Evidence Brief: Prevalence of Intimate Partner Violence/Sexual Assault Among Veterans

December 2021

U.S. Department of Veterans Affairs
Veterans Health Administration
Health Services Research & Development Service

Recommended citation: Parr NJ, Young S, Ward R, Mackey K. Evidence Brief: Prevalence of Intimate Partner Violence/Sexual Assault Among Veterans. Washington, DC: Evidence Synthesis Program, Health Services Research and Development Service, Office of Research and Development, Department of Veterans Affairs. VA ESP Project #09-199; 2021.

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This report was prepared by the Evidence Synthesis Program Coordinating Center located at the **VA Portland Health Care System**, directed by Mark Helfand, MD, MPH, MS and funded by the Department of Veterans Affairs, Veterans Health Administration, Health Services Research and Development.

PREFACE

The VA Evidence Synthesis Program (ESP) was established in 2007 to provide timely and accurate syntheses of targeted health care topics of importance to clinicians, managers, and policymakers as they work to improve the health and health care of Veterans. These reports help:

- Develop clinical policies informed by evidence;
- Implement effective services to improve patient outcomes and to support VA clinical practice guidelines and performance measures; and
- Set the direction for future research to address gaps in clinical knowledge.

The program comprises three ESP Centers across the US and a Coordinating Center located in Portland, Oregon. Center Directors are VA clinicians and recognized leaders in the field of evidence synthesis with close ties to the AHRQ Evidence-based Practice Center Program. The Coordinating Center was created to manage program operations, ensure methodological consistency and quality of products, interface with stakeholders, and address urgent evidence needs. To ensure responsiveness to the needs of decision-makers, the program is governed by a Steering Committee composed of health system leadership and researchers. The program solicits nominations for review topics several times a year via the program website.

The present report was developed in response to a request from the Center for Women Veterans. The scope was further developed with input from Operational Partners (below) and the ESP Coordinating Center review team. Comments on this report are welcome and can be sent to Nicole Floyd, Deputy Director, ESP Coordinating Center at Nicole.Floyd@va.gov.

ACKNOWLEDGMENTS

The authors are grateful to Kathryn Vela, MLIS, for literature searching, and the following individuals for their contributions to this project:

Operational Partners

Operational partners are system-level stakeholders who help ensure relevance of the review topic to the VA, contribute to the development of and approve final project scope and timeframe for completion, provide feedback on the draft report, and provide consultation on strategies for dissemination of the report to the field and relevant groups.

Elizabeth A. Estabrooks, MSW
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Peer Reviewers

The Coordinating Center sought input from external peer reviewers to review the draft report and provide feedback on the objectives, scope, methods used, perception of bias, and omitted evidence (see Appendix D in Supplemental Materials). Peer reviewers must disclose any relevant financial or non-financial conflicts of interest. Because of their unique clinical or content expertise, individuals with potential conflicts may be retained. The Coordinating Center works to balance, manage, or mitigate any potential nonfinancial conflicts of interest identified.

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EXECUTIVE SUMMARY

Key Findings

- Considerable variation in sampling, recruitment, and data collection methods used among available studies limits the informativeness and quality of the overall body of evidence on intimate partner violence/sexual assault (IPV/SA) among Veterans and spouses/intimate partners of Veterans.
- Moderate and low strength evidence suggests that psychological/emotional IPV is the most common form of experienced and perpetrated IPV/SA among both Veteran women and men, followed by physical IPV and sexual IPV.
- Most available evidence pertains to experienced IPV/SA among Veteran women and perpetrated IPV/SA among Veteran men. Experienced IPV/SA among Veteran men, IPV/SA perpetrated by Veteran women, and IPV/SA among minority Veterans and intimate partners/spouses of Veterans are understudied.
- Future studies of IPV/SA prevalence among Veterans should attempt to generate prevalence estimates that are applicable to Veterans of the range of ages, sexual and gender identities, races/ethnicities, and geographic contexts present in the Veteran population. Important methods to accomplish this aim include, but are not limited to, stratified random sampling with oversampling of important subgroups, such as historically underrepresented populations.

Intimate partner violence (IPV) includes physical violence, sexual violence including sexual assault (SA), stalking, and psychological aggression by a current or former intimate partner (*ie*, a spouse, dating partner, or sexual partner). Individuals of all ages, gender identities, sexual orientations, educational backgrounds, and socioeconomic statuses may experience IPV/SA. Veteran women experience IPV/SA at higher rates than women in the general US population; whether Veteran men also experience IPV/SA at disproportionately higher rates than the general population has not been well studied and is unclear. The prevalence of SA among Veteran intimate partners is also not fully understood.

The present review aimed to synthesize what is known about the prevalence of experienced IPV/SA (excluding non-partner SA) among Veterans and intimate partners of Veterans by type (physical, sexual, or psychological/emotional), timing (lifetime or past-year), and sociodemographic characteristics, as well as the prevalence of past-year IPV/SA perpetration by Veterans by type and gender identity. A second aim was to describe recruitment strategies and data collection methods used in studies of IPV/SA prevalence.

Background

The Evidence Synthesis Program (ESP) Coordinating Center is responding to a request from the Center for Women Veterans for an Evidence Brief on the prevalence of intimate partner violence/sexual assault (IPV/SA) among Veterans and spouses/intimate partners of Veterans. Findings from this Evidence Brief will be used to respond to activities required by section 5305 of the Johnny Isakson and David P. Roe, M.D. Veterans Health Care and Benefits Improvement Act of 2020 (H.R. 7105). Activities required by the Act are intended to enhance understanding of the scope of IPV/SA among Veterans and spouses/intimate partners of Veterans.

Methods

To identify studies, we searched OVID MEDLINE®, CINAHL, Cochrane Database of Systematic Reviews, and other sources through July 2021. We used prespecified criteria for study selection, data abstraction, and rating internal validity and strength of the evidence. See the Methods section and our PROSPERO protocol for full details of our methodology.

Findings of this review indicate that experienced IPV/SA is prevalent among Veteran women and men (Table ES1). The strongest available evidence was for past-year experienced IPV/SA among Veteran women; limited, low strength evidence was available for Veteran men and spouses/partners of Veterans. Psychological/emotional IPV appears to be the most common form of experienced IPV/SA among Veterans, followed by physical IPV and sexual IPV. Limited and low strength evidence was available on the lifetime prevalence of experienced IPV/SA among Veteran women, while for Veteran men, no information on lifetime prevalence of specific forms of experienced IPV/SA was found. Psychological/emotional IPV was the most common form of experienced IPV/SA across the lifetime for Veteran women. Perpetrated IPV/SA may also be common, particularly among Veteran men, but available evidence is sparse and poor quality. The limited available evidence suggests that psychological/emotional IPV is also the most common form of perpetrated IPV/SA among Veteran women and men.

Very little evidence was found on the role of sociodemographic factors in IPV/SA prevalence. The small number of identified studies used random samples, but were in Veteran women only and were small to moderate in size. This evidence suggests that past-year experienced IPV/SA may decrease with age and may be more prevalent among LGB Veteran women compared with heterosexual Veteran women. A single available study found similar prevalence of past-year experienced IPV/SA among rural and urban Veteran women. Studies reporting differences in experienced IPV/SA by race/ethnicity were inconsistent in their definition of some race/ethnicity subgroups and in their reported prevalence estimates, so it is unclear whether Veterans' race or ethnicity is associated with greater prevalence of experienced IPV/SA. Finally, no prevalence estimates were identified among gender minority (*eg*, transgender) Veterans.

Included studies used a variety of sampling, recruitment, and data collection methods, limiting the comparability and generalizability of available evidence. Some studies used random sampling methods to reduce biases in data collection, while others used convenience samples that are likely poorly representative of the Veteran population and could over- or under-represent the prevalence of various forms of IPV/SA among Veterans. IPV/SA prevalence was most commonly collected via surveys using validated measures of IPV/SA, but measures varied across studies and a number of studies used unvalidated ad hoc measures. Taken together, the considerable methodological variation found among included studies limits the informativeness and quality of the overall body of evidence on IPV/SA prevalence among Veterans.

Table ES1. Key Findings for Experienced IPV

IPV/SA Type	Prevalence	Strength of Evidence
Experienced (Veteran Women)		
Any (Lifetime)	58.0%, 95% CI [43.6, 71.2], *k* = 7	Low
Any (Past-year)	26.0%, 95% CI [16.3, 38.8], *k* = 11	Moderate
Physical (Lifetime)	33.8%, 95% CI [26.2, 42.3], *k* = 7	Low
Physical (Past-year)	7.6%, 95% CI [4.6, 12.4], *k* = 8	Moderate
Sexual (Lifetime)	14.2%, 95% CI [7.0, 26.4], *k* = 7	Low
Sexual (Past-year)	8.0%, 95% CI [4.5, 13.8], *k* = 8	Moderate
Psychological/Emotional (Lifetime)	54.1%, 95% CI [34.5, 72.5], *k* = 4	Low
Psychological/Emotional (Past-year)	19.7%, 95% CI [10.5, 33.7], *k* = 9	Moderate

IPV/SA Type	Prevalence	Strength of Evidence
Experienced (Veteran Men)		
Any (Lifetime)	12.6%, 95% CI [8.1, 19.1], *k* = 2	Low
Any (Past-year)	36.7%, 95% CI [16.1, 63.7], *k* = 3	Low
Physical (Lifetime)	N/A	Insufficient
Physical (Past-year)	7.2%, 95% CI [5.6, 9.1], *k* = 2	Low
Sexual (Lifetime)	N/A	Insufficient
Sexual (Past-year)	2.0%, 95% CI [0.8, 5.0], *k* = 2	Low
Psychological/Emotional (Lifetime)	N/A	Insufficient
Psychological/Emotional (Past-year)	33.2%, 95% CI [7.6, 75.1], *k* = 2	Low

Abbreviations. CI=confidence interval; k=number of studies; N/A=not available.

Future studies of IPV/SA prevalence among Veterans should attempt to generate prevalence estimates that are applicable to Veterans of the range of ages, sexual and gender identities, races/ethnicities, and geographic contexts present in the Veteran population. Important methods to accomplish this aim include, but are not limited to, stratified random sampling with oversampling of important subgroups, such as historically underrepresented populations. Importantly, while rigorous sampling methods are critical to the generalizability and applicability of prevalence estimates, they do not necessarily address reporting biases, such as those that may occur when IPV/SA is assessed in clinical settings. Consequently, IPV/SA prevalence estimates derived from patient-level health care data may be best interpreted in concert with evidence from well-conducted survey research. Finally, future measurement of IPV/SA in VA clinical settings could consider 1) employing brief assessment tools that minimize respondent burden (*eg*, the HARK questionnaire), 2) providing patients the option of answering assessments face-to-face with a trusted provider or privately using a computer, tablet, or smartphone-based assessment, and 3) ensuring that assessment tools are culturally appropriate for measuring experienced or perpetrated IPV/SA among racial/ethnic minority and LGBTQ+ Veterans.

EVIDENCE BRIEF

INTRODUCTION

PURPOSE

The Evidence Synthesis Program (ESP) Coordinating Center is responding to a request from the Center for Women Veterans for an Evidence Brief on the prevalence of intimate partner violence/sexual assault (IPV/SA) among Veterans and spouses/intimate partners of Veterans. Findings from this Evidence Brief will be used to respond to activities required by section 5305 of the Johnny Isakson and David P. Roe, M.D. Veterans Health Care and Benefits Improvement Act of 2020 (H.R. 7105). Activities required by the Act are intended to enhance understanding of the scope of IPV/SA among Veterans and spouses/intimate partners of Veterans.

BACKGROUND

Intimate partner violence (IPV) includes physical violence, sexual violence including sexual assault (SA), stalking, and psychological aggression by a current or former intimate partner (*ie*, a spouse, dating partner, or sexual partner).[1] Individuals of all ages, gender identities, sexual orientations, educational backgrounds, and socioeconomic statuses may experience IPV/SA. Despite evidence that IPV/SA is frequently underreported,[2-5] a 2010 national survey of US adults found that more than 1 in 3 women and more than 1 in 4 men have experienced rape, physical violence, and/or stalking by an intimate partner in their lifetime and nearly half of women and men have experienced psychological aggression.[6] For most women and men who have experienced IPV/SA, IPV/SA first occurs under age 25.

Experiencing IPV/SA prior to, during, or after military service may lead to or worsen health problems including anxiety, depression, and substance use and result in lower quality of life.[7-10] The association between IPV/SA and health outcomes may vary according to the type of IPV/SA experienced, but this potential variability has not been well studied. Veteran women experience IPV/SA at higher rates than women in the general US population based on data from the Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System.[7] Whether Veteran men experience IPV/SA at disproportionately higher rates than the general population is not fully understood. It is also unclear whether racial/ethnic minority and sexual and gender minority (LGBTQ+) Veterans experience different rates of IPV/SA than non-minority Veterans.

The Johnny Isakson and David P. Roe, M.D. Veterans Health Care and Benefits Improvement Act of 2020 (H.R. 7105) requires the VA Center for Women Veterans (CWV) to complete a baseline study of IPV/SA prevalence among Veterans and intimate partners of Veterans and recommend ways to expand services to impacted populations. The aim of the present report is to synthesize what is already known about the prevalence of experienced IPV/SA (excluding non-partner SA) among US Veterans and intimate partners of Veterans by type (physical, sexual, or psychological/emotional), timing (lifetime or past-year), and sociodemographic characteristics, as well as the prevalence of past-year IPV/SA perpetration by Veterans by type and gender identity. A second aim is to describe recruitment strategies and data collection methods used in studies of IPV/SA prevalence to inform methods used by the CWV in its baseline study.

METHODS

PROTOCOL

A preregistered protocol for this review can be found on the PROSPERO international prospective register of systematic reviews (http://www.crd.york.ac.uk/PROSPERO/; registration number CRD42021267769).

KEY QUESTIONS

The following key questions (KQs) were the focus of this review:

KQ1: What is the prevalence of experienced IPV/SA among Veterans and spouses/ intimate partners of Veterans by type (physical, sexual, or psychological/ emotional), timing (lifetime or past-year), and sociodemographic characteristics (*eg*, gender identity)?

KQ2: What is the prevalence of past-year IPV/SA perpetration by Veterans by type (physical, sexual, or psychological/emotional) and gender identity?

KQ3: What are common recruitment strategies and data collection methods utilized in studies of IPV/SA prevalence among Veterans and spouses/intimate partners of Veterans?

ELIGIBILITY CRITERIA

The ESP included studies that met the following criteria:

***P**opulation*	US Veterans and spouses/intimate partners of US Veterans
***I**ntervention*	Not applicable
***C**omparator*	Not applicable
***O**utcomes*	• *KQ1:* Prevalence (proportion) of Veterans or spouses/intimate partners of Veterans who have experienced IPV/SA (excluding non-partner SA) • *KQ2:* Prevalence (proportion) of Veterans who have perpetrated IPV/SA (excluding non-partner SA) • *KQ3:* Recruitment strategies and data collection methods
***T**iming*	Any
***S**etting*	Any
***S**tudy Design*	Any, but we may prioritize articles using a best-evidence approach to accommodate the Evidence Brief timeline

DATA SOURCES AND SEARCHES

We included all relevant studies from a 2013 ESP review[11] encompassing this topic. To identify additional articles relevant to the key questions, a research librarian searched Ovid MEDLINE and CINAHL, as well as AHRQ, Cochrane Database of Systematic Reviews, and gray literature

databases from database origination through July 2021 using terms related to experienced and perpetrated IPV/SA (see Appendix A in Supplemental Materials for complete search strategies). We limited the search to published and indexed articles involving human subjects available in the English language. Study selection was based on the eligibility criteria described above. Studies in highly specialized populations, such as purposive samples entirely composed of IPV/SA victims, were excluded. Titles, abstracts, and full-text articles were reviewed by 1 investigator and checked by another. All disagreements were resolved by consensus or discussion with a third reviewer.

DATA ABSTRACTION AND ASSESSMENT

Prevalence data and sample and methodological characteristics were abstracted from all included studies. The ROBIS tool[12] was used to assess risks of bias of included systematic reviews. Primary studies were assessed using the tool developed by Hoy et al[13] for prevalence studies, which rates studies across several characteristics including the representativeness of the sample, risks of bias common to studies of prevalence/incidence (*eg*, non-response bias, recall bias), directness of estimates (*ie*, whether prevalence was reported directly from participants or via a proxy), reliability and validity of the instrument used to assess prevalence, and apparent accuracy of reported estimates (*eg*, comparability of prevalence estimate denominators and study sample sizes). Because our interest was in any occurrence of IPV/SA in a given time period, rather than more granular estimates of IPV/SA frequency in that period, we did not consider recall bias a major risk and did not rate the item assessing that form of bias (*Was the length of the shortest prevalence period for the parameter of interest appropriate?*). All data abstraction and internal validity ratings were first completed by 1 reviewer then checked by another; disagreements were resolved by consensus or discussion with a third reviewer.

The Hoy et al tool also provides an overall rating of confidence in reported estimates, with a rating of *low risk* indicating that future research is very unlikely to alter confidence in the prevalence estimate, *moderate risk* indicating that future research is likely to alter confidence in the prevalence estimate and may change the estimate, and *high risk* indicating that future research is very likely to alter confidence in the prevalence estimate and will likely change the estimate.[13] Confidence ratings from individual studies, in concert with confidence intervals from meta-analyses, were used to rate the strength of evidence contributing to overall estimates of each form of IPV/SA (*eg*, past-year experienced physical IPV among Veteran women) using the following general algorithm: *high strength* evidence consisted of multiple, large studies rated as *low risk* (*ie*, precise estimates that are very likely to be representative and minimally biased); *moderate strength* evidence consisted of a mix of larger and smaller studies rated as *low risk* or *moderate risk*, or a single very large and highly representative *low risk* study (*ie*, fairly precise estimates that are likely to be representative and unbiased); *low strength* evidence consisted of multiple smaller trials rated as *moderate risk* or *high risk* (*ie*, imprecise estimates that are likely unrepresentative and biased); and *insufficient* evidence consisted of a single trial rated as *moderate risk* or *high risk* (*ie*, a single imprecise and unrepresentative estimate that is very likely to be biased), or no available studies.

Strength of evidence assessment was conducted for experienced IPV/SA findings only. For perpetrated IPV/SA findings, we located a recent high-quality systematic review and meta-analysis[14] that synthesized available evidence on prevalence of perpetrated IPV/SA among Veterans (see Synthesis and Literature Overview sections). We did not directly assess risks of

bias of studies identified in that review, and for most forms of perpetrated IPV/SA, limited evidence was found. As a result, we did not formally rate strength of evidence for perpetrated IPV/SA findings. In lieu of strength of evidence ratings, we summarize the assessments reported in that review.

SYNTHESIS

Prevalence estimates were organized by form of IPV/SA (experience or perpetrated), type (any, physical, sexual, or psychological/emotional), timing (past-year or lifetime), and gender identity (male or female). Physical IPV was defined as any form of non-sexual physical violence (*eg*, hitting or restraining). Sexual IPV included any form of sexual violence, including SA and sexual coercion, among intimate partners (*ie*, excluding non-partner SA). Psychological/ emotional IPV included any form of non-physical and non-sexual IPV, such as verbal threats, insults or degrading language, or shouting. If studies reported both past-year and more recent (*eg*, past 6 months) prevalence estimates, only past-year estimates were synthesized. If only past-6 months estimates were available, these estimates were synthesized with past-year estimates from other studies and sensitivity analyses excluding the shorter-term estimates were conducted. One study[15] reported an estimate of physical IPV "after military service," which was pooled with lifetime estimates. We did not limit eligibility based on type of instrument used to collect IPV/SA prevalence; however, as shown in Table 1, most studies used well-validated and widely used tools. As noted in the previous section, use of a validated instrument was also considered in strength of evidence assessments.

In general, the denominator used to calculate prevalence estimates was the total study sample size, such that estimates reflect the proportion of each type of IPV/SA in each study. Adjusted or weighted proportions were used when reported. When available, we also report prevalence estimates for the following sociodemographic subgroups: race/ethnicity, age category, rurality, and identification as heterosexual or a sexual or gender minority. For sociodemographic subgroup estimates, the total subgroup size from each study was used as the estimate denominator (*ie*, estimates offer within-study comparisons of relative prevalence, for example, the prevalence of past-year physical IPV among sexual or gender minority Veterans compared to heterosexual Veterans in each study).

When 2 or more estimates of experienced IPV/SA prevalence were identified, we quantitatively synthesized estimates using meta-analytic generalized random-effects logistic models. Reported estimates were transformed using the standard logit transformation for analysis, and back-transformed for interpretation and reporting. Precision of study-level and overall estimates is reported using 95% confidence intervals (CIs), and CIs were used to evaluate statistical significance of overall prevalence estimates at a significance level of .05. Heterogeneity was estimated using maximum-likelihood estimation and is presented using 95% prediction intervals (PIs). Although no syntheses included dependent estimates (*ie*, multiple estimates from the same study), several studies may have included overlapping participants because they derived samples from the same health system databases or registries. When it was clear that prevalence estimates reported in different studies were from an identical sample, we excluded duplicative estimates. In some cases, however, the extent of overlap among included studies was unknown, and this may have led to overestimating the precision of some overall prevalence estimates.

Whether overall prevalence estimates varied according to study sampling method (convenience or random/population) was explored using meta-analytic generalized mixed-effects logistic models (meta-regression). Studies were characterized as using a convenience sample if they used samples derived from non-randomized selection of participants from readily accessible sources (*eg*, recruitment from waiting rooms or among individual clinic patients). Random or population samples were derived from randomized selection of participants from a larger population, or that included all members of a population (*eg*, samples composed of all VHA patients at the health center, regional, or national level). Sufficient studies were available to investigate sampling method moderation for lifetime IPV/SA estimates only. Meta-analyses and moderation analyses were conducted using the *metafor*[16] package for R (R Foundation for Statistical Computing, Vienna, Austria).

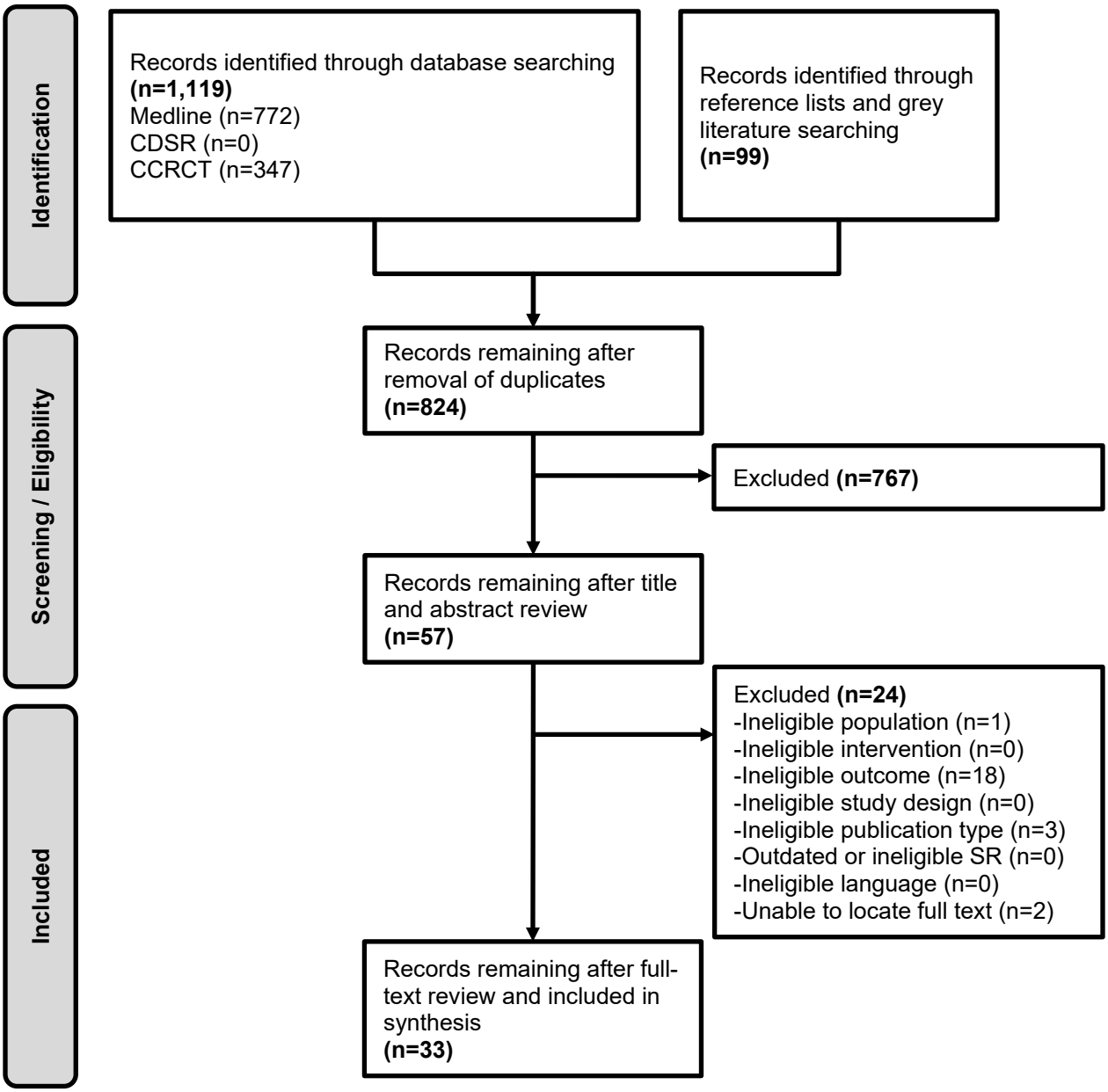
For perpetrated IPV/SA prevalence, we identified a recent high quality systematic review and meta-analysis[14] that synthesized available evidence on prevalence of perpetrated IPV/SA among Veterans. To address KQ2, we summarized the relevant findings on perpetrated IPV/SA prevalence from meta-analyses and individual studies (when meta-analysis was not conducted) reported in that review. Although initial interest was in past-year perpetrated IPV/SA only, given the sparseness of evidence on perpetrated IPV/SA in general, we also included any findings on lifetime perpetrated IPV/SA reported in the review. For KQ3, we narratively synthesized information on recruitment methods and data collection methods employed in included studies.

RESULTS

LITERATURE FLOW

The literature flow diagram (Figure 1) summarizes the results of the study selection process (full list of excluded studies available in Appendix B in Supplemental Materials).

Figure 1. Literature Flowchart



Note. Count of studies excluded for ineligible outcome includes studies meeting eligibility criteria but reporting duplicative prevalence estimates.
Abbreviations. CCRCT=Cochrane Central Register of Controlled Trials; CDSR=Cochrane Database of Systematic Reviews; SR=systematic review.

LITERATURE OVERVIEW

Our search identified 824 potentially relevant articles. Of these, 32 primary studies and 1 recent systematic review met eligibility criteria and reported non-duplicative prevalence estimates. Primary study characteristics are summarized in Table 1. Included primary studies generally reported prevalence of experienced IPV/SA only, and most studies provided prevalence estimates for Veteran women. Five studies[9,17-21] reported prevalence estimates for Veteran men, and 2 studies[22,23] were carried out among spouses/partners of Veterans. A small number of studies reported prevalence estimates within subgroups of interest, although no studies were identified that reported prevalence of IPV/SA among gender minority Veterans (estimates were available only for Veterans identifying as lesbian, gay, or bisexual [LGB]). All primary studies used cross-sectional or cohort designs, and the median sample size was 406 participants (range: 50-8,427). Several studies used subsamples from large Veteran databases or registries, including the New England VHA Cohort (5 studies[17,24-27]), the GfK Knowledge Networks Panel (4 studies[17,28-30]), and the VHA Corporate Data Warehouse (CDW; 1 study[31]). Sampling and IPV/SA measurement methods used in included studies are discussed in detail in the Results section. Our search also identified 3 underway systematic reviews related to this topic (see Appendix E in Supplemental Materials).

Most included primary studies ($k = 25$) were rated as *high risk*, indicating they were susceptible to risks of bias and/or were unlikely to be fully representative of the Veteran population. Common sources of potential bias and/or non-representativeness were high non-response rates in survey studies, use of a limited geographical or institutional sampling frame, incomplete or partial representation of Veteran age or era of service groups, recruitment from settings in which potential participants were likely to be at greater risk of IPV/SA than the general Veteran population, use of unvalidated IPV/SA measures, and small sample size. *Low risk* and *moderate risk* studies typically had moderate to large sample sizes and high response rates, and used random sampling procedures, validated IPV/SA measures, and established case definitions of IPV/SA.

The included systematic review[14] synthesized available evidence on prevalence of perpetrated IPV/SA among Veterans. Authors searched multiple databases and conducted hand searching and forward citation searches for relevant studies. Studies were eligible for inclusion in the review if they included male and/or female active duty/reserve personnel or Veterans, and used a validated self-report measure for collecting perpetrated IPV/SA prevalence (*eg*, Conflict Tactics Scale) or objective measure such as military records. The review included 23 studies in US Veteran samples, which were assessed for risk of bias and quality by two independent reviewers using a composite tool drawing from several preexisting assessment tools. Studies were rated as *high quality* if they scored at least 50% on questions related to selection bias, with only 8 of 23 studies in Veterans receiving this rating. Reviewers noted considerable variation in the types of samples employed (representative random samples and convenience samples from clinical settings) and in IPV/SA measures and assessment periods, limiting the comparability and generalizability of studies on perpetrated IPV/SA prevalence. After quality assessment, prevalence estimates were synthesized using random-effects models when 10 or more estimates were available for a given type of IPV/SA. We rated the overall risk of bias of this review as *low* using the ROBIS tool, corresponding to minimal concern about the review's eligibility criteria, search and screening strategies, study appraisal and synthesis methods, and reporting of findings.

Table 1. Characteristics of Included Primary Studies

Study *Sample Size*	Population *Sampling Method*	Design *Outcome Timing*	IPV/SA Instrument *IPV/SA Types Assessed*	Data Collection Modality *Data Source*	Risk of Bias Rating
Bartlett 2018[17] N=642	Veterans (women and men) Random/population	Cross-sectional Past-year	HARK Any, physical, sexual, psychological/emotional	Survey GfK & New England VHA Cohort	Moderate
Bennett 2019[32] N=103	Veterans (non-specific gender) Random/population	Cross-sectional Lifetime	NR Any	Record abstraction Midwestern VHA PTSD Clinic	High
Brignone 2018[31] N=8427	Veterans (women) Random/population	Cohort Past-year	E-HITS Any, physical, sexual, psychological/emotional	Record abstraction VHA CDW	Moderate
Campbell 2005[33] N=298	Veterans (women) Random/population	Cross-sectional Lifetime	Sexual Experiences Survey Sexual	Survey NR	High
Campbell 2008[34] N=268	Veterans (women) Convenience	Cross-sectional Lifetime	CTS-2 Any	Survey Midwestern VHA Women's Clinic	High
Caralis 1997[35] N=406	Veterans (women) Convenience	Cross-sectional Lifetime	Abuse Assessment Screen Any	Interview Miami VA Medical Center ambulatory clinics	High
Cerulli 2014a[19] N=296	Veterans (men) Random/population	Cross-sectional Lifetime	Ad hoc Any	Survey Upstate New York VHA survey	High
Cerulli 2014b[18] N=4729	Veterans (men) Random/population	Cross-sectional Lifetime	Ad hoc Any	Survey BRFSS	High
Combellick 2019[20] N=567	Veterans (women and men) Random/population	Cohort Past-year	E-HITS Any	Survey OIF/OEF/OND Roster	High
Coyle 1996[36] N=429	Veterans (women) Random/population	Cross-sectional Lifetime	Ad hoc Physical, sexual	Survey Baltimore VA Medical Center	High
Creech 2017[37] N=102	Veterans (women) Random/population	Cross-sectional Past-6 months	CTS-2 Any, physical, sexual, psychological/emotional	Survey OIF/OEF/OND Roster	High
Creech 2021[38] N=442	Veterans (women) Random/population	Cross-sectional Past-year	E-HITS Any	Interview COMFORT Study	High

Study ***Sample Size***	**Population** ***Sampling Method***	**Design** ***Outcome Timing***	**IPV/SA Instrument** ***IPV/SA Types Assessed***	**Data Collection Modality** ***Data Source***	**Risk of Bias Rating**
Dardis 2017[28] N=411	Veterans (women) Random/population	Cross-sectional Lifetime, past-year	HARK Physical, sexual, psychological/emotional	Survey GfK/Women Veterans and IPV-related Care Survey	Low
Dichter 2011[7] N=503	Veterans (women) Random/population	Cross-sectional Lifetime	Ad hoc Any	Survey BRFSS	High
Dichter 2014[8] Dichter 2015[39] N=249	Veterans (women) Convenience	Cross-sectional Lifetime	CTS-2 Any, physical, sexual, psychological/emotional	Survey Philadelphia Veterans Affairs Medical Center Women's Health Clinic	High
Dichter 2017[40] N=554	Veterans (women) Convenience	Cross-sectional Past-year	E-HITS Any	Survey 2 Philadelphia Veterans Affairs Medical Center Women's Health Clinics	High
Dobie 2004[41] N=1259	Veterans (women) Random/population	Cross-sectional Lifetime	Ad hoc Physical	Survey VA Puget Sound Health Care System	High
Dutra 2012[21] N=89	Veterans (men) Random/population	Cohort Past-year	CTS Physical	Interview NVVRS	High
Gondolf 1991[22] N=50	Spouses/partners (women) Convenience	Cross-sectional Past-year	CTS Physical	Survey Single center in Pittsburgh	High
Huston 2019[29] N=411	Veterans (women) Random/population	Cross-sectional Lifetime	HARK Any	Survey GfK/Women Veterans and IPV-related Care Survey	Low
Iverson 2013[25] N=160	Veterans (women) Random/population	Cross-sectional Past-year	CTS-2 Any, physical, sexual, psychological/emotional	Survey New England VHA cohort	High
Iverson 2015[24] N=80	Veterans (women) Random/population	Cross-sectional Past-year	E-HITS Any	Survey New England VHA cohort	High
Iverson 2015[26] N=176	Veterans (women) Random/population	Cross-sectional Lifetime, past-year	CTS-2 Any, physical, sexual, psychological/emotional	Survey New England VHA cohort	High

Study ***Sample Size***	**Population** ***Sampling Method***	**Design** ***Outcome Timing***	**IPV/SA Instrument** ***IPV/SA Types Assessed***	**Data Collection Modality** ***Data Source***	**Risk of Bias Rating**
Iverson 2017[9] N=407	Veterans (women and men) Random/population	Cohort Past-6 months	CTS-2 Any, physical, sexual, psychological/emotional	Survey DoD post-discharge/separation sampling frame	High
Iverson 2020[10] N=127	Veterans (women) Convenience	Cross-sectional Lifetime	HARK Any, physical, sexual, psychological/emotional	Survey OIF/OEF/OND Roster	High
Kimerling 2016[42] N=6046	Veterans (women) Random/population	Cross-sectional Past-year	HARK Any	Survey WOMAN Survey	Low
Luterek 2011[15] N=208	Veterans (women) Convenience	Cross-sectional After military service	TLEQ Physical	Interview VA Puget Sound Health Care System	High
Portnoy 2020[30] N=249	Veterans (women) Random/population	Cohort Past-year, past-6 months	CTS-2 Any, physical, sexual, psychological/emotional	Survey Women Veterans and IPV-related Care Survey	Moderate
Rosenfeld 2018[43] N=1241	Veterans (women) Random/population	Cross-sectional Past-year	NR Psychological/emotional	Interview Examining Contraceptive Use and Unmet Need among Women Veterans	High
Sadler 2003[44] N=506	Veterans (women) Random/population	Cross-sectional Lifetime	Ad hoc Sexual	Interview NR	High
Savarese 2001[23] N=376	Spouses/partners (non-specific gender) Random/population	Cohort Past-year	CTS Physical, psychological/ emotional	Interview NVVRS	High

Abbreviations. BRFSS=Behavioral Risk Factor Surveillance System; CAPS=Clinically Administered PTSD Scale; CDW=Corporate Data Warehouse; COMFORT=Center for Maternal and Infant Outcomes and Research in Translation; CTS=Conflict Tactics Scale; CTS-2=Revised Conflict Tactics Scale; DoD=Department of Defense; E-HITS=Extended-Hurt/Insult/Threaten/Scream screening tool; HARK=Humiliation, Afraid, Rape, and Kick questionnaire; GfK=GfK Knowledge Networks Panel; NR=not reported; NVVRS=National Vietnam Veterans Readjustment Study; OIF/OEF/OND=Operation Iraqi Freedom/Operation Enduring Freedom/Operation New Dawn; PTSD=Posttraumatic stress disorder; TLEQ=Traumatic Life Events Scale; VA=Department of Veterans Affairs; VHA=Veterans Health Administration; WOMAN=Women's Overall Mental Health Assessment of Needs.

EXPERIENCED IPV/SA

Any IPV/SA

Veteran Women

Seven studies[7,8,10,26,29,34,35,39] reported prevalence of any lifetime experienced IPV/SA among Veteran women. Pooling estimates from a total of 2,140 respondents, the overall prevalence was 58.0% (95% CI [43.6, 71.2], 95% PI [21.5, 87.5]). Although not significantly different, overall prevalence estimates appeared to be higher among studies using convenience samples (68.0%, 95% CI [50.0, 81.9], $k = 4$) compared with those using random samples (43.8%, 95% CI [35.5, 52.6], $k = 3$). Evidence contributing to the overall estimate was rated as *low strength*. Available studies were small to moderate in size (N = 127-503), used a mix of convenience and random samples, and in all but 1 case were rated as *high risk*.

Eleven studies[9,17,20,25,26,30,31,37,38,40,42] provided estimates of any past-year experienced IPV/SA among Veteran women (total $N = 17,328$). When pooled, the overall prevalence estimate was 26.0% (95% CI [16.3, 38.8], 95% PI [4.4, 72.7]). A sensitivity analysis removing past-6 months estimates from 2 studies[9,37] resulted in a similar but somewhat lower overall prevalence estimate of 19.8% (95% CI [13.3, 28.4], 95% PI [5.4, 51.9]). With the exception of 1 study, available studies used random sampling, and studies were rated as a mix of *low*, *moderate*, and *high risk*, with 2 very large studies (N = 6,046-8,427) rated as *low* or *moderate risk*. As a result, evidence contributing to the overall estimate was rated as *moderate strength*.

The number of studies reporting prevalence of any past-year experienced IPV/SA in sociodemographic subgroups differed for each subgroup. Five studies[24,25,31,38,42] provided prevalence estimates for non-Hispanic white Veteran women, 3 studies[31,38,42] for Black Veteran women, 1 study[38] for Latina Veterans, and 5 studies[24,25,31,38,42] for non-white Veteran women (reported as "non-white," "Hispanic, multiracial, or other race," or "other race"). Among white Veteran women, the overall prevalence of any past-year experienced IPV/SA was 16.1% (95% CI [11.3, 22.4], 95% PI [7.0, 32.9]); among Black Veteran women, 13.2% (95% CI [8.3, 20.6], 95% PI [5.2, 29.7]); among Latina Veterans, the single study reported a prevalence of 9%; and among non-white Veteran women, the overall prevalence was 19.7% (95% CI [10.3, 34.3], 95% PI [4.2, 57.7]).

One cross-sectional study[42] using a random sample (N = 6,046) reported differences in prevalence of any past-year experienced IPV/SA among subgroups of heterosexual- and LGB-identifying Veteran women. 18.0% of heterosexual Veteran women in the study reported any past-year experienced IPV/SA, compared with 24.7% of LGB Veteran women. The same study also reported differences in prevalence by rurality, with 18.1% of urban Veteran women and 19.0% of rural Veteran women in the study reporting any past-year experienced IPV/SA. A large cohort study[31] using a random sample (N = 8,427) reported prevalence by age subgroups. Among Veteran women in the study younger than 35, 10.4% experienced any past-year IPV/SA; among those aged 35-44, 9.2%; aged 45-54, 8.7%; aged 55-64, 6.2%; and aged 65 or older, 3.3%.

Veteran Men

Based on estimates from 2 studies[18,19] (total $N = 5,025$), the overall prevalence of any lifetime experienced IPV/SA was 12.6% (95% CI [8.1, 19.1], 95% PI [6.0, 24.6]). Three studies[9,17,20] (total $N = 1,573$) reported prevalence of any past-year experienced IPV/SA among Veteran men.

When pooled, the overall prevalence was 36.7% (95% CI [16.1, 63.7], 95% PI [6.0, 84.0]). The overall prevalence was somewhat lower when 1 study[9] providing a past-6 months estimate was removed (24.4%, 95% CI [12.0, 43.1], 95% PI [6.9, 58.4]). The lower overall estimate of lifetime prevalence (compared with past-year prevalence) may be the result of methodological variation across studies, particularly the use of ad hoc IPV/SA measures in studies providing lifetime estimates. No studies reporting prevalence estimates in sociodemographic subgroups were identified. Evidence contributing to both lifetime and past-year overall estimates was rated as *low strength* given the small number of available studies and the rating of studies as *moderate* or *high risk*.

Spouses/Partners

No studies were identified that reported prevalence of any experienced IPV/SA among spouses/partners of Veterans.

Other Studies

One small study[32] in a random sample ($N = 103$) did not disaggregate prevalence estimates by gender identity, and found that 32% of Veterans reported any lifetime experienced IPV/SA.

Physical IPV

Veteran Women

Seven studies[8,10,15,28,36,39,41,45] reported prevalence of lifetime experienced physical IPV among Veteran women (total $N = 2,859$). When pooled, the overall prevalence of this form of IPV/SA was 33.8% (95% CI [26.2, 42.3], 95% PI [16.0, 57.7]). Overall prevalence was somewhat higher in convenience samples (40.0%, 95% CI [26.6, 55.0], $k = 3$) compared with random samples (29.8%, 95% CI [23.2, 37.3], $k = 4$). Evidence contributing to the overall prevalence estimates was rated as *low strength*. Studies used a mix of convenience and random samples, ranged from small to moderate in size ($N = 127$-1,259), and all but 1 was rated as *high risk*.

Prevalence of past-year experienced physical IPV among Veteran women was reported by 8 studies[9,17,25,26,28,30,31,37] (total $N = 10,130$), and when pooled was 7.6% (95% CI [4.6, 12.4], 95% PI [1.7, 28.1]). Overall prevalence was similar when 3 studies[9,30,37] providing past-6 months estimates were removed (7.0%, 95% CI [3.2, 14.5], 95% PI [1.1, 34.3]). Studies varied from small to very large ($N = 102$-8,427), used random samples, and were rated *low*, *moderate*, or *high risk*. Consequently, evidence contributing to the overall estimate of past-year experienced physical IPV among Veteran women was considered *moderate strength*.

One cross-sectional study[28] in a random sample ($N = 411$) disaggregated estimates of lifetime and past-year experienced physical IPV among Veteran women by identification as heterosexual or LGB. 27.7% and 13.2% of heterosexual Veteran women in this study reported lifetime and past-year physical IPV, respectively, compared with 46.2% and 28.2% of LGB Veteran women respondents. Studies reporting prevalence of experienced physical IPV in other sociodemographic subgroups were not found.

Veteran Men

No studies were identified that reported prevalence of lifetime experienced physical IPV among Veteran men. Two studies[9,17] (total $N = 1,049$) reporting past-year estimates were located, and when pooled, the overall prevalence of past-year experienced physical IPV among Veteran men was 7.2% (95% CI [5.6, 9.1], 95% PI [5.6, 9.1]). Studies were moderate in size ($N = 407$-642) and used random samples, but given the small number of studies available and their rating as *moderate* or *high risk*, evidence contributing to the overall prevalence estimate was rated as *low strength*.

Spouses/Partners

One older study[22] using a small convenience sample ($N = 50$) reported 81.8% of female spouses/partners of Veterans experienced past-year physical IPV. In a second study,[21] 22.2% of male spouses/partners of Veterans experienced past-year physical IPV. A third study[23] that did not disaggregate by gender identity reported that past-year physical IPV was experienced by 21.3% of Veteran spouses/partners in the study. The latter 2 studies were small to moderate in size ($N = 89$-376) and used random samples. Because available evidence consisted of single studies among Veterans of different or nonspecific gender identities, evidence was insufficient to determine the strength of evidence on prevalence of experienced physical IPV among spouses/partners of Veterans.

Sexual IPV

Veteran Women

Seven studies[8,10,26,28,33,36,39,44] reported prevalence of lifetime experienced sexual IPV among Veteran women (total $N = 2,196$). When pooled, the overall prevalence was 14.2% (95% CI [7.0, 26.4], 95% PI [1.9, 58.9]). Studies used a mix of convenience and random samples, and overall prevalence was significantly higher in convenience samples (32.2%, 95% CI [27.7, 37.1]) compared with random samples (9.9%, 95% CI [4.4, 20.8]). Evidence contributing to the overall prevalence estimate was rated as *low strength*. Studies were small to moderate in size ($N = 127$-506), used a mix of random and convenience samples, and all but 1 were rated as *high risk*.

Prevalence of past-year experienced sexual IPV among Veteran women was reported by 8 studies[9,17,25,26,28,30,31,37] (total $N = 10,130$), and when pooled across studies, the overall prevalence estimate was 8.0%, (95% CI [4.5, 13.8], 95% PI [1.5, 33.8]). When past-6 months estimates from 3 studies[9,30,37] were removed, the overall prevalence estimate was slightly reduced (6.5%, 95% CI [2.9, 14.2], 95% PI [0.9, 35.5]). Studies providing past-year experienced sexual IPV prevalence estimates were the same as those reporting past-year experienced physical IPV prevalence, and consequently the evidence received the same rating of *moderate strength*.

One cross-sectional study[28] in a random sample ($N = 411$) reported differences in lifetime and past-year experienced sexual IPV prevalence among heterosexual- and LGB-identifying Veteran women. Prevalence of experienced sexual IPV among heterosexual Veteran women was 19.5% (lifetime) and 8.8% (past-year), compared with 35.9% (lifetime) and 28.2% (past-year) for LGB Veteran women enrolled in the study. No other sociodemographic subgroups were identified.

Veteran Men

No studies were found that reported lifetime experienced sexual IPV among Veteran men. Two studies[9,17] (total $N = 1,049$) reported past-year estimates, and when pooled, the overall prevalence of past-year experienced sexual IPV among Veteran men was 2.0% (95% CI [0.8, 5.0], 95% PI [0.5, 8.1]). Studies were moderate in size ($N = 407$-642) and used random samples, but given the small number of studies available and their rating as *moderate* or *high risk*, evidence contributing to the overall prevalence estimate was rated as *low strength*.

Spouses/Partners

No studies were identified that reported prevalence of experienced sexual IPV among spouses/ partners of Veterans.

Psychological/Emotional IPV

Veteran Women

Four studies[8,10,26,28,39] (total $N = 963$) provided prevalence estimates for lifetime experienced psychological/emotional IPV among Veteran women. When pooled, the overall prevalence estimate was 54.1% (95% CI [34.5, 72.5], 95% PI [16.7, 87.4]). Studies used a mix of convenience and random samples, and overall prevalence of lifetime experienced psychological/emotional IPV was significantly higher in convenience samples (69.8%, 95% CI [48.1, 85.2], $k = 2$) compared with random samples (38.8%, 95% CI [32.8, 45.2], $k = 2$). Available studies were generally small ($N = 127$-411), used of mix of convenience and random samples, and in all but one case were rated as *high risk.* As a result, evidence contributing to the lifetime overall prevalence estimate was considered *low strength*.

Nine studies[9,17,25,26,28,30,31,37,43] (total $N = 11,371$) reported past-year prevalence of experienced psychological/emotional IPV among Veteran women. When pooled, the overall prevalence estimate was 19.7% (95% CI [10.5, 33.7], 95% PI [2.4, 70.6]). Removing 3 past-6 months estimates[9,30,37] lowered the overall prevalence somewhat (11.6%, 95% CI [7.7, 17.0], 95% PI [4.1, 28.9]). Studies providing prevalence estimates of past-year psychological/emotional IPV among Veteran women were the same as those providing estimates of past-year physical and sexual IPV prevalence (with the addition of 1 smaller *moderate risk* study), and consequently the evidence also received the rating of *moderate strength*.

One cross-sectional study[28] in a random sample ($N = 411$) reported prevalence of past-year experienced psychological/emotional IPV among Veteran women identifying as heterosexual or LGB. 40.9% and 21.7% of heterosexual Veteran women in this study reported lifetime and past-year experienced physical IPV, respectively, compared with 56.4% and 41.0% of LGB Veteran women respondents. Another cross-sectional study[43] using a random sample ($N = 1,241$) reported past-year prevalence by age, although this study only enrolled participants aged 20-44. Among Veteran women in the study aged 20-29, 14.5% experienced past-year psychological/emotional IPV; among those aged 30-34, 10.4%; aged 35-39, 11.8%; and aged 40-44, 6.2%.

Veteran Men

No studies were identified that reported prevalence of lifetime experienced psychological/ emotional IPV among Veteran men. Two studies[9,17] (total $N = 1,049$) reported past-year

prevalence, and when pooled the overall estimate of past-year experienced psychological/emotional IPV among Veteran men was 33.2% (95% CI [7.6, 75.1], 95% PI [2.2, 91.8]). Studies were moderate in size (N = 407-642) and used random samples, but given the small number of studies available and their rating as *moderate* or *high risk*, evidence contributing to the overall prevalence estimate was rated as *low strength*.

Spouses/Partners

One study[23] (N = 376) employing a random sample did not disaggregate by gender identity, and reported that past-year psychological/emotional IPV was experienced by 83.8% of Veteran spouses/partners in the study. Available evidence was insufficient to determine the strength of evidence on prevalence of experienced physical IPV among spouses/partners of Veterans.

PERPETRATED IPV/SA

The included systematic review and meta-analysis[14] identified limited evidence on perpetrated IPV/SA, particularly among Veteran women. One included cross-sectional study in a convenience sample reported that 33.3% of Veteran women had perpetrated physical IPV in their lifetime, while 2 cross-sectional studies using a mix of convenience and random samples reported that 18.2-22.2% of Veteran women had perpetrated physical IPV in the past year. Two additional cross-sectional studies using a mix of convenience and random samples reported prevalence of past-year perpetrated psychological/emotional IPV ranging from 62.5-76.7%.

For IPV/SA perpetrated by Veteran men, prevalence of lifetime perpetrated physical IPV was reported by 3 cross-sectional studies using convenience samples; estimates ranged from 12.0-53.5%. Eight estimates of past-year prevalence of perpetrated physical IPV among Veteran men were pooled in a meta-analytic subgroup analysis, resulting in an overall prevalence estimate of 32.0% (95% CI [24.0, 41.0]). One cross-sectional study in a convenience sample reported that 28.0% of Veteran men perpetrated sexual IPV in their lifetime, while 2 cross-sectional studies also in convenience samples reported prevalence estimates of past-year perpetrated sexual IPV among Veteran men that ranged from 27.6-40.2%. An additional cross-sectional study in a convenience sample provided an estimate of lifetime perpetrated psychological/emotional IPV, which ranged from 67.0-68.0% depending on the subtype of psychological/emotional IPV (shouted at partner, insulted/swore at partner). Six cross-sectional studies were identified that reported past-year estimates of perpetrated psychological/emotional IPV; across the included convenience samples of Veteran men, prevalence of past-year psychological/emotional IPV ranged from 66.4-100%.

Finally, 1 cross-sectional study was identified that did not disaggregate prevalence estimates by gender identity. This study, which used a convenience sample, reported that prevalence of past-year perpetrated physical IPV among Veterans was 23.1% for moderate-severity physical IPV and 9.4% for severe physical IPV.

RECRUITMENT STRATEGIES AND DATA COLLECTION METHODS

Most included studies (k = 24) used random selection or attempted to take a census of their study population. Recruitment strategies included random digit dialing, randomly selecting participants from a national registry, extracting medical records from a database, and recruiting all patients receiving care within a VA network. Seven studies used convenience sampling techniques, such

as recruiting participants who had already participated in a previous survey or who presented for care at a local clinic. Paper or web-based surveys were the most common methods of data collection ($k = 22$), followed by phone or in-person interviews ($k = 7$). Only 2 studies used medical record abstraction to collect data. Medical record information was based on routine screening during in-person appointments with providers. Most studies used a validated tool to measure IPV/SA experiences ($k = 23$). The most common tools used were the (Revised) Conflict Tactics Scale (CTS/CTS-2, 10 studies), the Humiliation, Afraid, Rape, and Kick questionnaire (HARK, 5 studies), and the Extended-Hurt/Insult/Threaten/Scream screening tool (E-HITS, 5 studies). Six studies employed unvalidated, ad hoc questionnaires to measure IPV/SA prevalence, and 1 study did not report the data collection instrument used.

DISCUSSION

Findings of this review indicate that experienced IPV/SA is prevalent among Veteran women and men. The strongest available evidence was for past-year experienced IPV/SA among Veteran women; limited, low strength evidence was available for Veteran men and spouses/partners of Veterans. Psychological/emotional IPV appears to be the most common form of experienced IPV/SA among Veterans, followed by physical IPV and sexual IPV. Limited and low strength evidence was available on the lifetime prevalence of experienced IPV/SA among Veteran women, while for Veteran men, no information on lifetime prevalence of specific forms of experienced IPV/SA was found. Psychological/emotional IPV was the most common form of experienced IPV/SA across the lifetime for Veteran women. Perpetrated IPV/SA may also be common, particularly among Veteran men, but available evidence is sparse and poor quality. The limited available evidence suggests that psychological/emotional IPV also is the most common form of perpetrated IPV/SA among Veteran women and men, although comparisons of IPV/SA perpetration across gender identities must be interpreted with caution, as men may be more likely than women to underreport acts of physical violence against their partners.[46]

Very little evidence was found on the role of sociodemographic factors in IPV/SA prevalence. The small number of identified studies used random samples, but were in Veteran women only and were small to moderate in size. This evidence suggests that past-year experienced IPV/SA may decrease with age and may be more prevalent among LGB Veteran women compared with heterosexual Veteran women. A single available study found similar prevalence of past-year experienced IPV/SA among rural and urban Veteran women. Studies reporting differences in experienced IPV/SA by race/ethnicity were inconsistent in their definition of some race/ethnicity subgroups and in their reported prevalence estimates, so it is unclear whether Veterans' race or ethnicity is associated with greater prevalence of experienced IPV/SA. Finally, no prevalence estimates were identified among gender minority (*eg*, transgender) Veterans.

Included studies used a variety of sampling, recruitment, and data collection methods, limiting the comparability and generalizability of available evidence. Some studies used random sampling methods to reduce biases in data collection, while others used convenience samples that are likely poorly representative of the Veteran population and could over- or under-represent the prevalence of various forms of IPV/SA among Veterans. IPV/SA prevalence was most commonly collected via surveys using validated measures of IPV/SA, but measures varied across studies and a number of studies used unvalidated ad hoc measures. Taken together, the considerable methodological variation found among included studies limits the informativeness and quality of the overall body of evidence on IPV/SA prevalence among Veterans.

LIMITATIONS

Limitations of our review methods include use of a second reviewer check during study selection, data abstraction, and quality assessment rather than dual independent review. Our search focused on databases indexing health, psychiatric, trauma, and public health literatures, and therefore may have missed research on IPV/SA published in psychological journals. However, because our interest was chiefly in epidemiological (prevalence) research – and not literature on predictors or outcomes of IPV/SA – it is likely that most relevant literature was captured by our search. Additionally, caution should be used in interpreting reported meta-analytic confidence intervals and prediction intervals, as both statistical precision and

heterogeneity can be poorly estimated in small meta-analyses. Lastly, our search for recruitment and data collection methods for IPV/SA was nonsystematic because it used included studies as a convenience sample. As a result, our findings may not reflect the complete array of methods used in research on IPV/SA prevalence.

CONSIDERATIONS FOR FUTURE RESEARCH AND PRACTICE

As noted, methods for measuring IPV/SA prevalence varied considerably across included studies. Inconsistency among, and limitations of, study sampling approaches and measurement instruments, modalities, and settings may lead to inaccurate and poorly representative prevalence estimates. For example, the widely used CTS/CTS-2 instrument does not account for contextual factors such as whether violence was perpetrated in self-defense or in aggression, possibly leading to misclassification of IPV/SA.[14] Moreover, terminology used in IPV/SA measures such as *abuse* may lead to respondents under-reporting important but more subtle forms of psychological/emotional harm such as microaggressions, which can be perpetrated within intimate partnerships.[47] Finally, occurrence of IPV/SA among racial/ethnic minority and sexual and gender minority (LGBTQ+) Veterans appears understudied, which may reflect both sampling and recruitment limitations and a lack of culturally appropriate assessment tools.

Additionally, existing reviews and studies have found conflicting evidence on the role of screening modality in IPV/SA measurement accuracy and acceptability. One available meta-analysis[48] found that in primary care settings there is no apparent difference in IPV/SA detection rates between face-to-face interviews and computer-based surveys. A second review[49] in a broader array of clinical settings found that detection rates were higher using computer-based surveys compared to paper surveys and face-to-face interviews. Qualitative evidence from a study[50] conducted in the VA found that Veteran women prefer surveys over face-to-face screening at their primary care appointments and are more likely to disclose IPV/SA experiences after building trust with their primary care provider over multiple visits. Finally, although IPV/SA recorded in clinical records may be the most readily accessible form of IPV/SA prevalence data within a large health system, IPV/SA measured in clinical settings may mispresent the true prevalence of IPV/SA in comparison with survey research (*eg*, because of hesitancy to disclose IPV/SA to a medical provider).[51]

Future studies of IPV/SA prevalence among Veterans should attempt to generate prevalence estimates that are applicable to Veterans of the range of ages, sexual and gender identities, races/ethnicities, and geographic contexts present in the Veteran population. Important methods to accomplish this aim include, but are not limited to, stratified random sampling with oversampling of important subgroups, such as historically underrepresented populations. Importantly, while rigorous sampling methods are critical to the generalizability and applicability of prevalence estimates, they do not necessarily address reporting biases, such as those that may occur when IPV/SA is assessed in clinical settings. Consequently, IPV/SA prevalence estimates derived from patient-level health care data may be best interpreted in concert with evidence from well-conducted survey research. Finally, future measurement of IPV/SA in VA clinical settings could consider 1) employing brief assessment tools that minimize respondent burden (*eg*, the HARK questionnaire), 2) providing patients the option of answering assessments face-to-face with a trusted provider or privately using a computer, tablet, or smartphone-based assessment, and 3) ensuring that assessment tools are culturally appropriate for measuring experienced or perpetrated IPV/SA among racial/ethnic minority and LGBTQ+ Veterans.

CONCLUSIONS

Findings of this review indicate that IPV/SA is prevalent among Veteran women and men. Evidence is strongest for past-year experienced IPV/SA among Veteran women, while for Veteran men and spouses/partners of Veterans, less and lower strength evidence is available. Compared with experienced IPV/SA, evidence on perpetrated IPV/SA is more limited. Although the amount and strength of evidence varied, psychological/emotional IPV appears to be the most common form of experienced and perpetrated IPV/SA for both Veteran women and men. Future studies of IPV/SA prevalence among Veterans should attempt to generate prevalence estimates that are applicable to Veterans of the range of ages, sexual and gender identities, races/ethnicities, and geographic contexts present in the Veteran population.

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