

# ORIGINAL ARTICLE

Intimate partner violence in lesbian, gay, transgender, men who have sex with men, women who have sex with women, and bisexual people: A systematic review and metaanalysis of prevalence

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## ABSTRACT

**Background:** Intimate partner violence (IPV) in LGBT populations represents a major public health problem, and although research on the topic is increasing, knowledge remains limited, as current reviews have focused on specific populations. The prevalence of IPV in some studies reaches up to 48% in lesbian populations and 33% in MSM, while among transgender individuals, 37.5% have experienced physical violence and 25% sexual violence. Various factors aggravate the impact and make data collection more difficult.

**Objective:** This systematic review and meta-analysis aimed to synthesize the available evidence on the prevalence of intimate partner violence among lesbian, gay, bisexual, and transgender adults, considering the different forms of IPV and providing more precise estimates to inform future interventions and policies.

**Methods:** Our study is a systematic review. We searched four specialized databases of scientific articles: Scopus, Web of Science, PsycINFO, and PubMed. We included studies where the population was adults 18 to 65 years of age, who are in a casual or formal same-sex or same-gender partner relationship. We included cross-sectional studies and baseline cohort study measurements. We used the JBI Systematic Reviews "Checklist for Prevalence Studies" tool to assess the risk of bias for each study. Our study was registered in PROSPERO (CRD42024529982).

**Results:** Twenty-six studies met inclusion criteria; 17 were included in the meta-analysis, comprising 17,144 participants from various LGBT subgroups. The pooled prevalence was 29.5% (95% CI: 20.8%–39.0%), with high heterogeneity across studies (I<sup>2</sup> = 99.2%). Prevalence rates varied widely, especially among men who have sex with men (MSM) (8.1% to 54.5%) and transgender individuals (15.2% to 57.0%), highlighting significant variability depending on the subpopulation analyzed.

**Conclusions:** Our study concluded that IPV represents a significant global concern for both MSM and transgender individuals. Notably, psychological and emotional violence emerged as the most prevalent form of IPV in both groups. On the other hand, the need for more inclusive research that reflects diverse cultural and social contexts is highlighted. **Keywords:** Systematic Review Meta-analysis, Sexual and Gender Minorities, Intimate Partner Violence, Prevalence.

## INTRODUCTION

Intimate partner violence (IPV) is a global public health problem affecting individuals of all sexual orientations and gender identities. The World Health Organization (WHO, 2021) defines IPV as any behavior within an intimate relationship that causes physical, psychological, or sexual harm to the victim. In recent decades, researchers have increased their attention to IPV in lesbian, gay, bisexual, and transgender (LGBT) populations, revealing significant prevalence and unique patterns of victimization (Badenes-Ribera et al., 2016; Edwards et al., 2015). However, the global understanding of this phenomenon in the LGBT community remains limited due to the scarcity of studies that comprehensively cover all subgroups of this population (Badenes-Ribera et al., 2019; West, 2012).

The prevalence of IPV in LGBT populations varies considerably across studies, reflecting the complexity of the phenomenon and the methodological challenges in its investigation (Finneran & Stephenson, 2013; Longobardi & Badenes-Ribera, 2017). In women who identify as lesbian, one review reported that the average lifetime prevalence rates of IPV victimization reach 48%, while perpetration stands at 43% (Badenes-Ribera et al., 2014). Another review for the same population found that IPV prevalence fluctuates between 17% and 75%, with psychological and emotional violence being the most frequent form, with a prevalence of 14.7% (Badenes-Ribera et al., 2016). In men who have sex with men, a review found a combined IPV prevalence of 33% for victimization and 29% for perpetration (Liu et al., 2021). For transgender individuals, a review reported an average lifetime prevalence of physical IPV of 37.5% and sexual IPV of 25.0%. Additionally, transgender individuals were found to be 1.7 times more likely to experience any type of IPV compared to cisgender individuals (Peitzmeier et al., 2020)

Research on IPV in LGBT populations faces several methodological challenges that contribute to the variability in prevalence estimates. One of the main obstacles is the lack of validated measurement instruments specifically for LGBT relationships (Stephenson & Finneran, 2013). Furthermore, most studies rely on convenience samples, which limit the generalization of results (Edwards et al., 2014; Badenes-Ribera et al., 2016). The geographical distribution of studies also presents a significant bias, with 69% of research conducted in the USA, followed by China (19.2%), and to a lesser extent, other countries (Liu et al., 2021). This geographical concentration underscores the need for a global synthesis that can provide more internationally representative estimates.

The consequences of IPV in the LGBT population are significant and may be exacerbated by factors such as minority stress and lack of adapted support services (Edwards et al., 2015; Rollè et al., 2018). Stigmatization and heteronormative stereotypes can lead to underreporting and minimization of experienced violence, further complicating the obtaining of accurate prevalence estimates (Badenes-Ribera et al., 2014; Badenes-Ribera et al., 2016). A recent review identified specific risk factors for IPV in sexual minority women, including previous trauma, psychological and emotional problems, substance use, and minority stressors (Porsch et al., 2023). Additionally, lesbian and bisexual women have been observed to experience a disproportionately high burden of IPV victimization compared to their heterosexual peers, with approximately half of them reporting long-term negative impacts and trauma (Falluji et al., 2024). These factors underscore the crucial importance of understanding and addressing IPV in the LGBT community and the need for accurate prevalence estimates to inform public health policies and practices.

Although previous systematic reviews and meta-analyses on IPV in specific subgroups of the LGBT population exist (Buller et al., 2014; Badenes-Ribera et al., 2014; Badenes-Ribera et al., 2016; Peitzmeier et al., 2020; Callan et al., 2021; Liu et al., 2021;), to date, no comprehensive synthesis has been conducted that encompasses the entire LGBT community, considers multiple forms of IPV. Existing reviews have focused on specific populations without making comparisons among them, which does not allow for a more accurate understanding of the phenomenon under study, such as lesbian women (Badenes-Ribera et al., 2016), men who have sex with men (Finneran & Stephenson, 2012; Liu et al., 2021), or transgender individuals (Peitzmeier et al., 2020), and that addresses the methodological limitations identified in the literature (West, 2012; Badenes-Ribera et al., 2019). This knowledge gap limits our ability to develop effective, evidence-based interventions and public health policies to prevent and address IPV in these populations. Therefore, the objective of this systematic review and meta-analysis is to synthesize the available evidence on the prevalence of intimate partner violence in lesbian, gay, bisexual, and transgender adults, considering the different forms of IPV and providing more precise estimates to guide future interventions and policies.

#### **METHODS**

## **Design and register**

This study is based on a systematic review to analyze methodological and conceptual approaches to research on intimate partner violence among lesbian, gay, transgender, men who have sex with men, women who have sex with women and bisexual people. Our review followed the international standards proposed by PRISMA (see Supplementary Material 1). In addition, the study protocol was registered in PROSPERO (CRD42024529982). No significant methodological variations were recorded between the protocol registered in PROSPERO and the final manuscript. The only modification made was the change in statistical analysis software, replacing Stata with R.

## **Eligibility criteria**

The objective of our study is to determine the prevalence of intimate partner violence in lesbian, gay, transgender, and bisexual people. Our inclusion criteria were:

*Population:* adults 18 to 65 years of age, who are in a casual or formal same-sex or same-gender partner relationship. *Outcome:* prevalence of intimate partner violence in same-sex relationships. *Design:* Cross-sectional studies and baseline cohort study measurements will be included. Studies evaluating interventions (quasi-experimental and clinical trials) and review studies (narrative, scoping review, systematic reviews) will be excluded. *Setting:* We will include studies reported in Spanish and English. We will include studies from January 1, 1900, to

March 1, 2024. Only studies published in peer-reviewed scientific journals will be included, excluding books, theses, preprints, or other grey literature documents.

#### Information Sources and Search Strategy

A search was conducted in four specialized databases (Scopus, Web of Science, PsycINFO, and PubMed). The search strategy included specific terms for "prevalence", "lesbian, gay, transgender, and bisexual", and "intimate partner violence" (see Supplementary Material 2).

## Selection process

The records obtained from the search were downloaded in RIS format, and imported into the EndNoteX9 bibliographic manager, where automatic and manual techniques were applied to eliminate duplicates. After this cleaning, they were exported to an RIS file and loaded into ASReview. This open-source tool uses artificial intelligence to optimize the study selection process by prioritizing the most relevant records. This program was used during the title and abstract review, with a criterion for completion of the review being that more than half of the documents have been reviewed, and no relevant record is identified among the last 200 analyzed. ASReview was used for title and abstract review only, with the feature extraction technique of TF-IDF, the classifier Navie Bayes, with the maximum query strategy, and the balancing strategy of dynamic resampling. Full-text assessment was performed using Rayyan.ai, a free platform designed for collaborative systematic reviews. Two independent reviewers performed a title, abstract, and full-text review. In case of disagreement, they engaged in a dialogue to reach a consensus; if disagreement persisted, a third reviewer intervened to decide on the inclusion or exclusion of records. Those records excluded after full-text review were detailed in the Supplementary Material 3, indicating the reasons for their exclusion.

## **Data collection process**

Once the records to be reviewed have been selected, they will be exported to an Excel database to extract the relevant information. Two independent reviewers perform this process. Once the review is complete, the extracted relevant information is collated and consolidated into an Excel document. In the event of discrepancies in the information collected, the independent reviewers will discuss the matter until a consensus is reached. If differences persist, a third reviewer will make the final decision.

### Data items

Data extraction focused on collecting relevant information about the characteristics of the included article, such as the first author's last name, the first author's country of origin, the journal, and the year of publication. Details of participants were also collected, including total number, mean age, brief description, age group (adults), and type of participant (e.g., gay, lesbian, bisexual, transgender, etc.). In addition, outcome information was recorded, including the prevalence of intimate partner violence, confidence interval, and type of violence (sexual, physical, psychological). The type of sampling used in the study (probability and non-probability) and other relevant characteristics of the study, such as interest and funding, were noted.

## Study risk of bias assessment

To assess the risk of bias, we used the JBI Systematic Reviews "Checklist for Prevalence Studies" tool (Munn et al., 2020). This tool focuses on examining the methodological quality of studies and their ability to minimize bias in design, conduct, and analysis through nine specific domains. Each domain was assessed by considering whether it was at risk of bias, not at risk, uncertain risk, or not applicable. Two independent reviewers carefully performed the assessment. In the event of disagreement, consensus was sought through discussion; if disagreement persisted, a third reviewer made the final decision. We presented graphically the risk of bias analysis of each study individually, as well as grouped by each of the risk of bias domains identified in the Checklist for Prevalence Studies.

## Synthesis methods

## Description of studies

A narrative description of the included studies was provided, and a table summarizing the characteristics of the included studies was presented, e.g., countries with the highest number of articles, most common type of participant, type of violence studied, and total number of participants.

## Publication bias

When 10 or more studies were included in the meta-analysis, publication bias analysis was performed using funnel plots with significance contours and quantitative tests. We conducted publication bias assessments for analyses with sufficient studies to ensure adequate statistical power for bias detection. Peters' test was employed for each analysis, specifically designed for proportion meta-analyses and with better type I error control than Egger's test for this type of data (Peters et al., 2006). Publication bias was confirmed by asymmetric distribution in the funnel plot and a significant Peters' test (p-value <0.05).

#### Heterogeneity analysis

We assessed heterogeneity between studies using four indicators: a) Cochran's Q statistic, which assumes significant heterogeneity with a p-value < 0.05 (5%); b) Higgins' I2 statistic, which categorizes the degree of heterogeneity as low (I2 > 25%), moderate (I2 > 50%), and high (I2 > 70%) (Higgins et al., 2023); c) the H2 index, which indicates no heterogeneity with H2 = 1 or less (Higgins et al., 2023); and d) the between-study variance ( $\tau$ 2), where  $\tau$ 2 = 0 assumes no true heterogeneity between effect estimates (Huedo-Medina et al., 2006). We used random effects models because of the general assessment of heterogeneity.

## Meta-regression analysis

To explore potential sources of heterogeneity, we conducted meta-regression analyses examining study-level characteristics as potential moderators. The variables to be examined included participant mean age, publication year, and sample size. The publication year was centered on the means for each analysis to improve interpretability. The sample size was log-transformed to normalize the distribution. Meta-regression was performed

using random-effects models with Freeman-Tukey transformed proportions. For population comparisons between subgroups with sufficient studies, mixed-effects meta-regression was used, treating population type as a categorical moderator variable.

#### Meta-analysis

As high heterogeneity was expected, a random effects model was used to estimate the meta-analytic prevalence of IPV. First, we conducted a meta-analysis of all forms of violence as a unified category across all LGBT populations. Subsequently, we performed meta-analyses for each specific type of violence (physical, psychological, and sexual) across all LGBT populations to provide comprehensive prevalence estimates. We then conducted stratified analyses by subgroups based on the type of LGBT participant, including only populations with at least three studies per violence subtype to ensure adequate statistical power, stable heterogeneity estimation, and reliable confidence interval calculation.

For the effect size calculation, we used the Freeman-Tukey

transformation for proportions, which is particularly suitable for handling the skewness common in prevalence data. We calculated 95% confidence intervals for all effect estimates and included prediction intervals for the overall analysis to provide an estimate of the dispersion of prevalences expected in future studies.

Tests for subgroup differences were conducted to evaluate if prevalence rates varied significantly according to violence type or population group, with statistical significance set at p<0.05. All analyses were performed using R (version 2024.12.1) with the metafor package. Forest plots were created to visualize individual and pooled effect sizes along with their corresponding confidence intervals.

#### RESULTS

## Study selection

We initially identified 2,807 records across different databases. After removing 1,086 (38.6%) duplicates, 1,721 (61.3%) records progressed to title and abstract screening. Of these, we



excluded 1,664 (96.7%), leaving 57 (3.3%) records for full-text review. Subsequently, 31 (54.4%) were excluded, resulting in 26 (45.6%) articles selected for qualitative systematic review. Figure 1 shows the complete review process, and supplementary material 3 lists the articles excluded.

For quantitative analyses, we applied additional eligibility criteria. Of the 26 studies included in the systematic review, 17 were included in the meta-analysis of all forms of intimate partner violence. For specific violence type analyses, we included only subpopulations with at least three studies per violence subtype (physical, psychological, or sexual), a criterion met only by MSM and transgender populations.

## **Characteristics of Included Studies**

Among the 26 studies identified for the systematic review, the United States had the highest number of publications (14/26, 53.84%), followed by China (5/26, 19.23%) and other countries with lower representation. Most studies were published in 2021 (7/26, 26.92%). Regarding assessment instruments, 17 studies (65.38%) employed validated psychometric scales, while 9 (34.61%) used surveys specifically designed for this population. Table 1 presents the characteristics of studies included in the systematic review, specifying which were used in the different meta-analyses.

Author (Year)	Country	Study Population	Sample Size	Mean Age (SD)	Measurement Instrument	Violence Types*
Greenwood (2002)	USA	MSM	2,881	NR	Conflict Tactics Scale	P, S
Wong (2020)	USA	LGBT	-	30.5 (NR)	National Intimate Partner and Sexual Vio- lence Survey	P, Ph, S
Sabidó (2015)	Brazil	MSM	3,745	30.3 (NR)	Unspecified psychometric scale	S
Owen (2004)	USA	Gay	66	NR	National Violence Against Women Survey	AFV
Wall (2014)	USA	Gay, Bisexual,	190, 86	33.5 (NR)	Conflict Tactics Scale	AFV, Ph, S
		MSM				
Davis (2016)	USA	MSM	189	31.8 (NR)	Partner Violence Scale-GBM	AFV
Stephenson (2011)	USA	MSM	528	27.0 (NR)	Conflict Tactics Scale Revised	AFV, Ph, P, S
Shufang (2022)	China	MSM	413	32.4 (NR)	Unspecified psychometric scale	Ph, P, S
King (2021)	USA	Transgender	23,999	NR	U.S. Transgender Survey	P, S
Valentine (2017)	USA	Transgender	324	37.5 (13.6)	Questionnaire based on Abuse Assessment Screen	Ph, S
Murphy (2019)	Peru	Transgender	389	26.0 (NR)	Computer-Assisted Self-Interview Survey	AFV, Ph, S
Walsh (2021)	USA	MSM	214	36.02 (9.24)	Gay and Bisexual Men Intimate Partner Violence scale	Ρ
Stults (2023)	USA	Transgender	200	24.4 (3.2)	Modified Conflict Tactics Scale, Transgen- der-related IPV Scale, Identity Abuse Scale	AFV, Ph, P
Stults (2015)	USA	MSM	598	NR	Unspecified psychometric scale	AFV
Li (2021)	China	MSM	272	24.87 (6.53)	Conflict Tactics Scales (CTS2)	AFV
Finneran (2014)	USA	MSM	1,575	NR	Unspecified psychometric scale	S
Miltz (2019)	UK	MSM	410	NR	Health and Relationships survey	AFV, Ph, P, S
Hong (2022)	Multicenter	MSM	9,420	36.4 (11.25)	Unspecified psychometric scale	AFV
Dunkle (2013)	China	MSM	404	29.6 (10.4)	Unspecified survey	AFV
Hillman (2021)	USA	Transgender	3,462	59 (6.41)	National Intimate Partner and Sexual Vio- lence Survey	AFV, P, S
Longares (2017)	Spain	Gay, Lesbian	-	29.43 (9.78)	Psychological Abuse in Couple Scale	Ph, P, S
Wei (2021)	China	MSM	431	27.6 (8.2)	IPV-GBM scale	Ph, P, S
Zhu (2021)	China	MSM	578	NR	IPV-GBM scale	AFV, Ph, P, S
Thirunavukkarasu (2021)	India	MSM	235	25.5 (6.6)	Unspecified survey	AFV
Miller (2024)	USA	MSM	557	33 (33.3)	Unspecified psychometric scale	S
Wu (2015)	USA	MSM	74	41.8 (8.4)	Conflict Tactics Scale (CTS2)	AFV, Ph, P, S

Note: \*AFV = All forms of violence; Ph = Physical violence; P = Psychological violence; S = Sexual violence; NR = Not reported; \*\*AFV = Meta-analysis of all forms of violence; Ph-MSM = Physical violence in MSM; P-MSM = Psychological violence in MSM; S-MSM = Sexual violence in MSM; Ph-Trans = Physical violence in transgender; P-Trans = Psychological violence in transgender; S-Trans = Sexual violence in transgender; \$Only data corresponding to MSM were included; data from gay and bisexual populations were not included because these subpopulations did not meet the minimum criterion of 3 studies per violence subtype.

## **Risk of Bias Assessment**

The risk of bias assessment was conducted on 26 studies reporting 55 prevalence measurements using the Joanna Briggs Institute Critical Appraisal Checklist for Studies Reporting Prevalence Data (Figure 2A). The overall risk of bias assessment revealed that 43 measurements (78.2%) were classified as having high risk of bias, while only 5 measurements (9.1%) demonstrated low risk of bias, and 7 measurements (12.7%) showed some concerns.

Domain-specific analysis identified response rate adequacy and management (RoB9) as the most problematic area, with 33 measurements (60.0%) showing a high risk of bias. Sampling methods (RoB2) presented concerns in 26 measurements (47.3%), followed by sample frame appropriateness (RoB1) in 18 measurements (32.7%). The distribution of risk across domains is presented in Figure 2B, showing the proportion of lowrisk, some concerns, and high-risk assessments for each methodological domain and the overall evaluation.

## Meta-analysis of Overall Violence Prevalence

The meta-analysis of all forms of violence (Figure 3) included 17 studies with a total sample of 17,144 participants from various LGBT subpopulations. The pooled prevalence using the random-effects model was 0.295 (95% CI: 0.208–0.390), with extremely high heterogeneity between studies ( $I^2 = 99.2\%$ , Q = 1,376.5, p < 0.001). The wide prediction interval (0.023 to 0.702) reflects the considerable variability in population estimates, indicating that true prevalence in individual settings may range substantially beyond the pooled estimate.

The analysis encompassed diverse subpopulations: 11 studies in MSM populations, 3 studies in transgender populations, 2 studies in gay populations, 1 study in the bisexual population, and 1 study in the lesbian population. Individual study prevalences ranged from 0.081 (Thirunavukkarasu, 2021) to 0.545 (Davis, 2016) in MSM studies, and from 0.152 (Murphy, 2019) to 0.570 (Stults, 2023) in transgender studies.

## Meta-analysis of Prevalence by Specific Violence Types Across All LGBT Populations

We conducted comprehensive meta-analyses for each specific type of violence across all LGBT populations. The composition of studies for each analysis varies according to the violence types assessed in individual investigations, with some studies contributing to multiple analyses.

Physical violence across all LGBT populations (Figure 4) included 10 studies with a total sample of 3,537 participants, yielding a pooled prevalence of 0.138 (95% CI: 0.078-0.212) with extremely high heterogeneity ( $I^2 = 97.0\%$ , Q = 248.2, p < 0.001). Individual study estimates ranged from 0.034 (Shufang, 2022) to 0.385 (Stults, 2023).

Psychological violence across all LGBT populations (Figure 5) demonstrated the highest prevalence among specific violence types. Analysis of 13 studies (n = 33,404) showed a pooled prevalence of 0.293 (95% CI: 0.210-0.384) with extremely high heterogeneity ( $I^2$  = 99.4%, Q = 886.5, p < 0.001). Individual study prevalences ranged from 0.127 (Shufang, 2022) to 0.561 (Longares, 2017).

Sexual violence across all LGBT populations (Figure 6) included 15 studies with a total sample of 39,556 participants, showing a pooled prevalence of 0.078 (95% CI: 0.052-0.109) with extremely high heterogeneity ( $I^2 = 98.6\%$ , Q = 2,595.0, p < 0.001). Individual estimates varied from 0.021 (Pando, 2014) to 0.219 (King, 2021).

#### Subgroup Analysis by Population

Subgroup analyses were conducted for populations with sufficient studies to ensure statistical reliability and explore potential sources of heterogeneity. We included only populations with at least three studies per violence subtype, a criterion established to ensure adequate statistical power, stable heterogeneity estimation, and reliable confidence interval calculation for each specific violence type within each population. This criterion was met by MSM populations (7-11 studies per violence type) and transgender populations (3-4 studies per violence type), while gay (2 studies), lesbian (1 study), and bisexual populations (1 study) had insufficient study numbers for reliable subgroup meta-analysis across violence types.

## Meta-analysis of Prevalence by Violence Type in Men Who Have Sex with Men (MSM)

We conducted detailed subgroup analyses for the MSM population across all violence types (Supplementary material 4). The analysis of any form of violence in MSM included 11 studies (n = 12,825) with a pooled prevalence of 0.306 (95% CI: 0.212-0.408) and extremely high heterogeneity ( $I^2 = 98.6\%$ , p < 0.001). Physical violence in MSM included 7 studies (n = 2,624) with a pooled prevalence of 0.130 (95% CI: 0.068-0.208) and extremely high heterogeneity ( $I^2 = 96.4\%$ , Q = 152.8, p < 0.001). Psychological violence was analyzed in 8 studies (n = 5,529) with a pooled prevalence of 0.219 (95% CI: 0.138-0.313) and extremely high heterogeneity ( $I^2$  = 98.0%, Q = 341.3, p < 0.001). Sexual violence, evaluated in 11 studies (n = 11,382), showed a pooled prevalence of 0.074 (95% CI: 0.048-0.106) with extremely high heterogeneity ( $I^2$  = 96.6%, Q = 254.9, p < 0.001). The test for subgroup differences confirmed significant variation between violence types within the MSM population (Q[df=2] = 12.58, p = 0.002), with psychological violence demonstrating higher prevalence than sexual violence among specific types.

# Meta-analysis of Prevalence by Violence Type in Transgender Population

We conducted comprehensive analyses for the transgender population (Supplementary material 5) across available violence types, with study composition varying according to the specific violence types assessed in each investigation. The analysis of any form of violence in transgender individuals included 3 studies (n = 4,051) with a pooled prevalence of 0.364 (95% CI: 0.143-0.621) and extremely high heterogeneity ( $I^2 = 99.1\%$ , p < 0.001). Physical violence in transgender individuals included 3 studies (n = 913) with a pooled prevalence of 0.157 (95% CI: 0.022-0.379) and extremely high heterogeneity ( $I^2 = 98.3\%$ , Q = 95.4, p < 0.001). Psychological violence showed a pooled prevalence of 0.345 (95% CI: 0.271-0.422) from 3 studies (n = 27,661) with extremely high heterogeneity ( $I^2 = 98.3\%$ , Q = 201.1, p <

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Α										
Author (Year)	RoB1	RoB2	RoB3	RoB4	RoB5	RoB6	RoB7	RoB8	RoB9	Overall
Davis (2016)	⊙	0	•	⊙	0	•	0	0	۲	۲
Dunkle (2013)	$\odot$	⊗	•	0	0	$\odot$	0	0	0	<b>O</b>
Finneran (2014)	<u></u>	O	0	O	O	$\odot$	O	O	0	<u></u>
Greenwood (2002)	⊙	O	O	⊙	O	$\odot$	O	O	O	⊙
Hillman (2021)	⊙	8	•	⊙	0	•	•	•	0	0
Hong (2022)	$\odot$	⊗	O	O	0	$\odot$	O	O	O	<u>©</u>
King (2021)	$\odot$	⊙	•	⊙	Θ	$\odot$	Θ	Θ	8	۲
Li (2021)	8	0	0	O	0	$\odot$	0	0	Θ	0
Longares (2017)	0	0	0	⊙	⊙	$\odot$	•	⊙	•	<u></u>
Miller (2024)	0	⊙	•	⊙	۲	•	O	O	0	۲
Miltz (2019)	8	O	0	0	0	$\odot$	0	0	0	<b>O</b>
Murphy (2019)	8	۲	•	0	0	$\odot$	0	0	Θ	۲
Owen (2004)	8	8	⊗	⊙	0	$\odot$	0	0	Ø	0
Sabido (2015)	⊙	⊙	•	⊙	Θ	$\odot$	O	0	•	•
Shufang (2022)	8	⊗	•	⊙	O	$\odot$	O	0	0	<b>O</b>
Stephenson (2011)	⊙	•	•	0	0	•	0	0	۲	0
Stults (2015)	8	0	0	o	0	0	0	0	0	0
Stults (2023)	۲	Ø	0	0	0	0	0	0	Θ	0
Thirunavukkarasu (2021)	⊙	0	0	0	0	•	0	0	۲	0
Valentine (2017)	•	•	•	•	•	•	•	•	•	•

RoB1 = Was the sample frame appropriate to address the target population?

RoB2 = Were study participants sampled in an appropriate way? RoB3 = Was the sample size adequate?

RoB4 = Were the study subjects and the setting described in detail?

RoB5 = Was the data analysis conducted with sufficient coverage of the identified sample?

RoB6 = Were valid methods used for the identification of the condition?

RoB7 = Was the condition measured in a standard, reliable way for all participants?

RoB8 = Was there an appropriate statistical analysis?

RoB9 = Was the response rate adequate, and if not, was the low response rate managed appropriately?



**Figure 2.** Risk of bias assessment for prevalence studies. (A) Individual study risk of bias assessment across nine domains using the Joanna Briggs Institute Critical Appraisal Checklist. (B) Summary of the risk of bias proportions across all domains and overall assessment.

- + Low risk of bias
  - Some concerns
- × High risk of bias

0.001). Sexual violence was analyzed in 4 studies (n = 28,174) with a pooled prevalence of 0.087 (95% CI: 0.025-0.181) and extremely high heterogeneity ( $I^2 = 99.5\%$ , Q = 569.3, p < 0.001). Statistical testing identified significant differences between violence types within the transgender population (Q[df=2] = 7.73, p = 0.021).

## **Comparison Between MSM and Transgender Populations**

Statistical comparisons between MSM and transgender populations were conducted using mixed-effects meta-regression, which treats population type as a categorical moderator variable to evaluate differences in prevalence estimates between groups. Table 2 presents the comparison of prevalences between MSM and transgender populations by violence type. For any form of violence, transgender individuals showed a numerically higher pooled prevalence compared to MSM (0.364 vs 0.306), although this difference was not statistically significant (Q[df=1] = 0.25, p = 0.616). Similarly, comparisons for specific violence types showed no statistically significant differences between populations: physical violence (Q[df=1] = 0.05, p = 0.82), psychological violence (Q[df=1] = 2.84, p = 0.09), and sexual violence (Q[df=1] = 0.12, p = 0.73). Analyses for gay, lesbian, and bisexual populations were limited to inclusion in overall analyses due to insufficient study numbers per violence type to meet meta-analysis requirements (fewer than 3 studies per subgroup for most violence types).

 Study	Population	Cases	Total			Pooled Prevalence	[95% CI]	Weight (Random, %) (F	W b
Wall (2014)	Bisexual	5	86	H <b>B</b> -1		0.058	[0.017, 0.119	] 5.7	
Owen (2004)	Gay	37	66		·	0.561	[0.439, 0.679	] 5.6	
Wall (2014)	Gay	8	116	⊢∎→		0.069	0.029, 0.123	] 5.8	
Davis (2016)	Men who have sex with men	103	189		⊢∎⊣	0.545	0.473, 0.616	] 5.9	
Walsh (2021)	Men who have sex with men	32	214	⊦∎⊣		0.150	0.105, 0.201	] 5.9	
Li (2021)	Men who have sex with men	128	272	,	⊢∎⊣	0.471	[0.411, 0.530	] 5.9	
Miltz (2019)	Men who have sex with men	64	410	H <b>a</b> H		0.156	0.122, 0.193	] 6.0	
Hong (2022)	Men who have sex with men	1601	9420	•		0.170	0.162, 0.178	6.0	
Stults (2015)	Men who have sex with men	233	598		н	0.390	(0.351, 0.429	] 6.0	
Dunkle (2013)	Men who have sex with men	204	404		⊢∎⊣	0.505	0.456, 0.554	] 6.0	
Wei (2021)	Men who have sex with men	153	431	⊦∎⊣		0.355	(0.310, 0.401	] 6.0	
Zhu (2021)	Men who have sex with men	189	578	<b>(</b> ∎+		0.327	0.289, 0.366	6.0	
Thirunavukkarasu (2021	)Men who have sex with men	19	235	HEH		0.081	[0.049, 0.119	] 5.9	
Wu (2015)	Men who have sex with men	26	74			0.351	0.246, 0.464	] 5.6	
Murphy (2019)	Transgender	59	389	H <b>E</b> H		0.152	[0.118, 0.189	] 6.0	
Stults (2023)	Transgender	114	200		⊢∎⊣	0.570	[0.501, 0.638	] 5.9	
Hillman (2021)	Transgender	1406	3462	-	•	0.406	[0.390, 0.423	] 6.0	
Overall (Fixed)			17144	+		0.246	[0.239, 0.252	]	1
Overall (Random)			17144			0.295	[0.208, 0.390	] 100.0	
Heterogeneity: T <sup>2</sup> = 0.04,	, H <sup>2</sup> = 120.19, I <sup>2</sup> = 99.2%								
Q(16) = 1376.5, p = <0.0	001								
Test of θ = 0: z = 11.32, j	p = <0.001			0 0.2 0.4	1 4 0.6	95% Prec	liction Interva	al [0.023, 0.702]	

Proportion

Figure 3. Forest plot of intimate partner violence prevalence for all forms of violence across LGBT populations.

## Meta-regression Analysis

To explore potential sources of the observed high heterogeneity across all analyses, we conducted meta-regression analyses examining participant mean age, publication year, and sample size as potential moderators (Supplementary material 6). The extremely high heterogeneity observed across all violence types ( $l^2 > 96\%$  in all analyses) suggests substantial variability between studies that may reflect differences in study populations, measurement instruments, cultural contexts, or other unmeasured factors.

None of the examined variables showed significant associations with prevalence estimates across any violence type (all p > 0.05). Mean age showed no significant association across any violence type ( $\beta$  ranging from -0.005 to 0.001, all p > 0.05). Publication year showed minimal association with sexual violence prevalence ( $R^2 = 4.0\%$ ) but remained non-significant (p = 0.207). The sample size showed no meaningful association with any violence type. These findings indicate that the substantial between-study heterogeneity remains largely unexplained by the examined study-level characteristics.

## **Publication Bias**

We assessed publication bias using visual inspection of funnel plots and Peters' test for analyses with sufficient studies ( $\geq 10$  studies) to ensure adequate statistical power for bias detection.

Supplementary material 7 displays the funnel plot for all forms of violence across LGBT populations (17 studies). Peters' test showed no significant asymmetry (p = 0.222), suggesting no evidence of publication bias in the primary analysis. Supplementary material 8 shows the funnel plot for physical violence across LGBT populations (10 studies). Peters' test indicated no significant asymmetry (p = 0.557), suggesting no evidence of publication bias for this violence type.

However, statistical tests detected significant asymmetry for other violence types. Supplementary material 9 displays the funnel plot for psychological violence across LGBT populations (13 studies), with Peters' test detecting significant asymmetry (p = 0.006). Similarly, Supplementary material 10 shows the funnel plot for sexual violence across LGBT populations (15 studies), with Peters' test indicating significant asymmetry (p = 0.022). These findings suggest potential publication bias for psychological and sexual violence, with possible underrepresentation of studies reporting lower prevalence estimates.

## DISCUSSION

## Main findings

This meta-analysis represents the first quantitative synthesis examining IPV prevalence across multiple LGBT populations worldwide. Among the 26 studies included in the systematic review, 17 provided data suitable for meta-analysis of all forms

Study	Population	Cases	Total				Pooled Prevalence	[95% CI]	Weight Random, %)	Weight (Fixed, %
Wall (2014)	Men who have sex with men	12	190	⊦∎-i j			0.063	[0.032, 0.103]	9.9	5.4
Stephenson (2011)	Men who have sex with men	118	528		⊢∎⊣		0.223	[0.189, 0.260]	10.2	14.9
Shufang (2022)	Men who have sex with men	14	413	•			0.034	[0.018, 0.054]	10.2	11.7
Miltz (2019)	Men who have sex with men	96	410		⊢∎-	4	0.234	[0.194, 0.276]	10.2	11.6
Wei (2021)	Men who have sex with men	31	431	۲∎۲			0.072	[0.049, 0.098]	10.2	12.2
Zhu (2021)	Men who have sex with men	67	578	H <b>a</b>			0.116	[0.091, 0.143]	10.2	16.3
Wu (2015)	Men who have sex with men	20	74		<b>ب</b>	i	0.270	[0.175, 0.378]	9.1	2.1
Valentine (2017)	Transgender	22	324	H <b>≣</b> -1			0.068	[0.043, 0.098]	10.1	9.2
Murphy (2019)	Transgender	32	389	⊦∎⊣			0.082	[0.057, 0.112]	10.1	11.0
Stults (2023)	Transgender	77	200			⊢-∎	→ 0.385	[0.319, 0.454]	9.9	5.7
Overall (Fixed)			3537	+			0.126	[0.115, 0.137]		100.0
Overall (Random)			3537	-			0.138	[0.078, 0.212]	100.0	
Heterogeneity: r <sup>2</sup> = 0.02,	H <sup>2</sup> = 33.90, I <sup>2</sup> = 97.0%									
Q(9) = 248.2, p = <0.001										
Test of $\theta$ = 0: z = 7.71, p	= <0.001			0 0.1	0.2	0.3 0.4	95% Predic	ction Interval [	0.003, 0.414]	l
					-					

Figure 4. Forest plot of physical violence prevalence across all LGBT populations.

of violence, encompassing 17,144 participants and revealing a pooled prevalence of 29.5% (95% CI: 20.8%–39.0%). This finding indicates that nearly one in three individuals in LGBT relationships experience some form of intimate partner violence, representing a substantial public health burden. However, this estimate is characterized by extremely high heterogeneity (I<sup>2</sup> = 99.2%) and should be interpreted cautiously given the geographical concentration of studies primarily in North American contexts (53.84% from the United States).

When examining specific violence types across all LGBT populations, psychological violence emerged as the most prevalent form, affecting 29.3% (95% CI: 21.0%–38.4%) of individuals based on 13 studies. This was followed by physical violence at 13.8% (95% CI: 7.8%–21.2%) from 10 studies, and sexual violence at 7.8% (95% CI: 5.2%–10.9%) from 15 studies. The predominance of psychological violence aligns with emerging understanding of IPV as a multifaceted phenomenon extending beyond physical manifestations. However, publication bias was statistically confirmed for psychological (Peters' test, p = 0.006) and sexual violence (Peters' test, p = 0.022), suggesting these

prevalence rates may be overestimated due to underrepresentation of studies reporting lower estimates in the published literature.

Although our initial objective encompassed the entire LGBT community, the limited availability of studies meeting our methodological criteria restricted detailed subgroup analyses to MSM and transgender populations only. Among MSM, overall IPV prevalence was 30.6%, with the pattern of psychological violence predominating (21.9%), followed by physical (13.0%) and sexual violence (7.4%). Transgender individuals demonstrated numerically higher prevalence across all categories (36.4% overall), with psychological violence again being most prevalent (34.5%), followed by physical (15.7%) and sexual violence (8.7%). Despite these numerical differences, statistical comparisons revealed no significant differences between MSM and transgender populations across violence types (all p > 0.05), suggesting that while effect sizes may vary, the statistical evidence does not support differential prevalence patterns between these populations.

The substantial heterogeneity observed across all analyses,

Study	Population	Cases Total		Pooled Prevalence	e <sup>[95% CI]</sup> (R	Weight andom, %)	Weight (Fixed, %)
Longares (2017)	Gay	60 107		H 0.561	[0.466, 0.654]	7.4	0.3
Longares (2017)	Lesbian	59 107	·•	0.551	[0.456, 0.645]	7.4	0.3
Greenwood (2002)	Men who have sex with men	980 2881		0.340	[0.323, 0.358]	7.9	8.6
Stephenson (2011)	Men who have sex with men	175 528	<b>⊢</b> ∰-1	0.331	[0.292, 0.372]	7.8	1.6
Shufang (2022)	Men who have sex with men	26 413	-	0.063	[0.041, 0.089]	7.8	1.2
Walsh (2021)	Men who have sex with men	23 214	⊢ <b>≣</b> ⊣	0.107	[0.069, 0.153]	7.6	0.6
Miltz (2019)	Men who have sex with men	154 410	⊢∎⊣	0.376	[0.329, 0.423]	7.8	1.2
Wei (2021)	Men who have sex with men	53 431	H <b>⊞</b> H	0.123	[0.094, 0.156]	7.8	1.3
Zhu (2021)	Men who have sex with men	130 578	H	0.225	[0.192, 0.260]	7.8	1.7
Wu (2015)	Men who have sex with men	21 74		0.284	[0.186, 0.393]	7.1	0.2
King (2021)	Transgender	9937 23999	-	0.414	[0.408, 0.420]	7.9	71.8
Stults (2023)	Transgender	65 200	<b>⊢</b> ∎1	0.325	[0.262, 0.392]	7.6	0.6
Hillman (2021)	Transgender	1013 3462	÷	0.293	[0.278, 0.308]	7.9	10.4
Overall (Fixed)		33404	+	0.377	[0.372, 0.382]		100.0
Overall (Random)		33404		0.293	[0.210, 0.384]	100.0	
Heterogeneity: T <sup>2</sup> = 0.03	, H <sup>2</sup> = 157.13, I <sup>2</sup> = 99.4%						
Q(12) = 886.5, p = <0.00	01						
Test of $\theta$ = 0: z = 11.70,	p = <0.001						
				95% Prec —	diction Interval [	0.045, 0.640	0]
			0 0.2 0.4 0.6				

Figure 5. Forest plot of psychological violence prevalence across all LGBT populations.

with meta-regression examining participant age, publication year, and sample size explaining less than 4% of between-study variance, underscores the complexity of synthesizing IPV prevalence data across diverse LGBT populations and contexts. This unexplained variability likely reflects differences in study methodology, cultural contexts, legal frameworks, and measurement approaches that were not captured in our available moderator variables.

## Comparison with other studies

Previous systematic reviews have predominantly focused on individual LGBT subpopulations rather than multi-population synthesis, examining lesbian women (Badenes-Ribera et al., 2016), MSM (Finneran & Stephenson, 2012; Liu et al., 2021), or transgender individuals (Peitzmeier et al., 2020) separately. Our approach differs methodologically by enabling direct comparisons across populations while maintaining quality standards through exclusive inclusion of peer-reviewed publications, contrasting with some previous reviews that incorporated grey literature (Otero et al., 2015; Peitzmeier et al., 2020).

The observed discrepancy in psychological violence prevalence among MSM compared to previous meta-analyses warrants examination. While Liu et al. (2021) reported an emotional violence prevalence of 33% among MSM, our analysis found 21.9%. This difference may reflect several methodological and contextual factors. First, variations in recall periods and violence definitions across studies may contribute to different prevalence estimates. Second, underreporting of IPV by MSM may occur due to internalized homophobia and concerns about reinforcing negative LGBT stereotypes, as same-sex partner violence is often overlooked in both research and clinical contexts (Rojas-Solís et al., 2020; Rojas-Solís et al., 2021). Third, institutional prejudice within healthcare, religious, and law enforcement contexts may lead to differential reporting patterns across

 Study	Population	Cases Total		Pooled Prevalend	ce <sup>[95% CI]</sup> (R	Weight andom, %)	Weight (Fixed, %)
Greenwood (2002)	Men who have sex with men	145 2881	• ;	0.050	[0.043, 0.059]	7.0	7.3
Sabido (2015)	Men who have sex with men	89 3745	•	0.024	[0.019, 0.029]	7.0	9.5
Wall (2014)	Men who have sex with men	4 190	⊢∎i	0.021	[0.005, 0.047]	6.2	0.5
Stephenson (2011)	Men who have sex with men	52 528	<b>⊢-</b> ∎1	0.098	[0.074, 0.125]	6.7	1.3
Shufang (2022)	Men who have sex with men	21 413	⊢∎→	0.051	[0.032, 0.074]	6.7	1.0
Finneran (2014)	Men who have sex with men	59 1575	-	0.037	[0.029, 0.047]	6.9	4.0
Miltz (2019)	Men who have sex with men	63 410	·- <b>-</b>	0.154	[0.120, 0.190]	6.7	1.0
Wei (2021)	Men who have sex with men	38 431	⊷	0.088	[0.063, 0.117]	6.7	1.1
Zhu (2021)	Men who have sex with men	81 578	⊢∎→	0.140	[0.113, 0.170]	6.8	1.5
Miller (2024)	Men who have sex with men	56 557	<b>⊢</b> ∎i	0.101	[0.077, 0.127]	6.8	1.4
Wu (2015)	Men who have sex with men	11 74		→ 0.149	[0.076, 0.240]	5.3	0.2
King (2021)	Transgender	5266 23999	-	0.219	[0.214, 0.225]	7.0	60.7
Valentine (2017)	Transgender	17 324	⊢ <b>∎</b> -	0.052	[0.031, 0.080]	6.6	0.8
Murphy (2019)	Transgender	9 389	H∎-1	0.023	[0.010, 0.041]	6.6	1.0
Hillman (2021)	Transgender	334 3462	-	0.096	[0.087, 0.107]	7.0	8.8
Overall (Fixed)		39556	*	0.145	[0.141, 0.148]		100.0
Overall (Random)		39556	-	0.078	[0.052, 0.109]	100.0	
Heterogeneity: T <sup>2</sup> = 0.01	, H <sup>2</sup> = 71.06, l <sup>2</sup> = 98.6%						
Q(14) = 2595.0, p = <0.0	001						
Test of $\theta$ = 0: z = 10.64,	p = <0.001			050/	Deadiation later	10.005.0	2241
				95%	Frediction Interva	n [0.005, 0.	221]
			9 0.05 0.1 0.15 0.2	V.20			

Figure 6. Forest plot of sexual violence prevalence across all LGBT populations.

geographic regions and study periods. Finally, the predominant use of convenience sampling in both our included studies and previous research limits the representativeness of all estimates. For transgender populations, our findings showed greater consistency with existing literature. The prevalence of psychological violence of 34.5% aligns reasonably with Peitzmeier et al. (2020) estimates around 25%, particularly considering the limited number of studies and methodological variations. This convergence may reflect the particularly severe and visible nature of violence estimates less susceptible to the reporting variations observed in other populations.

The challenge of high heterogeneity appears to be a consistent pattern across IPV research in LGBT populations. Previous meta-analyses have documented similar difficulties: Buller et al. (2014) reported  $I^2 = 95.7\%$  in their analysis of six MSM studies, while Liu et al. (2021) found  $I^2 = 98.6\%$  across 34 studies examining MSM victimization. Even after excluding outlier studies, heterogeneity remained problematically high in previous analyses. This persistent pattern across multiple independent meta-analyses suggests that high heterogeneity reflects inherent complexity in IPV measurement across diverse LGBT populations and contexts, rather than methodological limitations specific to any single review approach.

# Public health implications

The pattern of violence identified in this analysis has direct implications for healthcare practice and policy development. The predominance of psychological over physical violence suggests that current IPV screening protocols, which often focus on identifying physical injuries, may systematically miss most LGBT individuals experiencing partner violence. Healthcare systems should prioritize developing and implementing screening tools that specifically assess for controlling behaviors, threats related to sexual orientation or gender identity disclosure, and forms of economic or social abuse that may be particularly relevant in LGBT relationships. Training programs for healthcare providers must emphasize recognition of non-physical forms of abuse and their serious health consequences.

The significant research gaps identified for lesbian, gay, and bisexual populations represent a critical challenge for evidence-based public health planning. The absence of sufficient data for these communities limits the development of comprehensive prevention programs and may result in resource allocation decisions that inadequately serve the full spectrum of LGBT individuals. Public health authorities should prioritize funding research initiatives that specifically target underrepresented LGBT populations to ensure that prevention strategies and clinical guidelines are informed by appropriate evidence rather than extrapolations from MSM and transgender data alone.

## Strengths and limitations

This systematic review and meta-analysis present several methodological strengths. First, we employed rigorous statistical approaches specifically designed for prevalence data, including Freeman-Tukey transformation for proportions and Peters' test

Table 2. Meta-analysis of prevalence by violence type and population.								
Violence Type	All LGBT [95% CI]	MSM [95% CI]	Transgender [95% CI]	MSM vs Transgender				
Any violence (All forms)	0.295 [0.208-0.390]	0.306 [0.212-0.408]	0.364 [0.143-0.621]	Q=0.25, p=0.616				
Studies (n)	17	11	3					
Sample size	17,144	12,825	4,051					
l² (%)	99.2	98.6	99.1					
Physical violence	0.138 [0.078-0.212]	0.130 [0.068-0.208]	0.157 [0.022-0.379]	Q=0.05, p=0.82				
Studies (n)	10	7	3					
Sample size	3,537	2,624	913					
l² (%)	97	96.4	98.3					
Psychological violence	0.293 [0.210-0.384]	0.219 [0.138-0.313]	0.345 [0.271-0.422]	Q=2.84, p=0.09				
Studies (n)	13	8	3					
Sample size	33,404	5,529	27,661					
l² (%)	99.4	98	98.3					
Sexual violence	0.078 [0.052-0.109]	0.074 [0.048-0.106]	0.087 [0.025-0.181]	Q=0.12, p=0.73				
Studies (n)	15	11	4					
Sample size	39,556	11,382	28,174					
l² (%)	98.6	96.6	99.5					

Note: All meta-analyses performed using random-effects model. "Any violence (All forms)" represents studies that measured experience of any type of intimate partner violence as a unified category. MSM vs Transgender comparisons conducted using mixed-effects meta-regression treating population type as a categorical moderator. Tests for subgroup differences within populations: Violence types within MSM: Q(df=2) = 12.58, p = 0.002; Violence types within Transgender: Q(df=2) = 7.73, p = 0.021.

for publication bias assessment, which are particularly suitable for handling the distributional characteristics inherent in prevalence studies. Second, our analysis incorporated comprehensive heterogeneity exploration through multiple statistical indicators (I<sup>2</sup>, Q-statistic, H<sup>2</sup>, and  $\tau^2$ ) combined with meta-regression analyses to identify potential sources of between-study variability. Third, we implemented a multi-dimensional analytical framework that simultaneously categorized studies by both violence type and population characteristics, enabling a more nuanced understanding of IPV patterns across different LGBT subgroups. Fourth, we established priori methodological criteria for subgroup analyses (minimum three studies per violence type), following established recommendations for adequate statistical power and reliable confidence interval estimation, thereby minimizing data-driven analytical decisions.

However, this study presents several important limitations that must be considered when interpreting the findings. First, publication bias was statistically confirmed for psychological violence (Peters' test, p = 0.006) and sexual violence (Peters' test, p = 0.022), suggesting potential overestimation of prevalence rates for these violence types and raising concerns about the representativeness of available literature. Second, extremely high heterogeneity was observed across all analyses (I<sup>2</sup> > 95%), with meta-regression explaining less than 4% of between-study variance, indicating that the sources of variability remain largely unexplained and challenging the interpretability of pooled estimates. Third, the geographical distribution of included studies was heavily concentrated in developed countries, particularly the United States (53.84% of studies), which limits the generalizability of findings to diverse cultural, legal, and social contexts globally. Fourth, the overall quality of evidence was limited, with 78.2% of prevalence measurements classified as having high risk of bias, primarily due to inadequate sampling methods and response rate management, which affects the reliability of the synthesized estimates. Fifth, a substantial proportion of studies (34.61%) employed measurement instruments lacking sufficient psychometric validation specifically for LGBT populations, potentially compromising the comparability and accuracy of prevalence assessments across studies. Finally, the predominant use of non-probabilistic sampling methods in included studies limits the capacity for population-level inference, as convenience samples may not adequately represent the broader LGBT communities from which prevalence estimates are derived.

## Conclusions

This systematic review demonstrates that intimate partner violence represents a significant public health concern across LGBT populations, with psychological violence emerging as the predominant form affecting both MSM and transgender individuals. However, confirmed publication bias, extremely high unexplained heterogeneity ( $l^2 > 95\%$ ), and geographical concentration primarily in North American studies substantially limit the reliability and generalizability of prevalence estimates.

The analysis revealed critical research gaps, particularly the underrepresentation of lesbian, gay, and bisexual populations, which prevented comprehensive analysis across the full spectrum of LGBT identities. Combined with the predominant use of convenience sampling and high risk of bias in 78.2% of included studies, these limitations underscore the urgent need for methodologically rigorous, geographically diverse research employing validated instruments specific to LGBT relationships to better inform evidence-based prevention strategies and policy development.

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#### **AUTHORS' CONTRIBUTION**

Juan Trujillo-Guablocho: Conceptualization, Investigation, Data curation, Project administration

Cristian Mosquera Minaya: Conceptualization, Investigation, Data curation, Project administration

Gianfranco Centeno-Terrazas: Formal Analysis, Methodology, Data Curation, Software, Supervision, Writing- original draft

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#### **CONFLICT OF INTEREST**

The author declares no conflict of interest.

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Not applicable.

## **REVIEW PROCESS**

This study has been reviewed by external peers in a double-blind mode. The editor in charge was David Villarreal-Zegarra. The review process is included as supplementary material 11.

## DATA AVAILABILITY STATEMENT

Not applicable.

## DECLARATION OF THE USE OF GENERATIVE ARTIFICIAL INTEL-LIGENCE

We used DeepL to translate specific sections of the manuscript and Grammarly to improve the wording of certain sections. The final version of the manuscript was reviewed and approved by all authors.

## DISCLAIMER

The authors are responsible for all statements made in this article.

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# Violencia de pareja en personas lesbianas, gais, transgénero, hombres que tienen sexo con hombres, mujeres que tienen sexo con mujeres y personas bisexuales: Revisión sistemática y metaanálisis de prevalencia

## RESUMEN

**Introducción:** La violencia de pareja (VP) en poblaciones LGBT representa un problema relevante de salud pública. Aunque las investigaciones al respecto han aumentado, el conocimiento sigue siendo limitado, ya que las revisiones existentes se han centrado en poblaciones específicas. La prevalencia de VP en algunos estudios alcanza hasta un 48 % en mujeres lesbianas y un 33 % en hombres que tienen sexo con hombres (HSH), mientras que, entre personas transgénero, un 37.5 % ha experimentado violencia física y un 25 % violencia sexual. Diversos factores agravan el impacto y dificultan la recolección de datos.

**Objetivo:** Esta revisión sistemática y metaanálisis tuvo como objetivo sintetizar la evidencia disponible sobre la prevalencia de violencia de pareja en personas adultas lesbianas, gais, bisexuales y transgénero, considerando las distintas formas de VP y proporcionando estimaciones más precisas para orientar futuras intervenciones y políticas.

**Métodos:** Este estudio es una revisión sistemática. Se realizaron búsquedas en cuatro bases de datos especializadas en artículos científicos: Scopus, Web of Science, PsycINFO y PubMed. Se incluyeron estudios con población adulta entre 18 y 65 años, en relaciones de pareja formales o casuales del mismo sexo o género. Se consideraron estudios transversales y mediciones basales de cohortes. Se utilizó la herramienta "Checklist for Prevalence Studies" de JBI Systematic Reviews para evaluar el riesgo de sesgo en cada estudio. El protocolo fue registrado en PROSPERO (CRD42024529982).

**Resultados:** Veintiséis estudios cumplieron con los criterios de inclusión; 17 fueron incluidos en el metaanálisis, con un total de 17,144 participantes pertenecientes a distintos subgrupos LGBT. La prevalencia agrupada fue de 29.5 % (IC 95 %: 20.8 %–39.0 %), con alta heterogeneidad entre estudios (I<sup>2</sup> = 99.2 %). Las tasas de prevalencia variaron considerablemente, especialmente entre los HSH (8.1 % a 54.5 %) y personas transgénero (15.2 % a 57.0 %), lo que evidencia una notable variabilidad según el subgrupo analizado.

**Conclusiones:** El estudio concluye que la violencia de pareja constituye un problema relevante a nivel global para los HSH y personas transgénero. Destaca que la violencia psicológica y emocional es la forma más prevalente en ambos grupos. Asimismo, se resalta la necesidad de investigaciones más inclusivas que reflejen la diversidad cultural y social.

Palabras claves: Revisión sistemática, Metaanálisis, Minorías sexuales y de género, Violencia de pareja, Prevalencia.