addressing these questions is summarized in **Appendix A**.

Data Sources and Searches

We searched PubMed/MEDLINE, the Cochrane Library, and Embase for English-language articles published through October 4, 2017. We used Medical Subject Headings as search terms when available and keywords when appropriate, focusing on terms to describe relevant

populations, screening tests, interventions, outcomes, and study designs. The search relied, in part, on the prior systematic reviews for the USPSTF[45, 51] to identify potentially relevant studies published before 2011 (we reassessed all articles included in the 2004 and 2011 systematic reviews using the eligibility criteria). We conducted new searches for studies relevant to screening and treatment for IPV victimization in men and adolescents because these populations were excluded in prior reviews for the USPSTF. **Appendix B** describes the complete search strategies. We conducted targeted searches for unpublished literature by searching ClinicalTrials.gov, the National Institutes of Health's Research Portfolio Online Report Tools, and the WHO's International Clinical Trials Registry Platform. To supplement electronic searches, we reviewed the reference lists of pertinent review articles and studies meeting our inclusion criteria and added all previously unidentified relevant articles. We will review all literature suggested by peer reviewers or public comment respondents and incorporate eligible studies into the final review. In addition, since October 2017, ongoing surveillance is being conducted through article alerts and targeted searches of high-impact journals to identify major studies published in the interim that may affect the conclusions or understanding of the evidence and, therefore, the related USPSTF recommendation. The last surveillance was conducted on August 1, 2018.

Study Selection

We developed inclusion and exclusion criteria for populations, interventions, comparators, outcomes, settings, and study designs (**Appendix B**).[52] We included English-language studies of adolescents and adults presenting for primary care and other health care settings (e.g., emergency departments) without recognized signs or symptoms of IPV or abuse. We also included English-language studies enrolling older adults (age 60 years or older) and vulnerable adults (age 18 years or older) presenting for primary care services without recognized signs or symptoms of abuse or neglect. All studies were conducted in the United States or in similar populations with services and interventions applicable to U.S. practice. We also searched for evidence on subgroups defined by age; sex; race/ethnicity; pregnancy status; lesbian, gay, bisexual, transgender, and queer (LGBTQ) identification; type of abuse (e.g., physical abuse, sexual abuse); history of abuse; or presence of comorbid conditions for all KQs.

The following descriptions of study selection criteria by KQ pertain to both IPV and abuse or neglect of older/vulnerable adults. For KQ 1 (direct evidence that screening improves health outcomes), we included only RCTs comparing groups that were screened (for IPV victimization or for abuse and neglect among older/vulnerable adults) with groups that were not screened. Eligible outcomes for KQ 1 included reduction in abuse or neglect, health outcomes, health care utilization attributed to IPV, quality of life, and mortality.

For KQ 2 (screening test accuracy), we searched for studies that assessed the accuracy (e.g., sensitivity, specificity) of screening tests designed to detect IPV (current or past victimization or risk status for victimization) or, among older/vulnerable adults, current, past, or increased risk of abuse or neglect. Only tools feasible for use in U.S. primary care settings (i.e., brief, easy to interpret, acceptable to patients and clinicians) and appropriate when abuse is not suspected were eligible. We included only studies that compared a screening test with an acceptable reference

standard, such as the Conflicts Tactics Scale (CTS), Composite Abuse Scale (CAS), or Index of Spouse Abuse (ISA). We excluded studies designed to identify perpetrators of IPV. For KQ 3 (harms of screening), we included RCTs and cohort studies with a concurrent control group comparing screened groups with unscreened groups. Eligible harm outcomes included labeling, stigma, false-positive and false-negative results, increased abuse and retaliation, and other harms (**Appendix B2**).

For KQ 4 (benefits of interventions) and KQ 5 (harms of intervention), we included studies assessing interventions that could be offered in or referred to by primary care (e.g., counseling, case management, home visitation, mentor or peer support, safety planning, and referral to community services). We included RCTs comparing intervention groups with no treatment, usual care, attention control, or waitlist control. For studies assessing the harms of interventions (KQ 5), cohort studies with a concurrent control group were also eligible. For KQ 5, all harms associated with the intervention (e.g., increased abuse or other forms of retaliation, emotional distress) were eligible.

Two investigators independently reviewed titles and abstracts. Two investigators independently reviewed the full text of articles marked for potential inclusion by either reviewer. Two experienced team members resolved any disagreements.

Quality Assessment and Data Abstraction

For each included study, one investigator extracted pertinent information about the methods, populations, interventions, comparators, outcomes, timing, settings, and study designs. A second investigator checked all data extractions for completeness and accuracy.

We assessed the quality of studies as good, fair, or poor using predefined criteria developed by the USPSTF and adapted for this topic (**Appendix B3**).[53] Two independent reviewers assigned quality ratings for each study. Disagreements were resolved by discussion with an experienced team member. We included only studies rated as having good or fair quality.

Data Synthesis and Analysis

Findings for each KQ were qualitatively synthesized by summarizing the characteristics and results of included studies in tables, figures, and narrative format. To determine whether meta-analyses were appropriate, we assessed the clinical and methodological heterogeneity of studies following established guidance.[54] We qualitatively assessed the populations, screening tests, interventions, comparators, outcomes, and study designs, looking for similarities and differences. For IPV, we did not estimate pooled effects of screening or treatment because we identified few trials focused on heterogeneous populations, intervention types, and outcomes. For screening test accuracy (KQ 2), we identified a larger body of literature (15 studies) but were unable to perform meta-analyses due to substantial heterogeneity in study populations, settings, screening tests, and diagnostic reference standards. No more than two included studies assessed the same screener in a similar population and reported on the same type of measure (e.g., accuracy for detecting past

year IPV, accuracy for detecting current or ongoing IPV). In addition, accuracy studies not only varied in the reference measure used (i.e., Composite Abuse Scale, Conflict Tactics Scale/Conflict Tactics Scale-2, Index of Spouse Abuse), but also in how the reference measure categorized IPV (e.g., overall IPV, physical violence only, or combined physical or sexual violence). In a few cases, accuracy studies using the same screener sometimes used different cut points for determining test positivity.

When possible, for studies reporting on similar outcomes, we created forest plots to display effect estimates from individual studies using Comprehensive Meta-Analysis version 3.3 (Biostat, Inc.) and Stata version 14 (StataCorp). In both figures and text, we show study estimates based on multiple imputation or other methods to address missing data when these were provided by authors. For KQ 4 (benefits of IPV interventions), studies reported on similar outcomes (e.g., incidence of IPV based on the Conflict Tactics Scale-2) using both continuous and dichotomous measures. To create figures displaying commonly reported outcomes, we re-expressed results as a standardized mean difference (SMD) when possible (i.e., when sufficient data was available).

When synthesizing evidence and making conclusions on screening test accuracy, we focused on studies that report the accuracy of screening tools for detecting past-year or current IPV as the outcomes most relevant for clinical practice (rather than lifetime IPV prevalence or prediction of future abuse). In the detailed Results and tables, we summarize all IPV test accuracy measures (current, past year, lifetime and prediction of future abuse).

Two independent reviewers assessed the overall strength of the body of evidence for each KQ as high, moderate, low, or insufficient using methods developed for the USPSTF (based on methods of the EPC program[55, 56]), based on the overall quality of studies, consistency of results between studies, precision of findings, and risk of reporting bias. The applicability of the findings to U.S. primary care populations and settings was also assessed. Discrepancies were resolved through consensus discussion.

Expert Review and Public Comment

A draft report was reviewed by content experts, representatives of Federal partners, USPSTF members, and AHRQ Medical Officers and was revised based on comments, as appropriate. The draft report was also posted for public comment between April 24, 2018, and May 21, 2018. References suggested by the public were reviewed and evaluated for inclusion/exclusion. For IPV, the report was revised to include an additional recommendation in the table of recommendations from other groups, to highlight risk factors for victimization in the introduction, and to include limiting access to money as an example of coercive tactics. For elderly and vulnerable adults, minor edits were made to clarify that eligible elder abuse screening tools for this report are those feasible for use in U.S. primary care settings (i.e., brief, easy to interpret, acceptable to patients and clinicians) and appropriate for screening when abuse is not suspected, and the team ensured that the prevalence estimates of elder abuse cited in the introduction are from the most recent, nationally representative studies enrolling U.S. adults.

USPSTF Involvement

This review was funded by AHRQ. AHRQ staff and USPSTF members participated in developing the scope of the work and reviewed draft manuscripts, but the authors are solely responsible for the content.

Chapter 3. Results

Literature Search

We identified 3,263 unique titles and abstracts and assessed 373 full-text articles for eligibility (**Figure 3**). We excluded 348 articles for various reasons detailed in **Appendix C** and included 30 published studies (34 articles) of good or fair quality. Of the included studies, three (four articles) addressed KQ 1, and two of these also reported on harms (KQ 3). Fifteen studies were included that examined IPV test accuracy (KQ 2). Eleven studies (14 articles) were identified that focused on the benefits of IPV interventions (KQ 4), and five of these also reported on harms. We identified one KQ 2 study of elder abuse test accuracy. We identified no eligible KQ 1 (direct evidence of screening), KQ 3 (harms of screening), KQ 4 (benefits of intervention), or KQ 5 (harms of intervention) studies that addressed elder abuse or abuse of vulnerable adults. Details of quality assessments of included studies and studies excluded because of poor quality are provided in **Appendix E**.

Results

KQ1. Does Screening for Current, Past, or Increased Risk for IPV in Adults and Adolescents Reduce Exposure to IPV, Physical or Mental Morbidity, or Mortality?

Summary

Overall, consistent evidence from three RCTs (3,759 participants) found no benefit of screening adult women (mean ages 34 to 40 years) for IPV followed by brief counseling or referral. The three RCTs compared universal screening for IPV in a health care setting with no screening; one enrolled participants from 10 U.S. primary care clinics,[57] one enrolled participants from a single New Zealand emergency department,[58] and one enrolled participants from a variety of Canadian clinical settings (12 primary care sites, 11 emergency departments, and 3 OBGYN clinics).[59] Prevalence of past-year IPV ranged from 12 to 18 percent across studies. Responses to positive screening results in the intervention group included brief education and referral options. The RCT set in U.S. primary care centers compared screening for IPV with two separate no-screen groups: one group received information on partner violence resources, and the other received no resource list;[57] the other two trials compared in-person screening before a health care encounter with no screening. In the Canadian RCT, the control group was screened after a health care visit, and women screening positive in both groups were followed over time.

None of the three RCTs found statistically significant benefits associated with screening. The RCT set in U.S. primary care centers found similar rates of IPV among women randomized to screening (11%), receipt of a partner violence resource list (11%), and no resource list (9%) at 12 months. The two other RCTs found a small benefit associated with the intervention, however, differences between groups were not statistically significant. Two RCTs also measured QOL and

found similar scores between women randomized to screening and no screening with no significant difference between groups;[57, 59] one of these (set in various Canadian healthcare settings) found an association between the intervention and improved depression and PTSD symptoms, however differences between groups were small and not statistically significant. We found no RCTs enrolling men or adolescents, and none focused on pregnant women or that reported outcomes separately by pregnancy status.

Characteristics of Included Trials

Three RCTs (described in 4 publications) compared universal screening for IPV in a health care setting with no screening (**Table 1**).[57-60] All three trials enrolled only women; one study enrolled a minority of pregnant women (5%),[59] and the other two did not comment on the proportion of participating women who were pregnant. Mean ages of enrolled women across studies ranged from 34 to 40 years. One trial limited enrollment to women who had a male partner within the past 12 months;[59] the other two did not comment on whether participants had male or same-sex partners, and no studies commented on the proportion of study participants who identified as LGBTQ. One trial enrolled a majority of nonwhite participants,[57] one enrolled a majority of white participants,[58] and the third did not comment on race or ethnicity.[59] Trials were conducted in the United States,[57] New Zealand,[58] and Canada.[59] The recruitment setting of included trials also varied; one trial enrolled participants from 10 primary care clinics,[57] one enrolled participants from a single emergency department,[58] and one cluster RCT enrolled participants from a variety of clinical settings (12 primary care sites, 11 emergency departments, and 3 OBGYN clinics).[59] Prevalence of past-year IPV ranged from 12 to 18 percent across studies.

All included studies assessed the benefit of universal screening for IPV (regardless of participant reason for seeking medical care) followed by a brief intervention or referral for screen positive women; no studies described the number of participants who were presenting with health complaints specific to violence. In the one RCT enrolling participants from an emergency department, 20 percent of enrolled women were presenting with an acute injury (not otherwise characterized).[58] All RCTs used screening tools designed to identify women who had experienced any IPV within the past 12 months. Two studies used the 3-item PVS[57, 58] (one study administered the tool via a computer,[57] and the other administered the tool in person via a research assistant),[58] and one study used the eight-item WAST.[59]

All RCTs compared screening to no formal screening; in two studies, the control group received a list or card with partner violence resources.[57, 59] The RCT set in U.S. primary care centers compared screening for IPV with two separate no-screen groups: one group received information on partner violence resources, and the other received no resource list.[57] Responses to positive screening tests varied across trials. In the RCT set in U.S. primary care centers, women who screened positive for IPV were immediately shown a short video providing support and information about a hospital-based partner violence advocacy program and were encouraged to seek help and also received a printout with local partner violence resources.[57] The RCT set in a New Zealand emergency department conducted in-person screening (by a research assistant); women who screened positive were given information about referral options and an additional clinical assessment was conducted to assess safety.[58] If women responded positively to questions about safety (concern about their own safety or that of children in their home), additional on-site

support included notification of their emergency department care provider and hospital social worker.[58] In the RCT conducted in a variety of Canadian healthcare settings, clinicians caring for women who screened positive for IPV were alerted before the encounter by placing the completed WAST screening tool in the chart; discussion of the positive findings, referrals, or treatment was left to the discretion of the treating clinician.[59] In the same RCT, all women completed the CAS after the clinic visit; women not randomized to screening completed both the WAST and CAS at the end of their visit. Women with positive scores on both the WAST and CAS (screened and nonscreened groups) were followed for 18 months (at baseline and again at 6, 12, and 18 months).[59]

Two RCTs were rated as fair and one was rated as good (**Appendix E Table 1**). One RCT had high overall attrition (42%), but low differential attrition and missing data was accounted for using multiple imputation.[59] However, women lost to followup had lower levels of education, higher scores on the WAST and CAS, and were more likely to be married compared with women retained in the trial.[59] This same trial also had low fidelity; less than half of screen-positive women (44%) reported discussing IPV with their clinicians during their clinic visit.[59] Rates of attrition in the other two RCTs ranged from 13 to 14 percent overall (with no significant differential attrition); the RCT set in U.S. primary care settings addressed missing data using multiple imputation the trial set in a New Zealand emergency department analyzed completers only.

Results of Included Trials

IPV

All included RCTs reported on rates of IPV following the screening intervention; however, specific measures and outcome timings varied across studies. Despite heterogeneity across studies, no study found a significant reduction in IPV among the screened group compared to a non-screened control group (**Figure 4**).[57-60]

The RCT conducted exclusively in U.S. primary care settings (N=2,708) measured the occurrence of any partner violence events 1 year after screening among women randomized to three groups: screening (plus provision of a partner violence resource list), partner violence resource only, and a control (no screening or provision of a resource list). Outcomes were measured using 18 questions adapted from the National Violence Against Women Survey[61] specific to psychological, physical, and sexual violence.[57] A positive response to any question was considered as experiencing partner violence (i.e., counted as an event). Women randomized to the screened group and control group had a similar incidence of partner violence at 1 year (odds ratio [OR], 1.2; 95% CI, 0.7 to 2.2); similarly, women randomized to the screened group and partner violence resource list only arm had a similar rate of partner violence (OR, 1.0; 95% CI, 0.8 to 1.4).[57] This RCT also assessed IPV recurrence among the subgroup of women reporting IPV before enrollment; rates of recurrence were similar between the screened and control groups (OR, 1.2; 95% CI, 0.7 to 2.2) and between the screened and partner violence resource list group (OR, 0.8; 95% CI, 0.5 to 1.4).[57]

The two other included RCTs measured rates of IPV using the CAS, and both reported on the

number of participants in each group with a positive CAS score (≥7, range 0 to 150).[58, 59] The RCT conducted in a variety of Canadian health care settings (N=707 participants) reported on outcomes only among the subgroup of women in the screening and control arms who screened positive on the WAST and CAS at baseline. Recurrence of IPV was assessed at 6, 12, and 18 months (**Figure 4**); at each time point, controlling for missing data using multiple imputation, there was an association between the intervention and lower IPV recurrence but results were not statistically significant and confidence intervals were wide (OR, 0.88; 95% CI, 0.43 to 1.82 at 18 months).[59] The trial enrolling women from one New Zealand emergency department (N=344) measured outcomes in all participants at 3 months (regardless of baseline screening results); the study found an association between the intervention and lower risk of IPV; however, results were not statistically significant (OR, 0.86; 95% CI, 0.39 to 1.92).[58]

Quality of Life

Two included RCTs reported on quality of life (**Figure 5**): the study conducted in U.S. primary care settings[57] and the study conducted in a variety of Canadian health care settings.[59] Both measured quality of life using the 12-Item Short For Survey (SF-12), and neither found a statistically significant difference between groups over 6 to 18 months of followup; scores were similar with less than a 2 point difference across all comparisons and outcome timings. One RCT also measured quality of life using the WHOQOL-Bref scale; scores were slightly lower in the screened group than controls (by 1 to 2 points) at 6, 12, or 18 months and differences were not statistically significant.[59] The RCT conducted in U.S. primary care settings found no difference between 3 arms (screening group, partner violence resource group, and control group) and found similar SF-12 scores at 1 year in the subgroup of women reporting IPV at enrollment **Appendix G Table 1**.[57]

Mental Health Outcomes

One RCT (enrolling women from a variety of Canadian health care settings) reported on PTSD and depression outcomes (**Figure 5**).[59] There were no statistically significant differences between screened and control groups on the Center for Epidemiologic Studies Depression Scale at any time point; estimates favored the screening group, but results were imprecise and differences in scores between groups were small (18-month mean difference between groups: -1.97; 95% CI, -4.33 to 0.39).[59] PTSD was measured using the 4-item SPAN screening tool; there was not a statistically significant difference between screened and nonscreened groups at any time point (**Appendix G Table 1**).

Health Care Utilization Outcomes

One RCT enrolling women from U.S. primary care settings reported on rates of health care utilization (not specific to use of IPV intervention services) (**Appendix G Table 1**).[57] Rates of emergency department utilization and visits with a family physician, nurse, or nurse practitioner were similar for screened and nonscreened groups at 1 and 3 years.[57]

KQ2. What Is the Accuracy of Screening Questionnaires or Tools for Identifying Adults and Adolescents With Current, Past, or Increased Risk for IPV?

Summary

We included 15 fair-quality studies (4,460 participants) assessing the accuracy of 12 different IPV screening tools. All studies enrolled adults, and most enrolled only women or a majority of women; one study included only men.[62] The recruitment settings varied across the studies: five recruited from emergency departments,[62-65] four from primary care practices,[66-69] one from urgent care,[70] and three recruited women by telephone or mail survey.[71-73] Most assessed a tool designed to identify persons experiencing IPV within the past year; however, four studies reported on the accuracy of five tools for identifying current (ongoing) abuse, one assessed the accuracy of detecting lifetime abuse, and one assessed the accuracy of a tool for predicting future (3- to 5-month abuse). Five studies reported on the accuracy of five different screeners (HARK, HITS, E-HITS, PVS, and WAST) for detecting any past-year IPV in adult women; sensitivity ranged from 65 to 87 percent, and specificity ranged between 80 and 95 percent. Most were assessed by only one study; the HITS was assessed in two studies (both enrolling women veterans), one of which also evaluated a modified version of the HITS (Extended HITS [E-HITS]). Estimates for accuracy of HITS and E-HITS were generally consistent but imprecise with sensitivity ranging from 75 to 78 percent and specificity ranging from 80 to 83 percent. One study enrolling men only from an emergency department reported on the accuracy of the PVS and HITS for detecting past-year IPV; sensitivities were low for both PVS and HITS for detecting psychological abuse (30% and 35%, respectively) and for detecting physical abuse (46% for both tools).[62] Four studies reported on the accuracy of five tools for identifying ongoing or current abuse;[63, 69, 70, 74] across all studies, accuracy varied widely (sensitivity 46% to 94%, specificity 38% to 95%). Only one tool, the OVAT, had a sensitivity and specificity greater than 80 percent (86% and 83%, respectively) compared with the ISA.

Characteristics of Included Studies

We included 15 fair-quality studies assessing the accuracy of a total of 12 screening tools for IPV (**Table 2**).[62-72, 74-76] Ten studies[62, 63, 65-70, 73-76] were in the USPSTF 2012 review,[45] and one study[64] was included in the 2004 review.[51]

Of the 13 studies that reported the minimum age of participants, one included participants as young as 17 years of age;[68] the remainder included only adults (age 18 years or older). One study enrolled parents without age specified,[67] and one included no information on age of participants.[74] One of the studies was limited to men,[62] and three included a minority of men (6% to 38%);[63, 67, 74] the rest included only women.[64-66, 68-73, 75, 76] None of the studies were focused on pregnant women, and only two studies reported on the percentage of women who were pregnant (8% to 9%[66, 76]). Two studies focused on women veterans.[71, 72] All but three studies[67, 75, 76] reported race/ethnicity. The range of nonwhite participants was 9 percent to 78 percent; one study reported that the percentage of African Americans was 91 percent.[70] No studies reported on the percentage of partners who were the same sex as the respondent.

The recruitment settings varied across the studies: five recruited from emergency departments,[62-65] four from primary care practices,[66-69] one from urgent care,[70] and three recruited women by telephone or mail survey.[71-73] None of the studies recruiting from emergency departments explicitly excluded participants with injuries that would be indicative of abuse, although most studies did exclude participants who were too ill to participate or who needed immediate medical attention. Two studies were set in Canada,[75, 76] and one was set in the United Kingdom.[68] The remainder were conducted in the United States. Sample sizes ranged from 53 to 5,604 across included studies, with a median size of 232.

Across all included studies, 12 different screeners were assessed: AAS; BRFSS; HARK screener; HITS screener; E-HITS; OAS; OVAT; Parent Screening Questionnaire (PSQ); PVS; Slapped, Things Threatened (STaT) screen; WAST; and an unnamed tool that includes five domestic violence screening questions with nongraphic language. Copies of the screeners are found in **Appendix E**; the tools contained between three and eight items, and all except the unnamed five question screener[69] include specific questions about physical abuse (eight include questions about emotional/psychological abuse, and five include questions about sexual abuse and safety issues). Some of these tools were examined in multiple studies; however, in some studies assessing the same tool, the authors used different criteria for determining a positive screen. This is the case for studies that included the HITS[62, 66, 71] and the WAST.[75, 76]

Included studies used the following validated reference standards to establish screening test accuracy: CAS, CTS/Conflict Tactics Scale-2 (CTS-2), and ISA. One study[65] used a semistructured interview as the gold standard to determine the presence of IPV. In a few studies, two reference standards were used to assess accuracy of the screener. Although the CAS, CTS/CTS-2, and ISA each provide scale scores for different types of IPV (e.g., physical, psychological), as well as an overall classification of IPV, most studies included only the overall measure of IPV. When authors only provided results for specific categories of abuse, we included those data in **Appendix G Table 2**.

Prevalence of current or recent IPV, as measured by the reference standards, ranged from 11 to 29 percent with a median of 24 percent; two studies[62, 67] reported prevalence for IPV subtypes only (**Appendix G Table 2**). Most screeners were designed to measure whether a participant was experiencing IPV within the past year or in the context of a current relationship. However, one study assessed the accuracy of the STaT for detecting lifetime abuse,[65] and one assessed the accuracy of a three-item tool for predicting future (3- to 5-month abuse).[73]

All 15 studies were rated fair quality. Most screeners were assessed by only one study. Methodological limitations included exclusion of missing data or unclear handling of missing data; few studies noted the number of participants excluded because of incomplete data, although one study noted that 19 percent of women did not complete one or more questionnaires.[74] Studies assessing the same screener sometimes used different cut points to determine test positivity or determined positive scores on a reference standard using different criteria (**Appendix G Table 2**).

Results of Included Studies

Accuracy of Detecting Past-Year IPV

Seven studies reported on the accuracy of six different screeners (HARK, HITS, E-HITS, PVS, PSQ, and WAST) for detecting past-year IPV (**Appendix G Table 2**).[62, 64, 67, 68, 71, 72, 76] Of these, five studies enrolled only women (or a majority of women) and reported on accuracy of a tool for detecting any type of past-year IPV; across all screeners, sensitivity ranged from 65 to 87 percent, and specificity ranged between 80 and 95 percent (**Figure 6**). Three screeners (WAST, HARK, and PVS) were assessed by only one study; the HITS was assessed in two study populations (both women veterans) along with a modified version of the HITS (E-HITS). The largest study (N=5,605) evaluated the WAST in a population of women enrolled from mixed clinical settings and found a sensitivity of 87 percent (95% CI, 85 to 90) and specificity of 89 percent (95% CI, 88 to 90) compared with the reference standard (CAS).[76] One study enrolling women from primary care (N=232) assessed the accuracy of HARK compared with the CAS; sensitivity was 81 percent (95% CI, 0.69 to 0.90) and specificity was 95 percent (95% CI, 91 to 98).[77] One study enrolling women from an emergency department evaluated the accuracy of the PVS against two different gold standards (the CTS and ISA); results were similar with estimates of sensitivity ranging from 64 to 71 percent and specificity ranging from 80 to 84 percent.[64] Two studies (both enrolling women veterans) assessed the accuracy of HITS, and one assessed the accuracy of E-HITS; estimates were generally consistent but imprecise (**Figure 6**), with sensitivity ranging from 75 to 78 percent and specificity ranging from 80 to 83 percent (**Figure 6**).

One study enrolling mostly women reported on the accuracy of a tool for detecting past-year subcategories of violence only.[67] The study enrolled adult caregivers from a pediatric primary care clinic (N=200, 94% mothers) and assessed the accuracy of the PSQ; results were reported for subtypes of violence only. Compared with the CTS-2, the tool had poor sensitivity for detecting physical assault (19%), injury (29%), and psychological aggression (27%); specificity was higher (>90%) for all three subtypes of violence.

One study enrolling men only (N=53) from an emergency department reported on the accuracy of the PVS in detecting past-year IPV (**Appendix G Table 2**). This study examined the accuracy of both the HITS and PVS compared with the CTS-2 scores for physical and psychological abuse; sensitivities were low for both PVS and HITS for detecting psychological abuse (30% and 35%, respectively) and for detecting physical abuse (46% for both tools).[62]

Accuracy of Detecting Current (Ongoing) IPV

Five studies reported on the accuracy of a tool in identifying ongoing or current relationship violence.[63, 66, 69, 70, 74] Of these, four reported on the accuracy of a tool for detecting any category of IPV.[63, 69, 70, 74] As shown in **Figure 6**, accuracy varied widely; sensitivity ranged from 46 to 94 percent, and specificity ranged from 38 to 95 percent. Only one tool, the OVAT, had a sensitivity and specificity greater than 80 percent (86% and 83%, respectively).[63] One study (N=113) assessed the accuracy of HITS for detecting physical abuse only compared with the ISA-P; among women enrolled from a primary care setting, HITS had a sensitivity of 86 percent and a

specificity of 99 percent.[66]

Accuracy for Predicting Future Abuse

One study (N=409) evaluated the accuracy of a three-item tool for predicting future partner abuse.[73] The unnamed tool is derived from questions administered in the Colorado BRFSS; the full tool is shown in **Appendix E**. At baseline, 24 percent of the sample reported partner abuse (verbal, sexual, or physical) on the CTS. The sensitivity and specificity for predicting IPV over 3 to 5 months was 20 percent (95% CI, 13 to 30) and 96 percent (95% CI, 93 to 98), respectively.[73]

Accuracy of Detecting Lifetime IPV

One study evaluated the accuracy of the STaT tool for detecting lifetime occurrence of IPV among women presenting to an urgent care center.[65] Using the recommended cut point of at least one endorsed item on the STaT, sensitivity was high (95%) but specificity was low (37%) compared with the ISA.

KQ3. What Are the Harms of Screening for IPV in Adults and Adolescents?

Characteristics of Included Studies

We included two fair-quality RCTs reporting on harms of screening;[58, 59] both were included in KQ 1 (benefits of screening). Study characteristics are described in detail under KQ 1 and shown in **Table 1**. Both RCTs enrolled only adult women; one (N=399)[58] enrolled women presenting to an emergency department of a New Zealand hospital for nonacute care, and the other trial (N=591) enrolled women presenting for their own health care at various settings (12 primary care sites, 11 emergency departments, and 3 OBGYN clinics).[59] Our study design criteria for harms of screening (**Appendix B2**) included RCTs and prospective cohort studies with a concurrent control group; we did not identify any cohort studies meeting our full eligibility criteria.

Results of Included Studies

In one RCT, authors developed a specific tool, the Consequences of Screening Tool (COST),[78] to measure the consequences of IPV screening.[59] The COST questions included an eight-item Effects on Quality of Life subscale that applies to women who received the screening intervention regardless of their abuse status; items are scored on a 5-point scale from two to minus two (range 16 to -16), with negative scores reflecting harm. The full questionnaire is shown in **Appendix E**. Example questions from the COST tool include the following: "Because the questions on partner violence were asked, I feel my home life has become (less difficult ... more difficult)"; "Because the questions on partner violence were asked, I see the quality of my own life as being (better ... worse); "Because the questions on partner violence were asked, I feel that the problems in my relationship with my partner are my fault" (disagree ... agree); and "Because the questions on partner violence were asked, my financial situation has become (better ... worse)." Results of scores were not reported in the main trial; however, the authors of another

systematic review obtained and reported unpublished data from the RCT authors.[79] The COST was administered to a subset of 591 women out of 3,271 screened (227 women who screened positive for abuse, 206 with mixed screen results, and 158 who screened negative). At baseline (within 14 days of being screened), the mean score on the eight-item Effects on Quality of Life subscale was 3.52 (standard deviation [SD] 3.24), indicating that being asked IPV screening questions was not harmful to women immediately after screening. Scores were similar across abuse groups; the mean scores were 3.7 (SD 3.2) for women who scored negative on both the WAST and CAS, 3.3 (SD 3.3) for those who had mixed results, and 3.5 (SD 3.4) for those who scored positive on both measures.[79] Harms were not assessed beyond the baseline visit.[59]

The second trial reported that no adverse events were reported by participants, clinicians or research staff; however, it is not clear whether adverse events were prespecified or how they were monitored.[58]

KQ4. How Well Do Interventions Reduce Exposure to IPV, Physical or Mental Morbidity, or Mortality Among Screen-Detected Adults and Adolescents With Current, Past, or Increased Risk for IPV?

Summary

Eleven RCTs (6,740 participants) evaluated an IPV intervention among adult women with screen-detected IPV or who were considered at risk for IPV; overall, results were imprecise and often inconsistent. Five RCTs enrolled women during the perinatal period; all reported on IPV outcomes. Two home-visiting interventions[80, 81] found lower rates of IPV among women assigned to the intervention group compared with controls; however, the difference between groups was small (standardized mean difference [SMD] -0.04 and -0.34), results were imprecise, and only one found a statistically significant difference (SMD -0.34; 95% CI, -0.59 to -0.08).[81] Three RCTs enrolling pregnant women with screen-detected IPV evaluated a counseling intervention, two found benefit in favor of the intervention[82, 83] and one found an association between the intervention and higher rates of IPV, although results were not statistically significant (SMD 0.22; 95% CI, -0.37 to 0.80).[84] One of the counseling trials that found benefit in favor of the intervention only reported on subtypes of violence; the benefit was significant for some subtypes of violence (psychological and minor physical abuse) but not others (severe physical and sexual abuse).[83] One RCT evaluating a brief prenatal counseling intervention reported on SF-36 subdomains and found mixed results (significant improvement in some subdomains, no difference in others, and significant worse scores for bodily pain).[83] One RCT assessing an integrated behavioral counseling intervention for women with one or more risk factors (smoking, environmental tobacco smoke exposure, depression and IPV) reported on birth outcomes among the subgroup who had IPV at baseline (N=306); there was no significant difference between groups in rates of low birth weight neonates (<2,500 g), very low birth weight neonates (<1,500 g) or preterm birth (<37 weeks); however, significantly fewer women in the intervention group had very preterm neonates (≤33 weeks) (2 vs. 9 women; p=0.03).[85] Many women with IPV at baseline (62%) also screened positive for depression and received counseling for depression in addition to counseling for IPV; improvement in outcomes may be attributable to counseling for depression as opposed to IPV counseling. Two RCTs reported on depression and both found benefit in favor of the intervention (only one found a statistically significant

benefit[83]); one of these also reported on PTSD symptoms and found similar scores in both groups.[84]

The six RCTs enrolling nonpregnant women all measured IPV incidence; four found no significant difference between groups in rates of overall IPV[86, 87] or combined physical and sexual violence;[88, 89] measures of IPV were either similar between groups or slightly higher in the intervention group. One trial reported on subtypes of violence only and found benefit for psychological aggression but not for physical assault or sexual coercion (scores were similar for both groups).[90] Two RCTs measured changes in quality of life following an intervention for IPV; in both trials, scores were similar between intervention and control groups and differences were not statistically significant.[86, 90] Three RCTs reported on depression outcomes; two found benefit in favor of the intervention group (although one found a difference below the threshold considered clinically meaningful),[86, 90] and one found similar scores between groups.[91] One RCT found no difference between groups in the percentage of women who had anxiety at 6 and 12 months; results slightly favored the intervention group, however the differences between groups were small and not statistically significant.[86]

Characteristics of Included Studies

Eleven good- or fair-quality RCTs reported in 14 publications met inclusion criteria.[80-86, 88-94] Four used cluster rather than parallel randomization designs;[81, 86, 88, 89] of these, two were clustered by clinic,[88, 89] one was clustered by physician,[86] and one was clustered by home visiting program.[81] Study characteristics are summarized in **Table 3**.

All included studies enrolled women only, five of these focused on women during the perinatal period.[80-84] Among the eight studies conducted in the United States,[59, 80-82, 84, 87-89, 91] the percentage of nonwhite participants varied, ranging from 75 percent or more in four studies,[80, 82, 87, 89] between 50 percent and 74 percent in three studies,[81, 84, 95] and less than 50 percent in two studies.[88, 91] No study identified participants as LGBTQ. Studies conducted in countries other than the United States included one in Australia[86] and two in Hong Kong.[83, 90]

Included studies assessed heterogeneous interventions. **Appendix G Table 4** shows a detailed summary of intervention components, delivery personnel, and intensity (e.g., number and length of sessions). Five RCTs enrolled women during the perinatal period who screened positive for IPV or were considered at risk;[80] two assessed multiple home visits that included components to address IPV,[80, 81] and three assessed counseling interventions offered during one or more prenatal clinic visits.[82-84] Six studies enrolled populations for whom perinatal status was not an inclusion criterion; all assessed brief counseling interventions. Four RCTs enrolled women with screen-detected IPV, and two cluster RCTs (by the same author) evaluated an intervention focused on clinician training and education that encouraged discussion of IPV during all patient encounters in family planning clinics.[88, 89] Three RCTs consisted of one in-person intervention session followed by telephone followup;[87, 90, 91] two consisted of one-session counseling sessions during a clinic visit;[88, 89] and one study included one to six counseling sessions, depending on the woman's need.[86]

All 11 RCTs were rated as good or fair quality (**Appendix E Table 7**). Common methodological

limitations included overall attrition (20% or higher in seven RCTs); but most had no differential attrition and accounted for missing data using multiple imputation.

Characteristics of Studies Enrolling Pregnant and Postpartum Women

Five RCTs enrolled pregnant or postpartum women determined to be at risk for IPV during a routine maternity care;[80-84] of these, two were included in the 2012 review for the USPSTF.[80, 82] Study characteristics are summarized in **Table 1**. Three RCTs based eligibility criteria for IPV using a validated tool,[81, 83, 84] and one asked women whether they had experienced physical or sexual abuse from a current or former partner in the past year or were afraid of their current partner.[82] One RCT, the Hawaiian Health Start Program (HSP), enrolled mothers during the postpartum period (primarily from hospitals) based on the infant's risk of maltreatment determined by chart review and score on the Kempe's Family Stress Checklist for screening;[80, 96] however, known involvement by Child Protective Services was an exclusion criterion.[80] Four RCTs limited enrollment to mothers age 18 years or older; one also enrolled adolescents.[81] The mean age of participants was reported in four RCTs and ranged from 24 to 32.[81-84] Of the four RCTs reporting race/ethnicity, all enrolled a majority of nonwhite participants.[80-82, 84] Four trials were set in the United States, and one was set in Hong Kong.[83]

Interventions focused on two main types: home visiting interventions and brief clinic-based counseling. Two RCTs evaluated IPV interventions delivered during multiple home visits during the perinatal period.[80, 81] Home visiting interventions were conducted by paraprofessionals or trained nonprofessionals and focused on empowerment, support, and linkages to needed services.[80, 81] One RCT, the Domestic Violence Enhanced Home Visitation (DOVE) trial, compared two home visiting arms (with and without a structured IPV intervention),[81] and the other compared home visits with usual clinical care.[80] The Hawaiian HSP compared weekly home visits for an intended duration of 3 years,[80] and one (the DOVE trial) included an abuse assessment and six IPV "empowered" sessions embedded into ongoing perinatal home visits.[81]

Three RCTs enrolling pregnant women or young mothers evaluated a brief clinic-based counseling intervention.[82-84] One RCT (N=913), the NIH-DC Initiative to Reduce Infant Mortality in Minority Populations, enrolled women screening positive for one of several risk factors known to contribute to adverse perinatal outcomes (cigarette smoking, environmental tobacco smoke exposure, depression, and IPV); women randomized to the intervention group received prenatal behavioral counseling (two to eight sessions, approximately 35 minutes in length), with up to two additional postpartum sessions provided by professional counselors delivered during routine prenatal care visits (specific to each identified risk). Overall, 32 percent of women (N=336) screened positive for past-year IPV at baseline (rates were similar for intervention and usual care groups); in terms of other risk factors, 22 percent smoked, 78 percent had environmental smoke exposure, 62 percent were depressed, 32 percent used alcohol, and 17 percent used illicit drugs.[82] The IPV (N=336) counseling emphasized danger assessment, safety behaviors, and information on community resources.[82]

The other two RCTs assessing counseling interventions focused only on IPV. One compared counseling based on principles of interpersonal psychotherapy delivered over four sessions during pregnancy by trained research personnel (four additional sessions were also offered after

delivery).[84] The second RCT assessed a brief counseling intervention immediately following screening delivered by a research assistant (a midwife with a degree in counseling); the intervention consisted of advice regarding safety, problem solving, other content developed to enhanced women's independence and control, and a brochure reinforcing the information provided.[83]

Of the five RCTs enrolling pregnant or postpartum women, four reported on IPV incidence following the intervention.[80-82, 84] Although all studies measured IPV outcomes using the CTS-2, outcome measures were reported using different metrics (e.g., average IPV events per person year, change from baseline CTS-2 score, and mean frequency of IPV acts), and one study reported only on specific subtypes of violence[83] (but not rates of any type of IPV) (**Table 4**). One RCT reported on pregnancy outcomes (e.g., preterm birth and low birth weight neonates).[82] Two studies reported on measures of postpartum depression using the Edinburgh Postnatal Depression Scale (EPDS).[83, 84] One trial each reported on PTSD symptoms[97] and quality of life.[83]

Results of Studies Enrolling Pregnant or Postpartum Women

IPV

Five RCTs enrolling pregnant or postpartum women reported on IPV outcomes (**Figure 7**). Of these, four reported on overall IPV (any type) and one reported on specific categories of IPV only.[84] Of those reporting on overall IPV, two assessed home-visiting interventions and found evidence of benefit in favor of the intervention (although the magnitude of difference was small and results were imprecise). In one home-visiting intervention (enrolling mothers at risk of child maltreatment), overall IPV victimization was lower in the intervention group at 3 years compared with controls; however, results were not statistically significant (incidence rate ratio [IRR] of average IPV events per person year: 0.86; 95% CI, 0.73 to 1.01).[80] At one year, the difference between groups in the occurrence of any IPV events slightly favored the intervention group but was not statistically significant (SMD, -0.04; 95% CI, -0.23 to 0.14). The average numbers of IPV events per person year over 3 years in the intervention and control groups was 7.50 and 9.55, respectively. Results were similar for physical assault victimization (IRR, 0.85; 95% CI, 0.71 to 1.00);[80] rates of verbal abuse, sexual violence, and injury were similar between intervention and control groups (**Appendix G Table 5**). Long-term followup rates (average of 6 years, 3 years after the intervention ended) of overall IPV victimization decreased in both groups, with no significant difference between groups (IRR, 0.95; 95% CI, 0.77 to 1.17); there was no statistically significant difference between groups for rates of physical assault, sexual violence or injury, or verbal abuse (**Appendix G Table 5**). The second RCT compared two different home-visiting programs in women who screened positive for IPV (postpartum visits with and without a structured IPV assessment and empowerment intervention); both groups experienced a decrease in CTS-2 scores from baseline to followup at 1, 3, 6, 12, 18, and 24 months postpartum ($p<0.001$).[81] Women in the intervention group experienced a larger mean decrease in IPV scores from baseline than controls (-40.82 vs. -35.87; mean difference in change from baseline scores: -4.95, $p <0.001$).[81]

Two RCTs assessing a counseling intervention reported on overall IPV. In the NIH-DC Initiative to Reduce Infant Mortality in Minority Populations RCT, results are described for the overall

sample and women who reported IPV at baseline (and thus received an intervention specific to IPV). As described above, women were randomized to an integrated behavioral counseling intervention or control (usual care); the counseling intervention was individually tailored to address one or more risk factors reported by women at enrollment. In the overall sample (N=913), the difference between groups in percentage of women experiencing IPV (based on CTS-2) was not statistically different (change in percentage from baseline to postpartum: -28.8 vs. -24.9; p=0.074). Among women who screened positive for IPV at baseline, those randomized to the intervention had significantly fewer recurrent episodes of IPV during pregnancy and postpartum (adjusted OR, 0.48; 95% CI, 0.29 to 0.80)[82, 85] Results based on outcome timing (during pregnancy vs. postpartum) and for specific subtypes of violence are shown in **Appendix G Table 5**. In the RCT comparing counseling based on principles of interpersonal psychotherapy with usual care (five sessions delivered during routine prenatal/postnatal care), there were no differences between groups in mean reduction of CTS-2 scores over time (baseline, postpartum, 2 weeks postpartum, and 3 months postpartum; p=0.44); at 6 months (3 months postpartum), women in the intervention group had a slightly higher mean CTS-2 score although differences were not statistically significant (**Figure 7**).

One RCT (N=110) assessing a counseling intervention reported on subtypes of IPV only. The study enrolled women from Hong Kong who screened positive for IPV and compared brief counseling with usual care; at 6 weeks postpartum, women in the intervention group had lower CTS scores than women in the control group on subdomains of psychological abuse (mean difference -1.1; 95% CI, -2.2 to -0.04) and minor physical violence (mean difference -1.0; 95% CI, -1.8 to -0.17), but no statistically significant difference between groups was observed for severe physical abuse (mean difference 0.08; 95% CI, -0.26 to 0.42) or sexual abuse (mean difference -0.07; 95% CI, -0.30 to 0.16) (**Table 4**).[83]

Quality of Life

One RCT enrolling pregnant women who screened positive for IPV reported on quality of life using the SF-36.[83] The RCT compared brief counseling with usual care for Chinese women who screened positive for IPV; results were reported only for the SF-36 individual domains (**Appendix G Table 6**);[83] at 6 weeks postpartum, the intervention group had significantly higher physical functioning and role limitation measures (for both physical and emotional problems) but lower (worse) scores on the bodily pain domain compared with the control group ($p \leq 0.05$). Scores for other domains were similar across groups and differences were not statistically significant.[83]

Birth Outcomes

The NIH-DC Initiative to Reduce Infant Mortality in Minority Population trial reported on birth outcomes.[82, 85, 92] Among the subgroup of women who screened positive for IPV at baseline (N=306), fewer women in the intervention group had very preterm neonates (≤33 weeks) (2 vs. 9 women; p=0.03) compared with women in the control group.[85] However, when using the full sample of the subgroup of women who had IPV at baseline and IPV measured at followup (N=306) (as opposed to the analytic approach used by the study—i.e., dropping participants with missing data), we found that the effect size for very preterm neonates was similar to the value

reported in the study, but the result was not statistically significant (**Figure 7**). There was no statistically significant difference between intervention and control groups in rates of low birth weight neonates (<2,500 g) (17 vs. 24 women; p=0.204) or preterm birth (<37 weeks) (18 vs. 27 women; p=0.135). As noted above, women in the intervention group also had counseling to address other risk factors for adverse pregnancy outcomes; in the overall sample, women in the intervention group had significantly reduced smoking and environmental some exposure compared with controls. In addition, among women experiencing IPV at baseline, 62 percent reported being depressed. It is unclear how modification of these risk factors influenced birth outcomes among women who had interventions targeting both IPV and other risk factors such as depression.

Depression

Two RCTs evaluating counseling interventions reported on depression outcomes (**Figure 8**).[83, 84] The RCT comparing brief counseling with usual care in Chinese prenatal clinics measured postnatal depression on the EPDS at 6 weeks postpartum;[83] fewer women in the intervention group had postnatal depression (defined as EPDS score ≥10) compared with the control group (relative risk [RR], 0.36; 95% CI, 0.15 to 0.88).[83] The second RCT evaluated an interpersonal psychotherapy–based intervention and found no differences between intervention and control groups in incident cases of major depressive episodes (five women in the control group and six women in the intervention group) measured by a standardized interview;[84] the same trial also measured EPDS scores and found an association between the intervention and lower depression scores at 6 months; however, differences between groups were not statistically significant (SMD, -0.32; 95% CI, -0.91 to 0.26).[84]

PTSD

One RCT evaluating a counseling intervention reported on PTSD outcomes (**Figure 8**).[84] Per the authors, only one woman (in the intervention group) met criteria for PTSD for the duration of the study measured by a standardized interview. PTSD symptoms were also assessed using the Davidson Trauma Scale; women in the intervention and control groups had similar scores at 6 months (SMD, -0.05; 95% CI, -0.63 to 0.53).[84]

Characteristics of Studies Enrolling Nonpregnant Adults and Adolescents

Six RCTs enrolled women without specifying perinatal or postnatal status as an inclusion criterion. Studies used various IPV screening tools and criteria to determine eligibility. One RCT that focused on physician training to deliver a brief IPV counseling intervention enrolled women who responded to a validated mail survey, sent from their health care provider, that included a question asking how often in the past 12 months the woman was afraid of her partner or ex-partner.[86] One RCT assessing motivational interviewing screened for past-year IPV using the AAS and Women's Experience with Battering (WEB) Scale, administered through an in-person computer-assisted tool.[91] A trial assessing a brief motivational intervention identified women experiencing IPV in the past 3 months based on responses to the CTS, with a further requirement that women indicated heavy drinking, based on their Alcohol Use Disorders Identification Test score.[87] A trial assessing brief in-person counseling used the Chinese version of the AAS to

identify emotional, physical, or sexual abuse by an intimate partner in the past year.[90] Two cluster RCTs focused on provider education and training related to IPV and sexual coercion and did not use a specific screening tool to determine eligibility; discussion of IPV was encouraged at all family planning clinic encounters.[88, 89]

Three RCTs included one in-person intervention session followed by telephone followup.[87, 90, 91] One trial consisted of motivational interviewing through one 1-hour, in-person session followed by three 10- to 15-minute telephone calls over a 4-month period;[91] one involved a single in-person empowerment session followed by 12 weekly telephone support calls over 9 months;[90] and one consisted of a brief motivational interviewing intervention and a telephone call 10 days later.[87] Two studies provided women with one session of counseling during a clinic visit by clinical staff who had received special IPV training.[88, 89] In a study focused on physician training to respond to IPV, the intervention was described as one to six counseling session, depending on the participant's needs; most participants received just one or a few visits (median=1, mean=2.4).[86] Across RCTs, in five studies the comparison group received usual care,[86-89, 95] and in one study the comparison group received resources and referrals by meeting with a field coordinator or an advocate.[91]

Five RCTs reported on a measure of IPV following the intervention.[80-82, 84, 86-90] Studies measured IPV using different scales and metrics (e.g., percentage of women with CTS-2 score ≥1 for past-week violence, mean CTS-2 scores), and some reported only on subtypes of violence. Two studies reported on quality-of-life outcomes (both used the SF-12 and one also used the WHOQOL-Bref). Three studies reported on depression outcomes and one of these also reported on anxiety.

Results of Studies Enrolling Nonpregnant Adults and Adolescents

IPV

Five RCTs measured IPV incidence (**Table 5**). Two reported on a measure of overall IPV and found similar rates of IPV among groups with no statistically significant difference (**Figure 8**).[86, 87] Two trials that focused on IPV education and training for family planning staff reported on recent (past 3 months) physical or sexual violence; neither trial found a statistically significant difference between groups (women in the intervention group had a slightly higher rate of IPV).[88, 89] One of these[89] found a greater reduction in pregnancy coercion among the subgroup of women experiencing IPV at baseline in the intervention group (OR, 0.29; 95% CI, 0.09 to 0.91) but no difference between groups in reduction in birth control sabotage (OR, 0.71; 95% CI, 0.17 to 2.94).[89] One trial reported on subtypes of violence only and found lower scores on the CTS-2 for psychological aggression over 3 to 9 months (difference between groups in mean scores: -1.87; 95% CI, -3.34 to -0.40) but not for physical assault (0.35; 95% CI, -0.80 to 0.10) or sexual coercion (-0.02; 95% CI, -0.12 to 0.09).[90]

Quality of Life

Two RCTs measured changes in quality of life following an intervention for IPV; although changes in mean scores favored the intervention group, differences between groups were small

and not statistically significant.[86, 90] One trial found no significant difference between intervention and control groups on SF-12 Mental Composite Score mean scores at 6 months (0.80; 95% CI, -2.3 to 3.9) or 12 months (1.9; 95% CI, -1.7 to 5.5) and no difference between groups on mean WHOQOL-Bref component scores at 6 or 12 months (mean difference between groups ranged from 1 to 5 points on all 4 component scores) (**Appendix G Table 6**).[86] Another trial found no statistically significant difference between groups at 3 to 9 months on mean SF-12 Physical Composite Scores (0.37; 95% CI, -0.91 to 1.65) or SF-12 Mental Composite Scores (0.80; 95% CI, -1.16 to 2.77).[90]

Depression

Three RCTs reported on depression outcomes (**Figure 8**). One RCT found a greater reduction in depression among the intervention group (percentage of participants with Hospital Anxiety and Depression Scale [HADS] depression score ≥8) at 6 months (OR, 0.4; 0.1 to 1.0) and 12 months (OR, 0.3; 95% CI, 0.1 to 0.7).[86] A second RCT also found a greater reduction in depression scores in the intervention group (Chinese Beck Depression Inventory-II) between 3 and 9 months (adjusted difference in score change: -2.66 (95% CI, -5.06 to -0.26), p=0.03; however, the difference was below the threshold considered clinically meaningful (5-point difference).[90] One other study that measured depression found similar changes in scores on the Center for Epidemiologic Studies Short Depression Scale over 6 months (SMD, -0.02; 95% CI, -0.29 to 0.26).[91]

Anxiety

One RCT assessing physician training to deliver brief IPV counseling reported on anxiety symptoms (**Figure 8)**. There was no difference between groups in the percentage of women with HADS anxiety score ≥8 at 6 months (OR, 0.5; 95% CI, 0.2 to 1.3) or 12 months (OR, 0.4; 0.2 to 1.2).[86]

KQ5. What Are the Harms of Interventions for IPV in Adults and Adolescents?

Five good- or fair-quality RCTs assessing interventions for IPV reported on harms; all are included in KQ 4. Characteristics of the studies are described above and shown in **Table 3**.

One RCT[86] assessing a brief counseling intervention surveyed women at 6 and 12 months about survey participation (including potential harms); there was no difference between groups in the percentage of women who reported potential harms, and authors concluded no harms were associated with the intervention. Items measured (5-point Likert scale from "strongly agree" to "strongly disagree") included "I am glad to be a participant in the project" (at 6 months, 2% in the intervention group responded "strongly disagree" compared with 0% of controls) and "I felt judged negatively by practice staff for being a participant in this trial" (at 6 months, no intervention group members strongly agreed compared with 1% of controls). To the item "As a result of participating in this trial, I see the quality of my own life as …" (respondents answered on a 5-point scale from "better" to "worse"), no intervention or control groups chose "worse" at 6 months. At 6 months, 28 percent in the intervention group and 10 percent in the control group

reported that their abusive partners were aware that they had talked to a doctor about relationship issues; at 12 months, the percentage of women reporting abusive partner awareness of participation was 24 percent and 13 percent in the intervention and control arms, respectively. Among women who reported abusive partner awareness of trial participation, the number of negative partner behaviors (e.g., got angry, made her more afraid for herself or her children, or restricted her freedom) was not significantly different between groups. Women in the intervention group reported 0.5 negative behaviors (per 15 women) and 0.7 behaviors (per 23 women) at 6 and 12 months, respectively. In the control arm, the number of negative partner behaviors associated with abusive partner awareness of trial participation was 3.0 (per 5 women) and 0.2 (per 12 women) at 6 and 12 months, respectively. Across all items, the authors report no between-group differences in harms.

In one RCT,[83] conducted at the antenatal clinic of a public hospital in Hong Kong, participants were asked by telephone whether the frequency of violence had increased as a result of their taking part in the study. According to the authors, no adverse events related to participation were reported by women in either group.[83]

Three other RCTs reported that no harms were associated with the intervention but did not comment on how harms were measured and assessed.[81, 87, 90]

Elder Abuse and Abuse of Vulnerable Adults

KQ1. Does Screening in Health Care Settings for Current, Past, or Increased Risk for Abuse and Neglect in Older and Vulnerable Adults Reduce Exposure to Abuse and Neglect, Physical or Mental Morbidity, or Mortality?

We identified no studies addressing this KQ.

KQ2. How Effective Are Screening Questionnaires or Tools in Identifying Older and Vulnerable Adults With Current, Past, or Increased Risk for Abuse and Neglect?

Characteristics of Included Studies

We included one fair-quality study assessing the accuracy of screening for abuse in older adults.[98] No studies were found on the effectiveness of screening questionnaires or tools in identifying abuse and neglect of vulnerable adults.

The study enrolled English- or Spanish-speaking participants age 65 years or older (N=139) presenting for routine dental care at an academic dental clinic in New York State. Eligible participants included those who received caregiver assistance (paid or unpaid) for at least 2 hours per week, agreed to be rescreened 6 months after the first interview, and scored 18 or more on the Mini Mental Status Examination.[99] The mean age of enrolled participants was 75, and the

majority were female (60%). Screening was conducted using the Hwalek-Sengstock Elder Abuse Screening Test (H-S/EAST), which includes 15 items. For this analysis, the study authors examined the proportion of participants who had a positive response (≥3) to a group of seven questions (questions 5, 7, 9, 10, 11, 13, and 15) determined by authors to be particularly indicative of abuse. The full H-S/EAST tool is shown in **Appendix E**. Screening test accuracy was compared against the CTS; participants were considered positive for elder maltreatment based on the CTS violence/verbal aggression scales combined if they reported that at least one item occurred once or more in the previous year in more than one of the following subscales: verbal aggression, minor violence, and severe violence. The number of participants identified who reported that at least one of the subscale items occurred once or more in the previous year were considered positive for that subscale.

Results of Included Studies

The gold standard, CTS, found elder maltreatment based on CTS violence/verbal aggression scales combined to be 41 percent. Compared with the CTS (violence/verbal aggression scales combined), the H-S/EAST had a sensitivity of 46 percent (95% CI, 32 to 59) and specificity of 73.2 percent (95% CI, 62 to 82). The positive likelihood ratio was 2 (95% CI, 2 to 2), and the negative likelihood ratio was 1 (95% CI, 1 to 1) for this comparison. The positive predictive value of this comparison was 54 percent (95% CI, 43 to 65), and the negative predictive value was 66 percent (95% CI, 60 to 72).

When comparing the individual components of the CTS to the H-S/EAST, the H-S/EAST has a sensitivity of 46 percent (95% CI, 32 to 59) to detect verbal aggression, 67 percent (95% CI, 22 to 96) to detect minor violence, and 75 percent (95% CI, 19 to 99) to detect severe violence. When comparing the individual components of the CTS to the H-S/EAST, the H-S/EAST has a specificity of 73 percent (95% CI, 62 to 82) to detect verbal aggression, 67 percent (95% CI, 58 to 75) to detect minor violence, and 67 percent (95% CI, 58 to 74) to detect severe violence. Positive likelihood ratios were 2 for all subtypes of violence, and negative likelihood ratios ranged from 0.4 to 1.0. Positive predictive values for individual subtypes of violence ranged from 6 to 54 percent; similarly, negative predictive values ranged from 99 to 66 percent.

KQ3. What Are the Harms of Screening for Abuse and Neglect in Older and Vulnerable Adults?

We identified no studies addressing this KQ.

KQ4. How Well Do Interventions Reduce Exposure to Abuse and Neglect, Physical or Mental Morbidity, or Mortality Among Screen-Detected Older and Vulnerable Adults With Current, Past, or Increased Risk for Abuse and Neglect?

We identified no studies addressing this KQ.

KQ5. What Are the Harms of Interventions for Abuse and Neglect in Older and Vulnerable Adults?

We identified no studies addressing this KQ.

Chapter 4. Discussion

Summary of Evidence

Table 6 and **Table 7** provide a summary of findings in this evidence review. These tables are organized by KQ and provides a summary of the main findings along with a description of consistency, precision, quality, limitations, strength of evidence, and applicability.

Evidence for the Benefits and Harms of Screening for IPV

Overall, consistent evidence from three RCTs (3,759 participants) found no benefit of screening adult women for IPV. Despite differences in setting, screening process, and comparisons, none found a statistically significant reduction in IPV among the screened group compared with a nonscreened control group over 3 to 18 months of followup (moderate strength of evidence). Two RCTs also measured quality of life and found no significant difference between groups (moderate strength of evidence).[57, 60] We found no RCTs of screening enrolling men or adolescents, and none focused on pregnant women or that reported outcomes separately by pregnancy status.

The RCT enrolling women from Canadian health care settings[59] was included in the prior (2013) review for the USPSTF (and the other two RCTs are new and were not included in the prior report). This trial has several limitations, including high overall attrition (42%) with higher abuse scores among those with missing data.[59] Another concern noted in the prior review for the USPSTF was the potential that the approach used in the control group may have biased results toward the null. Specifically, women randomized to the control group were provided with information cards listing local resources for women experiencing IPV and underwent extensive questioning about IPV over 18 months of followup; these types of activities have the potential to influence participants' behavior and affect outcomes of the trial.[59] Similar potential bias toward the null is unlikely in the newly identified RCTs; neither screened women at baseline (and both measured IPV at only one time point). In addition, the RCT set in U.S. primary care centers also included two nonscreened control groups (one was given a list of partner violence resources and one was not); there was no significant difference in IPV incidence, quality of life, or health care utilization between women allocated to the partner violence resource list group and the no-resource list control group.[57]

In the RCT enrolling women from Canadian health care settings, the response to women with a positive IPV screen was left to the discretion of the clinician. The newly identified RCTs assessed more standardized interventions for women who screened positive for IPV. The RCT enrolling women from U.S. primary care settings showed a brief video to all women who screened positive (focused on advocacy, support, and encouragement to seek help) in addition to providing a list of resources. The RCT set in a New Zealand emergency department provided information about referral options and an additional clinical assessment (to assess safety) to all women who screened positive. If appropriate (e.g., there was a safety concern), additional on-site support was provided by the emergency department provider or hospital social worker. The

newly identified RCT set in a New Zealand emergency department has unclear applicability to U.S. primary care centers (19% of the population was presenting for an acute injury, not specific to IPV); this trial also measured outcomes over a relatively short duration (3 months), which may not be sufficient time to detect a benefit.

Potential harms of screening asymptomatic populations for abuse include labeling, stigma, and risk of increased violence. The RCT enrolling women from various Canadian health care settings actively monitored harms and found no differences for women who were either exposed or not exposed to IPV;[59] however, outcomes were only measured over a short duration (14 days) following screening. Other potential harms of screening include false-positive test results that lead to more in-depth inquiry or referrals from health professionals that would not lead to benefit and may cause labeling. For this topic, the gold standard for determining abuse is a longer-form structured questionnaire (e.g., CTS-2) and/or interview. For screening programs in primary care settings, positive tests are not generally confirmed with a test such as the CTS-2 but would (ideally) be followed by a conversation with a health care provider about safety, counseling, preferences for referrals, or other resources.

Accuracy of Screening Questionnaires or Tools for Identifying Asymptomatic Populations Experiencing IPV

Screening tools are available for clinical practice that may reasonably identify women experiencing past year IPV (low strength of evidence). The 15 included studies assessed the accuracy of tools designed to detect IPV over different time frames (current/ongoing, past-year, or lifetime occurrence). Five studies evaluated accuracy of screeners for detecting any past-year IPV (HARK, HITS, E-HITS, PVS, and WAST) in adult women (**Figure 6**), sensitivity ranged from 65 to 87 percent, and specificity ranged between 80 and 95 percent. When limiting to studies enrolling participants from nonemergency department settings (i.e., primary care or community samples only), sensitivity was slightly higher (range: 75% to 87%), and specificity was unchanged. Most tools were assessed by only 1 study; the HITS was evaluated in 2 studies (both enrolling women veterans) one of which also evaluated the E-HITS. Estimates for accuracy of HITS and E-HITS were generally consistent but imprecise, with sensitivity ranging from 75 to 78 percent and specificity ranging from 80 to 83 percent.

The estimates of screening test accuracy for detecting past-year IPV are derived from populations with a prevalence of IPV (based on a gold standard) of 14 to 27 percent. The two studies enrolled women from primary care or mixed settings (primary care, OBGYN, and emergency departments) and reported an IPV prevalence of 23 and 14 percent, respectively. This is similar to the prevalence rate reported by the KQ 1 RCT enrolling women from U.S. primary care settings (15%). In a population of 100,000 women with 15 percent prevalence of IPV, use of the HARK screener (80% sensitivity and 95% specificity) would result in 81,000 true-positive tests and 5,000 false-positive tests (positive predictive value, 83%). Use of the WAST tool, with slightly higher sensitivity (87%) but lower specificity (89%) than the HARK, in a population with the same IPV prevalence (15%) would result in 87,484 true-positive tests and 11,000 false-positive tests (positive predictive value, 56%). The meaning of false-positive tests is not clear. As noted previously, the reference standard used to assess screening tool accuracy is a longer-form structured questionnaire. False-positive results may indicate a misunderstanding of the

screening question. Alternatively, women with a false-positive test may have experienced IPV but choose to answer the reference standard negatively because disclosure of violence may be uncomfortable. Only one included study (N=856) assessed the ability of a 3-item tool to predict future (3- to 5-month abuse) abuse in a population cohort; the tool had poor accuracy (20% sensitivity and 96% specificity) for predicting future partner abuse.

Benefits and Harms of IPV Interventions

Overall, evidence from 11 studies (6,740 participants) evaluating interventions for women with screen-detected IPV intervention or who were considered at risk for IPV was imprecise and often inconsistent. We graded the strength of evidence as low or insufficient for evidence on benefits of interventions. Although all RCTs enrolled only women, they assessed heterogeneous interventions and reported on a wide range of outcomes. For the most commonly reported outcome (IPV incidence), trials used different measures (e.g., CTS-2 scores, incidence of reproductive coercion) and often reported outcomes differently for the same measure (e.g., mean CTS-2 scores, incidence rate of violent episodes measured by the CTS-2). Most RCTs found lower rates of IPV over time in both groups, but few found a statistically significant difference between groups. Few studies enrolling similar populations and evaluating similar types of interventions reported on other outcomes (e.g., quality of life, reproductive outcomes). No studies measured mortality.

Two home-visiting interventions[80, 81] found lower rates of IPV among women assigned to the intervention group compared with controls; however, the difference between groups was small and results were imprecise (only one found a statistically significant difference).[81] Three RCTs enrolling pregnant women with screen-detected IPV evaluated a counseling intervention; two found benefit[82, 83] and one did not;[84] in one study, the benefit was significant for some subtypes of violence (psychological and minor physical abuse) but not others (severe physical and sexual abuse).[83] One RCT assessing counseling for multiple risk factors reported on birth outcomes among the subgroup of women experiencing IPV at baseline (N= 306 out of 1,044 enrolled); there was no significant difference between groups in rates of low birth weight neonates (<2,500 g), very low birth weight neonates (<1,500 g), or preterm birth (<37 weeks); however, significantly fewer women in the intervention group had very preterm neonates (≤33 weeks).[82] The RCT assessing behavioral counseling that found benefit for IPV and some birth outcomes among pregnant women has limitations. The intervention targeted multiple risk factors (smoking, environmental tobacco smoke exposure, depression, and IPV);[82] improvement in birth outcomes among the women who had experienced IPV at baseline may not be attributable to IPV counseling. For example, among the subgroup of women reporting IPV at baseline, 62 percent reported being depressed, and those randomized to the intervention also received counseling for depression (in addition to IPV);[85] the improvement in outcomes may be attributable to counseling for depression as opposed to IPV counseling. We graded the strength of evidence for birth outcomes as insufficient, downgrading because of imprecision, unknown consistency, few events from one subgroup analysis of an RCT, and uncertainty about whether results could be attributed to IPV counseling.

Across the six RCTs enrolling nonpregnant women, five measured IPV incidence. Four of these found no significant difference between groups in rates of overall IPV exposure[86, 87] or combined

physical and sexual violence;[88, 89] rates of IPV were either similar across groups or slightly lower among women in the control group. One trial reported on subtypes of violence only and found benefit for psychological aggression but not for physical assault or sexual coercion.[90] Two RCTs measured changes in quality of life following an intervention for IPV; scores were similar and differences were not statistically significant.[86, 90] Three RCTs reported on depression outcomes; two found benefit in favor of the intervention group (although one found a difference below the threshold for a clinically meaningful change),[86, 90] and one found similar scores between groups.[91]

Few RCTs reported on adverse effects of interventions. No trial found a statistically significant increase in IPV rates in the intervention group. Most studies reported that no adverse effects of the intervention were detected but did not specify whether harms outcomes were prespecified or how they were collected.

Evidence for the Benefits and Harms of Screening for Elder Abuse and Abuse of Vulnerable Adults

We found no screening trials of elder abuse or abuse of vulnerable adults.

Accuracy of Screening Questionnaires or Tools for Identifying Asymptomatic Populations With Elder Abuse or Abuse of Vulnerable Adults

We included one fair-quality study (N=139) assessing the accuracy of screening for abuse in older adults (age 65 or older) presenting for routine dental care.[98] Eligible participants included those who received caregiver assistance and scored 18 or more on the Mini Mental Status Examination. The enrolled population had a relatively high prevalence of elder maltreatment based on CTS violence/verbal aggression scales (41%). Compared with the CTS, the H-S/EAST tool had a sensitivity of 46 percent (95% CI, 32 to 59) and specificity of 73.2 percent (95% CI, 62 to 82) for detecting elder abuse. No studies were found on the effectiveness of screening questionnaires or tools in identifying abuse and neglect of vulnerable adults.

Benefits and Harms of Interventions for Elder Abuse or Abuse of Vulnerable Adults

We found no trials of interventions for older adults or vulnerable adults with screen-detected abuse.

Limitations

This review did not evaluate the evidence on programs to prevent IPV victimization or studies that assess routine screening and interventions for perpetrators of abuse. The scope of this review focuses on asymptomatic populations without signs or symptoms of abuse. We did not assess the

literature on whether certain physical or psychological symptoms should trigger an assessment of abuse (i.e., "case finding") for any type of abuse. Our conclusions for KQ 4 (interventions for IPV) may differ slightly from the prior 2013 report. In addition to including several newly identified studies relevant to both KQ1 and KQ4, we also we excluded one trial (the MOSAIC trial) included in the prior report because it enrolled women who were referred based on symptoms of abuse or self-disclosure of IPV status (and were not screen detected).[100] Women randomized to 12 months of weekly home visits from trained nonprofessional peer supporters had lower mean abuse scores than women in the control group at 1 year.

RCTs of IPV screening (KQ 1) were limited by heterogeneity in enrollment settings and differences in screening processes; however, trials measured similar outcomes and found consistent results. For KQ 3 (harms of screening), we limited the review to study designs that had a concurrent control group. This limit excluded uncontrolled studies that report results from single cohorts or focus groups of women who were offered IPV screening. The prior review for the USPSTF concluded that study populations and methods in noncontrolled studies varied widely. Results from these studies did not show significant harm related to screening; some studies found that a minority of respondents indicated discomfort with screening (particularly among those with prior IPV), infringement of privacy, worries about increasing abuse by disclosing IPV, and feelings of sadness or depression.[101]

Some studies of IPV screening tool accuracy (KQ 2) were limited by unclear applicability (many enrolled participants from emergency department settings) and imprecise results. Populations enrolled from emergency department settings may be more likely to include participants with acute injuries or other symptoms that may be related to abuse (**Appendix A**). Few tools were assessed by more than one study. We included only studies that compared an existing tool with a gold standard (and not studies comparing two different screening tools); this resulted in the exclusion of approximately nine studies from the 2004 and 2013 reviews for the USPSTF that did not include an appropriate reference standard (**Appendix D**).

RCTs of IPV interventions (KQ 4) were limited by overall attrition (20% or higher in 7 of 11 RCTs), potential measurement bias (e.g., recall bias or variation in comfort with self-reported measures of violence frequency/severity), and heterogeneity in outcome reporting (particularly for IPV outcomes). Usual care and use of a co-intervention (e.g., provision of an IPV resource sheet) in control groups varied across screening and intervention studies and was sometimes not described. Whether offering an information card or list of resources to women constitutes an active intervention is not clear; although it could lead to an inability to measure differences between intervention and control groups if women do change their behavior and seek services, one large screening RCT found no difference in outcomes between women who were provided a list of partner violence resources and those who were not. Finally, three studies were conducted in other countries (one in Australia and two in Hong Kong); the applicability of these studies to women in the United States may be limited by differences in cultural, social, and other factors. Studies of screening older and vulnerable adults for abuse and neglect were lacking. We identified only one study (of test accuracy) specific to elder abuse and no studies relevant to vulnerable adults.

Future Research Needs

Future studies could assess whether screening specific groups of women (e.g., pregnant women) results in improve health outcomes. The included RCTs of screening enrolled women of childbearing age, but none enrolled women from prenatal settings only or reported outcomes among women who were screened during prenatal care. Few studies with a control group assessed potential harms of screening; harms, such as labeling or increased abuse, may not be apparent until weeks or months following an initial screening visit. Future studies that assess screening should report on potential harms over a sufficient period of time following screening to assess potential psychosocial harms. Although one RCT assessing a behavioral counseling intervention during prenatal care found benefit for reducing both IPV and some adverse neonatal outcomes, it is not clear whether results are consistent across other populations or whether the benefit was attributable to the IPV counseling component alone versus counseling for IPV and other co-occurring risk factors (e.g., smoking or depression) at the same time. Future studies could assess whether similar behavioral counseling interventions for pregnant women with screen-detected IPV improve health outcomes. Finally, future research is needed to assess the accuracy of screening tools in men, as well as the benefit and harms of interventions for men with IPV.

Studies are needed to improve research for screening older and vulnerable adults for abuse and neglect. No RCTs of screening or interventions have been done. Studies of screening instruments are lacking. Screening and interventions for this population are likely to be different than IPV given that some older and vulnerable adults may not have sufficient physical, mental, or financial abilities to engage in screening or interventions. For these situations, instruments could be targeted toward caregivers. Additional challenges to this research may include the legal requirements related to disclosure, underlying medical conditions of patients (e.g., cognitive impairments for older persons), and dependence on the perpetrator for caregiving and access to medical care, among other issues.

Conclusions

Although available screening tools may reasonably identify women experiencing past 12-month or current IPV, RCTs of IPV screening in adult women do not show reduction in IPV or improvement in quality of life over 3 to 18 months of followup. Interventions for women with screen-detected IPV show inconsistent results; limited evidence from some RCTs suggested that home visiting interventions and behavioral counseling interventions that address multiple risk factors may lead to reduced IPV among perinatal populations. No eligible studies assessed screening or treatment for elder abuse and abuse of vulnerable adults.

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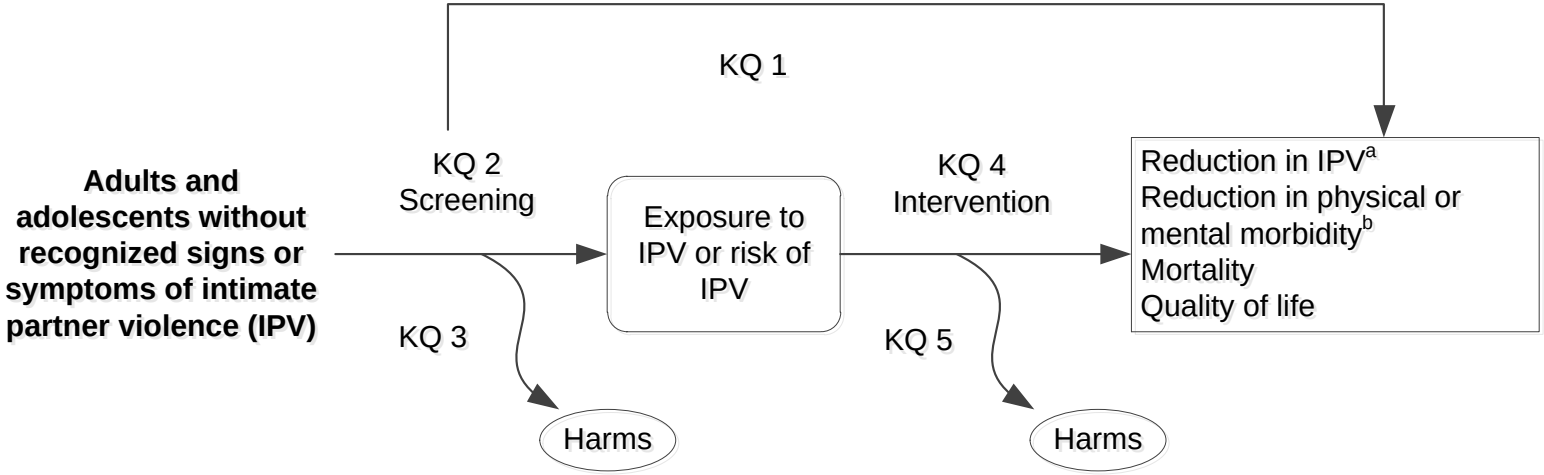
Figure 1. Intimate Partner Violence Analytic Framework



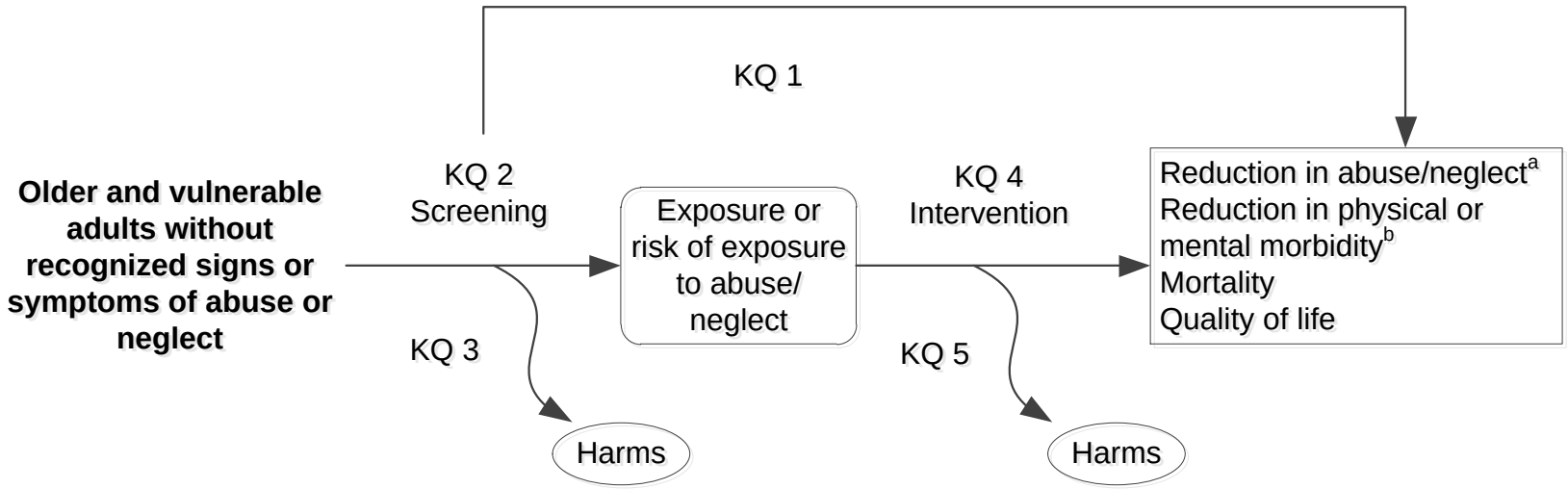
[a] Includes reduction in the frequency or severity of IPV.
[b] Includes acute and chronic morbidity from physical abuse (e.g., fractures, dislocations, brain injury), sexual abuse (e.g., unwanted pregnancy, sexually transmitted infections), psychological abuse (e.g., depression, anxiety, posttraumatic stress disorder), and financial abuse (e.g., limiting access to money or other resources); health care utilization attributed to any form of abuse/neglect and associated physical and mental morbidity (e.g., rates of emergency room visits); adverse perinatal outcomes (e.g., miscarriage, low birth weight); social isolation; and quality of life.

Abbreviations: IPV=intimate partner violence; KQ=key question.

Key Questions to Be Systematically Reviewed

1. Does screening for current, past, or increased risk for intimate partner violence (IPV) in adults and adolescents reduce exposure to IPV, physical or mental morbidity, or mortality?
2. What is the accuracy of screening questionnaires or tools for identifying adults and adolescents with current, past, or increased risk for IPV?
3. What are the harms of screening for IPV in adults and adolescents?
4. How well do interventions reduce exposure to IPV, physical or mental morbidity, or mortality among screen-detected adults and adolescents with current, past, or increased risk for IPV?
5. What are the harms of interventions for IPV in adults and adolescents?

Figure 2. Elder Abuse and Abuse of Vulnerable Adults Analytic Framework



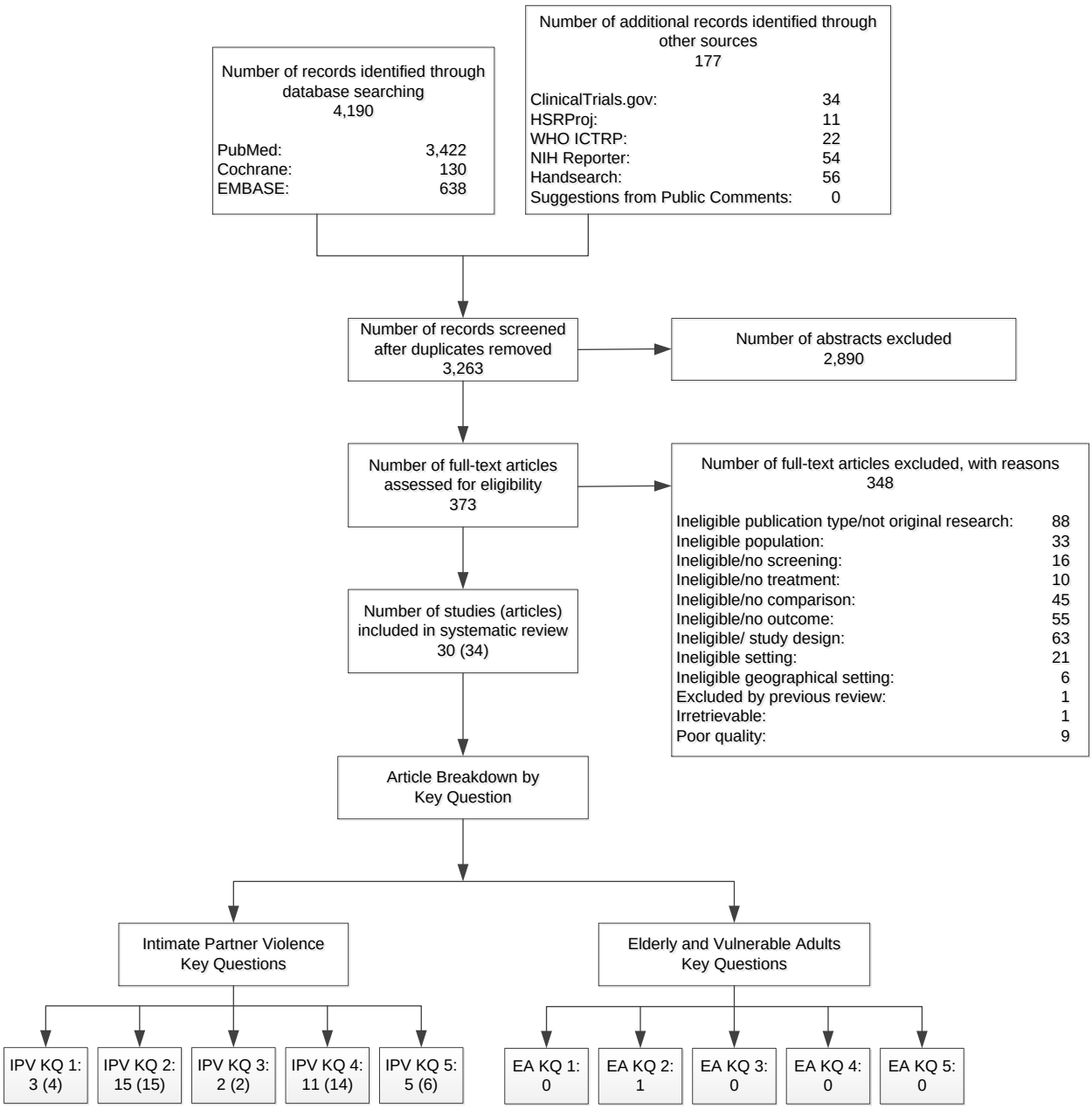
[a] Includes reduction in the level of violence or abuse or leaving an unsafe situation.
[b] Includes acute and chronic morbidity from physical abuse (e.g., fractures, dislocations, brain injury), sexual abuse (e.g., unwanted pregnancy, sexually transmitted infections), psychological abuse (e.g., depression, anxiety, posttraumatic stress disorder), and financial abuse (e.g., misuse of assets by a caregiver); health care utilization attributed to any form of abuse/neglect and associated physical and mental morbidity (e.g., rates of emergency department visits); adverse perinatal outcomes (e.g., miscarriage, low birth weight); social isolation; and quality of life.

Abbreviation: KQ=key question.

Key Questions to Be Systematically Reviewed

1. Does screening in health care settings for current, past, or increased risk for abuse and neglect in older and vulnerable adults reduce exposure to abuse and neglect, physical or mental morbidity, or mortality?
2. How effective are screening questionnaires or tools in identifying older and vulnerable adults with current, past, or increased risk for abuse and neglect?
3. What are the harms of screening for abuse and neglect in older and vulnerable adults?
4. How well do interventions reduce exposure to abuse and neglect, physical or mental morbidity, or mortality among screen-detected older and vulnerable adults with current, past, or increased risk for abuse and neglect?
5. What are the harms of interventions for abuse and neglect in older and vulnerable adults?

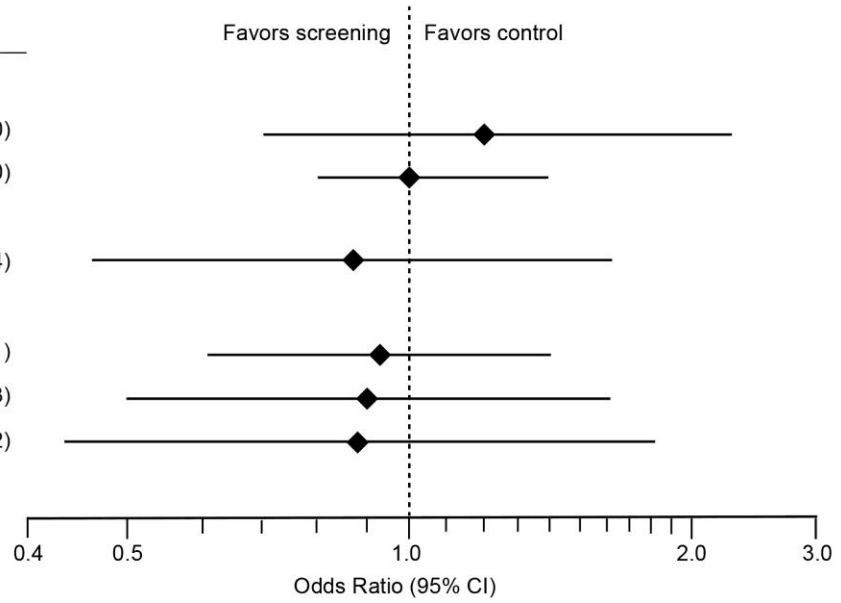
Figure 3. Summary of Evidence Search and Selection Diagram



Abbreviations: KQ=key question; IPV=intimate partner violence; NIH=National Institutes of Health; WHO ICTRP: World Health Organization International Clinical Trials Registry Platform.

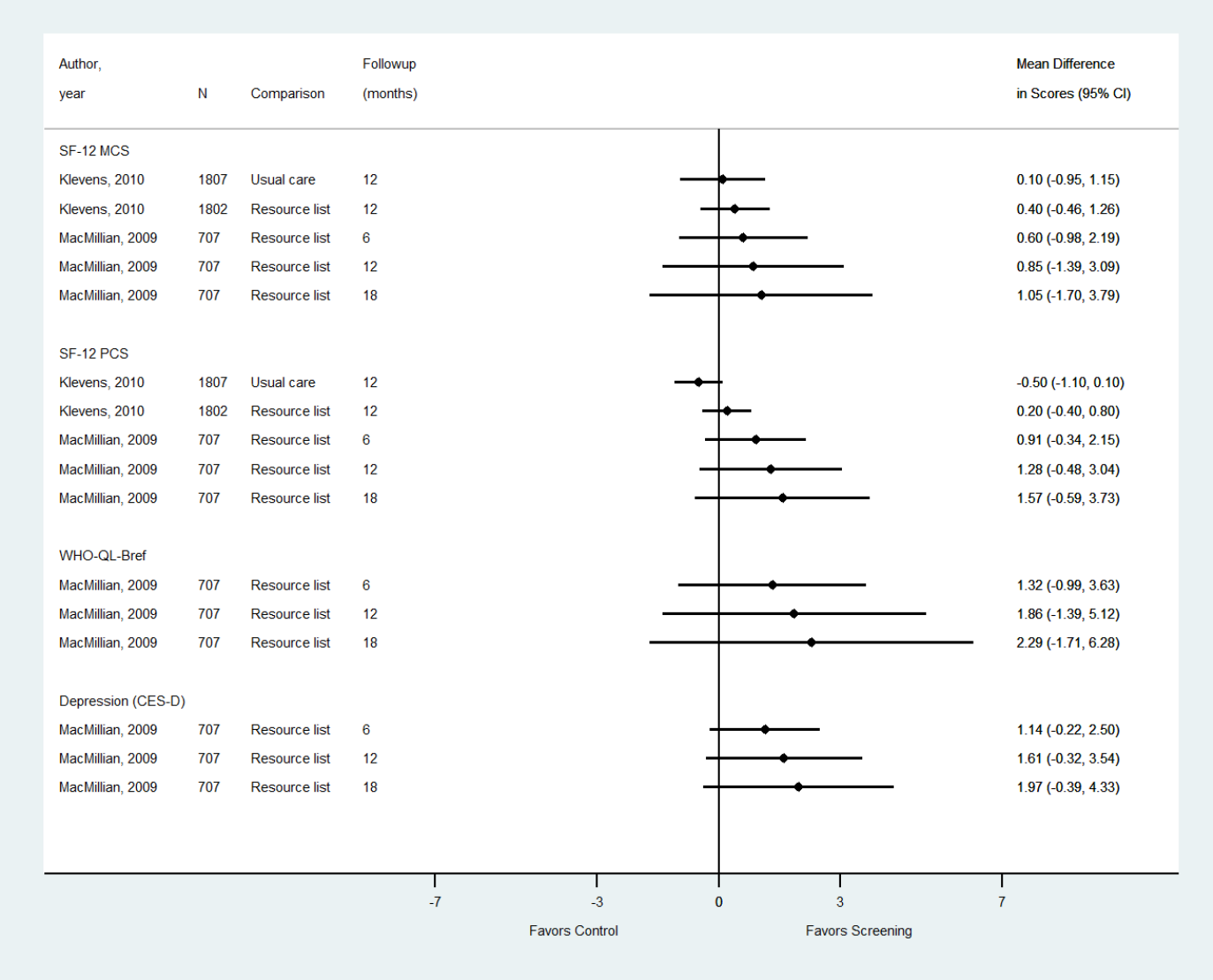
Figure 4. Benefit of IPV Screening Interventions for Reducing IPV Exposure (KQ1)

IPV measure	Comparison	N	No. IPV+	Followup (months)	Odds Ratio (95% CI)
Klevens, 2010 (primary care)					
NVAW ≥ 1	Usual care	1807	152	12	1.20 (0.70, 2.20)
NVAW ≥ 1	Resource list	1802	165	12	1.00 (0.80, 1.40)
Koziol-McLain, 2010 (emergency department)					
CAS ≥ 7	Usual care	344	26	3	0.87 (0.46, 1.64)
MacMillian, 2009 (mixed)					
CAS ≥ 7	Resource list	707	123	6	0.93 (0.61, 1.41)
CAS ≥ 7	Resource list	707	109	12	0.90 (0.50, 1.63)
CAS ≥ 7	Resource list	707	99	18	0.88 (0.43, 1.82)



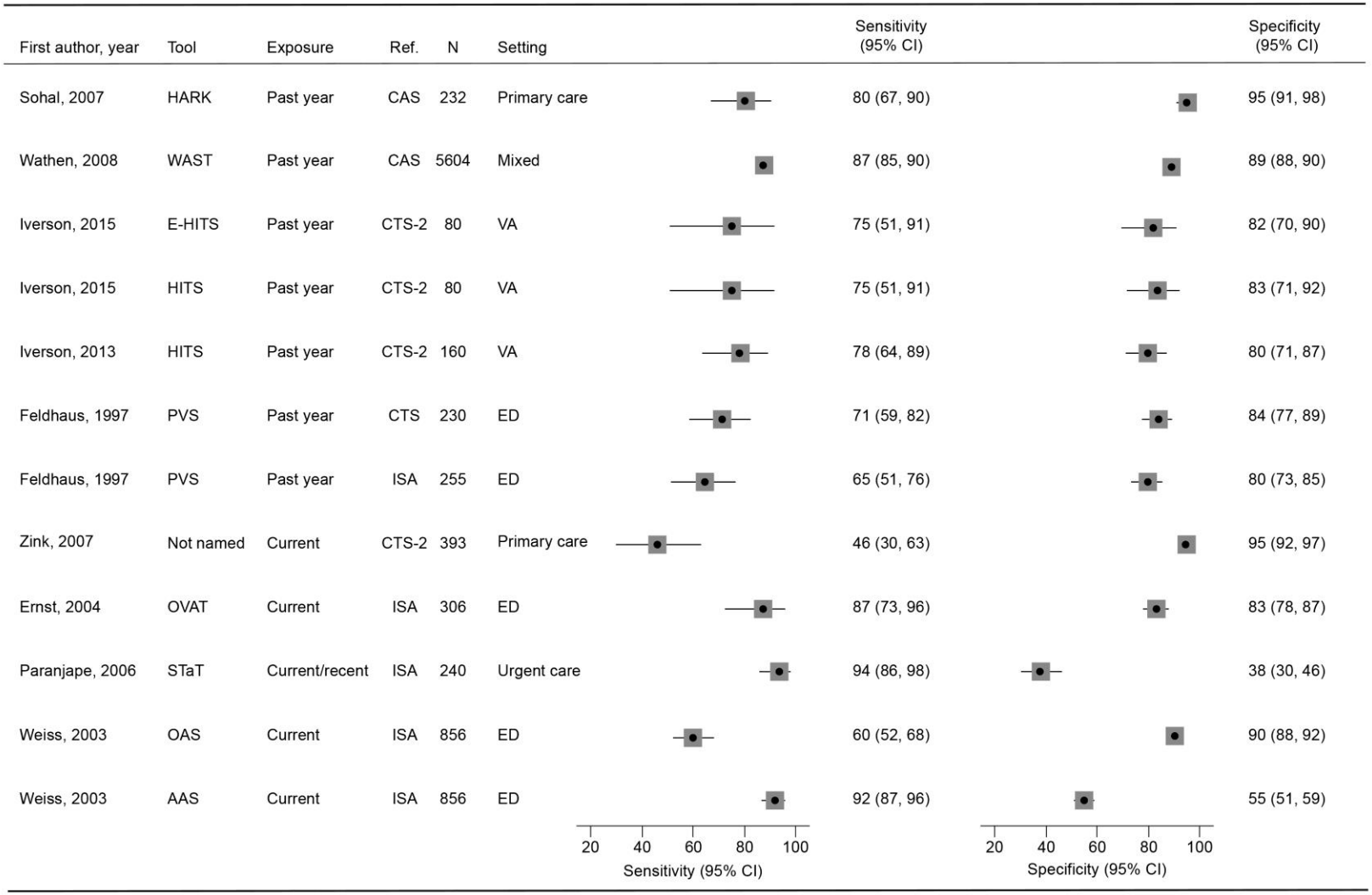
Abbreviations: CAS=Composite Abuse Scale (30-items); Cl=confidence interval; IPV=intimate partner violence; N=same size; NVAW=National Violence Against Women Survey (18-items); No.=number; OR=odds ratio.

Figure 5. Benefit of IPV Screening Interventions for Improving Quality of Life and Depression (KQ1)



Abbreviations: CES-D=Center for Epidemiologic Studies Depression scale; CI=confidence interval; MCS=Mental Composite Score; N=sample size; PCS=Physical Composite Score; SF-12=Short Form Health Survey-12 Item;; WHOQOL-Bref=World Health Organization Quality of Life-Bref instrument.

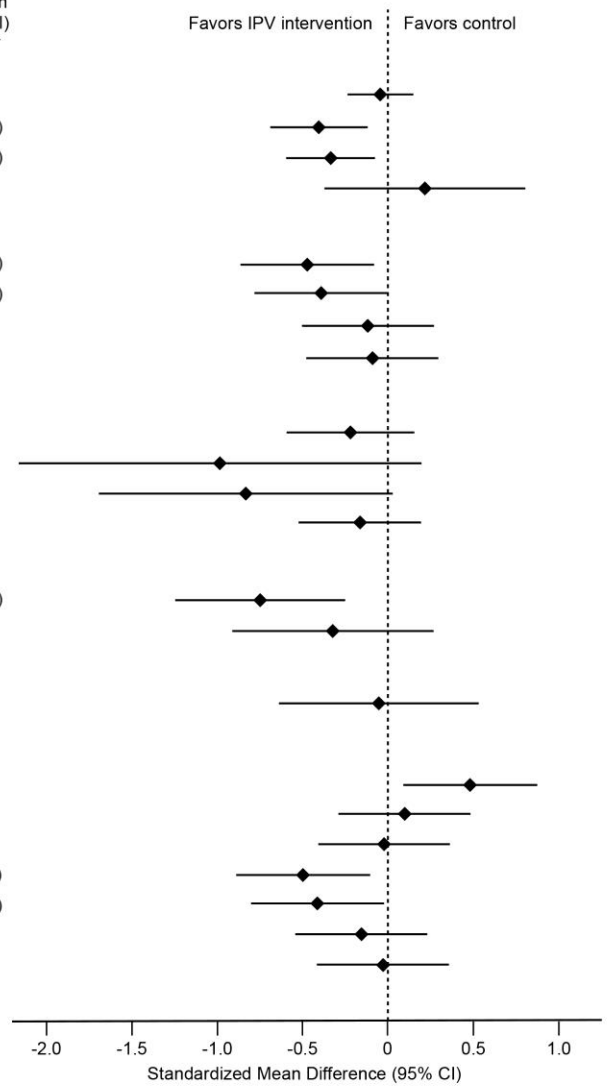
Figure 6. Accuracy of IPV Screening Tools for Detecting Past-Year or Current IPV Exposure (KQ2)



Abbreviations: AAS=Abuse Assessment Screen; CAS=Composite Abuse Scale; CI=confidence interval; CTS=Conflict Tactics Scale; CTS-2=Conflict Tactics Scale 2; E-HITS=Extended - Hurt, Insulted, Threaten, Scream; ER=emergency room; HARK=Humiliation, Afraid, Rape, Kick; HITS=Hurt, Insulted, Threaten, Scream; ISA=Index of Spouse Abuse; OAS=Ongoing Abuse Screen; OVAT=Ongoing Violence Assessment Tool; PVS=Partner Violence Screen; VA=Veterans Administration; WAST=Woman Abuse Screening Tool.

Figure 7. Benefit of IPV Interventions in Studies Enrolling Pregnant or Postpartum Women (KQ4)

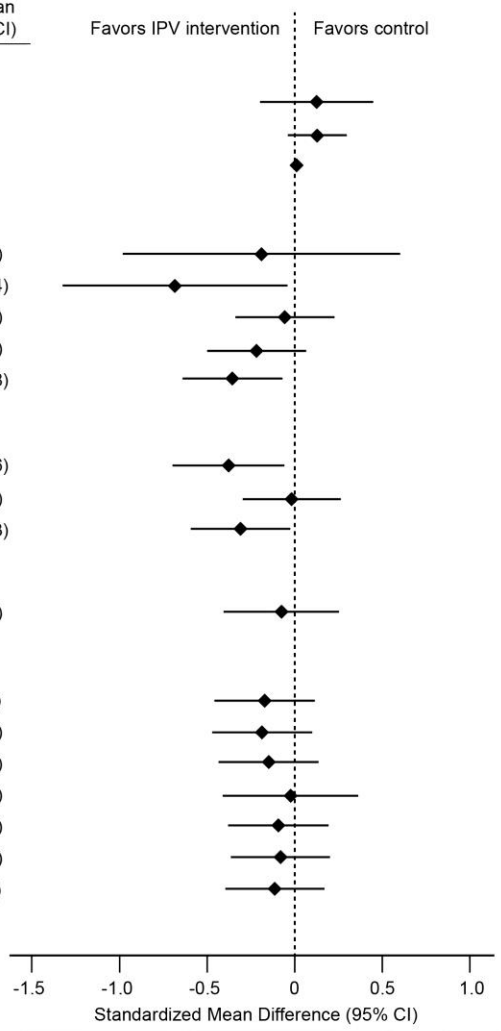
First author, year	Measure	Intervention type	N	Followup (months)	No. of sessions	Standardized Mean Difference (95% CI)
IPV (any type)						
Blair-Merritt, 2010	CTS-2	HV	643	12	weekly	-0.04 (-0,23, 0.14)
El-Mohandes, 2008	CTS-2	C (IPV + other)	336	5	6-10	-0.40 (-0.68, -0.12)
Sharps, 2016	CTS-2	HV	239	24	weekly (6)	-0.34 (-0.59, -0.08)
Zlotnick, 2011	CTS-2	C (IPV)	54	6	5	0.22 (-0.37, 0.80)
IPV (specific type)						
Tiwari, 2005	CTS-2 (minor phys.)	C (IPV)	110	5	1	-0.47 (-0.86, -0.09)
Tiwari, 2005	CTS-2 (psych.)	C (IPV)	110	5	1	-0.39 (-0.78, -0.01)
Tiwari, 2005	CTS-2 (sexual)	C (IPV)	110	5	1	-0.12 (-0.50, 0.26)
Tiwari, 2005	CTS-2 (severe phys.)	C (IPV)	110	5	1	-0.09 (-0.47, 0.29)
Birth outcomes						
El-Mohandes, 2008	LBW (<2,500 g)	C (IPV + other)	306	5	6-10	-0.22 (-0.59, 0.15)
El-Mohandes, 2008	VLBW (<1,500 g)	C (IPV + other)	306	5	6-10	-0.98 (-2.16, 0.19)
El-Mohandes, 2008	PTB (<37 wks)	C (IPV + other)	306	5	6-10	-0.83 (-1.69, 0.02)
El-Mohandes, 2008	VPTB (<33 wks)	C (IPV + other)	306	5	6-10	-0.16 (-0.52, 0.19)
Depression						
Tiwari, 2005	EPDS	C (IPV)	110	5	1	-0.75 (-1.24, -0.26)
Zlotnick, 2011	EPDS	C (IPV)	54	6	5	-0.32 (-0.91, 0.26)
PTSD symptoms						
Zlotnick, 2011	DTS	C (IPV)	54	6	5	-0.05 (-0.63, 0.53)
QOL						
Tiwari, 2005	SF-36 (bodily pain)	C (IPV)	110	5	1	0.48 (0.10, 0.87)
Tiwari, 2005	SF-36 (gen. health)	C (IPV)	110	5	1	0.10 (-0.28, 0.48)
Tiwari, 2005	SF-36 (ment. health)	C (IPV)	110	5	1	-0.02 (-0.40, 0.36)
Tiwari, 2005	SF-36 (phys. func.)	C (IPV)	110	5	1	-0.50 (-0.88, -0.11)
Tiwari, 2005	SF-36 (role-phys.)	C (IPV)	110	5	1	-0.41 (-0.80, -0.03)
Tiwari, 2005	SF-36 (social func.)	C (IPV)	110	5	1	-0.16 (-0.54, 0.23)
Tiwari, 2005	SF-36 (vitality)	C (IPV)	110	5	1	-0.03 (-0.41, 0.35)



Abbreviations: C=counseling; CI=confidence interval; CTS-2=Conflict Tactics Scale 2; EPDS=Edinburgh Postnatal Depression Scale; HV=home visiting; IPV=intimate partner violence; LBW=low birth weight; N=sample size; PTB=preterm birth; SMD=standardized mean difference; VLBW=very low birth weight; VPTB=very preterm birth.

Figure 8. Benefit of IPV Interventions in Studies Enrolling Nonpregnant Women (KQ4)

First author, year	Measure	N	Followup (months)	Setting	No. of sessions	Standardized Mean Difference (95% CI)
IPV (any type)						
Hegarty, 2013	CAS	272	12	PC	1-6	0.13 (-0.19, 0.44)
Miller, 2016	CTS-2	3540	12	FP	1	0.13 (-0.03, 0.29)
Rhodes, 2015	CTS-2	592	3	ED	1 (+1 call)	0.01 (-0.01, 0.03)
IPV (specific type)						
Miller, 2011	BC sabotage	156	3-6	FP	1	-0.19 (-0.97, 0.60)
Miller, 2011	Preg. coercion	156	3-6	FP	1	-0.68 (-1.32, -0.04)
Tiwari, 2010	CTS-2 (sexual)	200	5	PC	1 (+12 calls)	-0.06 (-0.33, 0.22)
Tiwari, 2010	CTS-2 (phys.)	200	5	PC	1 (+12 calls)	-0.22 (-0.49, 0.06)
Tiwari, 2010	CTS-2 (psych.)	200	5	PC	1 (+12 calls)	-0.35 (-0.63, -0.08)
Depression						
Hegarty, 2013	HADS	200	12	PC	1-6	-0.38 (-0.69, -0.06)
Saftlas, 2014	CESD-R10	204	6	FP	1 (+3 calls)	-0.02 (-0.29, 0.26)
Tiwari, 2010	CBDI-II	200	5	PC	1 (+12 calls)	-0.31 (-0.59, -0.03)
Anxiety						
Hegarty, 2013	HADS	100	12	PC	1-6	-0.08 (-0.40, 0.25)
QOL						
Hegarty, 2013	WHO (psych.)	196	12	PC	1-6	-0.17 (-0.45, 0.11)
Hegarty, 2013	WHO (phys.)	196	12	PC	1-6	-0.19 (-0.47, 0.10)
Hegarty, 2013	WHO (env.)	196	12	PC	1-6	-0.15 (-0.43, 0.13)
Hegarty, 2013	SF-12 MCS	188	12	PC	1-6	-0.02 (-0.40, 0.36)
Hegarty, 2013	WHO (social)	196	12	PC	1-6	-0.09 (-0.37, 0.19)
Tiwari, 2010	SF-12 PCS	200	5	PC	1 (+12 calls)	-0.08 (-0.36, 0.20)
Tiwari, 2010	SF-12 MCS	200	5	PC	1 (+12 calls)	-0.11 (-0.39, 0.16)



Abbreviations: CAS=Composite Abuse Scale; CBDI-II=Chinese Beck Depression Inventory-II**;** CESD-R10=Center for Epidemiologic Studies Short Depression Scale-10 Revised; CI=confidence interval; CTS-2=Conflict Tactics Scale 2; FP=family planning clinic; HADS=Hospital Anxiety and Depression Scale; IPV=intimate partner violence; N=sample size; PC=primary care; PC(pre.)=indicates women were recruited from routine prenatal care; SF-12= Short Form Health Survey-12 Item; SMD=standardized mean difference; QOL=quality of life; WHO=World Health Organization.

Table 1. IPV KQ1: Characteristics of Included Randomized, Controlled Trials

Author, Year Quality	Description of Screening Intervention	Description of Comparison(s)	Recruitment Setting, Country	Source Population	N	% Non-white	Mean Age (SD), Range	% With Past-Year IPV
Klevens et al, 2012[57, 60] Good	Computerized screening (3-item Partner Violence Screen); women with a positive response to ≥1 question were shown a brief video providing support, information about a hospital-based IPV advocacy program and encouraged to seek help; they were also given a printout with resources (e.g., local partner violence advocacy programs, 24-hour hotlines, women's shelters)	IPV resource list (no screening, all women received an IPV resource list) Control group: No screening, no-partner violence list control group	10 primary health care clinics, U.S.	Women ≥18 years seeking clinical services who could be separated from a partner or child >3 years	2,708	94.6	38.7 (14.9) NR	15*
Koziol-McLain et al, 2010[58] Fair	In-person screening (3-item Intimate Partner Violence screen conducted by a research assistant); if ≥1 positive response) women received a brief† statement about the unacceptability of violence, were asked additional questions about safety, and received information about referral options. Women with a positive response to safety questions‡ had additional services while in the ED	Usual care (no formal ED IPV screening policy)	1 ED, New Zealand	Women ≥16 presenting to the ED for care; 19% of included sample were presenting for an acute injury	344	39.6§	Median: 40 (IQR: 27–59) 16–94	18 (Lifetime prevalence: 51%)
MacMillan et al, 2009[59] Fair	In-person screening (8-item Woman Abuse Screening Tool) before clinic visit, clinician notification of women who screened positive;‖ all women were given a card that listed contact information of local agencies and hotlines for women exposed to violence	No screening before health care visit (screening completed after the clinic visit); at enrollment, women received the same resource card as the screening group	12 primary care sites; 11 EDs; and 3 OBGYN clinics, Canada	Women 18 to 64 years, had a male partner within the last 12 months and could be separated from those accompanying them	707	NR	34 (NR) 18–64	12

***** Prevalence refers to the year before enrollment and based on recall at 12 months after enrollment. Measured using 18 questions from the National Violence Against Women survey.

† Estimate based on a questionnaire descrbed by authors as a compilation of the Partner Violence Screen and Abuse Assessment Screen and asks about current (past-year) abuse. Considered positive if one of three questions was answered positively.

‡ Women who screened positive were asked questions about personal danger or children/elderly in the home who are in danger. If questions indicated a safety concern, the ED provider was notified and a referral was made to the hospital social worker or community specialist.

§ Refers to the percentage who were Mari or non-New Zealand European.

‖ The completed screening questionnaire was placed in the chart. Any discussion of the positive finding was left to the discretion of the treating clinician.

Abbreviations: ED=emergency department; KQ=key question; IPV=intimate partner violence; IQR=interquartile ratio; NR=not reported; OBGYN=obstetrics and gynecology; U.S.=United States.

Table 2. IPV KQ2: Characteristics of Included Studies

Author, Year Quality	Screener(s)	Timing of IPV Exposure	Population N	Recruitment Setting Country	Age in Yrs, Mean (SD), Range	% Female	% Pregnant	% Non-white
Chen et al, 2005[66] Fair	HITS	Current	Women ≥18 years, predominantly Hispanic, currently involved with a partner n=113	Family practice clinics U.S.	36 (NR) Range: NR	100	9	64
Dubowitz et al, 2007[67] Fair	PSQ	Past year	English-speaking adult caregivers with a child <6 years seen for a well-child visit n=200	Pediatric primary care clinic U.S.	Median: 24 Range NR	94 (mothers)	NR	NR
Ernst et al, 2004[63] Fair	OVAT	Current	English-speaking patients at the ED n=306	ED U.S.	34 (10) Range: NR	70	NR	51
Feldhaus et al, 1997[64] Fair	PVS	Past year	English-speaking women ≥18 years at ED who were noncritical ISA, n=255 CTS, n=230	ED U.S.	36 (16) Range: NR	100	NR	55
Iverson et al, 2013[71] Fair	HITS	Past year	Female veterans ≥18 yrs. found through VHA database and who reported an intimate relationship in past year. n=160	Mailed survey U.S.	48 (NR) Range: NR	100	NR	20
Iverson et al, 2015[72] Fair	HITS E-HITS	Past year	Female veterans ≥18 yrs. found through VHA database and who reported an intimate relationship within the past year n=80	Mailed survey U.S.	49 (NR) Range: NR	100	NR	14
Koziol-McLain et al, 2001[73] Fair	BRFSS (violence screen)	Prediction of future (3–5 months) partner abuse	English-speaking women ≥18 years n=409	Telephone survey U.S.	46 (16) 18 to 93	100	NR	9
MacMillan et al, 2006[75] Fair	PVS WAST	Past year	English-speaking (and reading) women 18–64 years presenting for their own health care visit not too ill to participate n=Unclear; 2,339 completed the gold standard CAS	2 family practices, 2 EDs, and 2 women's health clinics Canada	37 (12) Range: NR	100	NR	NR
Mills et al, 2006[62] Fair	HITS PVS	Past year	Men ≥18 yrs. in the ED who were triaged to the medical or trauma sections n=53	ED U.S.	40 (11) 20–62	0	NA	78

Table 2. IPV KQ2: Characteristics of Included Studies

Author, Year Quality	Screener(s)	Timing of IPV Exposure	Population N	Recruitment Setting Country	Age in Yrs, Mean (SD), Range	% Female	% Pregnant	% Non-white
Paranjape et al, 2003[65] Fair	STaT	Lifetime	English-speaking women 18–64 yrs. In the non-acute section of ED n=75	ED U.S.	36 (10) Range: NR	100	NR	66
Paranjape et al, 2006[70] Fair	STaT	Current or most recent relationship	English-speaking women 18–65 yrs. n=240	Urgent care U.S.	38 (10) Range: NR	100	NR	≥ 91*
Sohal et al, 2007[68] Fair	HARK	Past year	Women ≥17 yrs. who had been in an intimate relationship in the last year n=232	General practice waiting rooms U.K.	35 (NR) 18–70	100	NR	60
Wathen et al, 2008[76] Fair	WAST	Past year	English-speaking (and reading) women 18–64 yrs. with a male partner in the last year n=5,604	Primary, acute, and specialty care centers Canada	Overall NR Range: NR Screen group: 39 (NR) Range: NR	100	Overall: NR Screen group: 8	NR
Weiss et al, 2003[74] Fair	OAS AAS	Current	ED patients with a current partner who were not too ill to participate (due to trauma, drug overdose, alcohol intoxication, or other condition) n=856	ED U.S.	36 (NR) Range: NR	62	NR	49
Zink et al, 2007[69] Fair	Unnamed†	Current	English-speaking mothers in a relationship with a steady partner for ≥ 1 year and at least 1 child 3–12 yrs. n=393	Pediatric and family medicine clinics U.S.	Median: 31 Range: 18–58	100	NR	51

* Only African American reported

† Five-item unnamed screener designed to assess relationship quality and safety using nongraphic language.

Abbreviations: AAS=Abuse Assessment Screen; BRFSS=Behavioral Risk Factor Surveillance System; CAS=Composite Abuse Scale; CTS=Conflict Tactics Scale; CTS-2=Conflict Tactics Scale-2; ED=emergency department; HARK=Humiliation, Afraid, Rape, Kick; HITS=Hurt/Insult/Threaten/Scream Tool; E-HITS=Electronic HITS; IPV=intimate partner violence; ISA=Index of Spouse Abuse; KQ=key question; N/n=sample size; NR=not reported; OAS=Ongoing Abuse Screen; OVAT=Ongoing Violence Assessment Tool; PSQ=Parent Screening Questionnaire; PVS=Partner Violence Screen; SD=standard deviation; STaT=Slapped, Things, Threaten; U.S.=United States; WAST=Woman Abuse Screening Tool.

Table 3. IPV KQ4: Characteristics of Included Randomized, Controlled Trials

Author, Year Study Design Study Name Quality	Population	Intervention	Control	Recruitment Setting, Country	Source Population	Total N	% F	% Non-white	Mean Age (SD), Range
Blair-Merrit et al, 2010[80] Fair	Pregnant/ postpartum	Family-based intervention involving weekly home visits from paraprofessionals over 3 years;* direct services related to parenting, conflict resolution, emotional support; linking families to community services as needed, including IPV shelters/advocacy groups	Usual care	Hawaiian hospitals U.S.	Mothers (≥18 years) who gave birth between 1994–1995 on Oahu to children rated as high risk for maltreatment	643	100	88	NR
El-Mohandes et al, 2008[82] Kiely et al, 2010[85] El-Mohandes et al, 2011[92] Fair	Pregnant/ postpartum	Individual cognitive behavioral intervention delivered during prenatal care visits (4–8 prenatal sessions and 2 postpartum sessions) aimed at reducing behavioral risks (depression, IPV, smoking, and tobacco exposure); sessions targeted toward specific risk factors based on prenatal screening	Usual care	6 prenatal care sites in the District of Columbia U.S.	African American women ≥18 years, ≤28 weeks' gestation and reporting any of four risk factors (including any IPV in year before pregnancy)	913	100	100	25 (SE 0.2)
Hegarty et al, 2013[86] Fair	Nonpregnant	Physician training to respond to women and deliver a brief IPV counseling intervention (1–6 sessions, depending on needs)	Usual care	Family practice clinics in Victoria Australia	Women (16–50 years of age) who screened positive for fear of their partner in the past 12 months†	272 (52 physicians)	100	NR	38 (8)
Miller et al, 2011[89] Fair	Nonpregnant	Clinician training to deliver enhanced IPV screening, education, and counseling for IPV/reproductive coercion and assistance contacting resources (one session during clinic visit)	Usual care‡	4 family planning clinics in Northern California U.S.	Women 16–29 years of age who agreed to a followup interview	904 (4 clinics)	100	77	16–20 years=44% 21–24 years=33% 25–29 years=24%

Table 3. IPV KQ4: Characteristics of Included Randomized, Controlled Trials

Author, Year Study Design Study Name Quality	Population	Intervention	Control	Recruitment Setting, Country	Source Population	Total N	% F	% Non-white	Mean Age (SD), Range
Miller et al, 2016[88] Fair	Nonpregnant	Clinician and staff training (1/2 day) focused on IPV education, assessment, harm reduction counseling, and supported referrals to victims' services. Discussion of IPV encouraged for all encounters, guided by palm-sized brochure (one session during clinic visit)	Usual care[§]	25 family planning clinics in Western Pennsylvania U.S.	Women 16–29 years of age who agreed to a followup interview	3,540 (17 clinics)	100	19	16–20 years=38% 21–24 years=36% 25–29 years=27%
Rhodes et al, 2015[87] Fair	Nonpregnant	Brief motivational intervention, manual-guided (one session during ED visit, telephone booster 10 days later)	Assessed control No contact control	2 affiliated urban academic EDs in Philadelphia, PA U.S.	Women 18–64 years who screened positive for IPV and heavy drinking	592	100	82	32 (31–33) 18–64
Saftlas et al, 2014[91] Fair	Nonpregnant	Motivational interviewing conducted by field coordinator (1 60-min in-person session at baseline; three 10- to 15-min telephone sessions at 1, 2, and 4 months post-enrollment)	Provision of written materials; referral to community-based resources on request	2 family planning clinics in rural Iowa U.S.	Women ≥18 years who screened positive for past-year IPV (current partner)	204	100	12	NR
Sharps et al, 2016[81] DOVE Trial Fair	Pregnant/ postpartum	Brochure-based IPV empowerment intervention embedded into a home visiting program; tailored to a woman's expressed needs and level of danger; three 15- to 25-min sessions during pregnancy and three postpartum sessions during home visits	Standard home-visiting protocol[‖]	Urban and rural perinatal home-visiting programs U.S.	Women ≥14 years and ≤32 weeks' gestation; low income (i.e., Medicaid eligible); enrolled in a perinatal home visiting program at a participating agency; screened positive for IPV (current or past partner)	239	100	57	24.0 (5.2)

Table 3. IPV KQ4: Characteristics of Included Randomized, Controlled Trials

Author, Year Study Design Study Name Quality	Population	Intervention	Control	Recruitment Setting, Country	Source Population	Total N	% F	% Non-white	Mean Age (SD), Range
Tiwari et al, 2005[83] Fair	Pregnant/ postpartum	In-person counseling (single, 30-min session delivered by midwife counselor) focused on empowerment to enhance independence (advice in areas of safety, choice making, and problem solving), followed by brochure reinforcing information	Usual care (wallet sized card with community resources for abused women)	Public antenatal clinic Hong Kong	Women <30 weeks' gestation who screened positive for abuse by a partner during their first antenatal appointment	110	100	NR	28 (NR)
Tiwari et al, 2012[94] Tiwari et al, 2010[90] Good	Nonpregnant	Advocacy intervention, in-person interview, empowerment pamphlet, weekly telephone calls, 24-hour access to a hotline for additional support One 30-min session, followed by 12 weekly telephone calls (3 months and 9 months post-baseline)	Usual community care	Community center Hong Kong	Screened positive for IPV; ≥18, able to speak Cantonese or Putonghua	200	100	100	38 (7) NR
Zlotnick et al, 2011[84] Fair	Pregnant/ postpartum	Individual counseling (based on Interpersonal psychotherapy); delivered over four 60-min sessions during pregnancy and one session within 2 weeks of delivery)	Control (educational materials and list of IPV resources)	Primary care and OBGYN clinics U.S.	Women (18–40 years) who screened positive for past-year IPV	54	100	61	23.8 (4.6)

* Over the course of the intervention, 13.6 weekly visits occurred in year 1 (on average), tapering to 25% participation by year 3.

† Eligible physicians (for training) included those who worked ≥3 sessions per week, used electronic records, and ≥70% of their patients spoke English. Patients of eligible providers were mailed a survey regarding participant and screening for fear of partner.

‡ Usual care described as two violence screening questions on clinic intake form and usual clinic protocol for positive disclosures during encounters.

§ Usual care described as standard IPV question on intake sheet and referral if IPV was discussed.

‖ Standard care includes assessment and referral for IPV during first home visit; during subsequent visits, discussion of perinatal IPV only if indication or if woman raises a concern.

Abbreviations: DOVE=Domestic Violence Enhanced Home Visitation Program; ED=emergency department; IPV=intimate partner violence; min=minute; N=sample size; NR=not reported; OBGYN=obstetrics and gynecology; SD=standard deviation; SE=standard error; U.S.=United States.

Table 4. Summary of Results for RCTs Enrolling Pregnant or Postpartum Women (KQ4)

Author, Year	Study name	G1 G2	N analyzed	Main Results
Blair-Merritt et al, 2010[80]	Hawaiian HSP	G1: Weekly home visits from paraprofessionals, linkage to services G2: Usual care	G1: 373 G2: 270	CTS-2, adj. IRR, of average IPV events per person year* 3 years: 7.50 vs. 9.55, IRR: 0.86 (0.73 to 1.01) 7–9 years:† 3.35 vs. 4.01, IRR: 0.95 (0.77 to 1.17)
El-Mohandes et al, 2008[82, 85, 92]	NA	G1: Individual cognitive behavioral counseling delivered during prenatal care visits G2: Usual prenatal care	G1: 452 (169 IPV subgroup) G2: 461 (167 IPV subgroup)	CTS-2, change from baseline (13 weeks' gestation) to postpartum % of participants experiencing IPV (G1 vs. G2): -28.8 vs. -24.9; p=0.074 Subgroup of women with IPV at baseline, % experiencing IPV recurrence (baseline to postpartum) Adj. ORs (95% CI),‡ 0.48 (0.29 to 0.80) Women in the intervention group had lower rates of very preterm neonates (≤33 weeks) (1.5% vs. 6.6%; p=0.03) and very low birthweight neonates (<1,500 g) (0.8% vs. 4.6%; p=0.052); no statistically significant difference between groups in rates of low birth weight neonates (<2,500 g) (12.8% vs. 18.5%; p=0.204) or preterm births (<37 weeks) (13.0% vs. 19.7%; p=0.135)
Tiwari et al, 2005[83]	NA	G1: Brief clinic-based counseling and safety advice delivered by a midwife G2: Usual care (wallet-sized card with information on community resources)	G1: 51 G2: 55	Women in the intervention group had significantly lower CTS scores than controls on subdomains of psychological abuse (-1.1; 95% CI, -2.2 to -0.04) and minor physical violence (-1.0; 95% CI, -1.8 to -0.17), but no statistically significant difference for severe physical abuse (0.08; 95% CI, -0.26 to 0.42) or sexual abuse (-0.07; 95% CI, -0.30 to 0.16) Postpartum depression, % of women with EPDS score ≥ 10 (G1 vs. G2): RR, 0.36 (0.15 to 0.88) SF-36 (component scores): Women in the intervention group had significantly higher scores on three component scores (physical functioning, role-physical, and role-emotional, p≤0.05) but significantly lower (worse) scores for bodily pain (≤0.05); scores were similar between groups for general health, mental health, vitality, and social functioning (p=NS)
Sharps et al, 2016[81]	DOVE trial	G1: Domestic Violence Enhanced Home Visitation Program (DOVE), structured brochure-based IPV intervention added to standard home visitation G2: Standard home visiting protocol (4–6 prenatal visits, 6–12 postnatal visits over 2 years)	G1: 124 G2: 115	Women in the intervention group had a significantly lower mean decrease in CTS-2 scores from baseline compared with controls at 24 months (-40.82 vs. -35.87; difference: -4.95; p<0.01)

Table 4. Summary of Results for RCTs Enrolling Pregnant or Postpartum Women (KQ4)

Author, Year	Study name	G1 G2	N analyzed	Main Results
Zlotnick et al, 2011[84]	NA	G1: Interpersonal psychotherapy-based counseling G2: Usual care (educational material and a list of IPV resources)	G1: 25 G2: 21	No statistically significant difference between groups in frequency of IPV acts (p=0.44), postpartum depression (EPDS mean scores; p=0.20), or PTSD symptoms (Davidson Trauma Scores) (p=0.24) at followup during pregnancy, 3 weeks postpartum, or 3 months postpartum

* Analyses adjusted for missing data; imputed data adjusted for child age, program site, maternal mental health comorbidity, problem alcohol use, and past-year employment with control group as referent. Overall IPV rates also adjusted for baseline IPV (continuous term).
† The values for the long-term followup reflect the time period when the child was approximately 7 to 9 years of age (4–6 years after the home visiting intervention ended).
‡ Adjusted for depression and substance use. Authors also report outcomes at each specific time point during pregnancy and postpartum visit. Women in the intervention group were less likely to be victimized at all time points, but the difference between groups at the postpartum visit was not statistically significant (12.7% vs. 21.2%; p=0.063).

Abbreviations: CI=confidence interval; CTS=Conflict Tactics Scale; CTS-2=Conflict Tactics Scale-2; EPDS=Edinburgh Postnatal Depression Scale; G=group; HSP=Health Start Program; IPV=intimate partner violence; IRR=incidence rate ratio; KQ=key question; N=sample size; NA=not available; NR=not reported; NS=not sufficient; OR=odds ratio; RCT=randomized, controlled trial; RR=relative risk; SF-36=Short Form Health Survey-36 Item; vs.=versus.

Table 5. Summary of Results for RCTs Enrolling Nonpregnant Populations (KQ4)

Author, Year	Study Name	G1 (N analyzed) G2 (N analyzed)	N Analyzed	Main Results
Hegarty et al, 2013[86]	WEAVE trial	G1: Physician training to deliver a brief IPV counseling intervention G2: Usual care	G1: 137 G2: 135	No difference between groups in change from baseline to 12 months in % of women with CAS score ≥7 (G1 vs. G2): -28 vs. -29; p=NS Fewer women in the intervention group had a HADS depression score ≥ 8 at 6 months (OR, 0.4; 0.1 to 1.0; p=0.05) and 12 months (OR, 0.3; 01 to 0.7; p=0.005) than controls No difference between groups in % of women with HADS anxiety score ≥ 8 at 6 months (OR, 0.5; 0.2 to 1.3; p=0.14) or 12 months (OR, 0.4; 0.2 to 1.2; p=0.11) No difference between groups in SF-12 MCS mean scores (G1 vs. G2) at 6 months (0.8; -2.3 to 3.9) or 12 months (1.9; -1.7 to 5.5); no difference between groups on mean WHOQOL-Bref component scores at 6 or 12 months
Miller et al, 2011[89]	NA	G1: Clinican and staff IPV education; enhanced screening; counseling for IPV and appropriate referrals G2: Usual care (standard IPV question on intake sheet; referral if IPV disclosed)	G1: 453 G2: 451	No difference between groups in change from baseline to 3- to 6-month followup % of women reporting recent IPV* (defined as past 3-month physical or sexual violence) (0.9% vs. 2.2%), pregnancy coercion (-1.8% vs. -0.3%), or birth control sabotage (6.3% vs. 2.2%) In the subgroup of women with recent IPV at baseline, fewer women in the intervention group reported pregnancy coercion at followup (OR, 0.29; 0.09 to 0.91); there was no significant difference between groups in birth control sabotage (OR, 0.71; 0.17 to 2.94)
Miller et al, 2016[88]	NA	G1: Clinicians and staff IPV education training; discussion of IPV encouraged for all encounters, guided by palm-sized brochure G2: Usual care (standard IPV question on intake sheet; referral if IPV disclosed)	G1: 1429 G2: 1396	No difference between groups in change from baseline to 3- to 6-month followup in % of women reporting recent IPV (defined as past 3-month physical or sexual violence) (Adj. RR,† 1.07; 0.84 to 1.38) or reproductive coercion (Adj. RR,‡ 1.50; 0.95 to 2.35) In the subgroup of women with recent IPV at baseline, there was no difference between groups in change from baseline to followup in % of women reporting recent IPV (Adj. RR, 1.16; 0.82 to 1.64) or reproductive coercion (Adj. RR; 1.19; 0.63 to 2.22)
Rhodes et al, 2015[87]	NA	G1: Brief motivational intervention during ED visit G2: Assessed control G3: No contact control	G1: 232 G2: 121	No difference between groups in IPV at 3 months (CTS-2 score ≥1, in reference to abuse in the past week), G1 vs. G2: OR, 1.02 (0.98 to 1.06; p=0.33). No difference between groups on mean CTS scores at 3, 6, or 12 months
Saftlas et al, 2014[91]	NA	G1: Motivational interviewing G2: Written information on community-based resources	G1: 98 G2: 106	No statistically significant difference between groups in mean change from baseline depression scores (Center for Epidemiologic Studies Short Depression Scale), G1 vs. G2: -4.2 vs. -2.6; p=0.07

Table 5. Summary of Results for RCTs Enrolling Nonpregnant Populations (KQ4)

Author, Year	Study Name	G1 (N analyzed) G2 (N analyzed)	N Analyzed	Main Results
Tiwari et al, 2012[94] Tiwari et al, 2010[90]	NA	G1: Advocacy intervention (in-person interview, written materials, scheduled weekly calls, access to a 24-hour hotline) G2: Usual care	G1: 100 G2: 100	No difference between groups over 3 to 9 months in mean adj.‡ CTS-2 scores for physical assault (0.35; -0.80 to 0.10; p=0.13) or sexual coercion (-0.02; -0.12 to 0.09; p=0.60). Women in the intervention group had significantly lower scores on CTS-2 for psychological aggression (-1.87; -3.34 to -0.40; p=0.01) Women in the intervention groups had lower depression scores (CBDI-II)§ at 3 -9 months: -2.66 (-5.06 to -0.26); p=0.03. However, change is less than the 5-point difference considered clinically meaningful. No statistically significant difference between groups at 3 to 9 months on mean SF-12 PCS scores (0.37; -0.91 to 1.65; p=0.58) or SF-12 MCS scores (0.80; -1.16 to 2.77; p=0.42)

* Per authors, recent (past 3-month) experiences of physical and sexual violence were assessed using items modified from the Conflict Tactics Scales and the Sexual Experiences Survey.
† Models adjusted for baseline values, survey time point, interaction between baseline and time point, and clustering; missing data accounted for using multiple imputation.
‡ Between-group difference adjusted for baseline values.
§ Chinese version of the Beck Depression Inventory II; range of scores is from 0 to 36, higher scores indicate higher levels of depression.

Abbreviations: CBDI-II=Chinese Beck Depression Inventory-II; CTS=Conflict Tactics Scale; CTS-2=Conflict Tactics Scale-2; G=group; HADS=Hospital Anxiety and Depression Scale; KQ=key question; IPV=intimate partner violence; MCS=Mental Composite Score; N=sample size; NS=not sufficient; OR=odds ratio; PCS=Physical Composite Score; RCT=randomized, controlled trial; RR=relative risk; SF-12=Short Form Health Survey-12 Item; WEAVE=Women who have Experienced intimate partner Violence trial; WHOQOL-Bref=World Health Organization Quality of Life-Bref instrument ; vs.=versus.

Table 6. Summary of Evidence for Screening for Intimate Partner Violence

Key Question and Topic	No. of Studies & Study Design	No. of Participants	Summary of Main Findings (Including Consistency and Precision)	Quality	Limitations (Including Reporting Bias)	Strength of Evidence	Applicability
1: Benefits of screening	3 RCTs	3,759	*IPV (k=3):* No significant difference between screening and control groups over 3-18 months; consistent, imprecise *QOL (k=2):* No significant difference between screening and control groups on SF-12 scores over 6–18 months; one RCT also found no significant difference between groups on WHOQOL-Bref subdomains; consistent, imprecise *Depression/PTSD/health care utilization (k=1):* No significant difference between groups for depression, PTSD, or health care utilization outcomes (each reported by only one trial each); unknown consistency, imprecise	Good to fair	Studies enrolled participants from different settings (U.S. primary care settings, one New Zealand ED, and mixed Canadian health care settings) and used diverse screening processes	Moderate for no benefit *(IPV); and QOL);* Low for no benefit *(health care utilization; depression; PTSD)*	Unselected adult women presenting for primary care and ED visits; one large U.S. trial was set in primary care clinics only
2: Identifying current, past, or increased risk for abuse and neglect	15 Cross-sectional	4,460	*Past-year IPV (women; k=5):* Across five screeners (HARK, HITS, E-HITS, PVS, and WAST), , sensitivity ranged from 65 to 87%, and specificity ranged between 80 to 95%; mostly consistent, imprecise *Past-year IPV (men, k=1):* Sensitivity of two screeners (PVS, HITS) ranged from 30 to 71% and specificity ranged from 83 to 88%; unknown consistency, imprecise *Current/ ongoing IPV (k=4*): Across 5 screeners (OAS, AAS, OVAT, STaT, 3-item unnamed) accuracy varied widely; inconsistent, imprecise	Fair	Most screeners were assessed in only one study; studies used different reference standards and sometimes used different cutpoints for positivity in the same reference standard; handling of missing data (incomplete questionnaires) was often not reported; reporting bias not detected	Low (accuracy of past-year IPV in women) Insufficient (past-year IPV in men)	Adult women seeking care in various clinical settings with unknown IPV symptom status

Table 6. Summary of Evidence for Screening for Intimate Partner Violence

Key Question and Topic	No. of Studies & Study Design	No. of Participants	Summary of Main Findings (Including Consistency and Precision)	Quality	Limitations (Including Reporting Bias)	Strength of Evidence	Applicability
3: Harms of screening	2 RCTs	1,051	Two RCTs concluded no adverse effects of screening were identified; consistent, unknown precision	Fair	One RCT did not report whether harms were prespecified; the other collected harms using a structured questionnaire, however, outcome timing (at initial screening visit) may not be sufficient to assess harms; reporting bias not detected	Low for no harms	Adult women seeking care in various clinical settings
4: Benefits of treatment	11 RCTs	6,740	*IPV (k=10):* Two found a statistically significant benefit in favor of the intervention (one HV intervention and one counseling intervention addressing multiple risk factors) and one other HV intervention found an association with reduced IPV but differences were not statistically significant. Seven RCTs evaluated a counseling intervention for women with screen-detected IPV; five found similar rates of IPV in both groups with no statistically significant differences, and two reported on subtypes of violence only and found mixed results; inconsistent, imprecise *QOL (k=3):* 2 RCTs found no difference between groups on SF-12 scores, and 1 found mixed results across SF-36 subdomains; mostly consistent, imprecise *Depression (k=5):* Inconsistent results across different measures (3 RCTs found significant benefit and 2 did not); inconsistent, imprecise	Fair	Studies assessed heterogeneous interventions and measured IPV at different time points using different outcome measures; benefit for IPV and birth outcomes in one behavioral counseling intervention may be related to counseling for other risk factors (smoking, depression) and not specific to counseling for IPV;; reporting bias not detected	Low *(IPV, QOL)* Insufficient *(anxiety, depression, PTSD, birth outcomes)*	Women who screen positive for IPV during a routine primary care visit; studies that found significant benefit for reducing overall IPV enrolled pregnant women

Table 6. Summary of Evidence for Screening for Intimate Partner Violence

Key Question and Topic	No. of Studies & Study Design	No. of Participants	Summary of Main Findings (Including Consistency and Precision)	Quality	Limitations (Including Reporting Bias)	Strength of Evidence	Applicability
4: Benefits of treatment (continued)			*Anxiety (k=1):* No significant benefit (similar HADS scores in both groups); unknown consistency, imprecise *PTSD (k=1):* No significant benefit (similar PTSD symptom scores in both groups); unknown consistency, imprecise *Bith outcomes (k=1):* Significantly lower rates of very preterm birth (based on analyses not accounting for missing data), no difference between groups for low birth weight, very low birth weight, or preterm births; unknown consistency, imprecise				
5: Harms of treatment	5 RCTs	1,409	No study found significant harms associated with the interventions; consistent, imprecise	Fair	Studies did not comment on whether harms were prespecified or how they were ascertained; reporting bias not detected	Low for no harms	Women who screen positive for IPV during a routine primary care visit

Abbreviations: CES-D=Center for Epidemiologic Studies Depression; CTS-2=Conflict Tactics Scale-2; E-HITS=Electronic HITS; ED=emergency department; HARK=Humiliation, Afraid, Rape, Kick ; HITS=Hurt/Insult/Threaten/Scream Tool; IPV=intimate partner violence; k=number of studies; PTSD=posttraumatic stress disorder; QOL=quality of life; RCT=randomized, controlled trial; SPAN=Startle, Physiological Arousal, Anger, and Numbness instrument; WAST=Woman Abuse Screening Tool; WHOQOL-Bref=World Health Organization Quality of Life-Bref instrument.

Table 7. Summary of Evidence for Screening for Elder Abuse and Abuse of Vulnerable Adults

Key Question and Topic	No. of Studies & Study Design	No. of Participants	Summary of Main Findings (Including Consistency and Precision)	Quality	Limitations (Including Reporting Bias)	Strength of Evidence	Applicability
1: Benefits of screening	0	NA	NA	NA	NA	Insufficient	NA
2: Identifying current, past, or increased risk for abuse and neglect	1 Cross-sectional study	139	Compared with the CTS, the H-S/EAST had a sensitivity of 46% (95% CI, 32 to 59) for detecting physical or verbal aggression and a specificity of 73% (95% CI, 62 to 82); unknown consistency, imprecise	Fair	Scale is relatively long (15 items) and may not be feasible for screening older adults presenting for routine care; reporting bias not detected	Insufficient	Generally healthy older adults presenting for routine dental care; population had a high prevalence of abuse on CTS (41% had violence/ verbal aggression)
3: Harms of screening	0	NA	NA	NA	NA	Insufficient	NA
4: Benefits of treatment	0	NA	NA	NA	NA	Insufficient	NA
5: Harms of treatment	0	NA	NA	NA	NA	Insufficient	NA

Abbreviations: CI=confidence interval; CTS=Conflict Tactics Scale; H-S/EAST=Hwalek-Sengstock Elder Abuse Screening Test; NA=not applicable.

Appendix A Table 1. Categories of Intimate Partner Violence

Category*	Definition
Physical violence	Intentional use of physical force with the potential for causing death, disability, injury, or harm. Includes but is not limited to scratching, pushing, shoving, throwing, grabbing, biting, choking, shaking, hair pulling, slapping, punching, hitting, burning, use of a weapon (gun, knife, or other object), and use of restraints or one's body, size, or strength against another person. Physical violence also includes coercing other people to commit any of the above acts.
Sexual violence	Any sexual act committed or attempted by another person without freely given consent of the victim or against someone who is unable to consent or refuse, including forced or alcohol-/drug-facilitated penetration (completed or attempted) of a victim, forced or alcohol-/drug-facilitated incidents in which the victim was made to penetrate a perpetrator or someone else, nonphysically pressured unwanted penetration, intentional sexual touching, or noncontact acts of a sexual nature. Sexual violence can also occur when a perpetrator forces or coerces a victim to engage in sexual acts with a third party.
Psychological aggression	Use of verbal and nonverbal communication with the intent to a) harm another person mentally or emotionally and/or b) exert control over another person. Includes but is not limited to making threats of physical or sexual violence, involving the use of words, gestures, or weapons to communicate the intent to cause death, disability, injury, or physical harm; humiliating, degrading, or intentionally embarrassing or diminishing the victim; using coercive control of what the victim can and cannot do; withholding information from the victim; isolating the victim from friends and family; controlling the victim's reproductive or sexual health; and denying the victim access to money or other basic resources.
Stalking	Repeated, unwanted attention and contact that causes the victim fear or concern for her/his own safety or the safety of someone else, such as a family member or close friend.

***** Categories and definitions of Intimate Partner Violence shown here are based on CDC guidance. [3]

Appendix A Table 2. Categories of Elder Abuse

Category*	Definition
Physical abuse	Intentional use of physical force that results in acute or chronic illness, bodily injury, physical pain, functional impairment, distress, or death. May include but is not limited to such acts of violence as striking (with or without an object or weapon), hitting, beating, scratching, biting, choking, suffocation, pushing, shoving, shaking, slapping, kicking, stomping, pinching, and burning. In addition, inappropriate use of medications and physical restraints, pinning in place, arm twisting, hair pulling, force feeding, and physical punishment of any kind also are examples of physical abuse.
Sexual abuse or abusive sexual contact	Forced and/or unwanted sexual interaction (touching and nontouching acts) of any kind with an older adult. May include but is not limited to forced and/or unwanted completed or attempted contact between the penis and the vulva or the penis and the anus involving penetration, however slight; forced and/or unwanted contact between the mouth and the penis, vulva, or anus; forced and/or unwanted penetration of the anal or genital opening of another person by a hand, finger, or other object; forced and/or unwanted intentional touching, either directly or through the clothing, of the genitalia, anus, groin, breast, inner thigh, or buttocks; unwarranted, intrusive, and/or painful procedures in caring for genitals or rectal area; or forced and/or unwanted noncontact acts of a sexual nature. Also any of the above committed against an incapacitated person who is not competent to give informed approval, indicating a freely given agreement to have sexual intercourse or sexual contact.
Emotional or psychological abuse	Verbal or nonverbal behavior resulting in the infliction of anguish, mental pain, fear, or distress, perpetrated by a caregiver or other person who stands in a trust relationship to the elder. May have immediate effects or delayed effects that are short or long term in nature that may or may not be readily apparent to or acknowledged by the victim. May include any of the following and vary according to cultural norms: humiliation/disrespect, threats, harassment, or isolation/coercive control.
Neglect	Failure by a caregiver or other person in a trust relationship to protect an elder from harm or the failure to meet needs for essential medical care, nutrition, hydration, hygiene, clothing, or basic activities of daily living or shelter, which results in a serious risk of compromised health and/or safety, relative to age, health status, and cultural norms.
Financial abuse or exploitation	The illegal, unauthorized, or improper use of an older individual's resources by a caregiver or other person in a trusting relationship, for the benefit of someone other than the older individual. Includes but is not limited to depriving an older individual of rightful access to information about or use of personal benefits, resources, belongings, or assets.

* Categories and definitions of Intimate Elder abuse shown here are based on CDC guidance.[3]

Appendix A Table 3. Current Recommendations From Other Organizations

Organization, Year	IPV Screening Recommendation
AAFP, 2016[102]	Clinicians should screen all women of childbearing age for IPV, and women who screen positive for IPV should receive intervention services.
AAN, 2012[103]	Physicians should routinely screen all patients for past and ongoing violence, fully integrating the questions into the medical history.
AAP, 2010[104] (reaffirmed in 2014)[105]	Pediatricians should remain alert to the signs and symptoms of exposure to IPV in caregivers and children and should consider attempts to identify evidence of IPV either by targeted screening of high-risk families or universal screening.
ACOG, 2012[106, 107]	Pregnant women: Physicians should screen all women for IPV at periodic intervals, including during obstetric care (at the first prenatal visit, at least once per trimester, and at the postpartum checkup), offer ongoing support, and review available prevention and referral options. Adolescents: All adolescents should be asked annually about a history of experiencing or witnessing abuse, including emotional, physical, and sexual abuse and assault by family members, peers, romantic partners, and others. Practitioners should be aware of State law reporting requirements and clearly disclose those laws to the patient prior to asking questions. Screening may take place through either direct interviewing or written questionnaire.
AWHONN, 2015[108]	Opposes laws and policies that require nurses to report the results of screening for IPV to law enforcement or other regulatory agencies without the consent of the woman who experiences IPV. Women should be universally screened for IPV in private, safe settings where health care is provided.
IOM Committee on Preventive Services for Women, 2011[109]	Recommends for consideration as a preventive service for women: screening and counseling for interpersonal and domestic violence. Screening and counseling involve elicitation of information from women and adolescents about current and past violence and abuse in a culturally sensitive and supportive manner to address current health concerns about safety and other current or future health problems.
CTFPHC, 2013[110]	Available evidence does not justify routinely screening Canadian residents for IPV.
WHO, 2013[111]	"Universal screening" or "routine enquiry" (i.e., asking women in all health care encounters) should not be implemented.

Abbreviations: AAN=American Academy of Neurology; AAFP=American Academy of Family Physicians; ACOG=American Congress of Obstetricians and Gynecologists; AAP=American Academy of Pediatrics; AWHONN=Association of Women's Health, Obstetric and Neonatal Nurses; CTFPHC=Canadian Task Force on Preventive Health Care; IOM=Institute of Medicine; IPV=intimate partner violence; WHO=World Health Organization.

Appendix A Table 4. Current Recommendations From Other Organizations: Elderly and Vulnerable Adults

Organization, Year	Screening Recommendation
AAFP, 2014[112]	Routine screening of older and vulnerable adults is not explicitly recommended by the AAFP. However, the AAFP states that validated screening instruments are available, and preventative health visits may function as a reasonable occasion for screening at the discretion of family physicians.
AAN, 2012[103]	Physicians should routinely screen all patients for past and ongoing violence, fully integrating the questions into the medical history.
ACOG, 2013[113]	Recommends screening all patients older than 60 years for signs and symptoms of elder abuse; advocates for a safe environment for all aging women to receive high-quality care from health care providers; recommends following individual State guidelines for reporting elder abuse to APS; providing education regarding elder abuse to patients, family, caregivers, and health care providers; and encourages research in elder abuse and mistreatment.
CTFPHC, 2013[110]	Available evidence does not justify routine screening of Canadian residents for abuse of elderly and vulnerable persons.
HIGN, 2012[114]	Recommends screening for elder abuse and neglect.
AARP, 2009[115]	Recommends screening home care workers to protect elders and vulnerable adults from harm.

Abbreviations: AAFP=American Academy of Family Physicians; AAN=American Academy of Neurology; AARP=American Association of Retired Persons; ACOG=American Congress of Obstetricians and Gynecologists; APS=Adult Protective Services; CTFPHC=Canadian Task Force on Preventive Health Care; HIGN=Hartford Institute for Geriatric Nursing.

CQ 1. What factors limit the applicability of IPV screening and treatment studies conducted in emergency department settings to primary care settings (e.g., differences in patient populations or characteristics of the clinical settings)?

To address this question, we first assessed the applicability of IPV studies that met inclusion criteria for our review. Overall, nine included studies were set in an emergency department (one KQ 1 study, six KQ 2 studies, and one KQ 4 study). We also looked for studies that did not meet our inclusion criteria (e.g., wrong outcome or no comparison group) but that commented on factors that limited the applicability of IPV screening and treatment studies conducted in emergency departments. Our assessment of applicability focused on differences in populations, interventions offered, and care delivery likely to be different across outpatient primary care and emergency department settings.

Across the nine included studies conducted in an emergency department, the prevalence of IPV ranged from 14 to 40 percent; prevalence was lowest in a KQ 1 trial of screening (18%) and highest in KQ 2 studies enrolling participants from emergency departments (34 to 40%).

Twenty additional studies were identified that commented on factors that may limit the applicability of IPV screening and treatment studies conducted in emergency department settings to primary care. Most are cross-sectional or cohort studies focused on assessing IPV prevalence or acceptability of screening to patients and emergency department staff. Sixteen of these described clinical and demographic characteristics of patients presenting to the emergency department who were identified as having IPV. Patients who seek treatment in an emergency department may have higher IPV prevalence and more severe injury patterns than patients who present to primary care, although IPV prevalence varied between studies (from 0.4 to 38.9%).[1–15] Studies with the lowest reports of IPV prevalence were conducted outside of the United States. The majority of emergency department–based studies (10 studies) reported IPV prevalence greater than 10 percent, and five studies described IPV prevalence greater than 20 percent. In addition, unselected patients presenting to the emergency department may exhibit more overt signs and symptoms of IPV compared with patients presenting to primary care settings. For example, one cohort study (N=528) assessing an emergency department IPV screening program reported that 74 percent of patients who screened positive for IPV had a chief complaint of assault or trauma, while only 20 percent of IPV-positive patients presented with a medical chief complaint.[3] Additional studies set in an emergency department describe the presence of blunt injury in 70 percent of IPV-positive patients, including injury to the head or face, presence of multiple injuries, and presence of contusions.[2,6,9]

Beyond clinical presentation, patients treated in the emergency room may have decreased access to traditional health care services. Emergency department–based IPV screening studies report 33.3 to 43.1 percent of IPV-positive patients receive Medicaid, while 18.6 to 37.0 percent are uninsured.[3,5,13,15] One cross-sectional study (N=2,465) compared demographic characteristics of patients who screened positive for IPV in an emergency department versus primary care setting. A greater percentage of emergency department patients were unemployed, uneducated (less than high school education), African American, Hispanic, young (<29 years), and unmarried

compared with IPV-positive patients screened in primary care.[7] Data from the 2002 National Survey on Drug Use and Health (N=536) supports this finding of greater emergency department utilization among Hispanics experiencing IPV compared with non-Hispanic whites experiencing IPV.[16] Emergency department–treated patients also have high percentages of coexisting mental health conditions including depression, anxiety, and drug or alcohol use.[2,6,12,15]

Thirteen studies reported differences in emergency department and primary care clinical settings that may pose unique challenges to IPV screening in the emergency department. Most described poor engagement in emergency department screening programs by staff; prevalence of IPV screening ranged from 8.8 to 34.0 percent.[3–5,10,11,17] One narrative review examined 38 studies and categorized barriers to IPV screening in emergency departments as patient, provider, or systems issues.[1] Patient-driven factors include acute complaint or injury, severe pain, decreased level of consciousness, psychiatric presentation, and intoxication.[5,7,13,18] Provider-based factors include lack of time, lack of knowledge and training, lack of motivation, feelings of discomfort, feelings of inability to effect change, and provider beliefs about the emergency room's purpose and the provider's role in screening.[1,4,10,17,19–21] Systems barriers include lack of privacy for screening, unclear or inconsistent procedures for referral, inability to screen during night shift due to staff shortages and absence of social workers, patient arrival by ambulance, and patient absence from the emergency department for tests or imaging.[1,4,5,10,13,17,19,21]

CQ 2. What factors limit the applicability of older/vulnerable adult abuse and neglect screening and treatment studies conducted in emergency room settings to primary care settings (e.g., differences in patient populations or characteristics of the clinical settings)?

We found only one study addressing elder abuse that met inclusion criteria (and no studies enrolling vulnerable adults). The study assessed the accuracy of the Hwalek–Sengstock elder abuse screening test among older adults presenting for routine care at an academic dental clinic.[98] We found no studies comparing primary care with emergency department settings, nor any study set solely in the emergency department.

We did find observational studies that suggest differences between primary care and the emergency departments in the prevalence of abuse, the types of abuse, the types of older adults who are abused, and the types of abusers. Though likely underreported in all settings, the prevalence of abuse in primary care could be as high as 5 to 9 percent,[14, 15] while rates in emergency departments appear to be lower, ranging from 0.013 percent to 0.3 percent.[116, 117] The type of abuse detected in the emergency department may reflect higher rates of trauma than primary care, where emotional abuse may be more prevalent.[14, 15, 40, 118] The types of abuse and potential perpetrators may also differ. Victims of elder abuse in the emergency department may be more likely to suffer from dementia and be less able to access primary care.[119] Patients in the primary care setting may be more likely to be "young old" adults.[14, 41] Perpetrators of elder abuse and neglect are often family members in both settings. Approximately 11 percent of the substantiated reports of abuse of community-dwelling older adults with a known perpetrator involved a spouse or intimate partner.[16] The most common perpetrators of elder abuse are adult children (33% of cases) and other family members (20% of cases).[16] Elder abuse in emergency

departments appears to be commonly associated with family,[116] though other types of caregivers may be more prevalent than in the community, due to the rates of institutional care among older adults seen in emergency departments.

Original Search Strategies

KQ 2

#1	Search ((“Intimate Partner Violence”[Mesh]) OR, “Elder Abuse”[Mesh]) OR, (“Spouse Abuse”[Mesh]) OR, “Battered Women”[Mesh]	9879
#2	Search (“Domestic Violence”[Mesh]) NOT “Child Abuse”[Mesh]	11929
#3	Search (#1 OR, #2)	13490
#4	Search ((“Mass Screening”[Mesh]) OR, (“Risk”[Mesh] OR, “Risk Assessment”[Mesh]))	1016867
#5	Search (#3 AND #4)	3716
#6	Search (“Surveys and Questionnaires”[Mesh]) OR, (“Diagnosis”[Mesh] OR, “diagnosis” [Subheading]))	9346557
#7	Search (#5 AND #6)	2106
#8	Search (#5 AND #6) Filters: Humans	2106
#9	Search (#5 AND #6) Filters: Humans; English	2034
#10	Search (#5 AND #6) Filters: Publication date from 2012/01/01; Humans; English	490

Cochrane
((partner OR, spouse) AND (abuse OR, violence)) AND Screening
Reviews=3=2 New
DARE=3=2 New
Cochrane Controlled Clinical Trials Registry=7=3 New

Embase=69=57
((partner OR, spouse) AND (abuse OR, violence)) AND Screening

Total KQ 2 Database=554

Appendix B. Detailed Methods

KQ 3

#1	Search ((“Intimate Partner Violence”[Mesh]) OR, “Elder Abuse”[Mesh]) OR, (“Spouse Abuse”[Mesh]) OR, “Battered Women”[Mesh]	9879
#2	Search (“Domestic Violence”[Mesh]) NOT “Child Abuse”[Mesh]	11929
#3	Search (#1 OR, #2)	13490
#4	Search ((“Mass Screening”[Mesh]) OR, (“Risk”[Mesh] OR, “Risk Assessment”[Mesh]))	1016867
#5	Search (#3 AND #4)	3716
#6	Search (“Surveys and Questionnaires”[Mesh]) OR, (“Diagnosis”[Mesh] OR, “diagnosis” [Subheading]))	9346557
#7	Search (#5 AND #6)	2106
#8	Search (#5 AND #6) Filters: Humans	2106
#9	Search (#5 AND #6) Filters: Humans; English	2034
#10	Search (#5 AND #6) Filters: Publication date from 2012/01/01; Humans; English	490
#17	Search ”Observational Study” [Publication Type] OR, “Prospective Studies”[Mesh] OR, “Cohort Studies” [Mesh] OR, “adverse effects” [Subheading] OR, harms[tw]Filters: Publication date from 2012/01/01; Humans; English	514448
#18	Search (#10 AND #17) Filters: Publication date from 2012/01/01; Humans; English	120

Cochrane
((partner OR, spouse) AND (abuse OR, violence)) AND ((harms OR, adverse) AND (studies))
Reviews=0 New
DARE=0 New
Cochrane Controlled Clinical Trials Registry=1 New

Embase
((partner OR, spouse) AND (abuse OR, violence)) AND ((harms OR, adverse) AND (studies))
=12 New

Total Database KQ 3=133

Appendix B. Detailed Methods

KQ 4

#1	Search ((“Intimate Partner Violence”[Mesh]) OR, “Elder Abuse”[Mesh]) OR, (“Spouse Abuse”[Mesh]) OR, “Battered Women”[Mesh]	9879
#2	Search (“Domestic Violence”[Mesh]) NOT “Child Abuse”[Mesh]	11929
#3	Search (#1 OR, #2)	13490
#17	Search ”Observational Study” [Publication Type] OR, “Prospective Studies”[Mesh] OR, “Cohort Studies” [Mesh] OR, “adverse effects” [Subheading] OR, harms[tw]Filters: Publication date from 2012/01/01; Humans; English	514448
#24	Search ((((((“prevention and control” [Subheading] OR, “Primary Prevention”[Mesh]) OR, “Preventive Health Services”[Mesh]) OR, “Counseling”[Mesh]) OR, “Outcome and Process Assessment (Health Care)”[Mesh]) OR, “Mental Health Services”[Mesh]))	2214779
#27	Search #3 AND #24	4896
#28	Search (“Random Allocation”[Mesh] OR, “Randomized Controlled Trial” [Publication Type] OR, “Randomized Controlled Trials as Topic”[Mesh]) OR, (“Single-Blind Method”[Mesh] OR, “Double-Blind Method”[Mesh])	604087
#29	Search (#27 AND #28)	221
#30	Search (#27 AND #28) Filters: Humans	221
#31	Search (#27 AND #28) Filters: Humans; English	221
#32	Search (#27 AND #28) Filters: Publication date from 2012/01/01; Humans; English	98
#39	Search ((“Patient Outcome Assessment”[Mesh] OR, “Outcome Assessment (Health Care)”[Mesh] OR, “Pragmatic Clinical Trial” [Publication Type]) OR, “Outcome and Process Assessment (Health Care)”[Mesh]) OR, “Epidemiologic Studies”[Mesh]	2368187
#40	Search (#27 AND #39)	841
#41	Search (#40 OR, #32)	900
#42	Search (#40 OR, #32) Filters: Humans	900
#43	Search (#40 OR, #32) Filters: Humans; English	867
#45	Search (#40 OR, #32) Filters: Publication date from 2012/01/01; Humans; English	253

Cochrane
((partner OR, spouse OR, elder) AND (abuse OR, violence)) AND “controlled trials”
Reviews=9=2 New
DARE=3=2 New
Cochrane Controlled Clinical Trials Registry=9=4 New

Embase
((partner OR, spouse OR, elder) AND (abuse OR, violence)) AND “controlled trials”
131=81 New
Total Database KQ 4=342

Appendix B. Detailed Methods

KQ 5

#1	Search ((“Intimate Partner Violence”[Mesh]) OR, “Elder Abuse”[Mesh]) OR, (“Spouse Abuse”[Mesh]) OR, “Battered Women”[Mesh]	9879
#2	Search (“Domestic Violence”[Mesh]) NOT “Child Abuse”[Mesh]	11929
#3	Search (#1 OR, #2)	13490
#17	Search ”Observational Study” [Publication Type] OR, “Prospective Studies”[Mesh] OR, “Cohort Studies” [Mesh] OR, “adverse effects” [Subheading] OR, harms[tw]Filters: Publication date from 2012/01/01; Humans; English	514448
#24	Search ((((((“prevention and control” [Subheading] OR, “Primary Prevention”[Mesh]) OR, “Preventive Health Services”[Mesh]) OR, “Counseling”[Mesh]) OR, “Outcome and Process Assessment (Health Care)”[Mesh]) OR, “Mental Health Services”[Mesh]))	2214779
#27	Search #3 AND #24	4896
#28	Search (“Random Allocation”[Mesh] OR, “Randomized Controlled Trial” [Publication Type] OR, “Randomized Controlled Trials as Topic”[Mesh]) OR, (“Single-Blind Method”[Mesh] OR, “Double-Blind Method”[Mesh])	604087
#29	Search (#27 AND #28)	221
#30	Search (#27 AND #28) Filters: Humans	221
#31	Search (#27 AND #28) Filters: Humans; English	221
#32	Search (#27 AND #28) Filters: Publication date from 2012/01/01; Humans; English	98
#39	Search ((“Patient Outcome Assessment”[Mesh] OR, “Outcome Assessment (Health Care)”[Mesh] OR, “Pragmatic Clinical Trial” [Publication Type]) OR, “Outcome and Process Assessment (Health Care)”[Mesh]) OR, “Epidemiologic Studies”[Mesh]	2368187
#40	Search (#27 AND #39)	841
#41	Search (#40 OR, #32)	900
#42	Search (#40 OR, #32) Filters: Humans	900
#43	Search (#40 OR, #32) Filters: Humans; English	867
#45	Search (#40 OR, #32) Filters: Publication date from 2012/01/01; Humans; English	255
#46	Search (#17 AND #45) Filters: Publication date from 2012/01/01; Humans; English	88

Cochrane
((partner OR, spouse OR, elder) AND (abuse OR, violence)) AND (“controlled trials” AND outcome)

Reviews=1=New=1
DARE =0
Cochrane Controlled Clinical Trials Registry=0

Embase
((partner OR, spouse OR, elder) AND (abuse OR, violence)) AND (“controlled trials” AND outcome)
New=19
Total Database KQ 5=108

Update Searches

PubMed

#1	Search (("Intimate Partner Violence"[Mesh]) OR "Elder Abuse"[Mesh]) OR ("Spouse Abuse"[Mesh]) OR "Battered Women"[Mesh]	10798
#2	Search ("Domestic Violence"[Mesh]) NOT "Child Abuse"[Mesh]	12581
#3	Search (#1 OR #2)	14630
#4	Search (("Mass Screening"[Mesh]) OR ("Risk"[Mesh] OR "Risk Assessment"[Mesh]))	1106268
#5	Search (#3 AND #4)	4079
#6	Search ("Surveys and Questionnaires"[Mesh]) OR ("Diagnosis"[Mesh] OR "diagnosis" [Subheading]))	8845051
#7	Search (#5 AND #6)	2285
#8	Search (#5 AND #6) Filters: Humans	2285
#9	Search (#5 AND #6) Filters: Humans; English	2209
#10	Search (#5 AND #6) Filters: Publication date from 2016/02/01; Humans; English	122
#11	Search ("Observational Study" [Publication Type] OR "Prospective Studies"[Mesh] OR "Cohort Studies" [Mesh] OR "adverse effects" [Subheading] OR harms[tw]) Filters: Publication date from 2016/02/01; Humans; English	143929
#12	Search (#10 AND #11) Filters: Publication date from 2016/02/01; Humans; English	28
#13	Search (((((("prevention and control" [Subheading] OR "Primary Prevention"[Mesh]) OR "Preventive Health Services"[Mesh]) OR "Counseling"[Mesh]) OR "Outcome and Process Assessment (Health Care)"[Mesh]) OR "Mental Health Services"[Mesh]))) Filters: Publication date from 2016/02/01; Humans; English	97080
#14	Search (#3 AND #13) Filters: Publication date from 2016/02/01; Humans; English	203
#15	Search ("Random Allocation"[Mesh] OR "Randomized Controlled Trial" [Publication Type] OR "Randomized Controlled Trials as Topic"[Mesh]) OR ("Single-Blind Method"[Mesh] OR "Double-Blind Method"[Mesh] Filters: Publication date from 2016/02/01; Humans; English	28511
#16	Search (#14 AND #15) Filters: Publication date from 2016/02/01; Humans; English	30
#17	Search ((("Patient Outcome Assessment"[Mesh] OR "Outcome Assessment (Health Care)"[Mesh] OR "Pragmatic Clinical Trial" [Publication Type]) OR "Outcome and Process Assessment (Health Care)"[Mesh]) OR "Epidemiologic Studies"[Mesh]) Filters: Publication date from 2016/02/01; Humans; English	157528
#18	Search (#14 AND #17) Filters: Publication date from 2016/02/01; Humans; English	49
#19	Search (#16 OR #18) Filters: Publication date from 2016/02/01; Humans; English	65
#20	Search (#19 OR #12 OR #10) Filters: Publication date from 2016/02/01; Humans; English	168

PubMed = 168 = 166 New

Cochrane

Reviews=1=1 New
DARE=0 New
Cochrane Controlled Clinical Trials Registry=33=15 New

Embase=55=45

Total Update Database=227

Appendix B. Detailed Methods

Gray Lit

ClinicalTrials.gov=7=3 New

HSRProj=4

WHO ICTRP=12=0 New

Total=7

NIH Reporter=33

Key Question Searches in PubMed

KQ 2

#1	Search **(("Intimate Partner Violence"[Mesh]) OR "Elder Abuse"[Mesh]) OR ("Spouse Abuse"[Mesh]) OR "Battered Women"[Mesh]**	10798
#2	Search **("Domestic Violence"[Mesh]) NOT "Child Abuse"[Mesh]**	12581
#3	Search **(#1 OR #2)**	14630
#4	Search **(("Mass Screening"[Mesh]) OR ("Risk"[Mesh] OR "Risk Assessment"[Mesh]))**	1106268
#5	Search **(#3 AND #4)**	4079
#6	Search **("Surveys and Questionnaires"[Mesh]) OR ("Diagnosis"[Mesh] OR "diagnosis" [Subheading]))**	8845051
#7	Search **(#5 AND #6)**	2285
#8	Search **(#5 AND #6)** Filters: **Humans**	2285
#9	Search **(#5 AND #6)** Filters: **Humans; English**	2209
#10	Search **(#5 AND #6)** Filters: **Publication date from 2016/02/01; Humans; English**	122

Appendix B. Detailed Methods

KQ 3

#1	Search (("Intimate Partner Violence"[Mesh]) OR "Elder Abuse"[Mesh]) OR ("Spouse Abuse"[Mesh]) OR "Battered Women"[Mesh]	10798
#2	Search ("Domestic Violence"[Mesh]) NOT "Child Abuse"[Mesh]	12581
#3	Search (#1 OR #2)	14630
#4	Search (("Mass Screening"[Mesh]) OR ("Risk"[Mesh] OR "Risk Assessment"[Mesh]))	1106268
#5	Search (#3 AND #4)	4079
#6	Search ("Surveys and Questionnaires"[Mesh]) OR ("Diagnosis"[Mesh] OR "diagnosis" [Subheading]))	8845051
#7	Search (#5 AND #6)	2285
#8	Search (#5 AND #6) Filters: Humans	2285
#9	Search (#5 AND #6) Filters: Humans; English	2209
#10	Search (#5 AND #6) Filters: Publication date from 2016/02/01; Humans; English	122
#11	Search ("Observational Study" [Publication Type] OR "Prospective Studies"[Mesh] OR "Cohort Studies" [Mesh] OR "adverse effects" [Subheading] OR harms[tw]) Filters: Publication date from 2016/02/01; Humans; English	143929
#12	Search (#10 AND #11) Filters: Publication date from 2016/02/01; Humans; English	28

Appendix B. Detailed Methods

KQ 4 & KQ 5

#1	Search **(("Intimate Partner Violence"[Mesh]) OR "Elder Abuse"[Mesh]) OR ("Spouse Abuse"[Mesh]) OR "Battered Women"[Mesh]**	10798
#2	Search **("Domestic Violence"[Mesh]) NOT "Child Abuse"[Mesh]**	12581
#3	Search **(#1 OR #2)**	14630
#4	Search **(("Mass Screening"[Mesh]) OR ("Risk"[Mesh] OR "Risk Assessment"[Mesh]))**	1106268
#5	Search **(#3 AND #4)**	4079
#6	Search **("Surveys and Questionnaires"[Mesh]) OR ("Diagnosis"[Mesh] OR "diagnosis" [Subheading]))**	8845051
#7	Search **(#5 AND #6)**	2285
#8	Search **(#5 AND #6)** Filters: **Humans**	2285
#9	Search **(#5 AND #6)** Filters: **Humans; English**	2209
#10	Search **(#5 AND #6)** Filters: **Publication date from 2016/02/01; Humans; English**	122
#11	Search **("Observational Study" [Publication Type] OR "Prospective Studies"[Mesh] OR "Cohort Studies" [Mesh] OR "adverse effects" [Subheading] OR harms[tw])** Filters: **Publication date from 2016/02/01; Humans; English**	143929
#12	Search **(#10 AND #11)** Filters: **Publication date from 2016/02/01; Humans; English**	28
#13	Search **(((((("prevention and control" [Subheading] OR "Primary Prevention"[Mesh]) OR "Preventive Health Services"[Mesh]) OR "Counseling"[Mesh]) OR "Outcome and Process Assessment (Health Care)"[Mesh]) OR "Mental Health Services"[Mesh]))))** Filters: **Publication date from 2016/02/01; Humans; English**	97080
#14	Search **(#3 AND #13)** Filters: **Publication date from 2016/02/01; Humans; English**	203
#15	Search **("Random Allocation"[Mesh] OR "Randomized Controlled Trial" [Publication Type] OR "Randomized Controlled Trials as Topic"[Mesh]) OR ("Single-Blind Method"[Mesh] OR "Double-Blind Method"[Mesh]** Filters: **Publication date from 2016/02/01; Humans; English**	28511
#16	Search **(#14 AND #15)** Filters: **Publication date from 2016/02/01; Humans; English**	30
#17	Search **((("Patient Outcome Assessment"[Mesh] OR "Outcome Assessment (Health Care)"[Mesh] OR "Pragmatic Clinical Trial" [Publication Type]) OR "Outcome and Process Assessment (Health Care)"[Mesh]) OR "Epidemiologic Studies"[Mesh])** Filters: **Publication date from 2016/02/01; Humans; English**	157528
#18	Search **(#14 AND #17)** Filters: **Publication date from 2016/02/01; Humans; English**	49
#19	Search **(#16 OR #18)** Filters: **Publication date from 2016/02/01; Humans; English**	65

Appendix B. Detailed Methods

Additional Harms Search

#1	Search ((“Intimate Partner Violence”[Mesh]) OR, “Elder Abuse”[Mesh]) OR, (“Spouse Abuse”[Mesh]) OR, “Battered Women”[Mesh]	9879
#2	Search (“Domestic Violence”[Mesh]) NOT “Child Abuse”[Mesh]	11929
#3	Search (#1 OR, #2)	13490
#4	Search ((((((“prevention and control” [Subheading] OR, “Primary Prevention”[Mesh]) OR, “Preventive Health Services”[Mesh]) OR, “Counseling”[Mesh]) OR, “Outcome and Process Assessment (Health Care)”[Mesh]) OR, “Mental Health Services”[Mesh]))	2214779
#5	Search (#3 AND #4)	1683
#6	Search (harm OR, harms OR, adverse effect* OR, adverse event OR, complication* OR, death OR, stroke OR, mortality OR, “Long Term Adverse Effects”[Mesh])	4929732
#7	Search (#5 AND #6)	1206
#8	Search (#5 AND #6) Filters: Humans	1206
#9	Search (#5 AND #6) Filters: Humans; English	890
#10	Search (#5 AND #6) Filters: Publication date from 2012/01/01; Humans; English	360

Total Database IPV=1,001

Adding “Violence/prevention and control” as a Major Term

#1	Search ((((“Intimate Partner Violence”[Mesh]) OR, “Elder Abuse”[Mesh]) OR, (“Spouse Abuse”[Mesh]) OR, “Battered Women”[Mesh])) OR, ((“Domestic Violence”[Mesh]) NOT “Child Abuse”[Mesh])	13536
#4	Search ”Violence/prevention and control”[Majr]	10525
#5	Search (#4 NOT #1)	7925
#6	Search (#4 NOT #1) Filters: Humans	7556
#7	Search (#4 NOT #1) Filters: Humans; English	6912
#8	Search (#4 NOT #1) Filters: Publication date from 2012/01/01; Humans; English	1265
#10	Search ((“Mass Screening”[Mesh]) OR, (“Risk”[Mesh] OR, “Risk Assessment”[Mesh]))	1021253
#11	Search (“Surveys and Questionnaires”[Mesh]) OR, (“Diagnosis”[Mesh] OR, “diagnosis” [Subheading]))	9372880
#12	Search (#8 AND #10 AND #11)	77
#13	Search ((((((“prevention and control” [Subheading] OR, “Primary Prevention”[Mesh]) OR, “Preventive Health Services”[Mesh]) OR, “Counseling”[Mesh]) OR, “Outcome and Process Assessment (Health Care)”[Mesh]) OR, “Mental Health Services”[Mesh]))	2222452
#15	Search (“Random Allocation”[Mesh] OR, “Randomized Controlled Trial” [Publication Type] OR, “Randomized Controlled Trials as Topic”[Mesh]) OR, (“Single-Blind Method”[Mesh] OR, “Double-Blind Method”[Mesh])	606371
#17	Search (harm OR, harms OR, adverse effect* OR, adverse event OR, complication* OR, death OR, stroke OR, mortality OR, “Long Term Adverse Effects”[Mesh])	4905204
#18	Search (#8 AND #13)	1265
#19	Search (#18 AND #15)	74
#20	Search (#18 AND #17)	138
#21	Search (#12 OR, #19 OR, #20)	260

Total Database IPV=1,259

Focused Men 1995–2012

#1	Search ((“Intimate Partner Violence”[Mesh]) OR, “Elder Abuse”[Mesh]) OR, (“Spouse Abuse”[Mesh]) OR, “Battered Women”[Mesh]	9879
#2	Search (“Domestic Violence”[Mesh]) NOT “Child Abuse”[Mesh]	11929
#3	Search (#1 OR, #2)	13490
#4	Search ((“Mass Screening”[Mesh]) OR, (“Risk”[Mesh] OR, “Risk Assessment”[Mesh]))	1016867
#5	Search (#3 AND #4)	3716
#6	Search (“Surveys and Questionnaires”[Mesh]) OR, (“Diagnosis”[Mesh] OR, “diagnosis” [Subheading]))	9346557
#7	Search (#5 AND #6)	2106
#17	Search (harm OR, harms OR, adverse effect* OR, adverse event OR, complication* OR, death OR, stroke OR, mortality OR, “Long Term Adverse Effects”[Mesh])	4929732
#24	Search ((((((“prevention and control” [Subheading] OR, “Primary Prevention”[Mesh]) OR, “Preventive Health Services”[Mesh]) OR, “Counseling”[Mesh]) OR, “Outcome and Process Assessment (Health Care)”[Mesh]) OR, “Mental Health Services”[Mesh]))	2214779
#27	Search #3 AND #24	4896
#28	Search (“Random Allocation”[Mesh] OR, “Randomized Controlled Trial” [Publication Type] OR, “Randomized Controlled Trials as Topic”[Mesh]) OR, (“Single-Blind Method”[Mesh] OR, “Double-Blind Method”[Mesh])	604087
#29	Search (#27 AND #28)	221
#30	Search (#27 AND #17)	4901
#39	Search ((“Patient Outcome Assessment”[Mesh] OR, “Outcome Assessment (Health Care)”[Mesh] OR, “Pragmatic Clinical Trial” [Publication Type]) OR, “Outcome and Process Assessment (Health Care)”[Mesh]) OR, “Epidemiologic Studies”[Mesh]	2368187
#40	Search (#27 AND #39)	841
#41	Search (#7 OR, #29 OR, #30 OR, #40)	3028
#42	Search (#7 OR, #29 OR, #30 OR, #40)) Filters: Humans	3028
#43	Search (#7 OR, #29 OR, #30 OR, #40) Filters: Humans; English	2923
#44	Search (“Men”[Mesh]) OR, “Male”[Mesh]	7171428
#45	Search (#43 AND #44)	2150
#46	Search (#43 AND #44) Filters: Publication date from 1995/01/01 to 2011/12/31; Humans; English; Male	1017

Cochrane

Reviews=0
DARE=0
Cochrane Controlled Clinical Trials Registry 13=4=New

Embase=87=65 New

Total Men Database=1,086

Focused Adolescents

#1	Search ((“Intimate Partner Violence”[Mesh]) OR, “Elder Abuse”[Mesh]) OR, (“Spouse Abuse”[Mesh]) OR, “Battered Women”[Mesh]	9879
#2	Search (“Domestic Violence”[Mesh]) NOT “Child Abuse”[Mesh]	11929
#3	Search (#1 OR, #2)	13490
#4	Search ((“Mass Screening”[Mesh]) OR, (“Risk”[Mesh] OR, “Risk Assessment”[Mesh]))	1016867
#5	Search (#3 AND #4)	3716
#6	Search (“Surveys and Questionnaires”[Mesh]) OR, (“Diagnosis”[Mesh] OR, “diagnosis” [Subheading]))	9346557
#7	Search (#5 AND #6)	2106
#17	Search (harm OR, harms OR, adverse effect* OR, adverse event OR, complication* OR, death OR, stroke OR, mortality OR, “Long Term Adverse Effects”[Mesh])	4929732
#24	Search ((((((“prevention and control” [Subheading] OR, “Primary Prevention”[Mesh]) OR, “Preventive Health Services”[Mesh]) OR, “Counseling”[Mesh]) OR, “Outcome and Process Assessment (Health Care)”[Mesh]) OR, “Mental Health Services”[Mesh]))	2214779
#27	Search #3 AND #24	4896
#28	Search (“Random Allocation”[Mesh] OR, “Randomized Controlled Trial” [Publication Type] OR, “Randomized Controlled Trials as Topic”[Mesh]) OR, (“Single-Blind Method”[Mesh] OR, “Double-Blind Method”[Mesh])	604087
#29	Search (#27 AND #28)	221
#30	Search (#27 AND #17)	4901
#39	Search ((“Patient Outcome Assessment”[Mesh] OR, “Outcome Assessment (Health Care)”[Mesh] OR, “Pragmatic Clinical Trial” [Publication Type]) OR, “Outcome and Process Assessment (Health Care)”[Mesh]) OR, “Epidemiologic Studies”[Mesh]	2368187
#40	Search (#27 AND #39)	841
#41	Search (#7 OR, #29 OR, #30 OR, #40)	3028
#42	Search (#7 OR, #29 OR, #30 OR, #40)) Filters: Humans	3028
#43	Search (#7 OR, #29 OR, #30 OR, #40) Filters: Humans; English	2923
#44	Search (“Adolescent”[Mesh]) OR, “Pregnancy in Adolescence”[Mesh]	1719223
#45	Search (#43 AND #44)	666
#46	Search (#40 OR, #32) Filters: Publication date to 2011/12/31; Humans; English; Adolescent	666

Cochrane

Reviews=4=1 New

DARE=1=0 New

Cochrane Controlled Clinical Trials Registry=42=22 New

Embase=265=148 New

Total Adolescent Database=837

Appendix B Table 1. Eligibility Criteria: Intimate Partner Violence

	Include	Exclude
Populations	Studies enrolling adolescents[a] and adults (male and female, including older and vulnerable adults) presenting for primary care services without recognized signs or symptoms of IPV or abuse[b] For each KQ, we will search for evidence on subgroups defined by age, sex, race/ethnicity, pregnancy status, LGBTQ identification, type of abuse (e.g., physical abuse, sexual abuse), history of IPV, or presence of comorbid conditions	Studies restricted to populations seeking care for IPV or for obvious signs or symptoms of abuse
Screening	**KQs 1–3:** Screening tests designed to detect current or past IPV victimization or risk status for IPV victimization, including self-administered, computer-enabled, or patient self-report instruments, as well as clinician-administered screening methods; instruments must be feasible for use for screening in U.S. primary care settings (i.e., brief, easy to interpret, acceptable to patients and clinicians)	**KQs 1–3:** Screening tests designed to identify perpetrators of IPV
Interventions	**KQs 4, 5:** Services that could be offered in or referred to by primary care, including counseling, case management, home visitation, mentor or peer support, safety planning, and referral to community services	**KQs 4, 5:** Public awareness campaigns without specific interventions linked to screening; studies of other interventions that do not include a health service component (e.g., effectiveness of women's shelters, unless referred by a clinician)
Comparisons	**KQs 1, 3:** Screened vs. nonscreened groups **KQ 2:** Eligible instruments must be compared with an acceptable reference standard (verified or self-reported abuse or validated screening instrument for abuse) **KQs 4, 5:** No treatment, usual care, attention control, or waitlist control	**KQs 4, 5:** Head-to-head comparisons of two active interventions
Outcomes	**KQs 1, 4:** Reduced exposure to IPV as measured by a validated instrument (e.g., Community Composite Scale), self-report frequency of abuse (e.g., number of physical assaults), or discontinuation of an unsafe relationship; physical morbidity caused by IPV, including acute physical trauma (e.g., fractures, dislocations), chronic medical conditions (e.g., chronic pain, brain injury), and sexual trauma; mental health morbidity caused by IPV, including acute mental morbidity (e.g., stress, nightmares) and chronic mental health conditions (e.g., posttraumatic stress disorder, anxiety, depression); sexual trauma, unintended pregnancy, and sexually transmitted infections; adverse perinatal outcomes (e.g., preterm birth, low birth weight, decreased mean gestational age); health care utilization attributed to physical or mental effects of IPV (e.g., rates of emergency department visits); quality of life and social isolation; and mortality **KQ 2:** Sensitivity, specificity, positive and negative predictive values, positive and negative likelihood ratios, diagnostic odds ratios, and relative risks for future abuse **KQ 3:** Psychosocial harms, including labeling and stigma; false-positive and false-negative results; increased abuse or other forms of retaliation; and other reported harms of screening or identification **KQ 5:** Any harms that result from interventions, such as increased abuse or other forms of retaliation, and emotional distress	**All KQs:** Screening or referral rates, attitudes about screening, plans or intentions related to screening, and other intermediate outcomes **KQ 2:** Theory or survey development and validation without correlation to abuse outcomes, studies that focus only on particular risk factors, or assessment of provider or participant attitudes toward the instrument
Study Designs	**All KQs:** Randomized, controlled trials **KQ 2:** Cross-sectional and cohort studies of diagnostic accuracy are also eligible **KQs 3, 5:** Cohort studies with a concurrent control group are also eligible	All other study designs, including case series, case-control studies, and systematic reviews[c]
Quality	Studies rated good or fair quality	Studies rated poor quality

Appendix B Table 1. Eligibility Criteria: Intimate Partner Violence

	Include	Exclude
Settings	**All KQs:** Primary care clinics or other settings where primary care services are offered, such as student health centers and emergency departments[d] **KQs 4, 5:** Settings referable from primary care are also eligible	Nonclinically based settings or nonapplicable settings (e.g., prisons)
Country	Research conducted in the United States or in populations similar to U.S. populations with services and interventions applicable to U.S. practice (i.e., countries categorized as "Very High" on the United Nations Human Development Index, as defined by the United Nations Development Programme)	Research not relevant to the United States (i.e., countries not categorized as "Very High" on the Human Development Index)
Language	Full text published in English	Languages other than English

[a] Studies enrolling adolescents at any age will be included as long as the focus is on abuse from an intimate partner and not a parent or other caregiver.
[b] Adults and adolescents with problems directly related to abuse (e.g., physical injuries) will have evaluations outside the scope of screening.
[c] Relevant systematic reviews will be identified in database searches and used for hand searches to ensure the databases have captured all relevant studies.
[d] Results will be stratified by study setting to assess whether results for IPV screening accuracy and intervention studies differ based on whether populations were enrolled from primary care or emergency department settings.

Abbreviations: IPV=intimate partner violence; KQ=key question; LGBTQ=lesbian, gay, bisexual, transgender, and questioning; U.S.=United States; vs.=versus.

Appendix B Table 2. Eligibility Criteria: Elder Abuse and Abuse of Vulnerable Adults

	Include	Exclude
Populations	Studies enrolling older adult (age ≥60 years) and vulnerable[a] adult (age ≥18 years) populations presenting for primary care services without recognized signs or symptoms of abuse or neglect For each KQ, we will search for evidence on subgroups defined by age, sex, race/ethnicity, pregnancy status, LGBTQ identification, type of abuse (e.g., physical abuse, sexual abuse), history of abuse, or presence of comorbid conditions	Studies restricted to populations seeking care for abuse or presenting with obvious signs or symptoms of abuse
Screening	**KQs 1–3:** Screening tests designed to detect current or past abuse or neglect or risk of being abused, including self-administered, computer-enabled, or patient self-report instruments, as well as clinician-administered screening methods; screening may involve input from caregivers, and instruments must be feasible for use in U.S. primary care settings (i.e., brief, easy to interpret, acceptable to patients and clinicians)	**KQs 1–3:** Screening to detect behavioral problems in older and vulnerable adults with specific conditions (e.g., Alzheimer's, dementia)
Interventions	**KQs 4, 5:** Services that could be offered in or referred to by primary care, including counseling, case management, home visitation, and referral to community services (e.g., adult protective services)	**KQs 4, 5:** Public awareness campaigns without specific interventions linked to screening; studies of other interventions that do not include a health service component (e.g., effectiveness of nursing facility policies and procedures to reduce violence)
Comparisons	**KQs 1, 3:** Screened vs. nonscreened groups **KQ 2:** Eligible instruments must be compared with an acceptable reference standard (verified or self-reported abuse or validated screening instrument for abuse) **KQs 4, 5:** No treatment, usual care, attention control, or waitlist control	**KQs 4, 5:** Head-to-head comparisons of two active interventions
Outcomes	**KQs 1, 4:** Reduced exposure to abuse or neglect (e.g., reduced episodes of physical violence); physical morbidity associated with abuse or neglect, including physical trauma (e.g., fractures, dislocations) and chronic conditions (e.g., brain injury, physical disability); mental morbidity associated with abuse or neglect (e.g., anxiety, nightmares) and chronic mental health conditions (e.g., posttraumatic stress disorder, anxiety, depression); sexual trauma, unintended pregnancy,[b] and sexually transmitted infections; adverse perinatal outcomes[b] (e.g., preterm birth, low birth weight, decreased mean gestational age); health care utilization attributed to physical or mental effects of abuse (e.g., rates of emergency department visits); social isolation and quality of life; and mortality **KQ 2:** Sensitivity, specificity, positive and negative predictive values, positive and negative likelihood ratios, diagnostic odds ratios, and relative risks for future abuse **KQ 3:** Psychosocial harms, including labeling and stigma; false-positive and false-negative results; increased abuse or other forms of retaliation; and other reported harms of screening or identification **KQ 5:** Any harms that result from interventions, such as increased abuse or emotional distress	**KQs 1, 4:** Screening or referral rates, attitudes about screening, plans or intentions related to screening, and other intermediate outcomes **KQ 2:** Theory or survey development and validation without correlation to abuse outcomes, studies that focus only on particular risk factors, or assessment of provider or participant attitudes toward the instrument
Study Designs	**All KQs:** Randomized, controlled trials **KQ 2:** Cross-sectional and cohort studies of diagnostic accuracy are also eligible **KQs 3, 5:** Cohort studies with a concurrent control group are also eligible	All other study designs, including case series, case-control studies, and systematic reviews[c]
Quality	Studies rated good or fair quality	Studies rated poor quality

Appendix B Table 2. Eligibility Criteria: Elder Abuse and Abuse of Vulnerable Adults

	Include	Exclude
Settings	Primary care clinics, emergency departments,[d] or other settings where primary care services are offered[e]	Nonclinically based or nonapplicable settings (e.g., prisons), populations or services/interventions not applicable to U.S. practice
Country	Research conducted in the United States or in populations similar to U.S. populations with services and interventions applicable to U.S. practice (i.e., countries categorized as "Very High" on the United Nations Human Development Index, as defined by the United Nations Development Programme)	Research not relevant to the United States (i.e., countries not categorized as "Very High" on the Human Development Index)
Language	Full text published in English	Languages other than English

[a] "Vulnerable adult" is a person age 18 years or older whose ability to provide his or her own care or protection is impaired.
[b] Outcomes that are specific to pregnancy apply to vulnerable adult women of childbearing age.
[c] Relevant systematic reviews will be identified in database searches and used in hand searches to ensure the databases have captured all relevant studies.
[d] Results will be stratified by study setting to assess whether results for older/vulnerable adult abuse screening accuracy or intervention studies differ based on whether populations were enrolled from primary care or emergency department settings.
[e] This includes community-dwelling, assisted living settings where primary care services are delivered, and where patients/residents are able to live independently and receive care similar to a traditional primary care setting.

Abbreviation: KQ=key question; LGBTQ=lesbian, gay, bisexual, transgender, and questioning; U.S.=United States.

Appendix B Table 3. U.S. Preventive Services Task Force Quality Rating Criteria

Randomized, Controlled Trials and Cohort Studies

• Initial assembly of comparable groups
• Randomized, controlled trials (RCTs)—adequate randomization, including concealment and whether potential confounders were distributed equally among groups; cohort studies—consideration of potential confounders with either restriction or measurement for adjustment in the analysis; consideration of inception cohorts
• Maintenance of comparable groups (includes attrition, crossovers, adherence, and contamination)
• Important differential loss to followup or overall high loss to followup
• Measurements: Equal, reliable, and valid (includes masking of outcome assessment)
• Clear definition of interventions
• Important outcomes considered
• Analysis: Adjustment for potential confounders for cohort studies or intention-to-treat analysis for RCTs; for cluster RCTs, correction for correlation coefficient

Definition of Ratings Based on Above Criteria

Good:	Meets all criteria: Comparable groups are assembled initially and maintained throughout the study (followup ≥80%); reliable and valid measurement instruments are used and applied equally to the groups; interventions are spelled out clearly; important outcomes are considered; and appropriate attention is given to confounders in analysis. In addition, intention-to-treat analysis is used for RCTs.
Fair:	Studies will be graded "fair" if any or all of the following problems occur, without the important limitations noted in the "poor" category below: Generally comparable groups are assembled initially, but some question remains on whether some (although not major) differences occurred in followup; measurement instruments are acceptable (although not the best) and generally applied equally; some but not all important outcomes are considered; and some but not all potential confounders are accounted for. Intention-to-treat analysis is lacking for RCTs.
Poor:	Studies will be graded "poor" if any of the following major limitations exist: Groups assembled initially are not close to being comparable or maintained throughout the study; unreliable or invalid measurement instruments are used or not applied equally among groups (including not masking outcome assessment); and key confounders are given little or no attention. Intention-to-treat analysis is lacking for RCTs.

Appendix B Table 3. U.S. Preventive Services Task Force Quality Rating Criteria

Diagnostic Accuracy Studies

• Screening test relevant, available for primary care, and adequately described
• Credible reference standard, performed regardless of test results
• Reference standard interpreted independently of screening test
• Indeterminate results handled in a reasonable manner
• Spectrum of patients included in study
• Sample size
• Reliable screening test

Definition of ratings based on above criteria:

Good:	Evaluates relevant available screening test; uses a credible reference standard; interprets reference standard independently of screening test; assesses reliability of test; has few or handles indeterminate results in a reasonable manner; includes large number (>100) of broad-spectrum patients with and without disease
Fair:	Evaluates relevant available screening test; uses reasonable although not best standard; interprets reference standard independent of screening test; has moderate sample size (50 to 100 subjects) and a "medium" spectrum of patients.
Poor:	Has a fatal flaw, such as using inappropriate reference standard, improperly administering screening test, using biased ascertainment of reference standard; has very small sample size or very narrow selected spectrum of patients

Sources: U.S. Preventive Services Task Force, Procedure Manual, Appendix VI
https://www.uspreventiveservicestaskforce.org/Page/Name/methods-and-processes
Harris et al, 2001[53]

Appendix C. Excluded Studies

X1: Not Original Research
X2: Ineligible population
X3: Ineligible screening tool/intervention
X4: Ineligible treatment intervention
X5: Ineligible or no comparator
X6: No relevant outcome reported
X7: ineligible study design
X8: Ineligible setting
X9: Ineligible country
X10: Non-English
X11: Irretrievable
X12: Excluded by previous report
X13: Poor quality

1. Allen CT, Swan SC, Maas CD, et al. A Comparison of the Structural Factors of the Propensity for Abusiveness Scale for Women and Men in a Domestic Violence Treatment Program. J Interpers Violence. 2015 Aug;30(13):2326-43. doi: 10.1177/0886260514552450. PMID: 25304668. Exclusion Code: X 2.
2. Alon S, Berg-Warman A. Treatment and prevention of elder abuse and neglect: where knowledge and practice meet-a model for intervention to prevent and treat elder abuse in Israel. J Elder Abuse Negl. 2014;26(2):150-71. doi: 10.1080/08946566.2013.784087. PMID: 24499281. Exclusion Code: X 11.
3. Alpert EJ. Domestic violence and clinical medicine: learning from our patients and from our fears. J Gen Intern Med. 2002 Feb;17(2):162-3. doi: jgi11229 [pii]. PMID: 11841533. Exclusion Code: X 1.
4. Alvarez CP, Davidson PM, Fleming C, et al. Elements of Effective Interventions for Addressing Intimate Partner Violence in Latina Women: A Systematic Review. PLoS One. 2016;11(8):e0160518. doi: 10.1371/journal.pone.0160518. PMID: 27504833. Exclusion Code: X 7.
5. Amar A, Laughon K, Sharps P, et al. Screening and counseling for violence against women in primary care settings. Nurs Outlook. 2013 May-Jun;61(3):187-91. PMID: 23814797. Exclusion Code: X 1.
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327. Weaver TL, Gilbert L, El-Bassel N, et al. Identifying and intervening with substance-using women exposed to intimate partner violence: phenomenology, comorbidities, and integrated approaches within primary care and other agency settings. J Womens Health (Larchmt). 2015 Jan;24(1):51-6. doi: 10.1089/jwh.2014.4866. PMID: 25554915. Exclusion Code: X 1.
328. Weaver TL. Method variance and sensitivity of screening for traumatic stressors. J Trauma Stress. 1998 Jan;11(1):181-5. doi: 10.1023/A:1024477620628. PMID: 9479687. Exclusion Code: X 3.
329. Webster J, Creedy DK. Domestic violence. Screening can be made acceptable to women. BMJ. 2002 Jul 6;325(7354):44. PMID: 12102079. Exclusion Code: X 1.
330. Webster J, Holt V. Screening for partner violence: direct questioning or self-report? Obstet Gynecol. 2004 Feb;103(2):299-303. doi: 10.1097/01.AOG.0000110245.83404.3d. PMID: 14754699. Exclusion Code: X 5.
331. Wetmore M, Fairbairn CD. A regional California program to screen adolescent patients for intimate partner violence. J Emerg Nurs. 2003 Aug;29(4):373-6. doi: S0099176703002551 [pii]. PMID: 12874565. Exclusion Code: X 5.
332. Whitehouse WP. Study shows that more must be done to detect domestic violence. BMJ. 2014;348:g3946. PMID: 24942853. Exclusion Code: X 1.
333. Wiglesworth A, Mosqueda L, Mulnard R, et al. Screening for abuse and neglect of people with dementia. J Am Geriatr Soc. 2010 Mar;58(3):493-500. doi: 10.1111/j.1532-5415.2010.02737.x. PMID: 20398118. Exclusion Code: X 6.
334. Wilbur L, Noel N, Couri G. Is screening women for intimate partner violence in the emergency department effective? Ann Emerg Med. 2013 Dec;62(6):609-11. doi: 10.1016/j.annemergmed.2013.06.012. PMID: 23870859. Exclusion Code: X 1.
335. Wilson IM, Graham K, Taft A. Alcohol interventions, alcohol policy and intimate partner violence: a systematic review. BMC Public Health. 2014;14:881. doi: 10.1186/1471-2458-14-881. PMID: 25160510. Exclusion Code: X 4.

Appendix C. Excluded Studies

336. Wilson JS, Lane EM, Gillespie T. Identifying and responding to intimate partner violence in the health care setting. Okla Nurse. 2006 Jun-Aug;51(2):28-32; quiz 3. PMID: 16737118. Exclusion Code: X 1.
337. Wong JY, Tiwari A, Fong DY, et al. Intimate partner violence, depressive symptoms, and immigration status: does existing advocacy intervention work on abused immigrant women in the Chinese community? J Interpers Violence. 2013 Jul;28(11):2181-202. doi: 10.1177/0886260512475311. PMID: 23400883. Exclusion Code: X 6.
338. Woodin EM, Sotskova A, O'Leary KD. Do motivational interviewing behaviors predict reductions in partner aggression for men and women? Behav Res Ther. 2012 Jan;50(1):79-84. doi: 10.1016/j.brat.2011.11.001. PMID: 22119133. Exclusion Code: X 5.
339. Wray AM, Hoyt T, Gerstle M. Preliminary examination of a mutual intimate partner violence intervention among treatment-mandated couples. J Fam Psychol. 2013 Aug;27(4):664-70. doi: 10.1037/a0032912. PMID: 23750516. Exclusion Code: X 8.
340. Wright RJ. Identification of domestic violence in the community pediatric setting: need to protect mothers and children. Arch Pediatr Adolesc Med. 2000 May;154(5):431-3. PMID: 10807290. Exclusion Code: X 1.
341. Wuest J, Merritt-Gray M, Dube N, et al. The process, outcomes, and challenges of feasibility studies conducted in partnership with stakeholders: a health intervention for women survivors of intimate partner violence. Res Nurs Health. 2015 Feb;38(1):82-96. doi: 10.1002/nur.21636. PMID: 25594917. Exclusion Code: X 5.
342. Wyant AR, Collett D. Trauma in pregnancy: diagnosis and management of two patients in one. JAAPA. 2013 May;26(5):24-9. PMID: 23682452. Exclusion Code: X 1.
343. Yaffe MJ, Tazkarji B. Understanding elder abuse in family practice. Can Fam Physician. 2012 Dec;58(12):1336-40, e695-8. doi: 58/12/1336 [pii]. PMID: 23242889. Exclusion Code: X 1.
344. Yaffe MJ, Wolfson C, Lithwick M, et al. Development and validation of a tool to improve physician identification of elder abuse: the Elder Abuse Suspicion Index (EASI). J Elder Abuse Negl. 2008;20(3):276-300. doi: 10.1080/08946560801973168. PMID: 18928055. Exclusion Code: X 12.
345. Zachary MJ, Mulvihill MN, Burton WB, et al. Domestic abuse in the emergency department: can a risk profile be defined? Acad Emerg Med. 2001 Aug;8(8):796-803. PMID: 11483454. Exclusion Code: X 3.
346. Zakrison TL, Ruiz X, Gelbard R, et al. Universal screening for intimate partner and sexual violence in trauma patients: An EAST multicenter trial. J Trauma Acute Care Surg. 2017 Jul;83(1):105-10. doi: 10.1097/TA.0000000000001495. PMID: 28426560. Exclusion Code: X 6.
347. Zhang H, Neelarambam K, Schwenke TJ, et al. Mediators of a culturally-sensitive intervention for suicidal African American women. J Clin Psychol Med Settings. 2013 Dec;20(4):401-14. doi: 10.1007/s10880-013-9373-0. PMID: 23864403. Exclusion Code: X 13.
348. Zhang H, Neelarambam K, Schwenke TJ, et al. Mediators of a culturally-sensitive intervention for suicidal African American women. J Clin Psychol Med Settings. 2013 Dec;20(4):401-14. doi: 10.1007/s10880-013-9373-0. PMID: 23864403. Exclusion Code: X 13.

Appendix D. Overview of 2004/2012 Studies Excluded From the Current Report

Authors, Year	KQ; Exclusion Reason	Additional Information
Included in 2004 report		
Brown et al, 2000[120]	KQ 2; Wrong outcome	No eligible outcomes assessed
Canterino et al, 1999[121]	KQ 2; Wrong outcome	No eligible outcomes assessed
Coker et al, 2001[122]	KQ 2; Wrong comparator	No gold standard/validated instrument used as a comparator
Ernst et al, 2002[123]	KQ 2; Wrong comparator	No gold standard/validated instrument used as a comparator
Furbee et al, 1998[124]	KQ 2; Wrong comparator	No gold standard/validated instrument used as a comparator
Glass et al, 2001[125]	KQ 2; Wrong design	No comparison group and no eligible outcomes
McFarlane et al, 1991[126]	KQ 2; Wrong comparator	No gold standard/validated instrument used as a comparator
McFarlane et al, 1992[127]	KQ 2; Wrong outcome	No relevant outcomes assessed
McFarlane et al, 2000[128]	KQ 2; Poor quality	High attrition (no or unclear handling of missing data); unclear number of participants analyzed at various time points
Moody et al, 2000[129]	KQ 2 (EA); Wrong comparator	No gold standard/validated instrument used as a comparator
Morrison et al, 2000[130]	KQ 2; Wrong comparator	No eligible comparator and no eligible outcomes
Neale et al, 1991[131]	KQ 2 (EA); Wrong comparator	No gold standard/validated instrument used as a comparator
Norton et al, 1995[132]	KQ 2; Wrong comparator	No gold standard/validated instrument used as a comparator
Pan et al, 1997[133]	KQ 2; Wrong outcome	No eligible outcomes assessed
Parker et al. 1999[134]	KQ 2; Wrong outcome	No eligible outcomes assessed
Reis et al. 1995[135]	KQ 2 (EA); Wrong comparator	No gold standard/validated instrument used as a comparator
Sherin et al, 1998[136]	KQ 2; Wrong outcome	No eligible outcomes assessed
Smith et al, 1995[137]	KQ 2; Not original research	Expert review
Included in 2012 report		
Chang et al, 2003[138]	KQ 5; Wrong design	Wrong design (focus group study, no comparator)
Curry et al, 2006[139]	KQ 4; Poor quality	Randomization and allocation concealment not described; attrition is not well described; risk of measurement bias (validity of stress scores is not clear); comparison is only made between subgroup that was labeled as high risk
Fulfer et al, 2007[77]	KQ 2; Wrong comparator	No gold standard/validated instrument used as a comparator
Houry et al, 2004[140]	KQ 2; Poor quality	High rates of missing data; women who could not be contacted for the 4-month followup interview had a higher IPV exposure compared with women who participated (22% vs. 9%, respectively)
Houry et al, 2008[141]	KQ 5; Wrong design	Cohort study; single group, no eligible comparator
Hurley et al, 2005[142]	KQ 5; Wrong design	Survey of patients' opinion related to screening
Koziol-McLain et al, 2008[143]	KQ 5; Wrong design	Focus group study
Liebschutz et al, 2008[144]	KQ 5; Wrong design	Focus group study
McFarlane et al, 2006[128]	KQ 5; KQ 4; Poor quality	High attrition (with no or unclear handling of missing data); unclear number of participants analyzed at various time points.
Peralta et al, 2003[145]	KQ 2; Wrong comparator	No gold standard/validated instrument used as a comparator
Reichenheim et al,[146]	KQ 2; Wrong country	Conducted in Brazil
Renker et al, 2006[147]	KQ 5; Wrong design	Cohort study, no concurrent control group
Sethi et al, 2004[148]	KQ 5; Wrong design	Cohort study; no concurrent control group
Spangaro et al, 2010[149]	KQ 5; Wrong design	Qualitative study and no comparison group.
Spangaro et al, 2010[150]	KQ 5; Wrong design	Cohort study; no concurrent control group

Appendix D. Overview of 2004/2012 Studies Excluded From the Current Report

Authors, Year	KQ; Exclusion Reason	Additional Information
Taft et al, 2011[100]	KQ 4; Wrong population	Participants identified based on abuse symptoms ("case-finding") or self-disclosure
Thombs et al, 2007[151]	KQ 2; Wrong screening tool	Tool detects childhood abuse among adults, not IPV or elder abuse.
Weinsheimer et al, 2005[152]	KQ 5; Wrong population	Participants are trauma patients
Zeitler et al, 2006[153]	KQ 5; Wrong design	Cohort study; no concurrent control group

Abbreviation: EA=Elder abuse; IPV=intimate partner violence; KQ=key question.

Appendix E Table 1. Quality Assessment of Randomized, Controlled Trials (KQs 1 and 3): Part 1

Author, Year	Was randomization adequate?	Was allocation concealment adequate?	Are baseline characteristics similar between groups?	Did the study have cross-overs or contamination raising concern for bias?	Was the eligibility criteria specified?	Were outcome assessors masked?	Were providers masked?	Were patients masked?
Klevens et al, 2012[57] Klevens et al, 2015[60]	Yes	Unclear	Yes	No	Yes	Yes	NA	No
Koziol-McLain et al, 2010[58]	Yes	Yes	Mostly	No	Yes	Unclear	NA	NA
MacMillan et al, 2009[59]	Unclear	Unclear	Mostly	No	Yes	Yes	No	No

Abbreviations: KQ=key question; NA=not available.

Appendix E Table 2. Quality Assessment of Randomized, Controlled Trials (KQs 1 and 3): Part 2

Author, Year	What was the overall attrition?	What was the differential attrition?	Did the study have differential attrition or overall high attrition raising concern for bias?	Did the study use acceptable statistical methods?	Were outcome measures valid and reliable?	Was the duration of followup adequate to assess the outcome?
Klevens et al, 2012[57] Klevens etl al, 2015[60]	1 year: 13%; 3 years (health care utilization only): 1%	1 year: 0–2% across groups; 3 years: 0%	No	Yes	Yes	Yes
Koziol-McLain et al, 2010[58]	14%	4%	No	Yes	Yes	Yes
MacMillan et al, 2009[59]	42% at 18 months	2% at 18 months	Yes	Yes	Yes	Yes

Abbreviations: ITT=intention to treat; KQ=key question; vs.=versus.

Appendix E Table 3. Quality Assessment of Randomized, Controlled Trials (KQs 1 and 3): Part 3

Author, Year	Was an appropriate method used to handle missing data?	Quality Rating	Comments
Klevens et al, 2012[57] Klevens, 2015[60]	Yes	Good	Overall attrition was relatively low (13% for primary outcomes at 1 year); authors also used imputation in models to assess the effect of missing data. Allocation concealment was not described in detail, but this is unlikely to lead to significant bias.
Koziol-McLain et al, 2010[58]	Yes	Fair	Compared with the control group (no screening group), women in the treatment group were older, more likely to be New Zealand European, and more likely to have been admitted to the hospital before randomization.
MacMillan et al, 2009[59]	Yes	Fair	Clinic days (or shifts) were randomized to screening vs. control condition; randomization procedure is not described. Population characteristics reported for screened and nonscreened groups who were "retained" vs. "lost" to followup. For those who were retained, characteristics are mostly similar across groups. Women lost to followup had higher IPV scores on WAST and CAS. Risk of selection bias due to high attrition; for primary outcomes, analyses used multiple imputation to address missing data.

Abbreviations: CAS=Composite Abuse Scale; IPV=intimate partner violence; KQ=key question; WAST=Woman Abuse Screening Tool.

Appendix E Table 4. Quality Assessment of Diagnostic Accuracy Studies (KQ 2): Part 1

Author, Year	Were population selection criteria clearly described?	Was the spectrum of participants representative of patients who will receive the test in primary care?	Did the whole or a random selection of participants receive the test?	Adequate sample size? (>50)	What is the response rate?	What was the overall attrition?	Was attrition explained?	Did the study have high attrition raising concern for bias?
Buri et al, 2009[154]	Partially	Unclear	Whole	No	70%	35% (see notes)	Yes	Unclear
Chen et al, 2005[66]	Yes	Yes	Whole	Yes	52% of those eligible participated	Unclear	Yes	Unclear
Dubowitz et al, 2008[67]	Yes	Yes	Whole	Yes	75% (382/507) of eligible mothers agreed to participate; of these 81% (308/382) completed the study protocol	35% (108/308) excluded from analyses for not completing the protocol within 2 months or not answering all questions on the CTS-2	Yes	Yes
Ernst et al, 2004[63]	Partially	Unclear	Whole	Yes	NA (see comments)	15% (306/362 eligible participants)	Yes	No
Feldhaus et al, 1997[64]	Yes	Yes	Whole	Yes	NA	ISA: 21.7%; CTS: 14%	Partially	Yes
Fulmer et al, 2012[98]	Partially	Unclear	Whole	Yes	NA	0% (none reported)	NA	No
Houry et al, 2004[140]	Yes	Unclear	Whole	Yes	22% of eligible participants declined to participate	55.3% (119/215) did not participate in 4-month interview	Partially	Yes
Iverson et al, 2013[71]	Yes	Unclear	Whole	Yes	64%	11% (see notes)	Yes	No
Iverson et al, 2015[72]	Yes	Unclear	Whole	Yes	50%	49% (see notes)	Partially	Yes
Kita et al, 2017[155]	Yes	Yes	Whole	Yes	87% (initial survey); 60%) postnatal survey	54% (see notes)	Partially	Yes
Koziol-McLain et al, 2001[73]	Yes	Yes	Whole	Yes	98%	60%	Yes	Yes
MacMillan et al, 2006[75]	Yes	Yes	Whole	Yes	NA (see comments)	NR	No	Unclear
McNut, et al, 2002[156]	Yes	Unclear	Random	Yes	NA	Unclear	No	Unclear
Mills et al, 2006[62]	Partially	Unclear	Whole	Yes	47%	4%	Yes	No
Paranjape et al, 2003[65]	Yes	Yes	Whole	Yes	NA	0	Yes	No
Paranjape et al, 2006[70]	Yes	Yes	Whole	Yes	NA	NR	Yes	No
Shakil et al, 2005[157]	Yes	Yes	Whole	Yes	NA	19%	Yes	No

Appendix E Table 4. Quality Assessment of Diagnostic Accuracy Studies (KQ 2): Part 1

Author, Year	Were population selection criteria clearly described?	Was the spectrum of participants representative of patients who will receive the test in primary care?	Did the whole or a random selection of participants receive the test?	Adequate sample size? (>50)	What is the response rate?	What was the overall attrition?	Was attrition explained?	Did the study have high attrition raising concern for bias?
Sohal et al, 200	Yes	Yes	Whole	Yes	54%	0	Yes	No
Wathen et al, 2008[76]	Yes	Yes	Whole	Yes	NA	17%	Yes	No
Weiss et al, 2003[74]	Yes	Yes	Whole	Yes	NA	19%	Yes	No
Zink et al, 2007[69]	Yes	Yes	Whole	Yes	NA	2%	Yes	No

Abbreviations: CTS=Conflicts Tactics Scale; ISA=Index of Spouse Abuse; KQ=key question; NA=not available; NR=not reported.

Appendix E Table 5. Quality Assessment of Diagnostic Accuracy Studies (KQ 2): Part 2

Author, Year	Credible reference standard used?	Is the screening test relevant, available for primary care and adequately described?	Were the test results interpreted independently (blinded)?	Did all patients receive the reference standard regardless of screening results?	Was the cut-point (or threshold) used to determine test positivity adequately described (or referenced)?
Buri et al i, 2009[154]	Yes	See comments	Unclear	Yes	Yes
Chen, 2005[66]	Unclear	Yes	Unclear	Yes	Yes
Dubowitz et al, 2008[67]	Yes	Yes	NA	Yes	Yes
Ernst et al, 2004[63]	Yes	See comments	Unclear	Yes	Yes
Feldhaus et al, 1997[64]	Yes	Yes	Unclear	Yes	Yes
Fulmer et al, 2012[98]	Yes	Yes	Unclear	Yes	Yes
Houry et al, 2004[140]	Yes	Yes	Yes	Yes	Yes
Iverson et al, 2013[71]	Yes	Yes	Unclear	Yes	Yes
Iverson et al, 2015[72]	Yes	Yes	Unclear	Yes	Yes
Kita et al, 2017[155]	Yes	Yes	Unclear	Yes	Yes
Koziol-McLain et al, 2001[73]	Yes	Yes	Unclear	Yes	Yes
MacMillan et al, 2006[75]	Yes	Yes	Unclear	Yes	Yes
McNutt et al, 2002[156]	Yes	Yes	Unclear	Yes	Yes
Mills et al, 2006[62]	Yes	Yes	NA	Yes	Yes
Paranjape et al, 2003[65]	Yes	Yes	Unclear	Yes	Yes
Paranjape et al, 2006[70]	Yes	Yes	Yes	Yes	Yes
Shakil et al, 2005[157]	Unclear	Yes	NA	Yes	Yes
Sohal et al, 2007[68]	Yes	Yes	Yes	Yes	Yes
Wathen et al, 2008[76]	Yes	Yes	Yes	Yes	Yes
Weiss et al, 2003[74]	Yes	Yes	Yes	Yes	Yes
Zink et al, 2007[69]	Yes	Yes	Unclear	Yes	Yes

Abbreviations: KQ=key question; NA=not available.

Appendix E Table 6. Quality Assessment of Diagnostic Accuracy Studies (KQ 2): Part 3

Author, Year	Were methods for calculating accuracy clearly reported and valid?	Quality Rating	Comments
Buri et al, 2009[154]	No	Poor	Eligible participants were those referred to a social service agency; reasons for referrals are not clear. High risk of selection bias; 49 of 70 invited elders agreed to participate, of these 32 completed both questionnaires. The "gold standard" was one of the following: expert social worker assessment of abuse or report of abuse to state services or police. Authors assessed the accuracy of four different screening tools at the same time, meaning 34 abuse questions were asked during the same phone interview. Screening process does not reflect conditions in primary care.
Chen et al, 2005[66]	Yes	Fair	Of 386 women eligible to participate, 56 did not complete the questionnaire "due to the long waiting period for an available private room" and 128 refused to participate. Reasons for refusal were not described. The extent to which ISA-P is a credible reference standard is not clear.
Dubowitz et al, 2008[67]	Yes	Fair	Risk of selection bias, primarily due to high rate of missing data.
Ernst et al, 2004[63]	Yes	Fair	Applicability to primary care settings unclear; patients recruited from one ED setting who were presenting for medical complaints (79%), trauma complaints (18%), and 1% specifically for IPV-related complaints.
Feldhaus et al,1997[64]	Yes	Fair	Applicability to primary care unclear; participants were recruited from an ED setting, and a small minority of the population were presenting with acute injuries related to IPV.
Fulmer et al, 2012[98]	NA (calculated)	Fair	Participants were those presenting for routine dental care; no details were provided regarding whether patients had signs or symptoms of abuse. The method of scoring the screening test and gold standard are described but were determined by the authors (and are of unclear validity). Screening tests results were compared with subscores of the CTS; any CTS subscore >0 was considered positive.
Houry et al, 2004[140]	Yes	Poor	High risk of selection bias due to high rates of missing data. Women who could not be contacted for the 4-month followup interview had a higher positive IPV screen compared with women who participated (22% vs. 9%, respectively).
Iverson et al, 2013[71]	Yes	Good	Overall response rate to survey was 63%; of those that responded, 49% (N=179) were eligible (had an intimate partner relationship in the past year). Women who completed only one or neither of the IPV instruments were excluded from the study sample (11%) used to measure screening test accuracy.
Iverson et al, 2015[72]	Yes	Fair	Spectrum of patients appears to be representative of women veterans seeking care at VA primary care centers; this may or may not be representative of non-VA primary care centers. Authors note that of the survey responders 55% reported past-year involvement in an intimate relationship, completed all IPV instruments and were included in the study. It is not clear how many were excluded because they did not complete one instrument vs. not being involved in a relationship.
Kita et al, 2017[155]	No	Poor	High rate of missing data. Of those invited, 87% (832/955) completed surveys during pregnancy; of those who gave birth to a live infant at the research hospital (n=824), 60% (n=610) responded to postnatal survey. Of these, 453 were analyzed; reasons for exclusion were excessive blanks (n=116) and late responses (>2 months; n=41). In total, attrition was 54%. Unclear why authors do not provide sensitivity/specificity for the inital sample who completed the WAST and ISA; no characteristics are described for the initial and analyzed sample to determine whether IPV incidence and other characteristics differ.
Koziol-McLain et al, 2001[73]	Yes	Fair	High attrition; of those who responded to the initial survey, 40% did not have followup data. The tool was designed to assess the predictive ability of an IPV screen for future violence.

Appendix E Table 6. Quality Assessment of Diagnostic Accuracy Studies (KQ 2): Part 3

Author, Year	Were methods for calculating accuracy clearly reported and valid?	Quality Rating	Comments
MacMillan et al, 2006[75]	No	Fair	Study reports on accuracy but is primarily focused on comparing different screening modalities. Flow of participants is shown in figure. However, methods used to handle missing data/attrition for accuracy measures are not reported. Unclear whether screening test and gold standard are interpreted independently.
McNutt et al, 2002[156]	Yes	Poor	The study is part of a nonrandomized trial assessing a multicomponent IPV screening and treatment intervention. Women with a known history of IPV were eligible for screening (in addition to those who had not been screened in the past). The flow of participants eligible for assessment of screening test accuracy is unclear; the results of a random sample of telephone interviews were compared with results of screening tests performed independently. Based on the way data are presented, the amount of missing data is unclear. Authors only present data that allow comparison of sensitivity/specificity of screening to predict severe or moderate-to-severe levels of abuse (not any abuse).
Mills et al, 2006[62]	Yes	Fair	Spectrum of patients likely to be higher risk than those seen in primary care settings; the overall sample size is adequate but small (N=53 analyzed).
Paranjape et al, 2003[65]	Yes	Fair	Unclear whether the interviewer administering the semistructured interview or categorizing individuals is the same person as who administered the screening items. No missing data described; 7% of the population reported never being in an intimate relationship.
Paranjape et al, 2006[70]	Yes	Fair	Extent of missing data is not clear; no statement of whether tests were interpreted blindly.
Shakil et al, 2005[157]	No	Poor	Spectrum of patients is representative for Phase 1 only. The self-identified group was not administered the gold standard (CTS). Unclear how accuracy measures were calculated; CTS appears to be used for correlational purposes only.
Sohal et al, 2007[68]	No	Fair	Study considers response rate to be those who agreed (54%), but this was in person and not by mail/email. Text says CAS identified 53 women experiencing IPV, but Figure 1 says it is 50; sensitivity calculated using numbers in figure do not match those in Table 3.
Wathen et al, 2008[76]	Yes	Fair	Potential selection bias related to attrition and unclear handling of missing data.
Weiss et al, 2003[74]	Yes	Fair	Applicability to primary care unclear (population recruited from an ED setting); 19% of sample did not complete one or more questionnaires.
Zink et al, 2007[69]	Yes	Fair	There are minor discrepancies in the article in terms of the number of participants analyzed; unclear whether results are interpreted blindly (per methods, study PI checked data).

Abbreviations: CAS=Composite Abuse Scale; CTS=Conflict Tactics Scale; CTS2=Revised Conflict Tactics Scale; ED=emergency department; IPV=intimate partner violence; ISA-P=Index of Spouse Abuse-Physical Scale; KQ=key question; N=sample; NA=not applicable; PI=primary investigator; VA=Veterans Affairs.

Appendix E Table 7. Quality Assessment of Randomized, Controlled Trials (KQs 1 and 3): Part 1

Author, Year	Was randomization adequate?	Was allocation concealment adequate?	Are baseline characteristics similar between groups?	Did the study have cross-overs or contamination raising concern for bias?	Was the eligibility criteria specified?	Were outcome assessors masked?	Were providers masked?	Were patients masked?
Bair-Merritt et al, 2010[80]	Yes	NA	Mostly	Unclear	Yes	Yes	No	No
Curry et al, 2006[139]	Unclear	Unclear	No	Unclear	Yes	Unclear	No	No
El-Mohandes et al, 2008[82] El-Mohandes, 2011[92] Kiely, 2010[85]	Yes	NA	Yes	Unclear	Yes	Unclear	No	No
Hegarty et al, 2013[86]	Yes	Yes	Mostly	Unclear	Yes	Yes	No	No
McFarlane et al, 2000[128]	Unclear	Yes	Yes	Yes	Yes	Unclear	No	No
McFarlane et al, 2006[158]	No	No	Mostly	No	Yes	Unclear	No	No
Miller et al, 2011[89]	Yes	Unclear	Mostly	No	Yes	Yes	No	No
Miller et al, 2016[88]	Yes	Unclear	Yes	Unclear	Yes	Yes	No	Yes
Rhodes et al, 2015[87]	Yes	Yes	Mostly	No	Yes	Unclear	No	No
Saftlas et al, 2014[91]	Yes	Yes	Mostly	Unclear	Yes	No	NA	NA
Sharps et al, 2015[81]	Unclear	Yes	Mostly	No	Yes	Yes	No	No
Tiwari et al, 2005[83]	Yes	Yes	Mostly	No	Yes	Yes	No	No
Tiwari et al, 2010[94] Tiwari et al, 2012[90]	Yes	Yes	Yes	No	Yes	Yes	NA	NA
Zhang et al, 2013[159]	Unclear	Unclear	Unclear	No	Yes	Yes	NA	NA
Zlotnick et al, 2011[84]	Yes	Yes	Mostly	No	Yes	Unclear	No	No

Abbreviations: KQ=key question; NA=not available

Appendix E Table 8. Quality Assessment of Randomized, Controlled Trials (KQs 4 and 5): Part 2

Author, Year	What was the overall attrition	What was the differential attrition?	Did the study have differential attrition or overall high attrition raising concern for bias?	Did the study use acceptable statistical methods?	Were outcome measures valid and reliable?	Was the duration of followup adequate to assess the outcome?
Bair-Merritt et al, 2010[80]	11% lost to followup	6% across groups	No	Yes	Yes	Yes
Curry et al, 2006[139]	NR	NR	Unclear	Unclear	Unclear	Yes
El-Mohandes et al, 2008[82] El-Mohandes et al, 2011[92] Kiely et al, 2010[85]	26% (190/723 with risk factors)	4%	Yes	Yes	Unclear	Yes
Hegarty et al, 2013[86]	6% (doctors); 28% (individual patients)	4% (doctors); 4% (individual patients)	No	Yes	Yes	Yes
McFarlane et al, 2000[128]	2 months: 11%; 6 months: 15%; 12 months: 18%; 18 months: 21%; 24 months: 44%	3 groups: maximum differential attrition is 9%	Yes	No	Yes	Yes
McFarlane et al, 2006[158]	11% at 24 months	1.70%	No	No	Yes	Yes
Miller et al, 2011[89]	25%	NR	Yes	Yes	Yes	Yes
Miller et al, 2016[88]	21% at 12 months (see comments)	0% at 3 months; 5% at 12 months	Yes	Yes	Yes	Yes
Rhodes et al, 2015[87]	22%, 21% and 29% did not complete the 3-, 6-, and 12-month interview (respectively)	1–2% across groups at 3 months	Yes	Yes	Yes	Yes
Saftlas et al, 2014[91]	33% (includes two with missing data)	8%	Yes	Yes	Yes	Yes
Sharps et al, 2015[81]	Varied by outcome timing; at 24 months: 55%	8% at 24 months	Yes	Yes	Yes	Yes
Tiwari et al, 2005[83]	4%	7%	No	Yes	Yes	Yes
Tiwari et al, 2010[94] Tiwari et al, 2012[90]	0%	0%	No	NA	Yes	Yes
Zhang et al, 2013[159]	59%	14%	Yes	No	Yes	Yes
Zlotnick et al, 2011[84]	15%	Unclear	Unclear	Yes	Yes	Yes

Abbreviations: ITT=intention to treat; KQ=key question; NA=not available; NR=not reported.

Appendix E Table 9. Quality Assessment of Randomized, Controlled Trials (KQs 4 and 5): Part 3

Author, Year	Was an appropriate method used to handle missing data?	Quality Rating	Comments
Bair-Merritt et al, 2010[80]	Yes	Fair	Slightly more women in the control group had baseline problem alcohol use and fewer were employed in the past year compared with the intervention group. Compliance with intervention home visits waned over time: 90% families participated at 3 months, 70% at 6 months, 49% at 12 months, and 25% at 36 months; overall, 75% discontinued intervention by year 3. Overall and differential attrition were high, but authors addressed missing data using imputation.
Curry et al, 2006[139]	No	Poor	Randomization and allocation concealment are not described. Attrition is not well described. Potential measurement bias (validity of stress scores is not clear); and comparison is only made between subgroups that were labeled as high risk.
El-Mohandes et al, 2008[82] El-Mohandes et al, 2011[92] Kiely et al, 2010[85]	Yes	Fair	Risk of selection bias; 31% of women approached declined to participate. Of those who agreed and met eligibility criteria, 15% declined further participation. For primary analysis of risk factor reduction, only those with risk at baseline were analyzed. Among this subgroup, 26% (overall) did not complete a postpartum interview. Analyses used imputation to control for missing data. Self-report of some risks may be subject to measurement bias (e.g., recall bias).
Hegarty et al, 2013[86]	Yes	Fair	This is a cluster-randomized trial. Individual physicians (one in each practice) was randomized to intervention or control. Individual patient characteristics are mostly similar; however, slightly more women in the comparison group were married, living with a partner, and had children younger than 18 years of age. Characteristics of physicians randomized were similar.
McFarlane et al, 2000[128]	Unclear	Poor	High attrition and unclear number of participants analyzed at various time points. Unclear handling of missing data. Randomization is not described well.
McFarlane et al, 2006[158]	No	Poor	High risk of selection bias; method of randomization may not be adequate (randomization was by week, nurse was informed at the beginning of each week as to whether it was an active intervention or control week). Slightly higher percentage of Hispanic women and lower percentage of white women in the case-management group compared with controls.
Miller et al, 2011[89]	No	Fair	Participants differed slightly at baseline for IPV and birth control sabotage; overall attrition is high (differential attrition is not clear) .
Miller et al, 2016[88]	Yes	Fair	Overall attrition was 21% at 12 months (defined as % of eligible patients who completed the survey); participants lost to followup had a higher baseline prevalence of IPV. Analyses controlled for missing data by using imputation. Usual care (related to IPV screening/referral practices) at control sites is not well described.
Rhodes et al, 2015[87]	Yes	Fair	Baseline characteristics are mostly similar between groups; exceptions include fewer women in the no-contact group had higher rates of IPV at baseline, and more women in the assessed control group had previously used community-based IPV services compared with intervention group (10% vs. 4%). Although overall attrition is >20%, there was no differential attrition and the majority of those randomized (592 of 600) were included in the primary analyses (days of heavy drinking and number of IPV events).
Saftlas et al, 2014[91]	Unclear	Fair	High overall attrition, but no significant differential attrition.
Sharps et al, 2015[81]	Yes	Fair	Risk of selection bias and high overall attrition (55% at 24 months). Randomization procedures varied by site; at urban centers, randomization was by participant (using computer-generated number assignments) and rural health agencies (six sites were cluster randomized. Method of cluster randomization unclear.

Appendix E Table 9. Quality Assessment of Randomized, Controlled Trials (KQs 4 and 5): Part 3

Author, Year	Was an appropriate method used to handle missing data?	Quality Rating	Comments
Tiwari et al, 2005[83]	Yes	Fair	More women in the intervention group were married, had a paid job, and had a higher family income compared with women in the control group.
Tiwari et al, 2010[94] Tiwari et al, 2012[90]	Yes	Good	
Zhang et al, 2013[159]	No	Poor	Very high attrition with unclear handling of missing data. Randomization procedure unclear; there were some baseline differences between groups.
Zlotnick et al, 2011[84]	Unclear	Fair	Unclear whether outcome assessors were masked to treatment group. Overall sample size is small (N=54) with 15% overall attrition. Authors do not describe or provide data to calculate differential attrition.

Abbreviations: IPV=intimate partner violence; KQ=key question; N=sample; vs.=versus.

Appendix E Table 10. Quality Assessment of Randomized, Controlled Trials: Additional Questions for Studies Reporting Harms (KQ 5)

Author, Year	Were harms prespecified and defined?	Were ascertainment techniques for harms adequately described?	Were ascertainment techniques for harms equal, valid, and reliable?	Was duration of followup adequate for harms assessment?	Harms Quality Rating	Comments
Hegarty et al, 2013[86]	Yes	Yes	Unclear	Yes	Fair	
Rhodes et al, 2015[87]	Unclear	Unclear	Unclear	Yes	Fair	Authors note that "participant safety was carefully tracked … no harms related to the intervention were identified." The scope of harms ascertained (outside of main outcomes) is not clear. Ascertainment techniques for IPV events appears equal, valid, and reliable. Not clear whether authors assessed other harms (e.g., labeling).
Sharps et al, 2015[81]	No	Unclear	Unclear	Yes	Fair	Unclear whether intervention-related harms were prespecified and how they were ascertained.
Tiwari et al, 2005[83]	Yes	Yes	Unclear	Yes	Fair	Women were asked if they experienced an increase in violence due to participation in the study. Unclear if this is a reliable measure of harm.
Tiwari et al, 2010[94] Tiwari et al, 2012[90]	Unclear	Partially	Unclear	Yes	Fair	

Abbreviations: IPV=intimate partner violence; KQ=key question.

Appendix F Table 1. IPV Screening Instruments

Abbreviated Name	Complete Name	Description	Items	Scoring, Range, and Cutoff for Positive Screen
HITS[66, 72, 160]	Hurt, Insulted, Threaten, Scream	4 items assess the frequency of IPV	1. How often does your partner physically hurt you? 2. How often does your partner insult or talk down to you? 3. How often does your partner threaten you with physical harm? 4. How often does you partner scream or curse at you?	Each item is answered on a 5-point Likert scale: 1=never 2=rarely 3=sometimes 4=fairly often 5=frequently Score range: 4–20 Cutoff for IPV:* ≥10
E-HITS[72]	Extended–Hurt, Insulted, Threaten, Scream	5 items (including all 4 HITS items and an additional sexual violence item)	Over the last 12 months, how often did your partner: 1. Physically hurt you? 2. Insult your or talk down to you? 3. Threaten you with harm? 4. Scream or curse at you? 5. Force you to have sexual activities?	Each item is answered on a 5-point Likert scale: 1=never 2=rarely 3=sometimes 4=fairly often 5=frequently Score range: 5–25 Cutoff for IPV: ≥7
PSQ[67]	Parent Screening Questionnaire	3 items assess occurrence of physical IPV and fear in the past year	1. Have you ever been in a relationship in which you were physically hurt or threatened by a partner? 2. In the past year, have you been afraid of a partner? 3. In the past year, have you thought of getting a court order for protection?	Each item is answered yes/no Cutoff for IPV: Affirmative response to ≥1 items
OVAT[63, 160]	Ongoing Violence Assessment Tool	4 items assess ongoing physical and emotional IPV	1. At the present time, does your partner threaten you with a weapon? 2. At the present time, does your partner beat you up so badly that you must seek medical help? 3. At the present time, does your partner act like he/she would like to kill you? 4. My partner has no respect for my feelings	Items 1, 2, and 4 are answered true/false Item 3 is answered on a 5-point Likert scale: 1=Never 2=Rarely 3=Occasionally 4=Frequently 5=Very frequently Cutoff for IPV: Affirmative response to items 1+H5, 2, or 4; Response of ≥3 for item 3
PVS[64, 160]	Partner Violence Screen	3 items that assess physical IPV in the last year and current safety	1. Have you been hit, kicked, punched, or otherwise hurt by someone within the past year? If so, by whom? 2. Do you feel safe in your current relationship? 3. Is there a partner from a previous relationship who is making you feel unsafe now?	Each item is answered yes/no Cutoff for IPV: Affirmative response to ≥1 items (assuming person harming or making the respondent feel unsafe is a current or past partner)

Appendix F Table 1. IPV Screening Instruments

Abbreviated Name	Complete Name	Description	Items	Scoring, Range, and Cutoff for Positive Screen
HS-EAST[98, 131]	Hwalek-Sengstock Elder Abuse Screening Test	15 items that screen for elder abuse	1. Do you have anyone who spends time with you, taking you shopping or to the doctor? 2. Are you helping to support someone? 3. Are you sad or lonely often? 4. Who makes decisions about your life--like how you should live or where you should live? 5. Do you feel uncomfortable with anyone in your family? 6. Can you take your own medication and get around by yourself? 7. Do you feel that nobody wants you around? 8. Does anyone in your family drink a lot? 9. Does someone in your family make you stay in bed or tell you you're sick when you know you're not? 10. Has anyone forced you to do things you didn't want to do? 11. Has anyone taken things that belong to you without your O.K.? 12. Do you trust most of the people in your family? 13. Does anyone tell you that you give them too much trouble? 14. Do you have enough privacy at home? 15. Has anyone close to you tried to hurt you or harm you recently?	All items (except item 4) are answered yes/no; item 4 answered by free response Responses associated with abuse are: "No" to items 1, 6, 12, and 14; "Someone else" to item 4; "Yes" to all other items Unclear cutoff for positive test†
BRFSS[73]	Behavioral Risk Factor Surveillance Survey (modified by authors)	3 items from Colorado BRFFS	1. Thinking back over the past year, on any occasion were you hit, slapped, kicked, raped, or otherwise physically hurt by someone you know or knew intimately, such as a spouse, partner, ex-spouse or partner, boyfriend, girlfriend, or date? 2. Considering your current partners or friends, or any past partners or friends, is there anyone who is making you feel unsafe now? 3. In the past year, have the police ever been called to your home because of a fight or argument, no matter who was fighting or who was at fault?"	Each item is answered yes/no Cutoff for IPV: Affirmative response to ≥1 item(s)

Appendix F Table 1. IPV Screening Instruments

Abbreviated Name	Complete Name	Description	Items	Scoring, Range, and Cutoff for Positive Screen
WAST[75, 160]	Woman Abuse Screening Tool	8 items assess physical and emotional IPV	1. In general, how would you describe your relationship? 2. Do you and your partner work out arguments with... 3. Do arguments ever result in you feeling down or bad about yourself? 4. Do arguments ever result in hitting, kicking or pushing? 5. Do you ever feel frightened by what your partner says or does? 6. Has your partner ever abused you physically? 7. Has your partner ever abused you emotionally? 8. Has your partner ever abused you sexually?	Item 1 is answered with: A lot of tension some tension, or no tension Item 2 is answered with great difficulty, some difficulty, or no difficulty Items 4–8 are answered with often, sometimes, or never Responses recoded such that higher score indicates higher frequency of experiences; scores should be summed for individuals who answer all items Cutoff for IPV: None provided
STaT[65, 70]	Slapped, Things, Threatened	3 items (2 assess physical IPV, 1 assesses threats)	Have you ever been in a relationship where: 1. Your partner has pushed or slapped you? 2. Your partner threatened you with violence? 3. Your partner has thrown, broken or punched things?	Each item is answered yes/no Scoring: Each affirmative response is given a score of 1 Cutoff for IPV: Score of ≥1
HARK[68]	Humiliation, Afraid, Rape, Kick	4 items assess emotional and physical IPV in the past year	1. Within the last year, have you been humiliated or emotionally abused in other ways by your partner or your ex-partner? 2. Within the last year, have you been afraid of your partner or ex-partner? 3. Within the last year, have you been raped or forced to have any kind of sexual activity by your partner or ex-partner? 4. Within the last year, have you been kicked, hit, slapped or otherwise physically hurt by your partner or ex-partner?	Each item is answered yes/no Scoring: Each affirmative response is given a score of 1 Cutoff for IPV: Score of ≥1

Appendix F Table 1. IPV Screening Instruments

Abbreviated Name	Complete Name	Description	Items	Scoring, Range, and Cutoff for Positive Screen
OAS[74, 160]	Ongoing Abuse Screen	5 items adapted from the AAS that assess ongoing physical, sexual, emotional IPV, and fear	1. Are you presently emotionally or physically abused by your partner or someone important to you? 2. Are you presently being hit, slapped, kicked, or otherwise physically hurt by your partner or someone important to you? 3. Are you presently forced to have sexual activities? 4. Are you afraid of your partner or anyone of the following (circle if appropriate): husband/wife, ex-husband/ex-wife, boyfriend/girlfriend, stranger 5. (If pregnant) Have you ever been hit, slapped, kicked, or otherwise physically hurt by your partner or someone important to you during pregnancy?	Each item is answered yes/no Cutoff for IPV: Affirmative response to ≥1 item(s)
AAS[74, 160]	Abuse Assessment Screen	5 items assess physical, emotional, and sexual violence	1. Have you ever been emotionally or physically abused by your partner or someone important to you? 2. Within the last year, have you ever been hit, slapped, kicked, or otherwise physically hurt by someone? 3. Since you've been pregnant, have you been slapped, kicked, or otherwise physically hurt by someone? 4. Within the last year, has anyone forced you to have sexual activities? 5. Are you afraid of your partner or anyone listed above?	Items 1 and 5 are answered yes/no; if items 2, 3, or 4 are answered yes, participant is asked to indicate category of abuser (Circle all that apply: husband, ex-husband, boyfriend, stranger, other, multiple); for items 2 and 3, participants are asked to mark the area of injury on a body map. For each violence incident, items are scored based on severity of (1–6)‡ Cutoff for IPV: Affirmative response to ≥1 item(s)

* Cutoff for positive score here reflects widely accepted value; one included IPV test accuracy study[72] used a cutoff value of ≥6.

† We found no widely agreed upon standard for what constitutes a positive test. In general, higher scores indicate higher risk of being abused, neglected, or exploited. The one included study in this review considered positive responses to questions 5, 7, 9, 10, 11, 13, and 15 to indicate high risk of elder mistreatment.[98]

‡ Scores are based on the following: 1=Threats of abuse including use of weapon; 2=Slapping, pushing; no injuries and/or lasting pain; 3=Punching, kicking, bruises, cuts, and/or continuing pain; 4=Beating up, severe contusions, burns, broken bones; 5=Head injury, internal injury, permanent injury; 6=Use of weapon; wound from weapon.

Abbreviation: IPV=intimate partner violence.

Appendix F Table 2. IPV Consequences of Screening Tool (COST) Effects on Quality-of-Life Subscale*

Consequences of Item (Response Options)	Scoring, Range, and Interpretation
1. For me, I feel that being asked the questions on partner violence was (Good, Somewhat good, Neither good nor bad, Somewhat bad, or Bad) 2. Because the questions on partner violence were asked, I feel my home life has become (Less difficult, Somewhat less difficult, Neither less nor more difficult, Somewhat more difficult, or More difficult) 3. Because the questions on partner violence were asked, my feelings about my relationship with my partner are (More positive, Somewhat more positive, Neither more nor less positive, Somewhat more negative, or More negative) 4. Because the questions on partner violence were asked, I see the quality of my own life as being (Better, Somewhat better, Neither better nor worse, Somewhat worse, or Worse) 5. Because the questions on partner violence were asked, the people in my community who are usually 'there' for me for emotional support are (More available, Somewhat more available, Neither more nor less available, Somewhat less available, or Less available) 6. Because the questions on partner violence were asked, my feelings about myself as a person are (Better, Somewhat better, Neither better nor worse, Somewhat worse, or Worse) 7. Because the questions on partner violence were asked, I feel that the problems in my relationship with my partner are my fault. (Disagree, Somewhat disagree, Neither disagree not agree, Somewhat agree, or Agree) 8. Because the questions on partner violence were asked, my financial situation has become (Better, Somewhat better, Neither better nor worse, Somewhat worse, or Worse)	Each item is answered on a 5-point Likert scale; items are coded 2 through -2 (range 16 to -16). Positive scores indicate benefit while negative scores reflect harm.

***** As Described in MacMillan et al, 2009.

Abbreviations: COST=Consequences of Screening Tool; IPV=intimate partner violence.

Appendix G Table 1. IPV KQ1: Results of Included Randomized, Controlled Trials

Author, Year Study Design Quality	Setting Group (N)	IPV Outcome Measure (tool) Results	QOL Measure Results	Other Eligible Outcomes Measure (Tool) Results
Klevens et al, 2012[57, 60] Good	**Primary Care** G1: Computerized screening followed by brief intervention for screen-positive women and IPV resource list (909) G2: IPV resource list only (893) G3: Control (898)	**IPV exposure at 1 year (18 questions adapted from the National Violence Against Women Survey), G1 vs. G2** N events/N analyzed G1: 96/909 G2: 101/893 G3: 83/898 OR, (95% CI): G1 vs. G2: 1.2 (0.9 to 1.6) G1 vs. G3 1.0 (0.8 to 1.4) G2 vs. G3: 1.1 (0.8 to 1.5) **Recurrence of IPV at 1 year among women reporting IPV in the year prior to enrollment** N events/N analyzed G1: 38/120 G2: 33/116 G3: 40/110 OR, (95% CI): G1 vs. G2: 0.8 (0.5 to 1.4) G1 vs. G3: 1.2 (0.7 to 2.2) G2 vs. G3: 1.4 (0.8 to 2.5)	**SF-12 PCS at 1 year* (mean, 95% CI)** G1: 46.8 (46.1 to 47.4) G2: 46.4 (45.8 to 47.1) G3: 47.2 (46.5 to 47.8) P=0.21 (across all groups) **SF-12 MCS at 1 year (mean, 95% CI):** G1: 48.3 (47.5 to 49.1) G2: 47.9 (47.2 to 48.7) G3: 47.8 (47 to 48.5) p=0.51 (across all groups) **SF-12 at 1 year among women reporting IPV in the year prior to enrollment** **SF-12 PCS (mean, 95% CI):** G1: 47.4 (46.1 to 48.8) G2: 47.1 (45.7 to 48.4) G3: 47.5 (46.7 to 8.3) p=0.32 (across all groups) **SF-12 Mental Composite (mean, 95% CI):** G1: 44.2 (42.4 to 45.9) G2: 40.7 (41.9 to 45.5) G3: 42.5 (47.0 to 44.3) p=0.21 (across all groups)	**Hospitalization at 1 year (mean, 95% CI)** G1: 0.2 (0.0 to 0.3) G2: 0.1 (0 to 0.3) G3: 0.2 (0 to 0.3) p=0.40 (across all groups) **ED visits at 1 year (mean, 95% CI)** G1: 0.3 (0.2 to 0.4) G2: 0.3 (0.2 to 0.4) G3: 0.3 (0.2 to 0.4) p=0.40 (across all groups) **Ambulatory visits at 1 year (mean, 95% CI)** G1: 5.4 (3.8 to 7.0) G2: 5.7 (4.1 to 7.3) G3: 5.9 (4.3 to 7.4) p=0.12 (across all groups) **Hospitalization at 3 years (mean, 95% CI)** G1: 0.2 (0.1 to 0.4) G2: 0.3 (0.1 to 0.4) G3: 0.2 (0.1 to 0.4) **ED visits at 3 years (mean, 95% CI)** G1: 0.6 (0.4 to 0.8) G2: 0.7 (0.5 to 0.9) G3: 0.6 (0.4 to 0.9) **Ambulatory visits at 3 years (mean, 95% CI)** G1: 12.7 (8.9 to 16.2) G2: 12.2 (8.4 to 16.1) G3: 11.6 (7.7 to 15.4) p=0.12 (across all groups)

Appendix G Table 1. IPV KQ1: Results of Included Randomized, Controlled Trials

Author, Year Study Design Quality	Setting Group (N)	IPV Outcome Measure (tool) Results	QOL Measure Results	Other Eligible Outcomes Measure (Tool) Results
Koziol-McLain et al, 2010[58] Fair	**ED** G1: In-person screening followed by brief intervention, safety assessment, and information about referrals/resources (166) G2: Usual care (no formal IPV screening) (177)	**IPV exposure at 3 months (30-item Composite Abuse Scale)** N positive (CAS ≥7)/N analyzed G1: 20/167 G2: 24/177 Absolute risk difference (95% CI): -1.6 (-8.7 to 5.5) OR, (95% CI): 0.87 (0.46 to 1.64)	NR	NR
MacMillan et al, 2009[59] Fair	**Mixed (primary care, OBGYN clinics and EDs)** G1: In-person screening prior to visit with notification of clinician (inclusion of positive screen in chart); provision of IPV resource list (347) G2: No screening before visit (IPV screening conducted after clinic visit); provision of IPV resource list (360)	**Recurrence of IPV (30-item Composite Abuse Scale) among women disclosing past-year IPV at baseline, G1 vs. G2** **OR, (95% CI)†** 6 months: 0.93 (0.61 to 1.41) 12 months: 0.90 (0.50 to 1.63) 18 months: 0.88 (0.43 to 1.82)	**WHOQOL-Bref, difference between groups in mean scores (95% CI),† G2 vs. G2** 6 months: 1.32 (-0.99 to 3.63) 12 months: 1.86 (-1.39 to 5.12) 18 months: 2.29 (-1.71 to 6.28) **SF-12 PCS, difference between groups in mean scores (95% CI),† G2 vs. G2** 6 months: 0.91 (-0.34 to 2.15) 12 months: 1.28 (-0.48 to 3.04) 18 months: 1.57 (-0.59 to 3.73) **SF-12 MCS, difference between groups in mean scores (95% CI),† G2 vs. G2** 6 months: 0.60 (-0.98 to 2.19) 12 months: 0.85(-1.39 to 3.09) 18 months: 1.05 (-1.70 to 3.79)	**PTSD screen (SPAN)** **OR, (95% CI) †** 6 months: 0.77 (0.55 to 1.06) 12 months: 0.69 (0.43 to 1.08) 18 months: 0.63 (0.36 to 1.10) **Depression (CES-D) difference in mean scores (95% CI) †** 6 months: -1.14 (-2.50 to 0.22) 12 months: -1.61(-3.53 to 0.32) 18 months: -1.97 (-4.33 to 0.39)

* SF-12 scores adjusted for age, education, race/ethnicity, insurance status, and clustering by clinic) and baseline scores.
† All results shown are those adjusted for baseline differences and missing data using multiple imputation.

Abbreviations: CAS=Composite Abuse Scale; CES-D=Center for Epidemiologic Studies Depression; CI=confidence interval; ED=emergency department; G=group; IPV=intimate partner violence; KQ=key question; MCS=Mental Composite Score; N/n=sample size; NR=not reported; OBGYN=obstetrics and gynecology; OR=odds ratio; PCS=Physical Composite Score; PTSD=posttraumatic stress disorder; RCT=randomized, controlled trial; SF-12=Short Form Health Survey-12 Item; SPAN=Startle, Physiological Arousal, Anger, and Numbness instrument; WHOQOL-Bref=World Health Organization Quality of Life-Bref instrument; vs.=versus.

Appendix G Table 2. IPV KQ2: Results of Studies Reporting on Accuracy of IPV Screening Instruments

Author, Year Quality Rating	Timing of IPV Exposure	Screening Tools; Number of Items; Item Coverage Scores Used; Criteria for Positive Screen	Reference Standard(s) Number of Items, Item Coverage Criteria for Positive Score	Prevalence of IPV in Analyzed Population Based on Reference Standard	Total N Analyzed	Overall IPV Sensitivity, % (95% CI)	Overall IPV Specificity, % (95% CI)	Overall IPV Positive Likelihood Ratios, % (95% CI)	Overall IPV Negative Likelihood Ratios, % (95% CI)
Chen et al, 2005[66]	Current	HITS; 4 items; physical, psychological abuse Scores: Overall abuse; positive screen: Score >10.5	ISA-P; 11 items; dimensions: Only physical abuse included Physical abuse cut score ≥10	5%	113	86 (NR)	99 (NR)	91	0.1
Dubowitz et al, 2007[67] Fair	Past year	PSQ; 3 items; physical, fear, considered court order Scores: Any item; positive screen: # Endorsed ≥1	CTS-2; 78 items; dimensions: Psychological aggression, physical assault, injury, sexual coercion Cut score: Top 20% on psychological aggression; any past-year physical assault and injury	Psychological aggression: 76%[a] Physical assault: 32% Injury: 9% Sexual coercion: 28%	200 (n=185 for psychological aggression)	Physical assault: 19 (NR) Injury: 29 (NR) Psychological aggression: 27 (NR)	Physical assault: 92 (NR) Injury: 91 (NR) Psychological aggression: 92 (NR)	Physical assault: 2.5 (NR) Injury: 3.3 (NR) Psychological aggression: 3.3 (NR)	Physical assault: 0.9 (NR) Injury: 0.8 (NR) Psychological aggression: 0.8 (NR)
Ernst et al, 2004[63] Fair	Current	OVAT; 4 items; physical and nonphysical violence Scores: Total abuse; positive screen: A “true” response to Q1, 2, or 4 and a ≥3 Q3	ISA; 30 items; dimensions: Physical, emotional, and sexual abuse Overall IPV: Positive score on physical or nonphysical; physical abuse cut score ≥25; nonphysical abuse cut score ≥10	Overall: 20% Physical: 16% Nonphysical: 17%	306	86 (75 to 93)	83 (78 to 88)	5.1(3.8 to 6.8)	0.2 (0.1 to 0.3)

Appendix G Table 2. IPV KQ2: Results of Studies Reporting on Accuracy of IPV Screening Instruments

Author, Year Quality Rating	Timing of IPV Exposure	Screening Tools; Number of Items; Item Coverage Scores Used; Criteria for Positive Screen	Reference Standard(s) Number of Items, Item Coverage Criteria for Positive Score	Prevalence of IPV in Analyzed Population Based on Reference Standard	Total N Analyzed	Overall IPV Sensitivity, % (95% CI)	Overall IPV Specificity, % (95% CI)	Overall IPV Positive Likelihood Ratios, % (95% CI)	Overall IPV Negative Likelihood Ratios, % (95% CI)
Feldhaus et al, 1997[64] Fair	Past year	PVS; 3 items; physical violence and safety Scores: Combined abuse positive screen: Yes to any question Positive screen partner physical violence: Yes Positive screen safety: Yes or unsure to either question	ISA; 30 items; dimensions: Physical, emotional, sexual abuse; physical and nonphysical scales Combined abuse: Positive score on either physical or nonphysical: Physical abuse cut score >25; nonphysical abuse cut score >10 CTS (Form N); 19 items; dimensions: Verbal aggression, violence Combined abuse: Positive on either verbal or physical abuse; verbal abuse cut score >45.2; physical abuse cut score >7.4	ISA combined abuse: 24% CTS combined abuse: 27%	ISA: 255 CTS: 230	ISA: 64 (51 to 76) CTS: 71 (59 to 82)	ISA: 80 (74 to 86) CTS: 84 (78 to 90)	ISA: 3.3 (2.3 to 4.6) CTS: 4.6 (3.1 to 6.8)	ISA: 0.4 (0.3 to 0.6) CTS: 0.3 (0.2 to 0.5)

Appendix G Table 2. IPV KQ2: Results of Studies Reporting on Accuracy of IPV Screening Instruments

Author, Year Quality Rating	Timing of IPV Exposure	Screening Tools; Number of Items; Item Coverage Scores Used; Criteria for Positive Screen	Reference Standard(s) Number of Items, Item Coverage Criteria for Positive Score	Prevalence of IPV in Analyzed Population Based on Reference Standard	Total N Analyzed	Overall IPV Sensitivity, % (95% CI)	Overall IPV Specificity, % (95% CI)	Overall IPV Positive Likelihood Ratios, % (95% CI)	Overall IPV Negative Likelihood Ratios, % (95% CI)
Iverson et al, 2013[71] Fair	Past year	HITS; 4 items; physical, psychological abuse Scores: Overall abuse; positive screen: Score ≥6	CTS-2; 39 items; dimensions: Physical assault, sexual coercion, severe psychological aggression Overall IPV cut score: ≥1 on physical, sexual or severe psychological aggression	Overall IPV in past year: 29% (N=46) Physical IPV in past year: 14%[d] Sexual IPV in past year: 14%[d] Psychological IPV in past year: 18%[d] More than one type of IPV: 14%[d]	160	78 (63 to 89)	80 (71 to 87)	3.9 (2.6 to 5.8)	0.3 (0.2 to 0.5)

Appendix G Table 2. IPV KQ2: Results of Studies Reporting on Accuracy of IPV Screening Instruments

Author, Year Quality Rating	Timing of IPV Exposure	Screening Tools; Number of Items; Item Coverage Scores Used; Criteria for Positive Screen	Reference Standard(s) Number of Items, Item Coverage Criteria for Positive Score	Prevalence of IPV in Analyzed Population Based on Reference Standard	Total N Analyzed	Overall IPV Sensitivity, % (95% CI)	Overall IPV Specificity, % (95% CI)	Overall IPV Positive Likelihood Ratios, % (95% CI)	Overall IPV Negative Likelihood Ratios, % (95% CI)
Iverson et al, 2015[72] Fair	Past year	HITS; 4 items; physical, psychological abuse Overall IPV; positive screen: score ≥6 E-HITS; 5 items; 4 HITS items (physical, psychological abuse) and 1 sexual violence item Scores: Overall IPV; positive screen: Score ≥7	CTS-2: 39 items: Physical assault, sexual coercion, severe psychological aggression Overall IPV cutpoint ≥1 on physical, sexual, or severe psychological aggression CTS-2; 39 items; dimensions: Physical assault, sexual coercion, severe psychological aggression Overall IPV cut score: ≥1 on physical, sexual or severe psychological aggression	Overall IPV in past year: 25% More than one type of IPV: 45% Overall IPV in past year: 25% More than one type of IPV: 45%	80	75 (55 to 95) 75 (55 to 95)	83 (73 to 92) 82 (72 to 90)	2.3 (1.4 to 3.7) 2.1 (1.4 to 3.4)	0.2 (0.1 to 0.4) 0.2 (0.1 to 0.4)

Appendix G Table 2. IPV KQ2: Results of Studies Reporting on Accuracy of IPV Screening Instruments

Author, Year Quality Rating	Timing of IPV Exposure	Screening Tools; Number of Items; Item Coverage Scores Used; Criteria for Positive Screen	Reference Standard(s) Number of Items, Item Coverage Criteria for Positive Score	Prevalence of IPV in Analyzed Population Based on Reference Standard	Total N Analyzed	Overall IPV Sensitivity, % (95% CI)	Overall IPV Specificity, % (95% CI)	Overall IPV Positive Likelihood Ratios, % (95% CI)	Overall IPV Negative Likelihood Ratios, % (95% CI)
Koziol-McLain et al, 2001[73] Fair	Prediction of future (3–5 months) partner abuse	BRFSS-administered violence screen, 3 items Scores: Physical violence, feeling unsafe, police called; positive screen: ≥1 yes	Combined CTS and CTS-2[a]; 22 items; dimensions: Verbal aggression, physical violence, severe physical violence Sexual coercion Any partner abuse cut score: ≥13 or more verbally aggressive events or ≥1 physically violent, severe physically violent, or sexually coercive events	Any partner abuse: 24% Verbal aggression: 19% Sexual coercion: 10% Physical violence: 4% Severe physical violence: 1%	409	20 (13 to 30)[b]	96 (93 to 98)[b]	4.8 (2.4 to 9.3)	0.8 (0.8 to 0.9)
MacMillan et al, 2006[75] Fair	Past year	PVS; 3 items; physical abuse, safety Scores: Overall abuse; positive screen: Endorsing Q1 or 3 or not endorsing Q2	CAS; 30 items; dimensions: Physical, sexual, emotional abuse Overall abuse cut score: ≥7	NR[e]	NR[f]	49 (NR)	94 (NR)	NR	NR
MacMillan et al, 2006[75] Fair	Past year	WAST; 8 items; physical, sexual, emotional abuse Scores: Overall abuse; positive screen: Endorsing question “a lot of tension” or question “great difficulty”	CAS; 30 items; dimensions: Physical, sexual, emotional abuse Positive IPV cut score: ≥7	NR[e]	NR[f]	47 (NR)	96 (NR)	NR	NR

Appendix G Table 2. IPV KQ2: Results of Studies Reporting on Accuracy of IPV Screening Instruments

Author, Year Quality Rating	Timing of IPV Exposure	Screening Tools; Number of Items; Item Coverage Scores Used; Criteria for Positive Screen	Reference Standard(s) Number of Items, Item Coverage Criteria for Positive Score	Prevalence of IPV in Analyzed Population Based on Reference Standard	Total N Analyzed	Overall IPV Sensitivity, % (95% CI)	Overall IPV Specificity, % (95% CI)	Overall IPV Positive Likelihood Ratios, % (95% CI)	Overall IPV Negative Likelihood Ratios, % (95% CI)
Mills et al, 2006[62] Fair	Past year	HITS; 4 items; physical, psychological abuse Scores: Overall abuse; positive screen: Score >10	CTS-2; 78 items (perpetrator and victim); psychological aggression, physical violence, negotiation, sexual coercion, injury Psychological aggression cut score ≥21.7% Physical violence cut score ≥7.4%	Psychological aggression: 39% Physical violence: 20%	53	Psychological aggression: 30 (13 to 54) Physical violence: 46 (18 to 75)	Psychological aggression: 88 (71 to 96) Physical violence: 88 (74 to 96)	Psychological aggression: 2.5 (0.8 to 7.7) Physical violence: 3.8 (1.3 to 10.9)	NR
Mills et al, 2006[62] Fair	Past year	PVS; 3 items; physical violence and safety Scores: Combined abuse; positive screen: Yes to any question	CTS-2; 78 items (perpetrator and victim); Dimensions: Psychological aggression, physical violence, negotiation, sexual coercion and injury Psychological aggression score ≥21.7%; physical violence score ≥7.4%	Psychological aggression: 39% Physical violence: 20%	53	Psychological aggression: 35 (16 to 59) Physical violence: 46 (18 to 75)	Psychological aggression: 84 (67 to 94) Physical violence: 83 (68 to 92)[g]	Psychological aggression: 2.3 (0.9 to 6.3) Physical violence: 2.7 (1.1 to 7.0)	NR

Appendix G Table 2. IPV KQ2: Results of Studies Reporting on Accuracy of IPV Screening Instruments

Author, Year Quality Rating	Timing of IPV Exposure	Screening Tools; Number of Items; Item Coverage Scores Used; Criteria for Positive Screen	Reference Standard(s) Number of Items, Item Coverage Criteria for Positive Score	Prevalence of IPV in Analyzed Population Based on Reference Standard	Total N Analyzed	Overall IPV Sensitivity, % (95% CI)	Overall IPV Specificity, % (95% CI)	Overall IPV Positive Likelihood Ratios, % (95% CI)	Overall IPV Negative Likelihood Ratios, % (95% CI)
Paranjape et al, 2003[65] Fair	Lifetime	STaT; 3 items; Physical violence Scores: Any IPV; positive screen: ≥1 yes	Semistructured interview that followed a published interview guide to elicit a history of lifetime IPV Classification of IPV based on specific acts	Overall lifetime IPV: 63% past 12 months: 15% IPV subtype: Physical abuse: 11% Physical and emotional abuse: 36% Physical, emotional, and sexual abuse: 38%	75	STaT score: ≥1: 96 (90 to 100) ≥2: 89 (80 to 98) ≥3: 64 (50 to 78)	STaT score: ≥1: 75 (59 to 91) ≥2: 100 (NA) ≥3: 100 (NA)	StaT score: ≥1: 3.8 (2.0 to 7.3) ≥2: Infinity (NA) =3: Infinity (NA)	STaT score: ≥1: 0.1 (0.05 to 0.2) ≥2: 0.1 (0.05 to 0.2) =3: 0.4 (0.2 to 0.5)
Paranjape et al, 2006[70] Fair	Current or most recent relationship	STaT; 3 items; physical violence Scores: Any IPV; positive screen: ≥1 yes response	ISA; 30 items; dimensions: Physical, nonphysical (emotional and sexual abuse) Positive IPV: Positive ISA-Physical (ISA-P) or ISA Nonphysical (ISA-NP); Positive ISA-P ≥10 Positive ISA-NP ≥25	IPV during most recent relationship: 33% Current IPV: 15%	240	STaT Score: ≥1: 95 (90 to 100) ≥2: 85 (77 to 93) =3: 62 (51 to 73)	STaT score: ≥1: 37 (29 to 44) ≥2: 54 (46 to 62) =3: 66 (58 to 73)	StaT score: ≥ 1: 1.5 (1.3 to 1.7) ≥ 2: 1.8 (1.5 to 2.2) =3: 1.8 (1.4 to 2.4)	StaT score: ≥1: 0.1(0.05 to 0.4) ≥2: 0.3 (0.2 to 0.5) =3: 0.6 (0.4 to 0.8)

Appendix G Table 2. IPV KQ2: Results of Studies Reporting on Accuracy of IPV Screening Instruments

Author, Year Quality Rating	Timing of IPV Exposure	Screening Tools; Number of Items; Item Coverage Scores Used; Criteria for Positive Screen	Reference Standard(s) Number of Items, Item Coverage Criteria for Positive Score	Prevalence of IPV in Analyzed Population Based on Reference Standard	Total N Analyzed	Overall IPV Sensitivity, % (95% CI)	Overall IPV Specificity, % (95% CI)	Overall IPV Positive Likelihood Ratios, % (95% CI)	Overall IPV Negative Likelihood Ratios, % (95% CI)
Sohal et al, 2007[68] Fair	Past year	HARK; 4 items; psychological, physical, sexual abuse Scores: Overall abuse; positive screen: Score ≥1	CAS; 30 items; dimensions: Physical abuse, emotional abuse, severe combined abuse, harassment Overall abuse cut score: ≥3	23%	232	81 (69 to 90)	95 (91 to 98)	Multilevel LR 16 (8 to 31)[c]	NR
Wathen et al, 2008[76] Fair	Past year	WAST; 8 items; physical, sexual, and emotional abuse Scores: Overall abuse; positive screen: Score ≥4	CAS; 30 items; dimensions: Physical abuse, emotional abuse, severe combined abuse, harassment Positive IPV cut score: ≥7	14%	5,604	Overall: 88 (85 to 90) Screen group: 87 (83 to 90) No-screen group: 88 (85 to 91)	Overall: 89 (88 to 90) Screen group: 89 (88 to 90) No-screen group: 89 (87 to 90)	Overall: 7.8 (7.2 to 8.5) Screen group: 8 (7 to 9) No-screen group: 7.7 (6.9 to 8.7)	Overall: 0.1 (0.1 to 0.2) Screen group: 0.2 (0.1 to 0.2) No-screen group: 0.1 (0.1 to 0.2)
Weiss et al, 2003[74] Fair	Current	AAS; 5 items; physical violence, emotional abuse safety, sexual assault Scores: Overall abuse; positive screen: ≥1 yes response	ISA; 30 items; dimensions: Physical abuse, nonphysical abuse (emotional and sexual abuse) Positive IPV cut score: NR	19%	856	92 (87 to 96)	55 (52 to 59)	2.1 (1.9 to 2.3)	0.1 (0.1 to 0.2)
Weiss et al, 2003[74] Fair	Current	OAS; 5 items; physical violence, emotional abuse safety, sexual assault Scores: Overall abuse; positive screen: ≥1 yes	ISA; 30 items; dimensions: Physical abuse, nonphysical abuse (emotional and sexual abuse) Positive IPV cut score: NR	19%	856	60 (52 to 67)	90 (87 to 92)	5.8 (4.5 to 7.5)	0.4 (0.4 to 0.5)

Appendix G Table 2. IPV KQ2: Results of Studies Reporting on Accuracy of IPV Screening Instruments

Author, Year Quality Rating	Timing of IPV Exposure	Screening Tools; Number of Items; Item Coverage Scores Used; Criteria for Positive Screen	Reference Standard(s) Number of Items, Item Coverage Criteria for Positive Score	Prevalence of IPV in Analyzed Population Based on Reference Standard	Total N Analyzed	Overall IPV Sensitivity, % (95% CI)	Overall IPV Specificity, % (95% CI)	Overall IPV Positive Likelihood Ratios, % (95% CI)	Overall IPV Negative Likelihood Ratios, % (95% CI)
Zink et al, 2007[69] Fair	Current	Unnamed screener;[h] 5 items using nongraphic language; relationship quality, safety Scores: Overall IPV; positive screen: A response >1 on at least one of the questions	CTS-2; 39 items; Dimensions: Verbal aggression, physical violence, injury, and sexual coercion Positive verbal aggression, physical violence, injury, and sexual coercion ≥95th percentile on subscale; Positive IPV: A positive score on ≥1 subscale	11%	393	DV combinations in which at least one of the questions had a response >1: Q1 and 3: 39 (NR) Q1, 3, and 4: 46 (NR) Q1–5: 40 (NR)	DV combinations in which at least one of the questions had a response >1: Q1 and 3: 95 (NR) Q1, 3, and 4: 95 (NR) Q1–5: 91 (NR)	DV combinations in which at least one of the questions had a response >1: Q1 and 3: 7 (4 to 12) Q1, 3, and 4: 7.7 (4.5 to 13) Q1–5: 4.4 (2.7 to 7.3)	DV combinations in which at least one of the questions had a response >1: Q1 and 3: 0.7 (0.51 to 0.82) Q1, 3, and 4: 0.6 (0.4 to 0.8) Q1–5: 0.7 (0.5 to 0.8)

[a] Percentages refer to the number of respondents who endorsed that a partner had done any of the items on the subscales to them at least once in the past year.
[b] Sensitivity and specificity refer to prediction of abuse or nonabuse in the months immediately following the screen.
[c] Of individual HARK scores: 3 or 4: Undefined; 2: 15 (4 to 49); 1: 9 (4 to 22); 0: 0.2 (0.1 to 0.4).
[d] The numbers refer to overall sample with specific types of IPV (and not percentage of the positive IPV sample).
[e] 12-month prevalence of IPV ranged from 4 to 18% across settings measured by the PVS and WAST, the two reference measures used.
[f] 2,339 completed the gold standard CAS. Authors report numbers of participants who completed each screening tool and gold standard, but not the sample analyzed for each comparison.
[g] Document reported 2.4 as upper limit, but it appears to be 92.
[h] General Domestic Violence Screening Questions scored on a 3-point (Q1–Q2) or 5-point Likert scale (Q3–Q5) beginning at 0.

Abbreviations: AAS=Abuse Assessment Screen; BRFSS=Behavioral Risk Factor Surveillance System; CAS=Composite Abuse Scale; CI=confidence interval; CTS=Conflict Tactics Scale; CTS-2 Conflict Tactics Scale-2; E-HITS=Electronic HITS; HARK=Humiliation, Afraid, Rape, Kick; HITS=Hurt/Insult/Threaten/Scream Tool; n=sample size; IPV=intimate partner violence; ISA=Index of Spouse Abuse; ISA-P=Index of Spouse Abuse-Physical; KQ=key question; N=sample size; NA=not available; NR=not reported; OAS=Ongoing Abuse Screen; OVAT=Ongoing Violence Assessment Tool; PVS=Partner Violence Screen; STaT=Slapped, Things, Threaten; WAST=Woman Abuse Screening Tool.

Appendix G Table 3. RCTs Reporting on Harms of IPV Screening (KQ3) or Interventions (KQ5)

Author, Year	Key Question	Intervention Control	N	Harms Outcomes
Koziol-McLain et al, 2010[58]	KQ 3	Screening: In-person screening in a New Zealand ED followed by brief intervention, safety assessment, and information about referrals/ resources Control: Usual care (no formal IPV screening)	344	No adverse events were reported by participants, clinicians, or research staff; however, it is not clear whether adverse events were prespecified or how they were monitored.
MacMillan et al, 2009[59]	KQ 3	Mixed (primary care, OBGYN clinics, and ED settings) Screening: In-person screening in mixed health care settings (primary care, OBGYN clinics, and EDs) prior to visit; clinicians notified of positive results by including copy of positive screening questionnaire in the chart; provision of IPV resource list Control: No screening before visit (IPV screening conducted after clinic visit); provision of IPV resource list	591*	Effects on Quality of Life subscale of COST instrument administered to screened women regardless of abuse status. Mean score of 3.52 (SD 3.24) indicated that being asked IPV screening questions was not harmful to women immediately after screening; scores were similar across abuse categories.
Hegarty et al, 2013[86]	KQ 5	IPV intervention: Physician training to respond to women and deliver a brief IPV counseling intervention in primary care settings (137) Control: Usual care (135)	272	At 6 months, no women in the intervention group agreed strongly (on a 5-point scale) that they felt judged negatively by practice staff for being a participant or responded “worse” to the item “As a result of participating in this trial, I see the quality of my own life as… .” No adverse events were reported and the authors detected no evidence of a difference in harm or abuse between groups.
Sharps et al, 2016[81]	KQ 5	IPV intervention: Domestic Violence Enhanced Home Visitation Program (DOVE), structured brochure-based IPV intervention added to standard home visitation for screen-detected pregnant women Control: Standard home-visiting protocol (4–6 prenatal visits, 6–12 postnatal visits over 2 years)	239	No adverse events, such as IPV-related deaths, were reported in either group.

Appendix G Table 3. RCTs Reporting on Harms of IPV Screening (KQ3) or Interventions (KQ5)

Author, Year	Key Question	Intervention Control	N	Harms Outcomes
Tiwari et al, 2005[83]	KQ 5	IPV intervention: In-person counseling focused on empowerment and safety advice during routine prenatal care (51) Control: Usual care for abused women (wallet-sized card with information on community resources) (55)	106	In phone interviews at 6 weeks postpartum, women were asked if they had experienced increased frequency of IPV and, if so, whether they attributed the increase to study participation. No adverse events of participation were reported by women in the intervention group or by controls.
Tiwari et al, 2010[90]	KQ 5	IPV intervention: Advocacy Intervention, in-person interview, empowerment pamphlet to support the information provided, scheduled weekly telephone calls, 24-hour access to a hotline for additional support (100) Control: Usual care (100)	200	No adverse events resulting from women's participation in the study were reported. No details on how harms were measured and assessed were provided.
Rhodes et al, 2015[87]	KQ 5	IPV intervention: Brief motivational intervention during ED visit (239) Assessed control (232) No contact control (121)	592	No harms related to the intervention were identified.

***** This number differs from the sample size for benefit outcomes; the COST questionnaire was administered to a subset of 591 women out of 3271 screened (227 women who screened positive for abuse, 206 with mixed screen results, and 158 who screened negative).

Abbreviations: COST=Consequences of Screening Tool; DOVE=Domestic Violence Enhanced Home Visitation; ED=emergency department; KQ=key question; IPV=intimate partner violence; OBGYN obstetrics and gynecology; RCT randomized, controlled trial; SD=standard deviation.

Appendix G Table 4. IPV KQ4: Detailed Characteristics of Interventions for Included RCTs

Author, Year Quality Sample Size	Population Recruitment Setting	Source Population	Category	Intervention Description	Additional (Non-IPV) Intervention Components	Delivery Provider	Delivery Site	Number of Sessions Length of Session(s)	Frequency Intervention Duration*
Pregnant/Postpartum									
Bair-Merrit et al, 2010[80] Fair N=643	Pregnant/ postpartum Hawaiian hospitals, U.S.	Mothers ≥18 who gave birth between 1994-1995 on Oahu to children rated high risk for child maltreatment	HV	Family-based HV intervention aimed at preventing child abuse/neglect; provided direct services related to parenting, problem-solving skills, emotional support; linked families to community services (i.e., IPV shelters/ advocacy groups, mental health treatment)	Multiple (e.g., education on child development, role-modeling positive parenting, offering emotional support)	Parapro-fessionals who completed a 5-week training (0.5 day devoted to IPV)	Home	13.6† in year 1 (mean); number of sessions focused on IPV NR Length NR	Weekly to biweekly to monthly to quarterly as family achieved goals 3 years
El-Mohandes et al, 2008[82] Kiely et al, 2010[85] El-Mohandes et al, 2011[92] Fair N=913	Pregnant/ postpartum 6 prenatal care sites in the District of Columbia, U.S.	African American women ≥18 yrs, ≤28 weeks' gestation and reporting any of 4 risk factors; subgroup experiencing IPV screened positive for any IPV in year prior to pregnancy	C(IPV+dep +smoking)	Individual in-person CBT aimed at reducing behavioral risks (depression, IPV, smoking, and tobacco exposure); sessions targeted toward specific risks reported by women at that session; IPV components emphasized safety behaviors	Receipt of behavioral counseling for other risks (depression, smoking, tobacco exposure) in intervention group but not control group	Master's-level trained social workers or psychologists	Prenatal care sites	Prenatal: 3.9 (mean), range 4-8 36±15 min. Postpartum: 0.8 (mean), range 0-2 38±13 min.	NR (frequency determined by mothers' attendence at routinely scheduled perinatal care visits) 31 weeks (mean 19.3 weeks gestation to mean 10.3 weeks postpartum)
Sharps et al, 2016[81] Fair N=239	Pregnant/ postpartum Multiple urban and rural perinatal HV agencies, U.S.	Women ≥14 yrs, ≤32 weeks' gestation, low income (i.e., Medicaid eligible) enrolled in a perinatal HV program who screened positive for current IPV	HV	Brochure-based IPV empowerment intervention embedded into a perinatal HV program; tailored to a woman's expressed needs and level of danger; delivered during routine HVs	Women in both groups received 4-6 HVs prenatally and 6-12 postnatally up to 2 yrs postpartum providing routine perinatal support	Community health workers, nurses; unlicensed & licensed personnel	Home	6 HVs focused on IPV (3 during pregnancy, 3 postpartum) 15-25 min.	NR 1-2 years postpartum

Appendix G Table 4. IPV KQ4: Detailed Characteristics of Interventions for Included RCTs

Author, Year Quality Sample Size	Population Recruitment Setting	Source Population	Category	Intervention Description	Additional (Non-IPV) Intervention Components	Delivery Provider	Delivery Site	Number of Sessions Length of Session(s)	Frequency Intervention Duration*
Tiwari et al, 2005[83] Fair N=110	Pregnant/ postpartum 1 public antenatal clinic, Hong Kong	Women ≥18 yrs, <30 weeks' gestation who screened positive for abuse by a partner during their first antenatal appointment	C(IPV)	In-person counseling focused on empowerment to enhance independence (advice in areas of safety, choice making, and problem solving), followed by brochure reinforcing information. Content modified to be culturally relevant.	NA	Senior research assistant (described as a midwife with a master's degree in counseling)	Antenatal clinic	1 30 min.	Once (NA)
Zlotnick et al, 2011[84] Fair N=54	Pregnant/ postpartum 3 primary care and OBGYN clinics in Rhode Island, U.S.	Women 18-40 yrs. who screened positive for past-year IPV	C(IPV)	Individual in-person counseling (based on interpersonal psychotherapy) emphasizing social support, improving interpersonal relationships, and improving social support networks; sessions also included education on IPV and advice on making a safety plan	Sessions also addressed emotional risks (signs/ symptoms of PPD, PTSD, and substance abuse), role transitions into motherhood and self-care	Unclear; delivery personnel trained by first author (PhD-level psychologist)	Primary care and OBGYN clinics	5 (4 during pregnancy, 1 postpartum); mean 3 60 min.	Pregnant: Weekly Postpartum: ≤2 weeks post-delivery 14 weeks (mean)
Nonpregnant									
Hegarty et al, 2013[86] Fair N=272 (52 physicians)	Nonpregnant Multiple family practice clinics in Victoria, Australia	Women 16-50 who screened positive for fear of their partner in the past 12 months‡	C(IPV)	Physician training to respond to women who screen positive for IPV and deliver a brief in-person IPV counseling intervention to screen positive women	NA	Family practice physicians	Family practice clinic	1 (median), range 1-6 30 min.	Intermittent (per authors, frequency and number of visits depended on patient need) NR (varied per authors)

Appendix G Table 4. IPV KQ4: Detailed Characteristics of Interventions for Included RCTs

Author, Year Quality Sample Size	Population Recruitment Setting	Source Population	Category	Intervention Description	Additional (Non-IPV) Intervention Components	Delivery Provider	Delivery Site	Number of Sessions Length of Session(s)	Frequency Intervention Duration*
Miller et al, 2011[89] Fair N=904	Nonpregnant 4 family planning clinics in Northern California, U.S.	Women 16-29 who agreed to a followup interview	C(IPV)	Provider training to deliver in-person enhanced IPV screening, education, and counseling for IPV/reproductive coercion and response to IPV exposure; all women received brief education and inquiry, those who disclosed IPV receivied more resources/ counseling	NA	Trained paraprofes-sional reproductive health specialists	Family planning clinics	1 <1 min to "longer" for those who disclosed IPV/sexual coercion	Once (no followup described for those who disclosed abuse) NA
Miller et al, 2016[88] Fair N=3,540	Nonpregnant 25 family planning clinics (17 clinicians) in Western PA, U.S.	Women 16-29 who agreed to a followup interview	C(IPV)	Clinician and staff training to deliver in-person universal screening/ education, and counseling (emphasizing harm reduction strategies) for IPV/reproductive coercion; additional support, including referrals to victims' services, provided to those who screened positive	NA	Medical assistants, health educators, or clinicians	Family planning clinic	1 <1 min, plus "additional time" for those who disclosed IPV/sexual coercion	Once (no followup described for those who disclosed abuse) NA
Rhodes et al, 2015[87] Fair N=592	Nonpregnant 2 affiliated urban academic EDs in Philadelphia, PA, U.S.	Women 18-64 who screened positive for IPV and heavy drinking	C(IPV)	Brief in-person motivational intervention, manual-guided; focused on identifying reasons for change and personal goals	Intervention encouraged participants to identify any linkages between drinking and IPV	Master's-level therapists	ED	2 (1 in-person session followed by telephone call from same therapist) 20-30 min. (in-person session, telphone call NR)	One telephone call 10 days after initial visit

Appendix G Table 4. IPV KQ4: Detailed Characteristics of Interventions for Included RCTs

Author, Year Quality Sample Size	Population Recruitment Setting	Source Population	Category	Intervention Description	Additional (Non-IPV) Intervention Components	Delivery Provider	Delivery Site	Number of Sessions Length of Session(s)	Frequency Intervention Duration*
Saftlas et al, 2014[91] Fair N=204	Nonpregnant 2 family planning clinics in rural Iowa, U.S.	Women ≥18 who screened positive for current partner IPV	C(IPV)	In-person motivational interviewing focused on individual goal setting to improve health and increase safety	NA	Trained field coordinators	Family planning clinic	4 (1 baseline face-to-face session followed by 3 telephone calls) Baseline: 60 min. (in person) Followup: 10-15 min. (telephone)	Baseline, 1 month, 2 months, and 4 months 4 months
Tiwari et al, 2012[94] Tiwari et al, 2010[90] Good N=200	Nonpregnant 1 community outpatient center, Hong Kong	Women ≥18 yrs who screened positive for IPV	C(IPV)	Advocacy intervention comprising in-person empowerment (e.g., individual safety plan), informal counseling, telephone support, and linkage to community resources; women received a pamplet reinforcing intervention content	NA	Trained research assistants (registered social workers)	Community health center	13 (1 in-person, 12 telephone) Baseline: 30 min. in-person Followup: 15-20 min. telephone 24-hour access to hotline for additional support	Weekly (88% completion) 12 weeks

* Refers to the duration of the active intervention and not the timing of outcome assessment.
† Over the course of the intervention, 13.6 weekly visits occurred in year 1 (on average), tapering to 25 percent participation by year 3.
‡ Eligible physicians (for training) included those who worked ≥3 sessions per week, used electronic records, and ≥70% of their patients spoke English. Patients of eligible providers were mailed a survey regarding participant and screening for fear of partner.

Abbreviations: C=counseling; CBT=cognitive behavioral therapy; ED=emergency department; HV=home visits; IPV=intimate partner violence; N=number; NA=not applicable; NR=not reported; OBGYN=obstetrician/gynecologist; PPD= postpartum depression; PTSD=post-traumatic stress disorder.

Appendix G Table 5. Results of KQ4 Studies Reporting on IPV Exposure

Author, Year Study Design Study Name Quality	Population Group (N)	Overall (Any) IPV Exposure Measure Results	Physical Abuse Exposure Measure Results	Psych. Abuse Exposure Measure Results	Sexual/Other Abuse Exposure Measure Results
Bair-Merritt et al, 2010[80] RCT Hawaiian HSP Fair	Pregnant/postpartum G1: Home visits: Weekly home visits from paraprofessionals, linkage to services (373) G2: Usual care (270)	CTS-2, adj. IRR, of average IPV events per person-year* 3 years: 7.50 vs. 9.55 IRR: 0.86 (0.73 to 1.01) 7–9 years):† 3.35 vs. 4.01 IRR: 0.95 (0.77 to 1.17) CTS-2, N (%) with any IPV event at 1 year: G1: 143 (44) G2: 103 (55)	CTS-2 (physical assault), adj. IRR, of events per person-year 3 years: 5.23 vs. 6.68 IRR: 0.85 (0.71 to 1.00) 7–9 years:† 2.32 vs. 2.72 IRR: 0.87 (0.70 to 1.09) CTS-2 (injury), Adj. IRR, of events per person year 3 years: 1.18 vs.1.67 IRR: 0.86 (0.67 to 1.12) 7–9 years:† 0.55 vs. 0.88 IRR: 0.78 (0.56, 1.08)	CTS-2 (verbal abuse), adj. IRR, of events per person-year 3 years: 18.35 vs. 20.86 IRR: 0.97 (0.87 to 1.10) 7–9 years:† 15.77 vs. 15.40 IRR: 1.14 (0.97 to 1.34)	CTS-2 (sexual violence), adj. IRR, of average IPV events per person-year 3 years: 1.13 vs. 1.21 IRR: 1.02 (0.81 to 1.28) 7–9 years:† 0.12 vs. 0.22 IRR: 0.83 (0.56, 1.22)
El-Mohandes et al, 2008[82]; Kiely et al, 2010[85]; El-Mohandes et al, 2011[92] RCT Fair	Pregnant/postpartum G1: Individual cognitive behavioral intervention delivered during prenatal care visits (specific to IPV and other risk factors) (452) G2: Usual care (461)	CTS-2, % experiencing IPV, overall sample Baseline, N (%)‡ G1: 169 (37.4) G2: 167 (36.2) Postpartum (recurrence since baseline), N (%) G1: 39 (8.6) G2: 52 (11.3) Change in % from baseline to postpartum (G1 vs. G2): -28.8 vs. -24.9; p=0.074 Subgroup of women experiencing IPV at baseline, % with recurrence (baseline to postpartum) Adj. ORs (95% CI)‖ 0.48 (0.29 to 0.80)	CTS-2, physical IPV exposure during followup (G1 vs. G2) Baseline to 22–26 weeks gestation: Adj. OR, (95% CI):§ 0.49 (0.27 to 0.91) Absolute RD: 0.054 22–26 weeks gestation to 34–38 weeks gestation: Adj. OR, (95% CI): 0.56 (0.27 to 1.17) Absolute RD: 0.054 34–38 weeks gestation to postpartum interview: Adj. OR, (95% CI): 0.47 (0.27 to 0.82) Absolute RD: 0.050	NR	CTS-2, sexual IPV exposure (G1 vs. G2) Baseline to 22–26 weeks gestation Adj. OR, (95% CI): 0.39 (0.15 to 1.03) Absolute RD: 0.031 22–26 weeks gestation to 34–38 weeks gestation: Adj. OR, (95% CI): 0.99 (0.46 to 2.16) Absolute RD: 0.018 34–38 weeks gestation to postpartum interview: Adj. OR, (95% CI): 0.99 (0.46 to 2.16) Absolute RD: 0.001

Appendix G Table 5. Results of KQ4 Studies Reporting on IPV Exposure

Author, Year Study Design Study Name Quality	Population Group (N)	Overall (Any) IPV Exposure Measure Results	Physical Abuse Exposure Measure Results	Psych. Abuse Exposure Measure Results	Sexual/Other Abuse Exposure Measure Results
Tiwari et al, 2005[83] RCT Fair	Pregnant/postpartum G1: In-person counseling focused on empowerment and safety advice (51) G2: Usual care for abused women (wallet-sized card with information on community resources) (55)	NR	CTS-2, mean score (SD) Minor physical violence Baseline: G1: 1.3 (3.0) G2: 0.7 (1.6) 6 weeks postpartum G1: 0.05 (0.4) G2: 0.51 (1.3) Mean difference (95% CI) -1.0 (-1.8 to 0.17); p=0.05 Severe physical violence Baseline G1: 0.82 (3.0) G2: 0.35 (1.2) 6 weeks postpartum G1: 0.25 (1.2) G2: 0.17 (0.54) Mean difference (95% CI) 0.08 (-0.26 to 0.42); p=NS	CTS-2, mean score (SD) Psychological aggression Baseline: G1: 3.1 (2.8) G2: 2.8 (2.5) 6 weeks postpartum G1: 0.79 (1.0) G2: 1.6 (2.2) Mean difference (95% CI) -1.1 (-2.2 to -0.04); p=0.05	CTS-2, mean score (SD) Sexual abuse Baseline G1: 0.16 (0.63) G2: 0.18 (0.80) 6 weeks postpartum G1: 0.03 (0.11) G2: 0.12 (0.55) Mean difference (95% CI) -0.07 (-0.30 to 0.16); p=NS
Sharps et al, 2016[81] Cluster RCT by home visiting program DOVE Trial Fair	Pregnant/postpartum G1: Domestic Violence Enhanced Home Visitation Program (DOVE), structured brochure-based IPV intervention added to standard home visitation (124) G2: Standard home-visiting protocol (4–6 prenatal visits, 6–12 postnatal visits over 2 years) (115)	CTS-2, adj. mean decrease in IPV scores from baseline to 24 months (SD): G1: -40.82 (NR) G2: -35.87 (NR) Mean difference between groups in change from baseline score (G1 vs. G2): -4.95; p<0.01	NR	NR	NR

Appendix G Table 5. Results of KQ4 Studies Reporting on IPV Exposure

Author, Year Study Design Study Name Quality	Population Group (N)	Overall (Any) IPV Exposure Measure Results	Physical Abuse Exposure Measure Results	Psych. Abuse Exposure Measure Results	Sexual/Other Abuse Exposure Measure Results
Zlotnick et al, 2011[84] RCT Fair	Pregnant/postpartum G1: Interpersonal psychotherapy based (25) G2: Control, educational material and a listing of resources for IPV (21)	CTS-2: frequency of IPV acts, mean (SD): Baseline (past-year incidence): G1: 33.4 (28.4) G2: 38.7 (39.0) Frequency since last assessment (SD) 6 weeks (from baseline): G1: 7.8 (15.6) G2:12.7 (24.1) 2 weeks postpartum: G1: 7.3 (11.6) G2: 5.9 (9.0) 3 months postpartum: G1: 16.3 (28.6) G2: 12.7 (24.1) Overall interaction across all groups and time periods: p=0.44	NR	NR	NR
Hegarty et al, 2013[86] Cluster RCT (by physician) Fair	Nonpregnant G1: Physician training to respond to women and deliver a brief IPV counseling intervention (137) G2: Usual care (135)	CAS score ≥7 N positive/N analyzed (%) Baseline: G1: 101/135 (75) G2: 93/132 (71) 12 months: G1: 44/93 (47) G2: 40/96 (42) Change from baseline to 12 months in % with CAS score ≥7 (G1 vs. G2): -28 vs. -29	NR	NR	NR

Appendix G Table 5. Results of KQ4 Studies Reporting on IPV Exposure

Author, Year Study Design Study Name Quality	Population Group (N)	Overall (Any) IPV Exposure Measure Results	Physical Abuse Exposure Measure Results	Psych. Abuse Exposure Measure Results	Sexual/Other Abuse Exposure Measure Results
Miller et al, 2011[89] Cluster RCT by clinic Fair	Nonpregnant G1: Clinician training to deliver enhanced IPV screening, education, and counseling for IPV and appropriate referrals (453; 96 IPV exposed) G2: Usual car (2 violence screening questions on intake form, usual clinic protocol for positive disclosures) (451; 60 IPV exposed) Co-intervention: Card listing local violence-related resources	Recent IPV (past 3-month physical or sexual violence)[#] Total sample N positive (%) Baseline: G1: 96 (21.2) G2: 60 (13.5) 3–6 months: G1: 97 (22.1) G2: 70 (15.7) Difference between groups NS per authors; rates of IPV exposure in subgroup experiencing IPV at baseline NR			Pregnancy coercion (past 3-month, using investigator developed 4-item scale), total sample N positive (%) Baseline: G1: 41 (9.3) G2: 35 (7.9) 3–6 months: G1: 31 (7.5) G2: 32 (7.6) Pregnancy coercion in subgroup of women with recent IPV exposure at baseline; N positive (%) Baseline G1: 22 (23.2) G2: 15 (25.4) 3–6 months: G1: 9 (10.5) G2:14 (23.7) AOR, (95% Ci) 0.29 (0.09 to 0.91) Birth control sabotage (past 3-month, 5-item investigator developed scale); Total sample N positive (%) Baseline G1: 47 (10.7) G2: 31 (7.0) 3–6 months: G1: 18 (4.4) G2: 20 (4.8)

Appendix G Table 5. Results of KQ4 Studies Reporting on IPV Exposure

Author, Year Study Design Study Name Quality	Population Group (N)	Overall (Any) IPV Exposure Measure Results	Physical Abuse Exposure Measure Results	Psych. Abuse Exposure Measure Results	Sexual/Other Abuse Exposure Measure Results
Miller et al, 2011[89] Cluster RCT by clinic Fair (continued)					Birth control sabotage in subgroup of women with recent IPV exposure at baseline N positive (%) Baseline G1: 23 (24.2) G2: 10 (17.0) 3–6 months G1: 8 (9.3) G2: 5 (8.5) AOR, (95% CI) 0.71 (0.17 to 2.94)
Miller et al, 2016[88] Cluster RCT by clinic Fair	Nonpregnant G1: Clinicians and staff IPV education training (1/2 day), discussion of IPV encouraged for all encounters, guided by palm-sized brochure (1,429) G2: Usual care (standard IPV question on intake sheet; referral if IPV disclosed) (1,396)	Recent exposure to IPV (3 items, physical or sexual, measuring past 3 months IPV) baseline to 12 months, G1 vs. G2: Overall sample Adj. RR** (95% CI) 1.07 (0.84 to 1.38) Subgroup reporting IPV at baseline Adj. RR** (95% CI) 1.16 (0.82 to 1.64	NR	NR	Recent reproductive coercion (10 items measuring exposure over past 3 months) baseline to 12 months, G1 vs. G2: Overall sample Adj. RR** (95% CI) 1.50 (0.95 to 2.35) Subgroup reporting recent IPV at baseline Adj. RR** (95% CI) 1.19 (0.63 to 2.22)

Appendix G Table 5. Results of KQ4 Studies Reporting on IPV Exposure

Author, Year Study Design Study Name Quality	Population Group (N)	Overall (Any) IPV Exposure Measure Results	Physical Abuse Exposure Measure Results	Psych. Abuse Exposure Measure Results	Sexual/Other Abuse Exposure Measure Results
Rhodes et al, 2015[87] RCT Fair	Nonpregnant G1: Brief motivational intervention during ED visit (239) G2: Assessed control (232) G3: No contact control (121) Co-intervention: All received usual care and a standard list of social service resources	Experienced any IPV in past week (CTS-2 score ≥1) Baseline G1: 4.5 (3.8 to 5.2) G2: 4.9 (4.0 to 5.7) G3: 5.9 (4.7 to 7.2) 3 months G1: 5.2 (3.5 to 5.2) G2: 4.7 (3.8 to 5.6) G3: 3.3 (2.3 to 4.3) 6 months G1: 3.0 (2.3 to 3.6) G2: 3.3 (2.6 to 4.1) 12 months G1: 3.1 (2.3 to 3.9) G2: 3.8 (2.8 to 4.8) OR, (G1 vs. G2) for experiencing IPV at 3 months: 1.02; 95% CI, 0.98 to 1.06; p=0.33 CTS-2 score, mean (95% CI) Baseline G1: 9.8 (8.6 to 11.0) G2: 10.3 (8.9 to 11.6) G3: 12.7 (01.5 to 14.9) 3 months G1: 10.3 (8.9 to 11.6) G2: 8.5 (7.0 to 10.0) G3: 7.4 (5.4 to 9.4) 6 months G1: 6.2 (5.1 to 7.3) G2: 6.1 (4.8 to 7.4) 12 months G1: 12.7 (10.5 to 14.9) G2: 6.8 (5.2 to 8.4)	NR	NR	NR

Appendix G Table 5. Results of KQ4 Studies Reporting on IPV Exposure

Author, Year Study Design Study Name Quality	Population Group (N)	Overall (Any) IPV Exposure Measure Results	Physical Abuse Exposure Measure Results	Psych. Abuse Exposure Measure Results	Sexual/Other Abuse Exposure Measure Results
Tiwari et al, 2012[94] Tiwari et al, 2010[90] RCT Good	Nonpregnant G1: Advocacy intervention, in-person interview, empowerment pamphlet to support the information provided, scheduled weekly telephone calls, 24-hour access to a hotline for additional support (100) G2: Control (100)	NR	CTS-2, mean score (SD) Physical assault Baseline G1: 1.68 (4.21) G2: 1.55 (4.10) 3 months G1: 1.27 (3.22) G2: 3.21 (6.07) 9 months: G1: 0.23 (1.27) G2: 0.45 (1.74) Adj. difference (3–9 months)†† -0.35 (-0.80 to 0.10); p=.013	CTS-2, mean score (SD) Psych. aggression Baseline G1: 18.54 (10.20) G2: 18.95 (10.36) 3 months G1: 23.67 (15.89) G2: 20.84 (10.45) 9 months: G1: 10.07 (5.91) G2: 12.11 (8.57) Adj. differences (3 months to 9 months): †† -1.87 (-3.34 to -0.40); p=0.01	CTS-2, mean score (SD) Sexual coercion Baseline G1: 0.68 (3.32) G2: 0.14 (0.73) 3 months G1: 0.33 (1.29) G2: 1.11 (2.70) 9 months: G1: 0.03 (0.30) G2: 0.14 (0.75) Adj. difference (3 months to 9 months): †† -0.02 (-0.12 to 0.09); p=0.60

* Analyses adjusted for missing data; imputed data adjusted for child age, program site, maternal mental health comorbidity, problem alcohol use, and past-year employment with control group as referent. Overall IPV rates also adjusted for baseline IPV (continuous term).

† The values for the long-term followup reflect the time period when the child was approximately 7 to 9 years of age (4–6 years after the home-visiting intervention ended).

ǂ Baseline information obtained at approximately 13 weeks gestation; numbers refer to women in the overall study who reported any acts of IPV in the year before study entry

§ Adjusted for depression and substance use.

ǁ Adjusted for depression and substance use. Authors also report outcomes at each specific time point during pregnancy and postpartum visit. Women in the intervention group were less likely to be victimized at all time points, but the difference between groups at the postpartum visit was not statistically significant (12.7% vs. 21.2%; p=0.063)

¶ Analyzes adjusted for missing data (multiple imputation), maternal age, maternal depression, and site (urban/rural).

Per authors, recent (past 3-month) experiences of physical and sexual violence were assessed using items modified from the Conflict Tactics Scales and the Sexual Experiences Survey.

** Models adjusted for baseline values, survey time point, interaction between baseline and time point, and clustering; missing data accounted for using multiple imputation.

†† Between-group difference adjusted for baseline values.

Abbreviations: AOR=adjusted odds ratio; CAS=Composite Abuse Scale; CI=confidence interval; CTS-2=Conflict Tactics Scale-2; DOVE=Domestic Violence Enhanced Home Visitation Program; ED=emergency department; G=group; HSP=Health Start Program; IPV=intimate partner violence; IRR=incidence rate ratio; KQ=key question; N/n=sample size; NR=not reported; NS=not significant; RCT=randomized, controlled trial; RD=risk difference; RR=risk ratio ; SD=standard deviation.

Appendix G Table 6. Results of IPV KQ4 Studies Reporting QOL, Mental Health, and Pregnancy Outcomes

Author, Year Study Design Quality	Population	G1 (N analyzed) G2 (N analyzed)	Quality-of-Life Measure Results	Mental Health and Pregnancy Outcomes Results
El-Mohandes et al, 2008[82]; Kiely et al, 2010[85]; El-Mohandes et al, 2011[92] RCT Fair	Pregnant/ postpartum	G1: Individual cognitive behavioral intervention delivered during prenatal care visits (IPV: 452, 169 experiencing IPV at baseline; pregnancy outcomes 403) G2: Usual prenatal care (IPV: 461, 167 experiencing IPV at baseline; pregnancy outcomes 416)	NR	Pregnancy outcomes Intervention vs. control N positive/N analyzed (%) for women experiencing IPV throughout pregnancy Low birth weight (<2,500 g) G1: 17/150 (12.8) G2: 24/156 (18.5) p=0.204 Very low birth weight (<1,500 g) G1: 1/150 (0.8) G2: 6/156 (4.6) p=0.052 Preterm birth (<37 weeks of gestation) G1: 18/150 (13.0) G2: 27/156 (19.7) p=0.135 Very preterm birth (<33 weeks of gestation) Intervention: 2/150 (1.5) Control: 9/156 (6.6) p=0.030
Tiwari et al, 2005[83] RCT Fair	Pregnant/ postpartum	G1: In-person session by midwife counselor focused on empowerment to enhance abused women's independence and control (advice concerning safety, choice making, and problem solving), followed by brochure with reinforcing information (51) G2: Usual care for abused women consisting of wallet-sized card with information on community resources (55)	SF-36, difference between groups in component scores at 6 weeks (G1–G2): Physical functioning 10 (2.5 to 18); p≤0.05 Role-physical 19 (1.5 to 37); p≤0.05 Bodily pain -13 (-23 to -2.2); p≤0.05 General health -1.3 (-6.4 to 3.9); p=NS Vitality 0.45 (-5.4 to 6.3); p=NS Social functioning 3.1 (-4.3 to 11); p=NS Role-emotional 28 (9.0 to 47); p≤0.05 Mental health 0.28 (-4.4 to 5.0); p=NS	Postpartum depression EPDS score ≥10 at 5 weeks N positive/N analyzed (%) G1: 9/51 (18%) G2: 25/55 (45%) RR, (95% CI) 0.36 (0.15 to 0.88)

Appendix G Table 6. Results of IPV KQ4 Studies Reporting QOL, Mental Health, and Pregnancy Outcomes

Author, Year Study Design Quality	Population	G1 (N analyzed) G2 (N analyzed)	Quality-of-Life Measure Results	Mental Health and Pregnancy Outcomes Results
Zlotnick et al, 2011[84] RCT Fair	Pregnant/ postpartum	G1: Interpersonal psychotherapy-based (25) G2: Control, educational material and a listing of resources for IPV (21) Co-intervention: Usual medical care provided at the clinic	NR	Postnatal depression (EPDS scores), mean (SD) Baseline: G1: 7.18 (4.36) G2: 8.77 (6.07) Postpartum (6 weeks from baseline) G1: 6.84 (4.10) G2: 9.84 (6.05) 2 weeks postpartum: G1: 6.68 (5.54) G2: 7.14 (5.18) 3 months postpartum: G1: 6.12 (5.86) G2: 8.00 (5.74) Overall interaction across all groups and time periods: p=0.20 LIFE* structured interview, cases of MDD diagnosed during study period, N cases/N analyzed (%): G1: 6/25 (24%) G2: 5/21 (24%) p=NS per authors PTSD (Davidson Trauma Scale), mean (SD) Baseline: G1: 9.96 (10.62) G2: 16.11 (23.49) Postpartum (6 weeks from baseline): G1: 5.58 (7.51) G2:12.08 (17.60) 2 weeks postpartum: G1: 6.04 (7.75) G2: 10.09 (16.09) 3 months postpartum: G1: 8.44 (13.98) G2: 9.19 (14.20) Overall interaction across all groups and time periods: p=0.24

Appendix G Table 6. Results of IPV KQ4 Studies Reporting QOL, Mental Health, and Pregnancy Outcomes

Author, Year Study Design Quality	Population	G1 (N analyzed) G2 (N analyzed)	Quality-of-Life Measure Results	Mental Health and Pregnancy Outcomes Results
Zlotnick et al, 2011[84] RCT Fair (continued)				LIFE* structured interview, cases of PTSD diagnosed during study period, N cases/N analyzed (%): G1: 1/25 (5%) G2: 0/21 (0%) p=NS per authors
Hegarty et al, 2013[86] Cluster RCT (by physician) Fair	Nonpregnant	G1: Physician training to respond to women and deliver a brief IPV counseling intervention (137) G2: Usual care if presented with concerns (135) Co-intervention: All doctors received basic IPV education associated with CME credit. All women received a list of resources.	SF-12 mental health status, G1 vs. G2, adj.† mean difference (95% CI), p-value 6 months: 0.8 (-2.3 to 3.9); p=0.61 12 months: 2.4 (-1.0 to 5.7); p=0.17 WHOQOL-Bref. G1 vs. G2, adj. mean difference (95% CI); p-value Physical, 6 months 4.9 (1.1–8.6), p=0.01 Physical, 12 months 2.7 (-1.4–6.8), p=0.20 Psychological, 6 months 2.5 (-1.2–6.2), p=0.19 Psychological, 12 months 2.3 (-1.5–6.1), p=0.23 Social, 6 months 4.8 (-1.0–10.7), p=0.11 Social, 12 months 2.1 (-4.3–8.5), p=0.52 Environmental, 6 months 1.0 (-2.6–4.7), p=0.57 Environmental, 12 months 1.9 (-1.7–5.5), p=0.29	HADS depression score ≥8 Adj. OR, (95% CI), p-value 6 months: 0.4 (0.1 to 1.0); p=0.05 12 months: 0.3 (0.1 to 0.7); p=0.005 HADS anxiety score ≥8 Adj. OR, (95% CI), p-value 6 months: 0.5 (0.2 to 1.3); p=0.14 12 months: 0.4 (0.2 to 1.2); p=0.11
Miller et al, 2016[88] Cluster RCT by clinic Fair	Nonpregnant	G1: Clinicians and staff IPV education training (1/2 day), Discussion of IPV encouraged for all encounters, guided by palm-sized brochure (1,429) G2: Usual care (standard IPV question on intake sheet; referral if IPV disclosed) (1,396) Co-intervention: Women's health resource sheet	NR	Unintended past-year pregnancy‡ N positive/N analyzed (%) G1: 50/1,429 (3.5) G2: 40/1,396 (2.9) Adj. RR§ (95% CI) 1.03 (0.80 to 1.94) Women with recent IPV/RC at baseline N positive/N analyzed (%) G1: 41/176 (23.2) G2: 32/162 (19.8) Adj. RR§ (95% CI) 1.15 (0.67 to 1.96)

Appendix G Table 6. Results of IPV KQ4 Studies Reporting QOL, Mental Health, and Pregnancy Outcomes

Author, Year Study Design Quality	Population	G1 (N analyzed) G2 (N analyzed)	Quality-of-Life Measure Results	Mental Health and Pregnancy Outcomes Results
Saftlas et al, 2014[91] RCT Fair	Nonpregnant	G1: Motivational interviewing conducted by field coordinator (98) G2: In-person meeting with field coordinator or certified domestic abuse advocate who provided written information on community-based resources and referrals (106)	NR	Depression, Center for Epidemiologic Studies Short Depression Scale (10-items, score range 0–30) Score, mean (SD) Baseline G1: 15.7 (6.4) G2: 14.3 (5.9) 6 months G1: 11.7 (5.5) G2: 11.8 (6.1) Difference between groups in mean change from baseline: -4.2 vs. -2.6; p=0.07
Tiwari et al, 2012[94] Tiwari et al, 2010[90] RCT Good	Nonpregnant	G1: Advocacy intervention, in-person interview, empowerment pamphlet to support the information provided, scheduled weekly telephone calls, 24-hour access to a hotline for additional support (100) G2: Usual care (100)	SF-12, Physical Composite Score, mean (SD) G1: 43.28 (7.67) G2: 43.32(7.59) 3 months G1: 42.37 (7.22) G2: 42.39 (7.37) 9 months: G1: 44.35 (7.64) G2: 43.55 (7.30) Adj. differences (3–9 months): 0.37 (-0.91 to 1.65); p=0.58 SF-12, Mental Health Composite Score, mean (SD) G1: 26.58 (7.64) G2: 25.44 (7.66) 3 months G1: 34.79 (8.87) G2: 34.39 (8.26) 9 months: G1: 38.26 (8.56) G2: 37.89 (8.08) Adj. differences (3–9 months): 0.80 (-1.16 to 2.77); p=0.42	Depression CBDI-II,‖ mean score (SD) Baseline G1: 37.88 (14.90) G2: 39.33 (15.60) 3 months G1: 24.38 (14.45) G2: 39.33 (15.60) 9 months G1: 16.10 (10.69) G2: 18.25 (11.40) Adj. difference (95% CI) over 3–9 months: -2.66 (-5.06 to -0.26); p=0.03

* At 3 months postpartum, the longitudinal Interval Followup Examination (LIFE) structured interview was administered to assess for MDD and PTSD diagnoses.

† Adjusted for baseline measures and practice location in addition to missing data (using multiple imputation). For QOL between-group differences, "estimated effect size" refers to mean difference in scores.

ǂ Based on 7-item investigator developed tool.

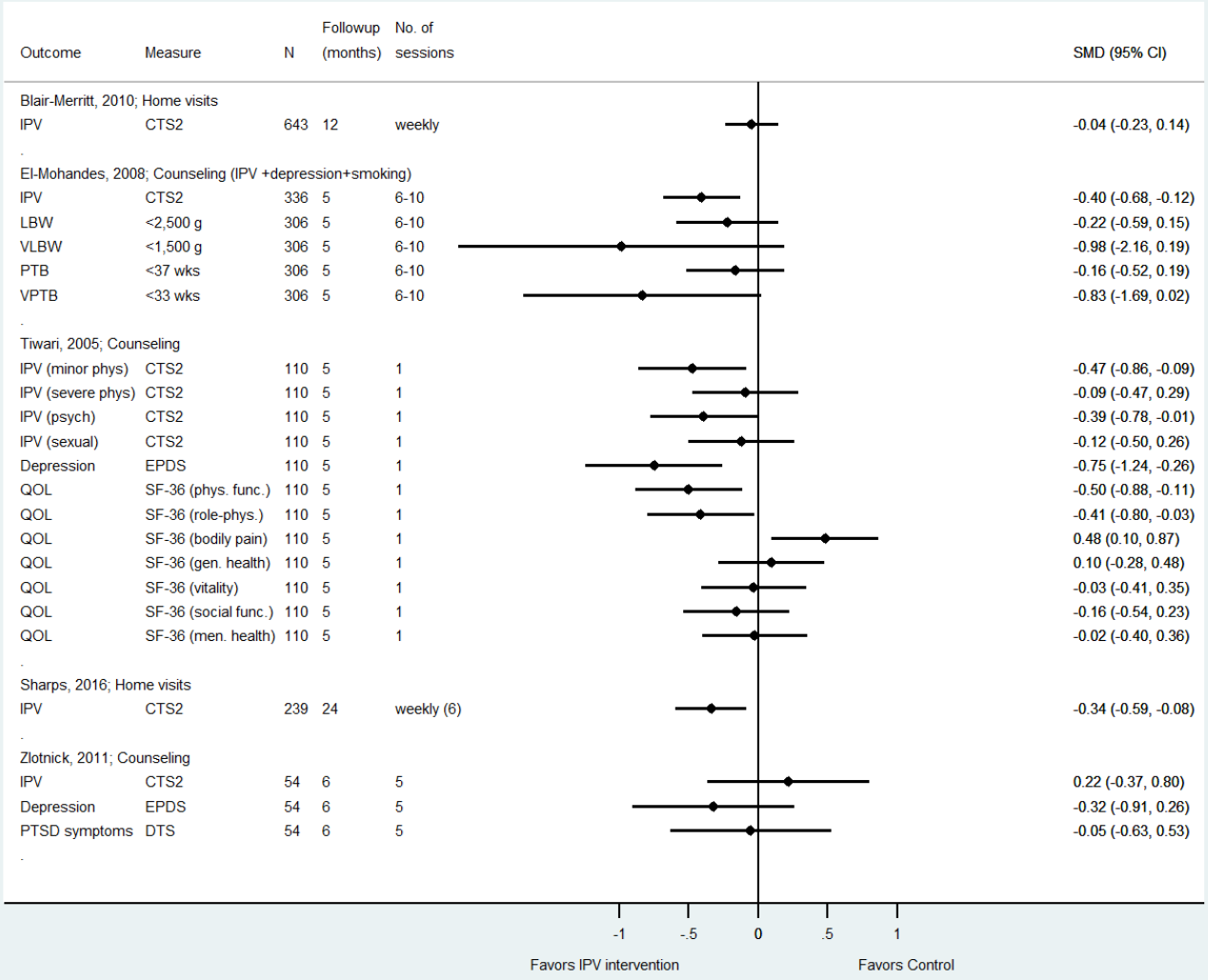
§ Adjusted for baseline value, time point, interaction term between baseline outcome value and time point, age, race, education, number of clinics in cluster and cluster rural/urban status, and accounting for clients within clinics within the cluster randomization.

Appendix G Table 6. Results of IPV KQ4 Studies Reporting QOL, Mental Health, and Pregnancy Outcomes

[l] Chinese version of the Beck Depression Inventory II; range of scores is from 0 to 36, higher scores indicate higher levels of depression.
[¶] Between-group difference (intervention-control) adjusted for baseline values.

Abbreviations: CBDI-II=Chinese Beck Depression Inventory-II; EPDS=The Edinburgh Postnatal Depression Scale; G=group; HADS =Hospital Anxiety and Depression Scale ; IPV=intimate partner violence; KQ=key question; LIFE=Longitudinal Interval Follow-up Examination; MDD=major depressive disorder; N/n=sample size; NR=not reported; NS=not sufficient; OR=odds ratio; RC=Reproductive Coercion; RCT=randomized, controlled trial; RR=relative risk; SD=standard deviation; SF-36=Short Form Health Survey-36 Item; WHOQOL-Bref=World Health Organization Quality of Life-Bref instrument.

Appendix G Figure 1. Benefit of IPV Interventions in Studies Enrolling Pregnant or Postpartum Women (Organized by Study)



Appendix G Figure 2. Benefit of IPV Interventions in Studies Enrolling Nonpregnant Women (Organized by Study)