Implementing successful intimate partner in health care settings: evidence generated from a realist-informed systematic review

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ABSTRACT

We undertook a synthesis of existing studies to re-evaluate the evidence on program mechanisms of intimate partner violence (IPV) universal screening and disclosure within a health care context by addressing how, for whom, and in what circumstances these programs work. Our review is informed by a realist review approach, which focuses on program mechanisms. Systematic, realist reviews can help reveal why and how interventions work and can yield information to inform policies and programs. A review of the scholarly literature from January 1990 to July 2010 identified 5046 articles, 23 of which were included in our study. We identified studies on 17 programs that evaluated IPV screening. We found that programs that took a comprehensive approach (i.e., incorporated multiple program components, including institutional support) were successful in increasing IPV screening and disclosure/identification rates. Four program components appeared to increase provider self-efficacy for screening, including institutional support, effective screening protocols, thorough initial and ongoing training, and immediate access/referrals to onsite and/or offsite support services. These findings support a multi-component comprehensive IPV screening program approach that seeks to build provider self-efficacy for screening. Further implications for IPV screening intervention planning and implementation in health care settings are discussed.

Key Words

Domestic violence; Women; Systematic review; Realist review; Health care; Screening

Introduction

Intimate partner violence (IPV) – a pattern of coercion, physical abuse, sexual abuse or threat of violence in intimate relationships – is a serious public health issue (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). The World Report on Violence and Health documented the prevalence of lifetime physical assault for women in the range of 22–30% for the United States, Canada and United Kingdom (Krug et al., 2002). Due to high rates of injury, mental health morbidity (Campbell, 2002; Campbell, Snow-Jones, & Dienemann, 2002), and health care utilization resulting from IPV (Day, 1995; O'Campo, Ahmad, & Cyriac, 2008; Snow-Jones et al., 2006; Bonomi, Anderson, Rivara, & Thompson, 2009) and because of the high levels of support for IPV screening among patients (Gielen et al., 2006; Ramsay, Richardson, Carter, Davidson, & Feder, 2002), there have been widespread calls to address IPV within the health care system through vigilant (U.S. Preventive Services Task Force, 2004; Wathen & MacMillan, 2003b) or routine inquiry (American Academy of Family Physicians, 2005; American Medical Association, 2000; Cherniak, Grant, Mason, Moore, & Pellizzari, 2005a).Victims interact with the health care system for both routine and abuse-related health care, and providers in all settings should be prepared to identify, support, and refer these individuals.

Evaluation of IPV screening programs in health care settings is growing, including several systematic reviews. Previous reviews have been equivocal in terms of locating strong evidence to recommend universal screening in health care settings (Anglin & Sachs, 2003; Feder et al., 2009; Nelson, Nygren, McInerney, & Klein, 2004; Spangaro, Zwi, & Poulos, 2009; Stayton & Duncan, 2005; U.S. Preventive Services Task Force, 2004; Waalen, 2000), and there remains a lack of understanding about the determinants of successes and failures in the implementation of screening programs (MacMillan et al., 2009; Spangaro et al., 2009). Previous reviews have also failed to acknowledge the variation in contexts for screening and have often combined results from disparate settings, which may blur the evidence for whether or not screening programs are successful.

Previous studies and reviews suggest that IPV screening should be evaluated according to how well it reduces IPV (Anglin & Sachs, 2003; Nelson et al., 2004; Wathen & MacMillan, 2003a). However, as we depict in Fig. 1, a change or reduction of IPV may not be the most appropriate outcome for screening. Intervention for IPV is a complex, multi-step process. Given the numerous steps and intervening factors between screening and IPV reduction, not all of which are under the control of the health care system or health care providers, a more productive strategy would be to consider the program's sequence of outcomes along this process. In this review, we focused on the initial steps of the IPV clinical management process: screening and risk assessment and identification of IPV victims (Fig. 1).

There are two approaches to screening: screening all women or patients regardless of presumed risk (a universal, routine screening approach) or screening only those individuals suspected to be most at risk (a non-universal, case-finding approach). The debate about whether IPV screening programs should or should not be universal has been addressed in the literature (Cherniak, Grant, Mason, Moore, & Pellizzari, 2005b; Janssen, Dascal-Weichhendler, & McGregor, 2006; Lachs, 2004; McFarlane, Groff, O'Brien, & Watson, 2006; Taket et al., 2003, Taket, Wathen, & MacMillan, 2004); however, this is not a topic that we are able to address in this review. In order to ensure that we reviewed comparable screening programs, and since most guidelines recommend routine screening, we chose to focus on only programs that adopted a universal, routine screening approach.

Realist approach to systematic review

A realist review "unpacks" the inner mechanisms of interventions by making explicit the underlying theories about how programs work (Pawson, Greenhalgh, Harvey, & Walshe, 2004), and then systematically gathering evidence to test these theories. More specifically, a realist review uses the contextual characteristics of programs to help explain program success or failure. Diverse evidence is included and examined (e.g., scholarly literature, key documents, interviews with key informants) to help reveal why and how interventions work. This approach to evaluating existing evidence is explanatory (i.e., how "x" works) rather than judgmental (i.e., how well did "x" work) because it combines both theoretical thinking and empirical evidence about program workings and context.

Realist review methodology has recently been used to evaluate complex health-related interventions including housing and mental health programs, smoking cessation programs, and school feeding programs (Greenhalgh, Kristjansson, & Robinson, 2007; Kaneko, 1999; O'Campo et al., 2009) and has been specifically mentioned as an approach for examining IPV screening (Spangaro et al., 2009). We conducted a realist-informed systematic review to determine why and how universal IPV screening programs in health care settings are effective.

Methods

Search strategy

The search was limited to articles published in English, in both industrialized and non-industrialized countries, between January 1990 and July 2010. Search terms included: intimate partner violence and its synonyms, screen, model, program, intervention, best practice, innovation, success, health service, program evaluation, program development, referral, and consulation. Search terms were entered into medical and social sciences databases using Boolean operators: MEDLINE, EBM Reviews, PsychINFO, ASSIA, Social Sciences Abstacts, Social Sciences Citation Indexed, Social Services Abstracts, Sociological Abstracts, and Violence and Abuse Abstracts. Evidence was collected from scholarly literature, which included both qualitative and quantitative evidence, theoretical literature on behavior change, and descriptive articles of programs that had been evaluated. The study received approval from the Research Ethics Board at St. Michael's Hospital.

The electronic database search yielded a total of 5046 articles, excluding duplicates, which were entered into a Reference Manager database. Three teams of two reviewers independently screened article titles and abstracts against pre-specified inclusion and exclusion criteria (Table 1), resulting in the identification of 72 potentially relevant articles for which full-text copies of articles were retrieved (Fig. 2). Each full-text article was independently reviewed by at least two reviewers, with disagreements resolved through discussion with a third reviewer. Additional articles were

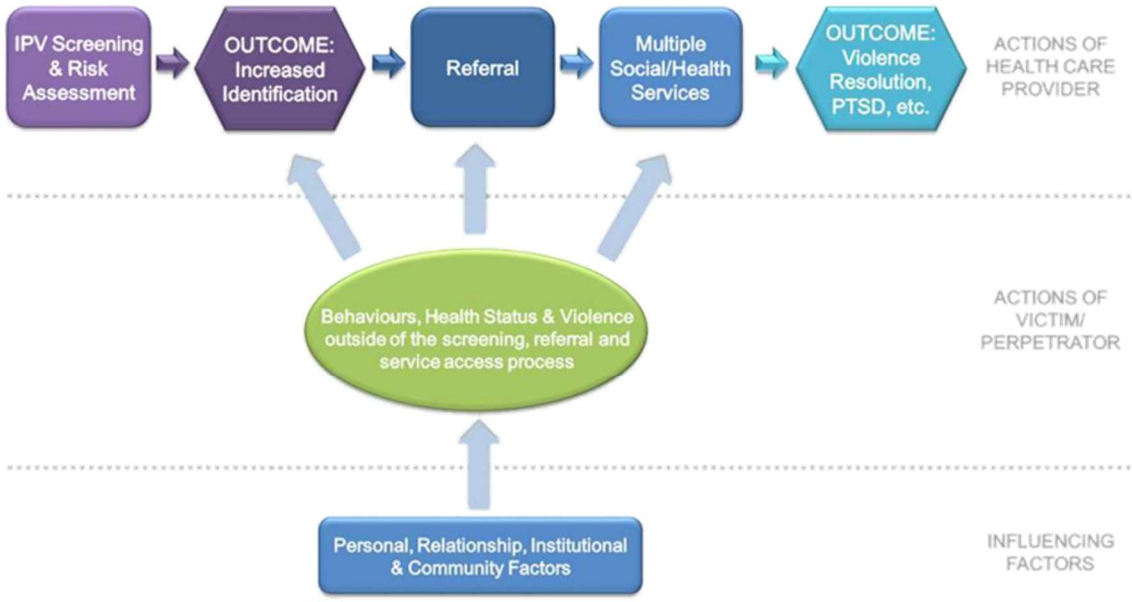

Fig. 1. Complexity of the process of IPV screening, referral and problem resolution.

Table 1
Inclusion/exclusion criteria.

Study Focus	
Health care-based IPV screening interventions	Includes but is not limited to: • Programs administered by regulated health care professionals, including physicians, social workers, nurses, and midwives within a health care context, including physician's offices, community health centres, and hospital departments (e.g., emergency, psychiatry, obstetrics, and surgical units) • Programs intended to encourage patients to disclose current or past/previous IPV • Programs that included the process of screening, identifying, and/or formally documenting the patient's disclosure of IPV • Programs that focused on both prevention and intervention strategies while including program components such as: IPV-specific educational materials, staff training, screening protocols and documentation of findings, and implementation of some form of treatment or care Excludes: • Programs administered in shelters, non-health care related community organizations, or dentistry settings
Universal or routine care screening efforts	Includes but is not limited to: • Programs aimed at screening patients presenting to a health care setting, regardless of the reason for the health care visit or the type of abuse being screened Excludes: • Training programs and/or IPV treatment or care programs (usually in the form of referrals) that did not focus on screening processes or protocols • Articles aimed exclusively at evaluating health care provider training programs or screening protocols, unless the training or protocol was part of a broader evaluation of a screening program and provided evaluative data on IPV screening or disclosure/identification rates • Articles that focused on the treatment and care of already diagnosed or identified victims
Study Participation	
Patients presenting to a health care setting	Excludes: • IPV-related batterer prevention and treatment programs • Violence or date rape prevention programs • Intervention programs for children and/or adolescents
Study Design	
Original evaluation studies	Includes but is not limited to: • Case studies, case series, cohort studies, case control studies, cross-sectional studies, pre-post studies, randomized controlled trials, non-randomized controlled trials, interrupted time series, and quasi-experimental studies • Studies in which the methodological design evaluated the effectiveness of screening and disclosure/identification processes • Qualitative evidence concerning provider screening behaviors as well as participant perceptions of the screening process within the health care context, only if they were related to a specific program that had been evaluated against screening outcomes Excludes: • Articles that only assessed the components of screening (e.g., tools or modes of inquiry) • Literature that simply described a screening program. Note: Articles that could be linked to an evaluation study were included as supplementary evidence with which to more fully understand the program components • Reviews and editorials
Screening Outcomes	
Rate of screening	Includes: • The proportion of women who were screened regardless of whether they disclosed IPV
Rate of disclosure/identification	Includes: • The proportion of women who were identified as victims of IPV as a result of screening and risk assessment

identified from the citation lists of reviewed articles and through recommendations from peer-reviewers. In total, our search strategy yielded 23 included articles (Fig. 2), representing 17 screening programs (Table 2). Primary reasons for excluding studies were: the IPV screening program used diagnostic or case-finding approaches, the program did not include evaluative data to indicate program success or failure, or the program was not in a health care setting. In instances where more than one article describing the same program was included, data were extracted from the most recent study.

Appraising study and overall program quality

To assess study quality, we evaluated the strength of the study's design components including the methods of evaluation, internal and external validity, and use of sound outcome measures (Petticrew & Roberts, 2006). To assess the rigor of the evaluation design and to determine whether large sources of bias may have been introduced, we also evaluated the appropriateness and comparability of the comparison groups (if present). Studies that were deemed "high" in methodological quality involved an appropriate control group, had inclusive eligibility criteria, used standardized and direct screening questions, provided details about their sample size, and had comparatively long study periods. Studies were typically considered weaker if they failed to include an appropriate control group, had unstructured or indirect screening questions, or had comparatively short study periods. All included studies were synthesized regardless of whether they were deemed "high" or "weak" quality.

Appraising the quality of the program description

We also used quality appraisal techniques (Dixon-Woods, Agarwal, Jones, Young, & Sutton, 2005; Popay et al., 2006; Spencer, Ritchie, Lewis, & Dillon, 2003) to assess whether the studies presented "thick" or "thin" descriptions of the program components and their mechanisms (Pawson, 2006; Petticrew & Roberts, 2006). Studies were rated along the "thick"/"thin" continuum according to whether they provided information on how program components affected the rate of IPV screening or disclosure/identification. "Thick" program descriptions were often detailed, described factors that affected program implementation, and considered the reasons for anomalous results (Arai, Roen, Roberts, & Popay, 2005; Dixon-Woods et al., 2005; Popay et al., 2006; Spencer et al., 2003). "Thin" studies lacked information on program components, implementation, and most importantly, discussions of reasons for program success or failure.

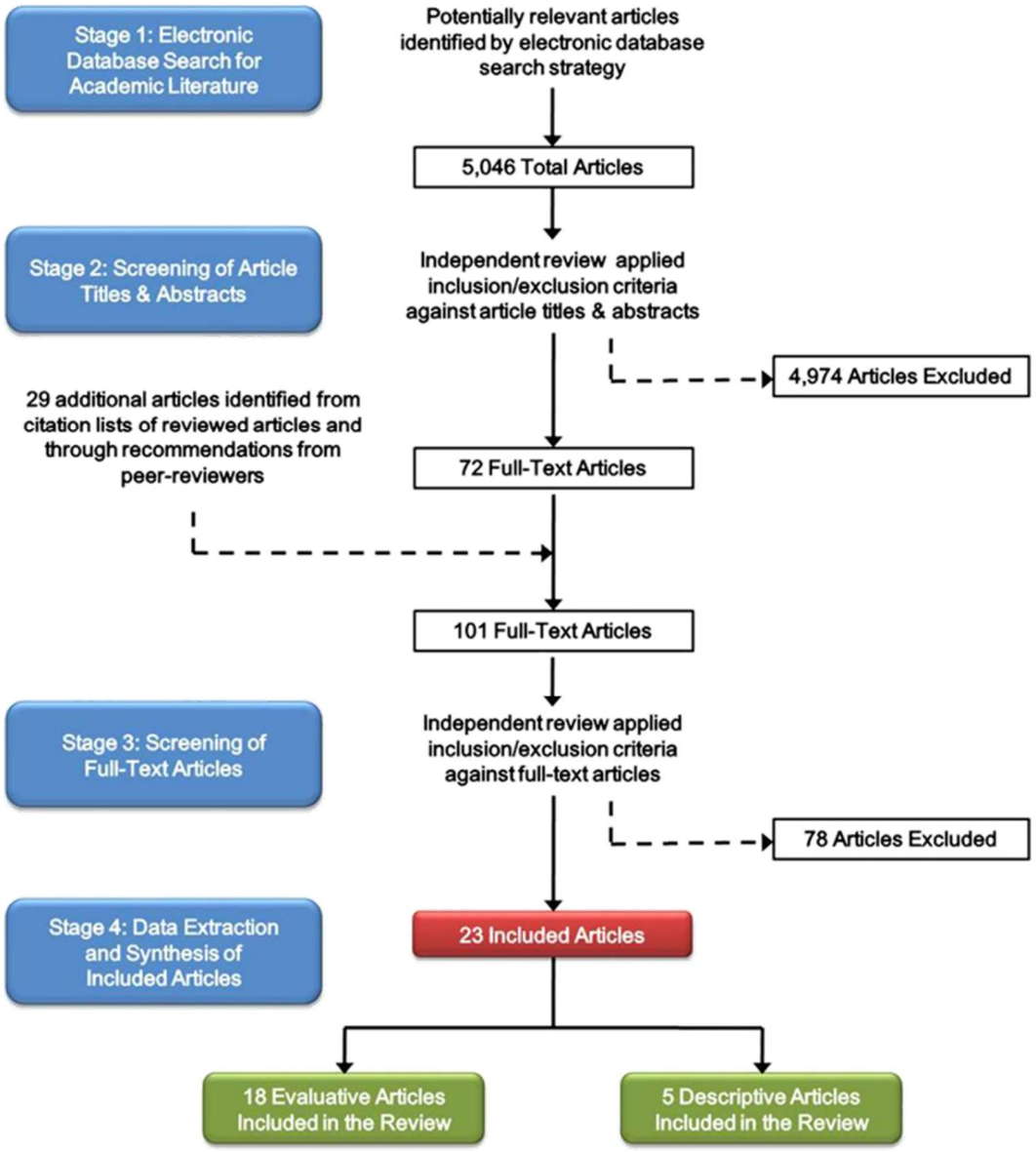

Fig. 2. Search strategy.

Indicators of program success or failure

The following program outcomes were considered as indicators of program success or failure: (1) the rate of screening alone (i.e., the proportion of women who were screened regardless of whether they disclosed IPV) and (2) the rate of disclosure/identification (i.e., the proportion of women who were identified as victims of IPV as a result of screening and risk assessment). Programs were considered "successful" if a statistically significant increase in any of the defined outcomes was observed and sustained post-intervention. Prevalence rates of IPV were not evaluated, nor were the severity or frequency of abuse or injuries. A secondary outcome for our review (where available) was providers' comfort level and self-efficacy to perform IPV screening.

Extraction and synthesis of evidence

Synthesis of the study findings was undertaken by two authors and involved independently reading the articles several times. Both authors jointly engaged in discussions to achieve agreement upon quality appraisal ratings, key methodological features, and main study findings for each program. We began our synthesis with evidence from studies with "high" quality methodological designs and those with "thicker" descriptions of program mechanisms, as these studies were of better quality and provided more detailed information about components that contributed to program success. In this sense, we qualitatively gave more weight to evidence provided by these studies. Consistent with realist approaches, our synthesis focused on mapping out, documenting, and identifying patterns in program mechanisms. We started with initial ideas about mechanisms for how IPV screening programs worked and why (Pawson et al., 2004). Upon reviewing each study, we extracted information to support or refute these proposed mechanisms, which were revised and refined throughout the synthesis process. Less rigorous "weak" studies and those that provided "thin" descriptions were used to test our evolving theories, but also to challenge alternative explanations for program mechanisms. After the two authors completed the initial synthesis, the results were reviewed and confirmed by all authors. Following the development of our conceptual framework,

Table 2
Description of the studies included in this realist-informed review of screening programs for intimate partner violence in health care settings.

Lead Author; Location	Health Care Setting	Program Approach; Intervention Program Components	Study Quality; Program Description	Screening Related Results
Bacchus et al. (2007); London, England	MAT and SH	*Non-Comprehensive* Effective Screening Protocol Thorough Initial Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: Moderate; Thick *Study Design*: Qualitative interviews with staff and patients; pre-post training surveys; chart audits on screening documentation *Study length*: Approximately one year evaluation for a program that was initiated three years prior. *Sample size*: Varies *Control Group*: N/A[b]	Screening increased from 15% to 45% for a one-year period in the maternity care clinic, but did not change in the sexual health clinic.
Coyer et al. (2006); Mid-western USA	PC	*Non-Comprehensive* Effective Screening Protocol Immediate Referral/Access to Support Services[a]	*Study Quality*: Weak; Thin *Study Design*: Retrospective electronic chart audit for screening and disclosure *Study Length*: 12 months *Sample Size*: $N - 1690$ audits pre-intervention; $N - 859$ audits post-intervention *Control Group*: none	100% of charts had evidence of screening (question on patient intake) post-intervention. <1% disclosed abuse.
Gadomski et al. (2001); New York State, USA	Multi-setting	*Non-Comprehensive* Effective Screening Protocol Immediate Referral/Access to Support Services[a]	*Study Quality*: Weak: Thick *Study Design*: Pre- and post-intervention of staff and record audits *Study Length*: Three years *Sample Size*: $N = 232$ health care participants with complete data; $N = 271$ medical records *Control Group*: N/A[b]	Screening increased from 36% pre-intervention to 39% post-intervention.
Grunfeld et al. (1994); Vancouver, Canada	ED	*Non-Comprehensive* Effective Screening Protocols	*Study Quality*: Weak; Thin *Study Design*: Review of screening documentation *Study Length*: 1 week *Sample Size*: $N - 338$ *Control Group*: none	Of the 338 screened, 252 were asked (75%) and 6% disclosed abuse
Harwell et al. (1998); Philadelphia, USA	CHC	*Non-Comprehensive* Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: Moderate; Thick *Study Design*: Multi-component evaluation *Study Length*: 12 months *Sample Size*: $N - 506$ *Control Group*: pre-post	Increases in provider comfort with screening were not sustained at 3-month follow-up. Knowledge increased and was sustained to 3 months. The rate of screening for IPV increased from 5% at baseline to 25% post-intervention; no increases in documentation of abuse.
Loughlin et al. (2000); *Fanslow and Norton (1999)*; *Fanslow et al. (1998)*; *Spinola et al. (1998)*; Auckland, New Zealand	ED	*Non-Comprehensive* Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: High; Thick *Study Design*: Community Intervention Trial *Study Length*: 12 months *Sample Size*: $N = 10{,}961$ patient records *Control Group*: Yes	Significant immediate post-intervention differences were not sustained at one-year post-intervention.
McCaw et al. (2001); California, USA	PC and ED	*Comprehensive* Institutional Support Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: Moderate; Thin *Study Design*: Multi-component evaluation of an institution/community implementation of DV screening activities *Study Length*: 12 months *Sample Size (pre- and post-intervention sample)*: Baseline = 190 Intervention = 207 *Control Group*: none	Significant but modest post-intervention differences reported for member recall of being asked about domestic abuse ($\chi^2 - 12.18$ $p - 0.0005$). Screening increased from 5% at baseline to 19% post-intervention.

(*continued on next page*)

Table 2 (*continued*)

Lead Author; Location	Health Care Setting	Program Approach; Intervention Program Components	Study Quality; Program Description	Screening Related Results
McColgan et al. (2010); Philadelphia, USA	PAED	*Non-Comprehensive* Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: Moderate: Thick *Study Design*: Provider surveys and chart reviews *Study Length*: 12 months *Sample Size*: $N = 72$ pediatric residents; $N = 402–599$ charts at baseline and 3- and 8-month follow-up *Control Group*: none	Significant improvements in residents' knowledge of IPV and comfort levels regarding IPV screening at baseline and 3-month follow-up. Significant decrease in perceived barriers to IPV screening at follow-up. Significant increase in chart documentation of screening from zero to 33% at 8 months. Less than 2% of screens were positive.
McNutt et al. (2002); Albany, USA	PC	*Non-Comprehensive* Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: High; Thin *Study Design*: Chart reviews of patients *Study Length*: 7 months *Sample Size*: $N - 558$ *Control Group*: Yes	No significant difference in documentation of IPV at the intervention site versus the control site. Approximately 5% of women who were screened had positive screens.
Ramsay et al. (2002); Sydney, Australia	ED	*Non-Comprehensive* Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: Weak; Thin *Study Design*: Multi-component evaluation of the pilot *Study Length*: 12 weeks *Sample Size*: $N = 2446$ *Control Group*: N/A[b]	10% of women presented were screened; of these 14.6% disclosed previous or current domestic violence.
Short et al. (2002); *Hadley et al. (1995)*; *Hadley (1992)*; Minnesota, USA	Mainly ED, but also CC, IC, and PRE	*Comprehensive* Institutional Support Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: High; Thick *Study Design*: Multi-component evaluation of hospital staff & patients *Study Length*: 24 months *Sample Size*: Staff: $N = 211$ Patient Chart Review: $N = 2531$ *Control Group*: Yes	Significant increase in patient's report of abuse and patient chart intimate partner abuse documentation ($F - 5.85$ $p <$ 0.02). Significant increases in provider scores on self-efficacy to identify and interact with victims of abuse ($F = 33.65$; $p < 0.000$) and referral of victims to services ($F = 11.79$; $p < 0.001$).
Spangaro et al. (2007); New South Wales, Australia	ANTE, PAED, MH, and DA	*Comprehensive* Institutional Support Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: Weak; Thin *Study Design*: Annual 1 month snapshot of all screening forms in NSW *Study Length*: 12 months *Sample Size*: $N = 16,290$ *Control Group*: N/A[b]	A significant increase in screening rates; rates more than doubled over 3 years. Some services showed high rates, 80% or more screened in alcohol and drug services and women's services.
Thurston et al. (2009); *Thurston et al. (2007)*; Calgary, Canada	CHC	*Comprehensive* Institutional Support Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: Weak; Thick *Study Design*: Intensive monitoring to assess practice change in first year of universal screening program *Study Length*: 12 months *Sample Size*: $N - 33,201$ patients, representing 51,303 unique medical visits; $N - 60$ staff respondents *Control Group*: none	93% of electronic medical records had indication of whether screening occurred; monthly screening rates ranged from 28% to 52% over the year. Disclosure rate (number of times DV was reported in patient visits) was 15%. Among patient visits where DV was disclosed, 61% were female.
Ulbrich and Stockdale (2002); Western Pennsylvania, USA	FP and PRE	*Comprehensive* Institutional Support Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: Moderate; Thick *Study Design*: Multi-component evaluation of an area wide DV screening program in a rural setting *Study Length*: 6 months *Sample Size*: $N = 16$ *Control Group*: none	Significant increase in screening and documentation from 37% to 100% post-intervention. Significant increase in providers' comfort level with knowledge of what to do if a patient discloses (56–93%); making a domestic violence referral (56–86%); and screening patients for domestic violence (38–93%).
Vecchio et al. (1998); Elmhurst, New York, USA	TC (level one)	*Non-Comprehensive* Effective Screening Protocols/Valid Tools Immediate Referral/Access to Support Services[a]	*Study Quality*: Weak; Thin *Study Design*: Cross-sectional survey of patients *Study Length*: 12 months *Sample Size*: $N - 46,929$ or 76% of those seen in the ED *Control Group*: none	17 (<0.01%) victims identified through screening; a greater proportion self-disclosed outside of screening efforts ($N - 106$)

Wilst and McFarlane (1999); South-western USA	PRE	*Non-Comprehensive* Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: High; Thin *Study Design*: Audit of medical charts pre-post *Study Length*: 15 months pre-intervention, 15 months post-intervention (30 months) *Sample Size*: $N = 360$ *Control Group*: Yes ($N = 180$)	Intervention clinics had significantly higher screening at 15 months (88%) compared to 0% in the comparison clinic. Detection increased to 7% at the intervention clinic, compared to 1% at the comparison clinic. Women were 7 times more likely to be identified as abused after the protocol was in place than before (95% CI: 2.35, 19.56).
Wills et al. (2008); New Zealand	Multi-setting	*Comprehensive* Institutional Support Effective Screening Protocols/Valid Tools Thorough Initial and Ongoing Staff Training Immediate Referral/Access to Support Services[a]	*Study Quality*: Moderate; Thick *Study Design*: Pre-post design *Study Length*: Multi-year (Nov. 02–Feb. 06) *Sample Size*: $N = 6176$ audits of clinical records; $N = 85$ staff interviews *Control Group*: none	Significant staff improvements in confidence to take abuse history, respond to disclosure, and refer to services. Significant increase in screening rates for partner abuse (ranges 6–100% depending on service). Significant increasing trend in abuse disclosure over time.

ANTE = antenatal care; CC = critical care; CHC = community health centre; DA = drug and alcohol services; ED = emergency department; FP = family planning clinic; IC = intensive care; MAT = maternity care clinic; MH – mental health services; PC – primary care; PRE – prenatal care; PAED – pediatric services; SH – sexual health clinic; TC – trauma centre.

[a] Includes both onsite and/or offsite referral services.

[b] N/A = not applicable; control group not possible due to study design (e.g., pre/post-intervention study).

we searched relevant databases for theoretical literature to support our proposed mechanism.

Results

"Comprehensive" program approach

During the evidence extraction and synthesis, a pattern emerged where programs that incorporated numerous screening components at multiple levels and had institutional support tended to have more successful outcomes. These programs were labeled "comprehensive" for the purposes of our review. We considered programs "non-comprehensive" if they did not broadly incorporate multiple screening components or if they were lacking institutional support.

Six programs took a "comprehensive" approach to IPV screening (Table 2). The common components identified among "comprehensive" programs, in addition to institutional support, were using effective screening protocols, providing thorough initial and ongoing training, and providing immediate access or referral to onsite and/or offsite support services. These components are described in more detail below. "Comprehensive" programs yielded significantly increased rates of IPV screening, disclosure, and identification and sustained these rates over the study period (Table 2). Some "comprehensive" programs also reported significant increases in providers' self-efficacy to perform IPV screening.

Institutional support

All "comprehensive" programs had institutional support for IPV screening, which included investment, approval, and support for the integration or institutionalization of the program at higher levels within health care settings or institutions, and occasionally involved making linkages with community resources. In many of these programs, information about the prevalence and impact of IPV, as well as information about resources in the community for individuals experiencing IPV, were communicated to patients and providers, raising organization-wide awareness and support (McCaw, Berman, Syme, & Hunkeler, 2001; Short, Hadley, & Bates, 2002; Spangaro, 2007; Thurston et al., 2009; Wills, Ritchie, & Wilson, 2008). This support helped reinforce the necessity of screening, and facilitated support for the victim through creating an overall culture of IPV awareness and its health care-based solutions, and thus seemed to facilitate other program components (McCaw et al., 2001; Short et al., 2002). For example, in the study by Thurston et al. (2009), institutional support for a community health centre-based pilot program was demonstrated through the partnering of a regional emergency department and a community-based IPV committee in the development of the program's screening guidelines, documentation procedures, and funding options, with the plan to implement the program in urgent care centres across the region. In another program, institutional support was received from the district health board through management and staffing support for the mandatory IPV screening training sessions, and through collaboration with community agencies in the development of screening and referral guidelines and the design and delivery of staff training (Wills et al., 2008).

Effective screening protocols

Many programs acknowledged that providers expressed concerns about asking appropriate questions and being uncertain about what to do when an individual discloses IPV; these concerns tended to undermine provider confidence and screening behavior (Hadley, Short, Lezin, & Zook, 1995; McCaw et al., 2001). Successful IPV

screening programs overcame this challenge by incorporating screening protocols that clearly outlined guidelines for these issues. IPV questions were standardized to ensure they were appropriate and direct, and some programs incorporated environmental prompts for screening (McCaw et al., 2001; Ulbrich & Stockdale, 2002). Protocols also provided details on how to assess patient safety, review patient options, and/or refer victims to support services (McCaw et al., 2001; Spangaro, 2007; Ulbrich & Stockdale, 2002).

For example, the New South Wales Health Initiative in Australia implemented a structured screening protocol that instructed providers to only conduct screening when the patient was alone, to first inform patients that they may choose not to answer questions, and to report IPV if risk of harm or abuse is disclosed. If a woman answered 'yes' to screening questions, providers were instructed to follow-up regarding whether they wanted help or were in immediate danger for purposes of referral (Spangaro, 2007). This kind of guided protocol can promote screening behavior and enhance providers' perception that they are knowledgeable and equipped to help IPV victims (McLeer, Anwar, Herman, & Maquiling, 1989; Stayton & Duncan, 2005).

Thorough initial and ongoing training

Many of the successful programs incorporated thorough initial and ongoing mandatory training sessions for staff (McCaw et al., 2001; Short et al., 2002; Ulbrich & Stockdale, 2002; Wills et al., 2008). Ulbrich and Stockdale (2002) noted considerable increases in comfort with screening and referral among providers six months after participating in training. Thorough training approaches in which the extent and nature of the problem was explained as well as guidance toward implementing the screening protocol at all stages of the detection process were provided to staff. This training was seen as instrumental for building high provider self-efficacy for screening. Two programs provided mandatory training to staff and clinicians and offered refresher training sessions to staff (Thurston et al., 2009; Wills et al., 2008). The program evaluated by Wills et al. (2008) also involved community agencies in their training sessions, which served to raise comfort with screening by establishing staff linkages with referral services. In these programs, training functioned to convince the provider of the need to screen and offer help, increased the providers' comfort with asking questions about IPV, built the providers' awareness of screening procedures and supports, and helped the provider understand that screening will make a difference (McCaw et al., 2001; Short et al., 2002; Spangaro, 2007; Ulbrich & Stockdale, 2002; Wills et al., 2008).

Immediate access/referral to onsite and/or offsite support services

The availability of support services that enable the victim to address their short- and long-term health, social, and safety needs emerged as another important component of comprehensive programs. Staff in various programs noted that unless assistance could be provided to victims who disclose violence, screening would not be useful. It was clear within these programs that providers wanted to know that the screening and subsequent actions taken would make a difference to the patients' well-being (Salber & McCaw, 2000). Successful screening programs had support services in place for individuals who disclosed IPV including, but not limited to, mental health services, safe shelters or transitional housing, health care, employment assistance, and legal services (Short et al., 2002; Ulbrich & Stockdale, 2002).

In some comprehensive programs, selected services, especially those related to maintaining or promoting safety, were available 24 hours a day (Short et al., 2002; Spangaro, 2007; Ulbrich & Stockdale, 2002). Onsite assistance by staff with specialized training in IPV also helped to facilitate the referral process (McCaw et al., 2001; McColgan et al., 2010; Short et al., 2002). While some successful models had offsite services, programs that provided immediate access to support, for example through an onsite case manager or coordinator, showed the most improvement in screening rates (Hadley et al., 1995; Short et al., 2002) as well as provider confidence and self-efficacy (McCaw et al., 2001; Short et al., 2002). The Family Violence Prevention Project in Richmond, California, instituted access to an onsite domestic violence specialist who provided victims with a danger assessment, safety planning, and access to an onsite support group (McCaw et al., 2001). Facilitating immediate access to offsite community services, in addition to providing onsite support, ensured ongoing communication with community service providers to sustain up-to-date referral lists and facilitate smooth transitions to care (Short et al., 2002; Ulbrich & Stockdale, 2002).

Non-comprehensive approaches to IPV screening

We evaluated eleven universal screening programs that we considered to be "non-comprehensive". In general, these programs yielded no change in rates compared to a control group or found only minimal increases in screening outcomes that were not sustained during the study period. Many "non-comprehensive" programs were comprised of a screening protocol with a short, one-time training. Three programs introduced general screening questions with few other supports (Coyer, Plonczynski, Baldwin, & Fox, 2006; Grunfeld, Ritmiller, Mackay, Cowan, & Hotch, 1994; Vecchio, Bhatia, & Sciallo, 1998). In these cases, the questions were fairly non-specific (e.g., "Is anyone hurting you?") and very few victims were identified.

Another, more extensive program implemented a 3–6 hour training session (based on trauma theory) to several Community Health Centers in Philadelphia, Pennsylvania, including follow-up support for two years post-training (Harwell et al., 1998). Although knowledge of IPV, and to a lesser extent comfort with participant screening, increased immediately post-training, these changes were not maintained beyond 3 months after training. Comfort with screening was the single most important predictor of screening implementation.

Bacchus, Aston, Vitolas, Jordan, and Murray (2007) conducted a mixed method one-year evaluation following implementation of a multi-year screening and referral program for IPV in two departments: maternity and genitourinary services. Training was provided through a one-time one-day session that increased knowledge and confidence levels for screening. Maternity services saw significant increases in screening over the period covered by the evaluation, while genitourinary, which had relatively high rates to start (approximately 55%), saw no changes in rates of screening. Significant increases in screening for maternity services were attributed to greater staff attendance at trainings and the rising prominence of onsite advocacy services.

Gadomski, Wolff, Tripp, Lewis, and Short (2001) evaluated a multi-setting screening program in New York State that involved both staff training and the implementation of a clinical screening protocol. While the evaluation observed improved provider self-efficacy to screen post-intervention, it was not clear whether victim identification rates significantly increased. The authors attributed this lack of improvement to inadequate training and to the two-year gap between provider training and evaluation. Low screening levels among a pilot project in Sydney, Australia, were attributed to lack of staff ownership of the program, resulting from unclear rationale for screening, poorly attended training, and no implementation of a formal screening protocol (Ramsden & Bonner, 2002).

Wiist and McFarlane (1999) evaluated a multi-component program that included a screening form on all patient records and an onsite counselor. Screening rates were high (approximately 90%) while the program was in operation; however, rates declined over time, due in part to the erosion of the full program and a lack of ongoing supports (i.e., onsite counselor) for the staff. The onsite counselor was seen as a critical component for success and may have partially substituted for institutional support by functioning as a local champion and reminding providers of the importance of screening.

The OASIS program in Auckland, New Zealand (Fanslow & Norton, 1999; Fanslow, Norton, Robinson, & Spinola, 1998) is another example of the importance of institutional support in IPV screening. This program began as a comprehensive, universal screening approach; nevertheless, after a few months of implementation, the program switched to a case-finding approach, where only those who were suspected to be victims of abuse were screened. This switch resulted from insufficient institutional support for universal screening and a lack of training on the screening protocol. Findings suggested that screening and disclosure rates were no better than the control site (Loughlin, Spinola, Stewart, Fanslow, & Norton, 2000). McNutt, Carlson, Rose, and Robinson (2002) evaluated a screening program in Albany, New York that was also partially comprehensive, including four short sessions of staff education, a screening protocol that flagged the medical records of patients, and access to an onsite social worker. Despite identifying a greater number of IPV victims compared to the control site, the difference was non-significant. As well, identification was biased to severely abused women, likely resulting from a screening protocol that had low sensitivity to detect low to moderate IPV.

Discussion

We present findings from a realist-informed systematic review of IPV screening. Unlike previous systematic reviews that combined routine and universal screening programs with case-finding approaches or that included programs in both health care and non-health care settings, we focused specifically on universal screening efforts occurring in health care settings. We chose the realist approach for two reasons. First, IPV screening and identification is a complex intervention that often includes numerous components operating at multiple levels. A full understanding of this complexity requires information on the provider/program and institutional level factors involved, as well as the community level resources that directly support referral efforts post-screening. Second, the realist approach focuses on *how* the intervention works in context (in this case, within the health care setting) as opposed to *whether* the intervention works. This kind of explanatory focus is particularly useful for effective policy development, program replication in a variety of settings, and program administration.

Based on the evidence that we accumulated through our synthesis, we constructed a conceptual framework that depicts the mechanisms of program success (Fig. 3). The presence of multiple program components operating at various levels of influence (e.g., community, institutional, and program/provider) is related to increased provider confidence and self-efficacy for screening, which functions to create a supportive environment for successful universal screening. As noted in our framework, a critical component of "comprehensive" programs is high levels of institutional support, which can also function to promote other program components. A number of studies labeled as "non-comprehensive" in our review, despite having one or more of these "comprehensive" program components, did not succeed, which we primarily attribute to a lack of institutional support. Some "non-comprehensive" programs that had three of the four strategies (e.g., Wiist & McFarlane, 1999; McColgan et al., 2010; McNutt et al., 2002; Bacchus et al., 2007) did, however, report high screening rates. While it is possible that these programs included institutional support, the published studies did not mention this component.

Theoretical and empirical support for the conceptual framework

After developing our conceptual framework, we sought support from theoretical and empirical sources. Many of the studies we

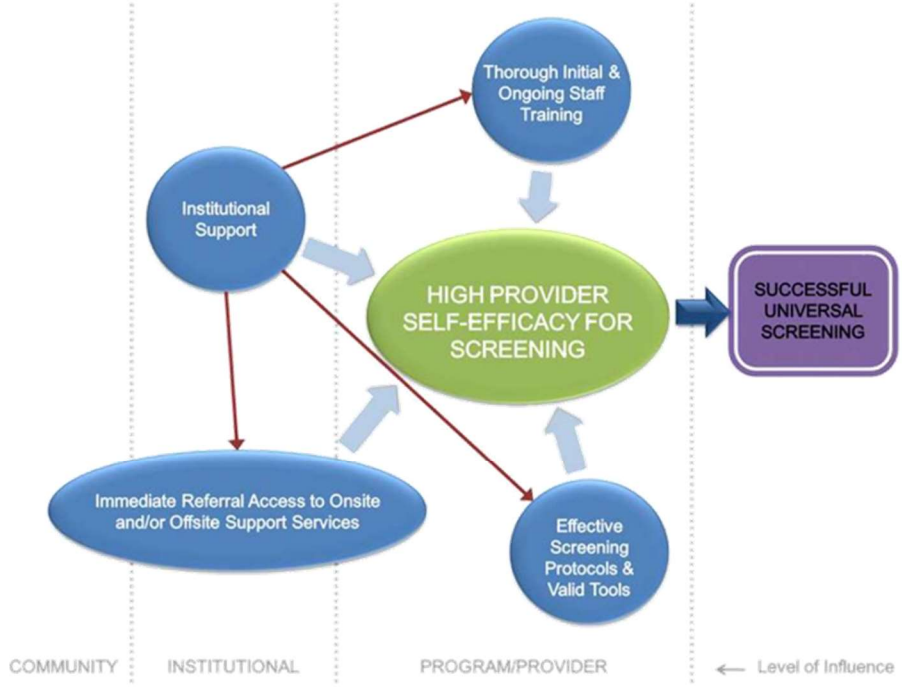

Fig. 3. Conceptual framework for IPV screening in health care settings.

consulted suggested that screening efforts are more successful when providers (i) accept the responsibility of intervening with victims of IPV, (ii) are comfortable intervening (Elliott, Nerney, Jones, & Friedmann, 2002; Gerbert et al., 2002), and (iii) have the resources and time to assess and assist the victim (e.g., Short et al., 2002; Wills et al., 2008). The social cognitive theory for behavior and behavior change resulting from the interaction between behaviors (i.e., the desired behavior or, in our case, IPV screening behavior), personal factors (i.e., the person's beliefs and cognitive competencies), and the environment (i.e., social influences and structures within the environment) explains how and why these components are necessary to achieve effective screening (Bandura, 1986, 1988).

Our conceptual framework is consistent with social cognitive theory in that there are environmental factors, which support and reinforce each other, which in turn influence providers' self-efficacy for screening (thicker arrows) and leads to a successful screening program (e.g., Short et al., 2002; Ulbrich & Stockdale, 2002) (Fig. 3). Several of the studies included in our review also ascribe IPV screening program failure to the absence of key environmental factors such as thorough and ongoing training (Waalen, 2000), detailed screening protocols (McLeer et al., 1989; Stayton & Duncan, 2005), and institutional support (Campbell et al., 2001). The wider literature on screening for partner violence also provides support for these factors impacting provider self-efficacy for screening (Chamberlain & Perham-Hester, 2002; Gutmanis, Beynon, Tutty, Wathen, & MacMillan, 2007; Salber & McCaw, 2000; Waalen, 2000).

Our findings differ from past systematic reviews that have sought to determine the effectiveness and benefits of IPV screening in health care settings. Several (Feder et al., 2009; Nelson et al., 2004; Ramsay et al., 2002; Wathen & MacMillan, 2003a) sought to examine reduction in violence resulting from screening programs; however, as stated earlier, we feel this is not the best outcome to examine given the complexity of the screening process and the myriad of mediating factors between screening and a change or reduction in violence. Wathen and MacMillan (2003a, 2003b) and Nelson et al. (2004) covered areas not discussed in this review, such as comparison of screening tools, interventions to address abuse once detected, abuse among elderly populations, and screening in non-health care settings. Ramsay et al. (2002) and their updated review (Feder et al., 2009) conclude that while IPV detection rates following screening increased in the numerous studies reviewed, there is "insufficient evidence to implement a screening programme for partner violence." However, Ramsay et al. (2002) and Feder et al. (2009) made this conclusion based on evidence across a variety of different IPV-related outcomes (e.g., reduction in IPV, referrals for IPV) and focussed more on *whether* these IPV programs work rather than *how* screening programs work, the topic explored in our realist-informed review. Waalen (2000) also examined increased detection as a result of screening programs in health care settings and concluded that, as with efforts to change provider behaviors for other health-related conditions, "interventions combining predisposing (education) and enabling strategies (additional strategies including written protocols and prompts) were more effective than those involving predisposing strategies alone in changing provider behaviors". Our findings are consistent with those reported by Waalen (2000), but also extend beyond these findings through our development of a IPV-specific screening conceptual framework that identifies the particular predisposing, enabling, and reinforcing strategies needed to maintain a successful program.

According to realist methodology, understanding context is key to assessing why and how programs work (Pawson, 2006; Pawson et al., 2004; Pawson & Tilley, 1997). Limiting our review to health care settings allowed us to focus on a single larger context. However, while we sought to examine variation in type of clinical setting (e.g., emergency departments versus prenatal care settings), we had too few studies in different settings and too little information about such contexts to be able to examine contextual features important to program success or failure.

There are several other limitations to be noted. With the exception of studies by Fanslow et al. (1998), Fanslow and Norton (1999), Short et al. (2002), and Wills et al. (2008), limited program details and process information were provided in the study articles, which prevented us from fully understanding why programs were or were not successful. While most studies reported the results of statistical tests, not all studies reported actual rates, which made it difficult to determine the magnitude of the differences throughout the study period.

We acknowledge that our realist-informed review was based solely upon peer-review literature, primarily peer-review journals. To be more consistent with the realist approach, we would have ideally consulted other sources of evidence for information on programs and confirmation of our framework. While service providers have confirmed the face validity of our framework during conference and organizational presentations, this was not systematically documented.

Studies on IPV screening typically do not assess potential harms that may arise from screening. Such harms might include: disclosure distress, distress over safety, feelings of guilt, concern about the impact on family, friends or the perpetrator, increased perpetration or decreased economic security. Such information is only beginning to emerge, and while recent studies report no or minimal adverse effects associated with screening (Koziol-McLain et al., 2010; MacMillan et al., 2009; Spangaro, Zwi, Poulos, & Man, 2010) or report on only selected harms (e.g, stigmatization of victims, loss of trust in providers' ability to keep information confidential) (Feder et al., 2009; Bacchus et al., 2007), systematic absence of this information precluded us from reporting on harms as an outcome.

Our review focussed on screening as a means to increase detection and intervention for IPV; however, we acknowledge that there may be other ways to encourage disclosure and referrals for IPV, which are not covered in our review. Moreover, there could be additional components of a comprehensive screening model, such as adequate staff time (Waalen, 2000), use of valid screening tools (Feder et al., 2009), and performance-feedback to the staff (Mezey, Bacchus, Haworth, & Bewley, 2002), which were not evaluated due to inadequate or limited information in the reviewed studies. Finally, it is possible that some non-comprehensive programs may have been misclassified, as we had to rely on the information that was contained in the reviewed studies. We did attempt to go beyond what was published in the literature by making contact with the authors to verify program components and gain more insight into why programs were or were not successful, but very few responded to our queries.

Unlike most previous reviews of IPV screening efforts, we limited our focus to screening-related outcomes. Specifically, we focused on rates of screening and disclosure/identification. While we agree with others who have argued that unless IPV prevalence or risk is reduced, screening efforts are of little use (e.g., Bacchus et al., 2007; Feder et al., 2009; MacMillan et al., 2009; Ramsay et al., 2002), the screening process itself is the first step in a longer, more complex set of processes that taken together can have an impact on IPV prevalence (Fig. 1). As a next step, we are undertaking a realist-informed scoping review on the referrals offered to victims of IPV after identification by health care providers. We hope that together these reviews can provide a more comprehensive picture of program components that facilitate effective screening, referral, and IPV resolution.

Our synthesis yielded an empirically supported program theory of how and why programs for IPV can be successful in increasing screening and detection in health care settings. The critical program components we uncovered can be tailored to almost any health care, and possibly non-health care, setting. In order to confirm and improve upon the program theory proposed here, the components of existing programs, as well as why and how these components are contributing to the success of the program, must continue to be documented and publicized. This is a critical step in ensuring that IPV screening programs can be successfully implemented.

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