Violence motivated by perception of sexual orientation and gender identity: a systematic review

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Objective To assess the prevalence of physical and sexual violence motivated by perception of sexual orientation and gender identity in sexual and gender minorities.

Methods We searched nine databases without language restrictions for peer-reviewed and grey literature published from 2000 to April 2016. We included studies with more than 50 participants that measured the prevalence of physical and sexual violence perceived as being motivated by sexual orientation and gender identity or gender expression. We excluded intimate partner violence and self-harm. Due to heterogeneity and the absence of confidence intervals in most studies, we made no meta-analysis.

Findings We included 76 articles from 50 countries. These covered 74 studies conducted between 1995 and 2014, including a total of 202607 sexual and gender minority participants. The quality of data was relatively poor due to a lack of standardized measures and sometimes small and non-randomized samples. In studies where all sexual and gender minorities were analysed as one population, the prevalence of physical and sexual violence ranged from 6% (in a study including 240 people) to 25% (49/196 people) and 5.6% (28/504) to 11.4% (55/484), respectively. For transgender people the prevalence ranged from 11.8% (of a subsample of 34 people) to 68.2% (75/110) and 7.0% (in a study including 255 people) to 49.1% (54/110).

Conclusion More data are needed on the prevalence, risk factors and consequences of physical and sexual violence motivated by sexual orientation and gender identity in different geographical and cultural settings. National violence prevention policies and interventions should include sexual and gender minorities.

Introduction

On 17 June 2011, the United Nations (UN) Human Rights Council passed a resolution that expressed grave concern at violence and discrimination against individuals based on their sexual orientation and gender identity.1 This first-ever UN resolution on sexual orientation and gender identity requested a report by the Office of the High Commissioner for Human Rights. It was published in November 2011 and stated:

“Homophobic and transphobic violence has been recorded in all regions. Such violence may be physical (including murder, beatings, kidnappings, rape and sexual assault) or psychological (including threats, coercion and arbitrary deprivations of liberty). These attacks constitute a form of gender-based violence, driven by a desire to punish those seen as defying gender norms.”

An updated 2014 resolution confirmed these conclusions and culminated in the designation of an UN Independent Expert on sexual orientation and gender identity in September 2016.2-3

Although the UN recognized violence against individuals based on their sexual orientation and gender identity as a form of gender-based violence, we do not know whether such violence is characterized by the same gender dynamics and motivations as gender-based violence against women or if it follows a different path.4-9

Violence against individuals based on their sexual orientation is one of the ways in which sexual stigma is expressed.10 Sexual stigma based on perceived sexual orientation emerges from a society’s shared belief system in which homosexuality is denigrated and discredited as invalid relative to heterosexuality. Stigma based on gender identity works along the same lines of a gendered society in which only two gender possibilities, masculine or feminine, are perceived as valid. This stigma is incorporated by a society and enacted by its institutions.10 In many countries, for example, laws criminalize sexual and gender minorities directly or indirectly on the grounds of morality or promotion of non-traditional values. This can result in physical punishment, death penalty, arbitrary arrest and torture, ill-treatment in health facilities and forced sterilization.11-13 Discriminatory health policies have also resulted in unnecessary gender-conformation operations in intersex babies.14 Individuals identified as sexual and gender minorities (Box 1) and may internalize the negative attitudes and values of society. This internalized homophobia or transphobia has detrimental effects on their mental health and might result in self-harm or violence among individuals.15-17

Several comprehensive reviews have demonstrated that sexual and gender minorities are more likely to be victims of physical and sexual violence than the general population.18-21 However, these did not report whether the victims perceived the violence being against their sexual orientation and gender identity. Our study aimed to review the research evidence on the prevalence of physical and sexual violence motivated by perception of sexual orientation, gender identity or gender expression among sexual and gender minorities. We distinguished this from violence inflicted on a random member

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Footnotes:

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29
Systematic reviews
Physical and sexual violence

Box 1. Definitions used in the systematic review of physical and sexual violence motivated by perception of sexual orientation and gender identity

**Sexual and gender minority**
People identifying themselves as homosexual, bisexual or nonbinary sexual, such as pansexual and polysexual, or people engaging in homosexual, bisexual or nonbinary sexual behaviour or identifying with or expressing as a different gender than the one assigned at birth (male, female or another), or intersex people.

**Sexual orientation**
Refers to each person’s capacity for profound emotional, affectional and sexual attraction to (and intimate and sexual relations with) individuals of any sex.

**Gender identity or gender expression**
Refers to a person’s deeply felt internal and individual experience of gender, which may or may not correspond with the sex assigned at birth. It includes both the personal sense of the body – which may involve, if freely chosen, modification of bodily appearance or function by medical, surgical or other means – as well as other expressions of gender, including dress, speech and mannerisms.

**Homosexual**
A person who has sexual relations with or sexual attraction to people of the same sex.

**Gay**
The term gay can refer to same-sex sexual attraction, same-sex sexual behaviour and same-sex cultural identity. Unless individuals or groups self-identify as gay, the expression men who have sex with men should be used.

**Lesbian**
A lesbian is a woman attracted to other women. She may or may not be having sex with women, and a woman having sex with women may or may not be a lesbian. The term women who have sex with women should be used unless individuals or groups self-identify as lesbians.

**Bisexual**
A person who is attracted to or has sexual relations with both men and women.

**Transgender**
People whose gender identity and expression does not conform to the norms and expectations traditionally associated with their sex at birth. It includes individuals who have received gender reassignment surgery, individuals who have received gender-related medical interventions other than surgery (e.g. hormone therapy) and individuals who identify as having no gender, multiple genders or alternative genders.

**Intersex**
An individual with both male and female biological attributes (primary and secondary sexual characteristics).

**Gender non-conforming or gender variant or queer**
A person who challenges (or is not conforming to) prevailing gender norms and expectations or to heterosexual norms.

Note: Except for sexual and gender minority and queer, all definitions were based on the 2015 Joint United Nations Programme on HIV and AIDS terminology guidelines.21

of the general population or violence experienced by sexual and gender minorities, but not specifically perceived to be motivated by their sexual orientation or gender identity.

**Methods**

Our review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.22 The protocol for this review has not been registered on the PROSPERO register of systematic reviews, but is available on request.

We searched nine bibliographic databases (PubMed*, Embase*, Web of Science, Africa Wide Information, CINAHL, LILACS, Popline, Sociological Abstracts and GenderWatch) for articles published from 1 January 2000 to 28 April 2016. We used a combination of medical subject headings and text words (Box 2), with no language restrictions. These searches were supplemented by a scan of the citations in the articles for studies not found in the search and by consultation with individual experts about their knowledge of other studies.

Studies were eligible for inclusion if they included people belonging to a sexual or gender minority. We included both peer-reviewed and grey literature reporting studies that measured the prevalence of physical and sexual violence perceived as being motivated by sexual orientation, gender identity or gender expression. We excluded intimate partner violence and self-harm. Studies had to be published from 2000 to the search date, refer to data collected after 1995 and include at least 50 participants.

Two researchers screened the identified abstracts. When there was doubt or disagreement about whether an article met the inclusion criteria, the article was taken to the next stage of screening. The researchers then independently assessed the full text of potentially eligible studies. If needed, we contacted the authors of the articles for further information.

After initial screening, we appraised the included studies for quality. The criteria were: sampling method, sample representativeness, description of the population, completeness of the data, description of the methods, reliability of the data, and controls for confounding. We categorized studies as high quality if six to seven criteria were adequate, medium quality if three or five criteria were adequate and low quality if none to two criteria were adequate. None of the studies were excluded based on this quality assessment. We minimized publication bias across studies by including grey literature and consulting with experts.

Two researchers independently extracted details of the studies into a database. The data collected were: country and area; data collection period; study type and sampling method; description of study population; terminology of violence used to elicit responses from participants; time periods of experiences of violence (ever in lifetime, specific dates or time periods); participants’ perceptions of motivation for violence; sample size; and number and percentage of respondents affected by different types of violence. The outcome of interest for the review was the prevalence of physical and sexual violence motivated by perception of sexual orientation and gender identity. However, such violence was not the primary outcome in most of the studies.

We made a descriptive summary of the prevalence data in tables and charts. Although the UN resolution included sexual violence within physical violence, most studies reported them separately. Where possible and relevant, we conducted separate descriptive analyses of subgroups of sexual and gender minorities. The results of the studies were highly heterogeneous, due to vari-
ability in the sampling (definition of the population and sampling methods) and the descriptions of violence used to gather data from participants. In view of this heterogeneity and the absence of confidence intervals in most studies (reported in only six), we did not attempt a meta-analysis.

Results

Study selection

Our literature search yielded 10,601 references, of which 8,233 were unique entries. Next, we excluded 8,000 articles after screening titles and abstracts. Of the 233 references that potentially met the inclusion criteria, nine could not be retrieved, and of the 224 retrieved texts, 185 were excluded for different reasons (Fig. 1). We added 37 articles and reports after citation tracking and consulting with experts. In total 76 articles were included in the review. Seven articles were categorized as low quality, 55 as medium and 14 as high quality (Table 1).

Study characteristics

Of the 76 articles, 56 were in English language, seven in Spanish, six in Portuguese, three in Dutch, two in French and two in German. Data were from 50 countries: United States of America (USA; 27 articles), Australia (7 articles), Brazil (6 articles), Canada (5 articles), United Kingdom of Great Britain and Northern Ireland (5 articles), Argentina (3 articles), Belgium (3 articles), Chile (3 articles), Mexico (2 articles), Germany (2 articles), USA and Canada (2 articles); Australia and New Zealand (1 article), Spain and USA (1 article); 38 European countries (1 article); and Colombia, Côte d’Ivoire, Croatia, France, Italy, Netherlands, Rwanda and Singapore (1 article each).

Thirty-six publications were peer-reviewed articles, 38 were study reports, one was a dissertation and one a book chapter.

The 76 articles were based on 74 studies conducted between 1995 and 2014, including a total of 202,607 sexual and gender minorities participants. Sixty-three studies used a convenience sample, four used respondent-driven sampling, four used venue-based or time-location sampling, one random digit dialling and two used mixed methods (Table 2; available at: http://www.who.int/bulletin/volumes/96/11-17521).

Twenty-six studies included all sexual and gender minorities, of which eight were exclusively high-school students. Thirteen included homosexual and bisexual participants, of which five focused only on younger participants (maximum age 25 years) and one only on older participants (minimum age 60 years). Thirteen studies included homosexual or bisexual men and of these 8 targeted specific groups: bisexual men (4 studies); Latino men (1 study); homosexual or bisexual men aged < 29 years (1 study); seronegative homosexual or bisexual men aged 15–30 years (1 study); and non-white seropositive homosexual or bisexual men aged 13–24 years (1 study). Homosexual or bisexual women were exclusively sampled in four studies, of which three targeted specific groups: bisexual women (2 studies) and sexual minority women of non-androgyne identity (1 study). One study sampled young people who experienced same-gender attraction and another included the same study group together with young people who questioned their gender. One study sampled homosexual or bisexual men and male-to-female transgender people. Fifteen studies were of transgender people, of which five studies were specific groups only: male-to-female transgender people (3 studies), male-to-female individuals who were sex workers (1 study); and transitioning transgender people (1 study).

The descriptions and definitions of physical and sexual violence motivated by perception of sexual orientation and gender identity that were used to elicit participants’ responses varied across studies (Box 3). These included the victim’s perception of the motivation of the violence and the types of violence
experienced. A few studies used lists of specific violent acts or a combination of actions or scales with multiple items to measure experiences of different kinds of physical violence. Similarly, in the category of sexual violence several different definitions were used in different studies.

Fifty-seven studies asked about experiences of violence ever in the respondent’s lifetime. Six studies specified experiences over certain stages of the lifetime: from 13 years old (1 study); ages 6–10 years, 11–17 years and 18+ years (1 study); 1 year ago, 1–10 years ago and > 10 years ago (1 study); age 12–18 years and 18+ years (2 studies); or childhood versus adulthood (1 study). Other studies asked about experiences over specific time periods: 5 years (1 study); 2 years (1 study); 12 months (21 studies); 6 months (3 studies); or 1 month (2 studies). Ten studies asked about experiences in school: past year in school (7 studies); ever in school (1 study); during high-school years (1 study); and since the beginning of the school year (1 study). Some articles measured violence experienced both over the lifetime and over certain periods.

Prevalence of violence
A total of 57 studies provided data on the lifetime prevalence of any kind of physical violence motivated by perception of sexual orientation and gender identity (Table 2). Fig. 2 summarizes the data for 51 studies, according to the different populations and the attacker’s motivation as perceived by the victim (sexual orientation, gender identity or both). In 14 studies where all sexual and gender minorities were taken together the prevalence ranged from 6% in a study of 240 people to 25.0% (49/196). When transgender people were not included (11 studies) the figures ranged from 3.3% (24/761) to 31.1% (436/1402). In homosexual or bisexual men (29 studies), the prevalence was between 8.5% in a study of 603 people and 34.7% (318/916), although when only bisexual men were included (4 studies), the prevalence was no higher than 22.6% (12/53). A similar tendency was observed in homosexual or bisexual women (21 studies), with a prevalence range from 4.6% in a study including 909 individuals to 25.1% (42/167 people), and a lower prevalence when bisexual women only were included (4 studies). For transgender people prevalence (28 studies) ranged from 11.8% of a sample size of 34 to 68.2% (75/110 people).

There was no pattern of prevalence for the perceived motivation of the violence (sexual orientation, gender identity or both). The lifetime prevalence of violence in younger aged samples did not seem to be lower (Table 2).

Seven studies reported data specifically on the lifetime prevalence of being punched, kicked, hit or beaten up. In homosexual or bisexual men and women the lowest value was 10% in a study sampling a total of 1911 people, and the highest value was 15.6% (62/416 people). In studies sampling only men the prevalence peaked at 23.4% (of a total sample of 506). In 10 studies the researchers asked homosexual or bisexual women specifically about having objects thrown at them motivated by homophobia or transphobia. The prevalence ranged from 3.7% (in a study of 909 sexual minority women) up to 35.0% (65/186 lesbian, gay and bisexual people). Among transgender people, values ranged from 7.4% (in a study of 255 people) to 17.4% (70/402).

Prevalence of sexual violence
Fig. 3 shows the data from 33 studies reporting lifetime prevalence of any kind of sexual violence motivated by perception of sexual orientation and gender identity. The prevalence ranged from 5.6% (28/504 people) to 11.4% (55/484) for all sexual and gender minority groups (12 studies), and from 2.1% (8/377) to 9.7% (18/186) when only homosexual or bisexual men and women were considered (5 studies). The prevalence in homosexual or bisexual men (17 studies) ranged from 3.7% in a study sampling 3429 people to 16.5% (69/419 people). This was slightly higher than in studies of homosexual or bisexual women (8 studies), where it ranged from 1.0% (1/102 people) to 13.2% (14/106). When bisexual people were disaggregated (10 studies), the prevalence ranged from 2.4% (1/41 people) to 14.7% (24/95). Between 7.0% (in a study of 255 people) and
Table 1. Quality appraisal of the 76 articles (74 studies) included in the systematic review of physical and sexual violence motivated by perception of sexual orientation and gender identity

| Publication                        | Sampling method(s) | Sample representativeness | Description of population | Follow up or completeness of data | Description of methods | Reliability of data | Controlled for confounding | Score |
|-----------------------------------|--------------------|---------------------------|---------------------------|-----------------------------------|------------------------|---------------------|--------------------------|-------|
| D'Augelli et al., 200142          | N                  | Y                         | Y                         | Y                                 | Y                      | Y                   | Y                        | High  |
| Diaz et al., 200148              | Y                  | Y                         | Y                         | Y                                 | Y                      | Y                   | Y                        | High  |
| Lombardi et al., 200178          | N                  | Y                         | Y                         | N                                 | Y                      | Y                   | Y                        | Medium|
| D'Augelli et al., 200281          | N                  | Y                         | Y                         | Y                                 | Y                      | Y                   | Y                        | High  |
| Kosciw, 200244                    | N                  | Y                         | Y                         | N                                 | Y                      | Y                   | Y                        | Medium|
| Carrara et al., 200344           | N                  | N                         | Y                         | N                                 | Y                      | Y                   | N                        | Medium|
| Jarman et al., 200343            | N                  | Y                         | Y                         | N                                 | Y                      | Y                   | N                        | Medium|
| Morris et al., 200381            | N                  | Y                         | Y                         | Y                                 | Y                      | Y                   | N                        | Medium|
| Rose, 200344                     | N                  | N                         | Y                         | N                                 | Y                      | Y                   | N                        | Low   |
| Huebner et al., 200449           | N                  | Y                         | Y                         | Y                                 | Y                      | N                   | Y                        | Medium|
| Kosciw 2004                      | N                  | Y                         | N                         | Y                                 | Y                      | Y                   | Y                        | Medium|
| Carrara et al., 200545           | N                  | Y                         | N                         | N                                 | Y                      | Y                   | N                        | Medium|
| Figari et al., 200546            | N                  | N                         | Y                         | Y                                 | N                      | Y                   | Y                        | Medium|
| Hillier et al., 200547           | N                  | Y                         | Y                         | Y                                 | Y                      | Y                   | N                        | Medium|
| Carrara et al., 200646           | N                  | N                         | Y                         | N                                 | Y                      | Y                   | N                        | Medium|
| Clements-Nolle et al., 200640     | N                  | Y                         | Y                         | Y                                 | Y                      | Y                   | Y                        | High  |
| D'Augelli et al., 200644         | N                  | Y                         | N                         | Y                                 | Y                      | N                   | N                        | Medium|
| Jones et al., 200645             | N                  | N                         | Y                         | N                                 | Y                      | Y                   | N                        | Medium|
| Kosciw et al., 200648            | N                  | Y                         | N                         | Y                                 | Y                      | Y                   | N                        | Medium|
| Ortiz-Hernandez et al., 200648   | N                  | Y                         | N                         | Y                                 | Y                      | Y                   | Y                        | Medium|
| Petts et al., 200656             | N                  | Y                         | N                         | Y                                 | N                      | N                   | N                        | Medium|
| van San et al., 200659           | N                  | N                         | Y                         | Y                                 | Y                      | N                   | N                        | Medium|
| Carrara et al., 200757           | N                  | N                         | Y                         | N                                 | Y                      | N                   | N                        | Medium|
| Couch et al., 200764             | N                  | Y                         | Y                         | Y                                 | Y                      | N                   | N                        | Medium|
| Lippl, 200758                    | N                  | Y                         | Y                         | Y                                 | Y                      | N                   | N                        | Medium|
| Poelman et al., 200761           | N                  | Y                         | Y                         | N                                 | Y                      | Y                   | N                        | Medium|
| Barrientos et al., 200852        | N                  | N                         | Y                         | N                                 | Y                      | Y                   | N                        | Medium|
| Cadiou et al., 200853            | N                  | Y                         | Y                         | Y                                 | Y                      | Y                   | Y                        | High  |
| Kosciw et al., 200854            | N                  | Y                         | Y                         | N                                 | Y                      | Y                   | Y                        | Medium|
| Lampinen et al., 200857          | N                  | Y                         | Y                         | N                                 | Y                      | Y                   | Y                        | Medium|
| Paterson et al., 200858          | N                  | Y                         | Y                         | Y                                 | N                      | N                   | N                        | Medium|
| Scottish Transgender Alliance, 200890 | N                  | Y                         | N                         | N                                 | Y                      | N                   | N                        | Low   |
| Brigeiro et al., 200958          | N                  | N                         | Y                         | Y                                 | Y                      | Y                   | N                        | Medium|
| Greytak, 200942                  | N                  | Y                         | N                         | Y                                 | Y                      | N                   | N                        | Medium|
| Herek, 200946                    | Y                  | Y                         | Y                         | Y                                 | Y                      | Y                   | Y                        | High  |
| Lippl, 200947                    | N                  | Y                         | Y                         | Y                                 | Y                      | N                   | Y                        | Medium|
| Hillier et al., 201048           | N                  | Y                         | Y                         | Y                                 | N                      | N                   | Y                        | Medium|
| Nuttbrock et al., 201046         | N                  | Y                         | Y                         | N                                 | Y                      | Y                   | Y                        | Medium|
| Chapman et al., 201153           | N                  | N                         | Y                         | N                                 | N                      | N                   | N                        | Low   |
| Hightow-Weidman et al., 201156   | N                  | Y                         | Y                         | N                                 | Y                      | Y                   | Y                        | Medium|
| Nemoto et al., 201159            | N                  | Y                         | N                         | Y                                 | Y                      | N                   | N                        | Medium|
| Barrientos et al., 201222        | N                  | N                         | Y                         | N                                 | Y                      | N                   | N                        | Medium|
| Brito et al., 201223             | N                  | N                         | N                         | Y                                 | Y                      | N                   | N                        | Medium|
| Guasp, 201224                    | N                  | Y                         | N                         | N                                 | N                      | N                   | N                        | Low   |
| Iosa et al., 201226              | N                  | N                         | Y                         | N                                 | Y                      | N                   | N                        | Medium|
| Kosciw et al., 201228            | N                  | Y                         | N                         | Y                                 | Y                      | Y                   | Y                        | Medium|
| Leonard et al., 201229           | N                  | Y                         | N                         | Y                                 | N                      | N                   | N                        | Medium|
| Levitt et al., 201225            | N                  | Y                         | Y                         | N                                 | N                      | N                   | N                        | Medium|
| McNeil et al., 201226            | N                  | Y                         | Y                         | Y                                 | Y                      | N                   | N                        | Medium|

(continues...
49.1% (54/110 people) of transgender people reported sexual violence (22 studies).

Six studies reported specifically on rape (Table 2). Among homosexual or bisexual men and women between 0.3% (6/1740 people) and 10.0% (of 264 people) reported ever being raped due to their sexual orientation or gender identity, with figures for men being higher than those for women. The prevalence of rape for transgender people ranged from 3.3% (in a study sampling 255 people) to 9.9% (25/253 people).

**Discussion**

Our review found a high prevalence of physical and sexual violence motivated by perception of sexual orientation and gender identity experienced by sexual and gender minorities, particularly among transgender people. These values suggest that such violence accounts for a large part of all the violence encountered by sexual and gender minorities. Nevertheless, it remains to be researched whether such violence explains the higher prevalence of violence against sexual and gender minorities in comparison with the rest of the population. The higher prevalence in transgender people might be partly explained by a higher risk of being involved in sex work.

Violence motivated by perception of sexual orientation and gender identity might not be confined to a minority population. Recent research identified distinct populations on the sexual orientation continuum who identify as mostly heterosexual with a small degree of same-sex sexual or romantic attraction, including occasionally having sexual relations with someone from the same sex. Although we found no publications on this population, earlier research has shown that the prevalence of childhood victimization by adults. This elevated proportion is similar to those found among homosexual or bisexual men and women compared to heterosexuals, which might be explained by gender non-conformity in childhood. Moreover, people who do not belong to a sexual or gender minority, have also reported being victims of violence motivated by perception of sexual orientation and gender identity.

A review of systematic reviews showed that sexual and gender minorities are highly burdened by human immunodeficiency virus infection, sexually transmitted infections, sexually transmitted infection-related cancers, mental health conditions and violent experiences. We suggest further research into the associations of violence motivated by perception of sexual orientation and gender identity with adverse health and social outcomes, including criminalization. This includes the effect of what has been termed syndemic vulnerability or the synergistic interaction between health conditions, exacerbated under circumstances of structural and political adversity.
If we want to eradicate violence motivated by perception of sexual orientation and gender identity, we must identify the mechanisms and motivations of such violence. The perpetrators are often male and although violence is not necessarily a part of men’s dominant position in society (hegemonic masculinity), the two are often linked. In many parts of the world, women are perceived as inferior and therefore both femininity and homosexuality are denigrated and discredited. Physical or sexual force and threats are ways to achieve control, including punishment of perceived acts of resistance to or transgression of gender norms and behaviours. Although same-sex attraction and gender nonconformity can negatively affect the personal relations of individuals with their peers, some authors believe that sexual and gender minorities are mainly attacked because they defy gender stereotypes. This has prompted calls for the elimination of the dichotomist gender characterization.

A wide range of descriptions and definitions of violence were used to elicit responses in the included studies:

**Motivation for the violence**

The victim’s perception of the motivation of the violence was variously defined as: “because you’re in a queer” situation; “because someone knew or presumed you were gay”; “because of if based on/attributed to (perceived) sexual orientation”; “on the grounds of homosexuality”; “related to MSM-status”; “because of gender identity” or “because of based on sexuality”; “because of your sexual identity” or “because of based on your gender identity” or “because of your sexual and gender identity”; “on the basis of gender issues”; “for being gay or being perceived as effeminate”/“related to their sexual orientation, how they express their gender”; “due to gender stereotype transgression”/“due to being trans (gender)”/“thought it was” because of gender identity or gender presentation”; “because you’re trans or because of your gender expression”; “because you’re lesbian/gay/bisexual/transgender”/“transgender status, gender identity or expression”; “because of the status as a transgender person”/“because of transgender identity or background” “due to being queer”; “an incident that you felt was homophobic (or transphobic)”; “an anti-lesbian/gay incident”; “heterosexist violence and harassment because of sexuality or gender identity”.

**Types of physical violence**

Different terms for physical violence were used in different articles. Some used “physical violence”/“assault”, “victimization”, “abuse”, “aggression”, “mistreatment” or “injury”.

One article used a longer definition: “the intentional use of physical force with the potential for causing death, disability, injury, or harm; some examples: scratching, pushing, shoving, throwing, grabbing, biting, choking, shaking, slapping, punching”. Another used the term “criminal victimization”, including specific incidents of physical violence: “experience of a crime against their person (hit, beaten, physically attacked, sexually assaulted)...”.

Similarly, most articles included specific violent acts or a combination of actions: “thrown some object”/“hit”/“knocked down”/“injured with some weapon”/“punched”/“kicked”/“beaten”/“hurt with a knife, gun, bat, or some other weapon”/“assault/robbery with violence”/“assault with a weapon, assault without a weapon”/“grievous bodily harm”/“attempted murder” and “violent assault”.

One article used an extensive scale to measure physical violence. Physical violence was surveyed making use of 11 items, ranging from “an object that was thrown at me”, “I was being pushed or pulled”, “someone hit me with his or her hand” to “someone tried to strangle or suffocate me”.

**Types of sexual violence**

Several different terms were used in different articles to define sexual violence: “sexual violence”/“sexual assault”/“rape”/“sexual aggression”/“sexual victimization”/“sexual abuse” and “other sexual violence”.

In some publications definitions for sexual violence or similar concepts were applied: “ever been forced to engage in unwanted sexual activity”; “any sexual act that is perpetrated against someone’s will; some examples: completed non-consensual sex act, an attempted non-consensual sex act, abusive sexual contact and non-contact sexual abuse”/“sexual aggression: sexually molested and/or forced to have sexual relations with penetration”/“sexual victimization: ever been sexually abused or raped”.

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**Box 3. Terminology used in studies included in the systematic review of physical and sexual violence motivated by perception of sexual orientation and gender identity**

A wide range of descriptions and definitions of violence were used to elicit responses in the included studies:

**Motivation for the violence**

The victim’s perception of the motivation of the violence was variously defined as: “because you’re in a queer” situation; “because someone knew or presumed you were gay”; “because of if based on/attributed to (perceived) sexual orientation”; “on the grounds of homosexuality”; “related to MSM-status”; “because of gender identity” or “because of based on sexuality”; “because of your sexual identity” or “because of based on your gender identity” or “because of your sexual and gender identity”; “on the basis of gender issues”; “for being gay or being perceived as effeminate”/“related to their sexual orientation, how they express their gender”; “due to gender stereotype transgression”/“due to being trans (gender)”/“thought it was” because of gender identity or gender presentation”; “because you’re trans or because of your gender expression”; “because you’re lesbian/gay/bisexual/transgender”/“transgender status, gender identity or expression”; “because of the status as a transgender person”/“because of transgender identity or background” “due to being queer”; “an incident that you felt was homophobic (or transphobic)”; “an anti-lesbian/gay incident”; “heterosexist violence and harassment because of sexuality or gender identity”.

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One article used a longer definition: “the intentional use of physical force with the potential for causing death, disability, injury, or harm; some examples: scratching, pushing, shoving, throwing, grabbing, biting, choking, shaking, slapping, punching”. Another used the term “criminal victimization”, including specific incidents of physical violence: “experience of a crime against their person (hit, beaten, physically attacked, sexually assaulted)...”.

Similarly, most articles included specific violent acts or a combination of actions: “thrown some object”/“hit”/“knocked down”/“injured with some weapon”/“punched”/“kicked”/“beaten”/“hurt with a knife, gun, bat, or some other weapon”/“assault/robbery with violence”/“assault with a weapon, assault without a weapon”/“grievous bodily harm”/“attempted murder” and “violent assault”.

One article used an extensive scale to measure physical violence. Physical violence was surveyed making use of 11 items, ranging from “an object that was thrown at me”, “I was being pushed or pulled”, “someone hit me with his or her hand” to “someone tried to strangle or suffocate me”.

**Types of sexual violence**

Several different terms were used in different articles to define sexual violence: “sexual violence”/“sexual assault”/“rape”/“sexual aggression”/“sexual victimization”/“sexual abuse” and “other sexual violence”.

In some publications definitions for sexual violence or similar concepts were applied: “ever been forced to engage in unwanted sexual activity”; “any sexual act that is perpetrated against someone’s will; some examples: completed non-consensual sex act, an attempted non-consensual sex act, abusive sexual contact and non-contact sexual abuse”/“sexual aggression: sexually molested and/or forced to have sexual relations with penetration”/“sexual victimization: ever been sexually abused or raped”.

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**Fig. 2. Lifetime prevalence of physical violence motivated by perception of sexual orientation and gender identity, by perceived motivation for the attack**

Notes: Based on 51 studies. Six of the 57 studies were not included because they measured a particular form of physical violence, such as being hit or beaten. Data are presented from the smallest subgroup in each study.
Some limitations of this review are that most studies used a non-probability sample, mostly a convenience sample, and provided little information on the representativeness of the sample, the potential impact of non-participation, or the study power. The reliability and comparability of studies were limited, as it was not possible to compare between countries, regions or cultural backgrounds. The studies relied on the participants’ self-reports to determine whether they had been a victim of violence and whether that violence was motivated by their sexual orientation and gender identity. Without increased understanding of respondents’ narratives about violence and its motives, research in this field will be vulnerable to criticism.¹⁰

Despite these limitations, our review shows that high proportions of sexual and gender minorities experienced physical and sexual violence, motivated by perception of sexual orientation and gender identity, which might have an effect on their health and well-being. National violence prevention policies and interventions should include such violence, integrating it into national health surveys and health promotion efforts and improve data collection and reporting of incidents. ■

Competing interests: None declared.

The quality of our data was relatively poor due to a lack of standardized measures and sometimes small and non-randomized samples. The evidence base needs to be strengthened. More and better research on the prevalence and adverse outcomes of violence motivated by perception of sexual orientation and gender identity is needed across many different geographical and cultural settings (especially outside the USA) and different socioeconomic and age groups. Community organizations should be empowered to add scientific value to their existing efforts to map such violence. A consensus is needed on definitions and measures of violence motivated by perception of sexual orientation and gender identity and how to operationalize them to allow for comparisons across studies.

Malnarrative

The lifetime prevalence of sexual violence motivated by perception of sexual orientation and gender identity, by perceived motivation for the attack

![Diagram](image_url)

Notes: Based on 33 studies. Data are presented from the smallest subgroup in each study.

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Competing interests: None declared.
Rezumat

Violenta motivată prin percepția orientației sexuale și identității de gen: o recensământ sistematic

Scop Afișa prevalența violențelor fizice și sexuale motivate prin percepția orientației sexuale și identității de gen în minorități sexuale.

Mетоды Насялението на човешка сексуална ориентация и гендерна индивидуалност: систематичен обзор

Цел Оценить распространенность физического и сексуального насилия на почве сексуальной ориентации и гендерной индивидуальности в отношении сексуальных и гендерных меньшинств.

Методы В девяти базах данных авторы провели поиск без языковых ограничений «серой» и рецензируемой специалистами литературы, опубликованной с 2000 года по апрель 2016 года. В анализ были включены исследования (в них приняли участие более 50 респондентов), посвященные оценке распространенности физического и сексуального насилия на почве сексуальной ориентации, гендерной индивидуальности или гендерного самовыражения. Исключались насилие со стороны полового партнера и причинение вреда самому себе. Из-за неоднородности данных и отсутствия доверительных интервалов в большинстве исследований метаанализ не был проведен.

Резултаты В анализ включили 76 статей из 50 стран. Они охватывали 74 исследования, проведенные в период между 1995 и 2014 годами, включая в общей сложности 202 607 участников на общем фоне и 9 716 участников, включенных в 20 исследования. В 13 исследованиях были описаны атаки с применением оружия, в 23 исследованиях были описаны атаки на основе сексуальной ориентации, в 7 исследованиях были описаны атаки на основе гендерной идентичности или гендерного самовыражения. В 4 исследованиях были описаны атаки на основе сексуальной ориентации и гендерной идентичности, в 2 исследованиях были описаны атаки на основе сексуальной ориентации и гендерного самовыражения, в 1 исследовании были описаны атаки на основе гендерной идентичности и гендерного самовыражения, в 1 исследовании были описаны атаки на основе сексуальной ориентации, гендерной идентичности и гендерного самовыражения.

Конъюнкция Нами включены 138 насилий, описанных в 20 исследованиях, включая в общей сложности 202 607 участников на общем фоне и 9 716 участников, включенных в 20 исследования. В 13 исследованиях были описаны атаки с применением оружия, в 23 исследованиях были описаны атаки на основе сексуальной ориентации, в 7 исследованиях были описаны атаки на основе гендерной идентичности или гендерного самовыражения. В 4 исследованиях были описаны атаки на основе сексуальной ориентации и гендерной идентичности, в 2 исследованиях были описаны атаки на основе сексуальной ориентации и гендерного самовыражения, в 1 исследовании были описаны атаки на основе гендерной идентичности и гендерного самовыражения, в 1 исследовании были описаны атаки на основе сексуальной ориентации, гендерной идентичности и гендерного самовыражения.

Насилие на почве сексуальной ориентации и гендерной индивидуальности: систематический обзор
Resumen
Violencia motivada por la percepción de la orientación sexual y la identidad de género: una revisión sistemática

Objetivo Evaluar la prevalencia de la violencia física y sexual motivada por la percepción de la orientación sexual y la identidad de género en las minorías sexuales y de género.

Métodos Se realizaron búsquedas en nueve bases de datos sin restricciones de idioma en busca de literatura gris y examinada por expertos publicada desde 2000 hasta abril de 2016. Incluimos estudios con más de 50 participantes que midieron la prevalencia de la violencia física y sexual percibida como motivada por la orientación sexual y la identidad o la expresión de género. Excluimos la violencia en la pareja íntima y la autolesión. Debido a la heterogeneidad y la ausencia de intervalos de confianza en la mayoría de los estudios, no realizamos ningún metanálisis.

Resultados Se incluyeron 76 artículos de 50 países. Estos cubrieron 74 estudios realizados entre 1995 y 2014, incluyendo un total de 202.067 participantes de minorías sexuales y de género. La calidad de los datos fue relativamente baja debido a la falta de medidas estandarizadas y, en ocasiones, muestras pequeñas y no aleatorizadas. En los estudios en los que todas las minorías sexuales y de género se analizaron como una única población, la prevalencia de la violencia física y sexual varió del 6% (en un estudio que incluía a 240 personas) al 25% (49/196 personas) y del 5,6% (28/504) al 11,4% (55/484), respectivamente. Para las personas transsexuales, la prevalencia varió del 11,8% (de una submuestra de 34 personas) al 68,2% (75/110) y del 7,0% (en un estudio que incluyó a 255 personas) al 49,1% (54/110).

Conclusión Se necesitan más datos sobre la prevalencia, los factores de riesgo y las consecuencias de la violencia física y sexual motivada por la orientación sexual y la identidad de género en diferentes entornos geográficos y culturales. Las políticas e intervenciones nacionales de prevención de la violencia deberían incluir las minorías sexuales y de género.

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Table 2. Main characteristics of the 76 articles (74 studies) included in the systematic review of physical and sexual violence motivated by perception of sexual orientation and gender identity

| Author and year | Area, country | Data-collection period | Study population | Study type; sampling method | Type of violence | Sample, no. | No. (%) affected by violence |
|-----------------|---------------|------------------------|------------------|-------------------------------|-----------------|------------|---------------------------|
| D’Augelli et al., 2003 | USA and Canada | 1997–1998 | Lesbian gay and bisexual people (≥ 60 years old) | Convenience; cross-sectional | Lifetime experience of physical victimization: object being thrown, physical assault (punched, kicked, or beaten), or sexual assault or rape | All groups: 416 | Male: 297 | Physical assault: 46 (11.2%) |
| | | | | | | | | Female: 119 | Physical assault or rape: 29 (7.3%) |
| Díaz et al., 2001 | New York, Los Angeles, and Miami, USA | 1998–1999 | Gay and bisexual people (Latino) | Venue-based, cross-sectional | Ever experience in childhood and adulthood of physical assault | 912 | | Physical assault in childhood: 18% (95% CI: 15–21); in adulthood: 10% (95% CI: 7–13) |
| Lombardi et al., 2001 | USA | 1996–1997 | Transgender people | Convenience; cross-sectional | In the past 30 days, 12 months or ever experienced assault with a weapon, assault without weapon, rape or attempted assault | 402 | | Assault without weapon in past 30 days: 7 (1.7%); past 12 months: 26 (6.5%); lifetime: 78 (19.4%) |
| D’Augelli et al., 2002 | USA, Canada and New Zealand | 1995–1997 | Lesbian, gay, and bisexual people (age ≥ 21 years) | Convenience; cross-sectional | Lifetime experience of physical victimization: object being thrown, physical assault (punched, kicked, or beaten) | All groups: 350 | Male: 193 | Physical assault: 14 (4.8%) |
| | | | | | | | Female: 154 | Physical assault: 10 (6.5%) |
| Kosciw, 2002 | USA | 2001 | Lesbian, gay, bisexual, and transgender youth (11–20 years old) | Convenience; cross-sectional | In the past school year, been physically assaulted at school | All groups: 104 | Male: 58 | Physical assault based on sexual orientation: N/A (21.1%); gender expression: N/A (11.3%) |
| | | | | | | | Female: 46 | Physical assault based on sexual orientation: N/A (14.2%); gender expression: N/A (10.5%) |
| Carrara et al., 2003 | Rio de Janeiro, Brazil | 2003 | Lesbian, gay, bisexual, and transgender people | Convenience; cross-sectional | Lifetime experience of physical aggression or sexual violence | All groups: 403 | Male: 215 | Physical aggression: 67 (16.6%); Sexual violence: 24 (6.0%) |
| | | | | | | | Female: 388 | Physical aggression: 42 (15.3%); Sexual violence: 17 (5.6%) |
| Jarman et al., 2003 | Northern Ireland | 2002–2003 | Lesbian, gay, bisexaul and bisexual people | Convenience; cross-sectional | Lifetime and in the past 2 years experience of having object thrown, physical or sexual assault | 186 | | Physical assault: 45 (24.2%); lifetime: 65 (35.0%) |
| Morris et al., 2003 | USA | 1994–1995 | Lesbian and bisexual women | Convenience; cross-sectional | Lifetime experience of physically attack, sexual assault or rape | 2431 | | Physical attack: N/A (6.5%); Sexual assault or rape: N/A (–2.0%) |
| Rose, 2003 | Saint-Louis, USA | N/A | Lesbian people | Convenience; cross-sectional | In the past 12 months been assaulted with a weapon, or experienced physical or sexual assault | 229 | | Sexual assault: N/A (7.4%); Physical assault: N/A (5.2%); Assault with a weapon: N/A (1.7%) |
| Huebner et al., 2004 | Phoenix, Albuquerque, New Mexico and Austin, USA | 1996–1997 | Gay and bisexual people | Convenience; cross-sectional | In the past 6 months experienced physical violence | 1210 | | Physical violence: 58 (4.8%); 95% CI: 3.6–6.0) |
| Kosciw 2004 | USA | 2003 | Lesbian, gay, bisexual, and transgender youth (11–20 years old) | Convenience; cross-sectional | In the past school year, been physically assaulted at school | 887 | | Physical assault based on sexual orientation: N/A (17.8%); gender expression: N/A (11.5%) |
| Carrara et al., 2005 | Rio de Janeiro, Brazil | 2004 | Lesbian, gay, bisexual, and transgender people | Convenience; cross-sectional | Lifetime experience of physical aggression or sexual violence | All groups: 504 | Male: 279 | Physical aggression: 94 (18.7%); Sexual violence: 28 (5.6%) |
| | | | | | | | Female: 225 | Physical aggression: 92 (19.8%); Sexual violence: 55 (11.4%) |
| Figari et al., 2005 | Buenos Aires, Argentina | 2004 | Lesbian, gay, bisexual, and transgender people | Convenience; cross-sectional | Lifetime experience of physical aggression or sexual violence | All groups: 484 | Male: 279 | Physical aggression: 93 (19.6%); Sexual violence: 55 (11.4%) |
| | | | | | | | Female: 205 | Physical aggression: 92 (19.1%); Sexual violence: 30 (14.6%) |
| Hiller et al., 2005 | Australia | 2003–2004 | Same sex attracted people (14–21 years old) | Convenience; cross-sectional | Lifetime experience of physical abuse | All groups: 1749 | Male: 1106 | Physical abuse: N/A (5%); Physical abuse: N/A (9%) |

(continues...)

Table continues on next page...
| Author and year            | Area, country       | Data-collection period | Study population | Study type; sampling method | Type of violence | Sample, no. | No. (%) affected by violence |
|---------------------------|---------------------|------------------------|------------------|-----------------------------|------------------|-------------|-----------------------------|
| Carrara et al., 2006      | São Paulo, Brazil   | 2005                   | Lesbian, gay, bisexual and transgender people | Convenience, cross-sectional | Lifetime experience of physical aggression or sexual violence | All groups: 721 | Physical violence: 133 (18.4%); Sexual violence: 46 (6.9%) |
|                           |                     |                        |                  |                             |                  |             | Physical violence: 102/411 (24.8%); Sexual violence: 24 (5.9%) |
|                           |                     |                        |                  |                             |                  |             | Physical violence: 11 (4.9%); Sexual violence: 12 (5.6%) |
|                           |                     |                        |                  |                             | 511             | Physical violence: 43 (53.8%); Sexual violence: 19 (23.8%) |
| Clements-Noile et al., 2006 | San Francisco, USA  | 1997                   | Transgender people | Targeted, respondent driven and convenience, cross-sectional | Lifetime experience of physical abuse or beating | Male: 274   | Physical violence: N/A (15%); Sexual violence: N/A (14%) |
|                           |                     |                        |                  |                             |                  |             | Physical violence: N/A (7%); Sexual violence: N/A (5%) |
|                           |                     |                        |                  |                             | Female: 254      |             | Physical aggression: 39 (13.5%); Sexual violence: 11 (3.9%) |
|                           |                     |                        |                  |                             |                  |             | Physical aggression: 14 (10.1%); Sexual violence: 11 (8.0%) |
|                           |                     |                        |                  |                             |                  |             | Physical aggression: 12 (13.3%); Sexual violence: 5 (6.6%) |
|                           |                     |                        |                  |                             | Transgender: 67  |             | Physical aggression: 35 (22.2%); Sexual violence: 23 (34.3%) |
| D’Augelli et al., 2006    | New York, USA       | N/A                    | Lesbian and bisexual people (15–19 years old) | Convenience, longitudinal | Lifetime experience of physical violence (quarters, kicked, or beaten or hurt with a knife, gun, bat, or some other weapon) or sexual violence (sexual abuse or rape) | Male: 289    | Physical aggression: 17 (5.9%); Sexual violence: 11 (3.8%) |
|                           |                     |                        |                  |                             |                  |             | Physical aggression: 14 (10.1%); Sexual violence: 11 (8.0%) |
|                           |                     |                        |                  |                             |                  |             | Physical aggression: 12 (13.3%); Sexual violence: 5 (6.6%) |
|                           |                     |                        |                  |                             | Transgender: 67  |             | Physical aggression: 35 (22.2%); Sexual violence: 23 (34.3%) |
| Jones et al., 2006        | Argentina, Buenos Aires | 2005 | Lesbian, gay, bisexual and transgender people | Convenience, cross-sectional | Lifetime experience of physical aggression or sexual violence | Gay: 289 | Physical aggression: 12 (13.3%); Sexual violence: 5 (6.6%) |
|                           |                     |                        |                  |                             |                  |             | Physical aggression: 14 (10.1%); Sexual violence: 11 (8.0%) |
|                           |                     |                        |                  |                             |                  |             | Physical aggression: 12 (13.3%); Sexual violence: 5 (6.6%) |
| Kassow et al., 2006       | USA                 | 2005                   | Lesbian, gay, bisexual and transgender youth (13–20 years old) | Convenience, cross-sectional | In the past 12 months, been physical assaulted at school | 1732       | Physical assault based on sexual orientation: 382/1717 (17.6%); gender expression: 201/706 (11.8%) |
| Ortiz-Hernandez et al., 2006 | Mexico City, Mexico | 2001 | Lesbian, gay, and bisexual people | Convenience, cross-sectional | (i) Been hit or beaten in childhood and adolescence due to gender stereotypes or transgression; (ii) Ever or in the past 12 months experienced physical and sexual violence in adulthood (age > 18 years) | In childhood | All groups: 506 | Hit or beaten from age 6–11 years: N/A (9%); age 12–17 years: N/A (6%) |
|                           |                     |                        |                  |                             |                  |             | Hit or beaten from age 6–11 years: N/A (11%); age 12–17 years: N/A (7%) |
|                           |                     |                        |                  |                             | Female: 188      |             | Hit or beaten from age 6–11 years: N/A (2%); age 12–17 years: N/A (4%) |
|                           |                     |                        |                  |                             |                  |             | Physical aggression: 12 (13.3%); Sexual violence: 5 (6.6%) |
|                           |                     |                        |                  |                             | Transgender: 67  |             | Physical aggression: 35 (22.2%); Sexual violence: 23 (34.3%) |
|                           |                     |                        |                  |                             |                  |             | Physical aggression: 12 (13.3%); Sexual violence: 5 (6.6%) |
|                           |                     |                        |                  |                             |                  |             | Physical aggression: 14 (10.1%); Sexual violence: 11 (8.0%) |
| Pitts et al., 2006        | Australia           | 2005                   | Sexual and gender minorities | Convenience, cross-sectional | Lifetime experience of physical attack or other kind of violence, object thrown, rape or sexual assault | Male: 3429 | Physical violence: N/A (7%); Physical injury with a weapon in past 12 months: N/A (0%) |
|                           |                     |                        |                  |                             |                  |             | Physical injury with a weapon in past 12 months: N/A (14%); Physical injury: N/A (17%) |
|                           |                     |                        |                  |                             | Female: 1929     |             | Physical violence: N/A (7.2%); Physical injury with a weapon in past 12 months: N/A (14%) |
|                           |                     |                        |                  |                             |                  |             | Physical injury: N/A (17%); Physical injury with a weapon in past 12 months: N/A (14%) |
|                           |                     |                        |                  |                             |                  |             | Physical injury with a weapon in past 12 months: N/A (14%); Physical injury: N/A (17%) |
|                           |                     |                        |                  |                             |                  |             | Physical injury with a weapon in past 12 months: N/A (14%); Physical injury: N/A (17%) |
|                           |                     |                        |                  |                             |                  |             | Physical injury with a weapon in past 12 months: N/A (14%); Physical injury: N/A (17%) |
| van San et al., 2006      | Netherlands         | N/A                    | Homosexual males and females | Convenience, cross-sectional | Lifetime experience of physical violence | 761        | Physical violence: 24 (3.3%) |

(continues...)
| Author and year | Area, country | Data-collection period | Study population | Study type; sampling method | Type of violence | Sample, no. | No. (%) affected by violence |
|----------------|---------------|------------------------|------------------|----------------------------|----------------|------------|----------------------------|
| Carrara et al., 2007 | Recife, Brazil | 2006 | Lesbian, gay, bisexual and transgender people | Convenience; cross-sectional | Lifetime experience of physical aggression or sexual violence | All groups: 544 | Physical violence: 113 (20.8%); Sexual violence: 55 (10.2%) |
| | | | | | | Homosexual male: 269 | Physical aggression: 65 (24.2%); Sexual violence: 32 (12.1%) |
| | | | | | Bisexual male: 53 | Physical aggression: 12 (22.6%); Sexual violence: 3 (5.8%) |
| | | | | | Homosexual female: 113 | Physical aggression: 9 (8.6%); Sexual violence: 4 (3.6%) |
| | | | | | Bisexual female: 49 | Physical aggression: 36 (6.1%); Sexual violence: 30 (6.1%) |
| | | | | | Transgender: 16 | Physical assault: 20 (57.1%); Sexual violence: 11 (30.6%) |
| | | | | | | | | |
| Couch et al., 2007 | Australia and New Zealand | 2006–2007 | Transgender people | Convenience; cross-sectional | Lifetime experience of physical attack or other kind of violence, object being thrown, sexual assault or rape | 253 | Physical attack: 47 (18.6%); Object thrown: 37 (14.6%); Sexual assault: 29 (11.5%); Rape: 25 (9.9%) |
| Lipp, 2007 | Germany | 2007–2008 | Homosexual and bisexual men | Convenience; cross-sectional | In the past 12 months been physically assaulted | 23 949 | Physical injury: N/A (6.6%) |
| Poelman et al., 2007 | Brussels, Belgium | 2006 | Lesbian, gay and bisexual people | Cross-sectional; convenience | Lifetime experience of physical aggression, sexual assault or rape | 377 | Physical aggression: 34 (9.0%); Sexual assault or rape: 8 (2.1%) |
| Barrientos et al., 2008 | Santiago, Chile | 2007 | Lesbian, gay, bisexual and transgender people | Convenience; cross-sectional | Lifetime experience of physical aggression or sexual violence | All groups: 400 | Physical aggression: 91 (22.8%); Sexual violence: 43 (10.8%) |
| | | | | | | Lesbian: 133 | Physical aggression: 23 (17.3%); Sexual violence: 12 (9.0%) |
| | | | | | | Gay: 193 | Physical aggression: 51 (26.4%); Sexual violence: 18 (9.5%) |
| | | | | | | Bisexual: 55 | Physical aggression: 8 (14.5%); Sexual violence: 5 (9.1%) |
| | | | | | | Transgender: 19 | Physical aggression: 9 (47.4%); Sexual violence: 8 (42.1%) |
| Cadiu et al., 2008 | France | 2003–2004 | Lesbian and gay women | Convenience; cross-sectional | Lifetime experience of physical violence or rape in different contexts | 1740 | Physical violence from family: 30 (1.67%); friends: 11 (0.61%); neighbours: 39 (2.18%); in public life: 102 (5.3%); by police services: 18 (1.09%); at workplace: 2 (0.11%); by police: 4 (0.22%); Rape by family: 17 (0.95%); friends: 4 (0.22%); neighbours: 4 (0.22%); in public life: 6 (0.33%); at workplace: 4 (0.22%) |
| Kosciw et al., 2008 | USA | 2007 | Lesbian, gay, bisexual and transgender youth (13–21 years old) | Convenience; cross-sectional | In the past 12 months, been physically assaulted at school | 6209 | Physical assault based on sexual orientation: N/A (2.2%); gender expression: N/A (14.2%) |
| Lampren et al., 2008 | Vancouver, Canada | 1995–2004 | Men who have sex with men (15–30 years old; HIV-negative) | Convenience; longitudinal | Ever or in the past 12 months experienced physical abuse | 521 | Physical abuse in past 12 months: 18 (3.5%); lifetime: 84 (16,1%) |
| Paterson et al., 2008 | United Kingdom of Great Britain and Northern Ireland | N/A | Lesbian, bisexual and transgender women | Convenience; cross-sectional | Ever or in the past 12 months experienced physical violence, grievous bodily harm, attempted murder, rape or other sexual violence | 1112 | Physical violence or assault in past 12 months: N/A (4.6%); lifetime: N/A (7.9%); Grievous bodily harm in past 12 months: N/A (1.4%); lifetime: N/A (0.3%); Rape in past 12 months: N/A (0.4%); lifetime: N/A (6.0%); Other sexual violence in past 12 months: N/A (0.7%); lifetime: N/A (0.1%); Attempted murder in past 12 months: N/A (0.4%); lifetime: N/A (0.4%); Sexually assaulted in the home: 28 (5.5%); elsewhere: 123 (23.3%); at school: 5 (0.9%) |
| Scottish Transgender Alliance, 2008 | Scotland | 2007 | Transgender people | Convenience; cross-sectional | Lifetime experience of physical or sexual abuse in domestic relationships or by a stranger | 71 | Physical abuse in the home: 8 (11.3%); by a stranger: 12 (16.9%); Sexual abuse in the home: 4 (6.1%); by a stranger: 3 (4.2%) |
| Brigno et al., 2009 | Bogota, Colombia | 2007 | Lesbian, gay, bisexual and transgender people | Convenience; cross-sectional | Lifetime experience of physical or sexual aggression | Lesbian: 167 | Physical aggression: 42 (25.1%); Sexual violence: 20 (12.0%) |
| | | | | | | Gay: 419 | Physical aggression: 133 (31.7%); Sexual violence: 69 (16.5%) |
| | | | | | | Bisexual: 95 | Physical aggression: 24 (25.3%); Sexual violence: 14 (14.7%) |
| | | | | | | Transgender: 88 | Physical aggression: 43 (48.9%); Sexual violence: 29 (33.0%) |
| Greytak, 2009 | USA | 2006–2007 | Transgender students | Convenience; cross-sectional | In the past year, been physically assaulted in school (punched, kicked, or injured with a weapon) | 295 | Physical assault based on sexual orientation: N/A (28.8%); gender expression: N/A (26%) |
| Herek, 2009 | USA | 2005 | Lesbian, gay and bisexual people | Random digit dialling cross-sectional | Lifetime experience of violent crime (hit, beaten, physically attacked, sexually assaulted) | All groups: 662 | Physical violence: N/A (13.9%); 95% CI: 9.7–17.6 |
| | | | | | | Gay: 241 | Physical violence: N/A (24.9%); 95% CI: 17.3–34.5 |
| | | | | | | Lesbian: 152 | Physical violence: N/A (21.1%); 95% CI: 14.4–29.8 |
| | | | | | | Bisexual male: 110 | Physical violence: N/A (19.1%); 95% CI: 7.3–37.1 |
| | | | | | | Bisexual female: 159 | Physical violence: N/A (8.9%); 95% CI: 3.1–14.5 |
| Lipp, 2007 | Germany | 2006–2007 | Homosexual and bisexual men | Convenience; cross-sectional | In the past 12 months been physically assaulted | 17 477 | Physical assault: N/A (4.6%) |
| Hillier et al., 2010 | Australia | 2009–2010 | Same sex attracted and gender questioning people (14–21 years old) | Convenience; cross-sectional | Lifetime experience of physical abuse | All groups: 3134 | Physical abuse: N/A (18.6%); Physical assault: N/A (23%) |
| | | | | | | Male: 1265 | Physical assault: N/A (14%) |
| | | | | | | Female: 1766 | Physical assault: N/A (31%) |
| Kosciw et al., 2018 | USA | 2009 | Lesbian, gay, bisexual and transgender youth (13–21 years old) | Convenience; cross-sectional | In the past 12 months been physically assaulted at school | 7261 | Physical assault based on sexual orientation: N/A (18.8%); gender expression: N/A (12.5%) |

(continues ...)

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| Author and year | Area, country | Data-collection period | Study population | Study type; sampling method | Type of violence | Sample, no. | No. (%) affected by violence |
|-----------------|---------------|------------------------|------------------|----------------------------|-----------------|------------|-----------------------------|
| Nuthbrock et al., 2010[^1] | New York, USA | 2004–2009 | Male-to-female transgender people | Convenience; longitudinal | Lifetime experience of physical abuse | All ages: 571 | Physical violence: 286 (50.1%); Physical aggression: 171 (30.3%); Physical mistreatment: 13 (4.6%); Physical violence: 12 (2.2%); Physical violence: 57 (10.2%) |
| Chapman et al., 2011[^2] | Kigali, Rwanda | 2008–2009 | Men who have sex with men | Snowball; cross-sectional | Lifetime experience of physical mistreatment | All groups: 86 | Physical violence: 8 (9.3%); Physical aggression: 5 (5.9%); Physical mistreatment: 1 (1.2%) |
| Highstone–Weidman et al., 2011[^3] | 8 cities, USA | 2006–2009 | Men who have sex with men (13–24 years old; HIV-positive; non-white) | Convenience; cross-sectional | Lifetime experience of physical violence (hit or beaten up) | All groups: 351 | Physical violence: 35 (10.0%); Physical aggression: 8 (2.3%); Physical mistreatment: 4 (1.1%) |
| Nemat et al., 2011[^4] | San Francisco, USA | 2000–2001 2004–2006 | Male-to-female transgender sex-workers | Convenience; cross-sectional | Sometimes or almost daily experiences of physical violence | All groups: 196 | Physical aggression: 49 (25.0%); Sexual violence: 20 (10.2%) |
| Barrientos et al., 2012[^5] | Santiago, Chile | 2011 | Lesbian, gay, bisexual and transgender people | Cross-sectional; convenience | Lifetime experience of physical or sexual aggression | All groups: 823 | All groups: 823 Physical aggression: 149 (18.1%); Sexual violence: 75 (9.1%) |
| Brito et al., 2012[^6] | Mexico City, Mexico | 2008 | Lesbian, gay, bisexual and transgender people | Convenience; cross-sectional | Lifetime experience of physical or sexual aggression | All groups: 271 | All groups: 271 Physical aggression: 49 (18.3%); Sexual violence: 15 (5.6%) |
| Guasp, 2012[^7] | United Kingdom of Great Britain and Northern Ireland | 2011–2012 | Lesbian, gay and bisexual people (12–19 years old) | Convenience; cross-sectional | Lifetime experience of homophobic bullying in and around school: physical abuse or sexual assault | All groups: 375 | All groups: 375 Physical aggression: 26 (4.8%); Sexual violence: 54 (9.1%) |
| Isa et al., 2012[^8] | Córdoba, Argentina | 2010 | Lesbian, gay, bisexual and transgender people | Convenience; cross-sectional | Lifetime experience of physical aggression or sexual violence | All groups: 347 | Gay: 174 Physical aggression: 85 (23.3%); Sexual violence: 29 (8.4%) |
| | | | | | | Lesbian: 95 Physical aggression: 42 (44.6%); Sexual violence: 8 (8.6%) |
| | | | | | Bisexual: 44 Physical aggression: 13 (31.8%); Sexual violence: 7 (16.3%) |
| | | | | | Transgender: 34 Physical aggression: 20 (58.8%); Sexual violence: 10 (29.4%) |
| | | | | | | All groups: 8584 Physical aggression: 1814 (21.2%); Sexual violence: 27 (0.3%) |
| Koscis et al., 2012[^9] | USA | 2011 | Lesbian, gay, bisexual and transgender youth (11–20 years old) | Convenience; cross-sectional | In the past 12 months been physically assaulted at school | All groups: 3835 | Male: 1701 Physical attack: N/A (2.2%); Sexual assault: N/A (2.9%) |
| | | | | | Female: 1894 Physical attack: N/A (2.1%); Sexual assault: N/A (3.1%) |
| | | | | | Transgender male: 47 Physical attack: N/A (0.0%); Sexual assault: N/A (0.0%) |
| | | | | | Transgender female: 122 Physical attack: N/A (2.2%); Sexual assault: N/A (0.9%) |
| | | | | | Other gender identity: 116 Physical attack: N/A (6.2%); Sexual assault: N/A (4.5%) |
| | | | | | Other gender identity: 909 Physical attack: N/A (8.3%); Sexual assault: N/A (7.5%) |
| Levett et al., 2012[^10] | USA and Canada | N/A | Sexual minority women (non-androgynous identity) | Convenience; cross-sectional | Lifetime experience of throw object, physical attack or sexual assault | All groups: 889 | Physical attack: N/A (9.1%); Sexual assault: N/A (9.1%) |
| | | | | | Male: 272 Physical attack: N/A (2.9%); Sexual assault: N/A (3.0%) |
| | | | | | Female: 617 Physical attack: N/A (2.1%); Sexual assault: N/A (3.0%) |
| | | | | | Same-sex-attracted male: 272 Physical attack: N/A (2.9%); Sexual assault: N/A (3.0%) |
| | | | | | Same-sex-attracted female: 134 Physical attack: N/A (2.5%); Sexual assault: N/A (3.0%) |
| | | | | | Male-to-female transgender: 18 Physical attack: N/A (2.2%); Sexual assault: N/A (2.7%) |
| | | | | | Female-to-male transgender: 14 Physical attack: N/A (14.3%); Sexual assault: N/A (14.3%) |
| Matmans et al., 2012[^11] | Belgium | 2012 | Transgender people (transforming) | Convenience; cross-sectional | Lifetime experience of physical or sexual violence | All groups: 260 | Physical violence: 21 (27.9%); Physical aggression: 9 (11.4%); Physical mistreatment: 14 (17.7%) |
| | | | | | Same-sex-attracted male: 272 Physical violence: 21 (27.9%); Physical aggression: 9 (11.4%); Physical mistreatment: 14 (17.7%) |
| | | | | | Same-sex-attracted female: 134 Physical violence: 21 (27.9%); Physical aggression: 9 (11.4%); Physical mistreatment: 14 (17.7%) |
| | | | | | Male-to-female transgender: 18 Physical violence: 21 (27.9%); Physical aggression: 9 (11.4%); Physical mistreatment: 14 (17.7%) |
| | | | | | Female-to-male transgender: 14 Physical violence: 21 (27.9%); Physical aggression: 9 (11.4%); Physical mistreatment: 14 (17.7%) |
| Oogachaga, 2012[^12] | Singapore | 2012 | Lesbian, gay, bisexual, transgender and queer people | Convenience; cross-sectional | Lifetime experience of physical violence or sexual violence | All groups: 271 | Physical violence: 21 (27.9%); Physical aggression: 9 (11.4%); Physical mistreatment: 14 (17.7%) |
| | | | | | Since beginning of the school year (6–8 months) been pushed or hit or having objects thrown |
| | | | | | Response driven; cross-sectional | Lifetime experience of physical aggression or sexual violence | All groups: 271 Physical aggression: 75 (88.2%); Sexual assault: 54 (68.1%) |
| Author and year          | Area, country | Data-collection period | Study population                          | Study type; sampling method                                         | Type of violence                                      | Sample, no. | No. (%) affected by violence |
|-------------------------|---------------|------------------------|-------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------|-------------|------------------------------|
| Pelissier et al., 2013† | Naples, Italy | 2011                   | Lesbian, gay and bisexual people          | Convergence; cross-sectional                                       | Ever experienced episodes of victimization: physical or sexual violence | 1000        | Physical or sexual violence in past 12 months: 18 (1.8%); lifetime: 74 (7.4%) |
| Aho et al., 2014††       | Abidjan, Côte d'Ivoire | 2011–2012               | Men who have sex with men                 | Cross-sectional; Respondent Driven Sampling                         | History of coerced sex or physical abuse              | 603         | Physical abuse: N/A (8.5%); N/CI: 5.5–11.4 |
| Boza et al., 2014†       | Australia     | 2012                   | Transgender people                        | Convergence; cross-sectional                                       | Lifetime experience of physical or sexual violence   | 255         | Objects thrown: 18 (7.4%); Assault without a weapon: 25 (10.3%); Assault with a weapon: 7 (2.9%); Sexual assault: 17 (7.0%); Attempted rape: 4 (1.6%); Rape: 8 (3.3%) |
| de Deus 2014              | São Paulo, Brazil | 2011–2012               | Men who have sex with men                 | Time-location; cross-sectional                                     | Lifetime experience of physical aggression or sexual violence | 1215        | Physical aggression: 268 (22.1%); Sexual violence: 86/1214 (7.1%) |
| Herrick et al., 2014     | Los Angeles, USA | 2005–2006               | Men who have sex with men (18–24 years old) | Venue-day-time; longitudinal                                     | Lifetime experience of physical victimization        | 470         | Physical victimization: 107 (22.8%) |
| Ivanović et al., 2014    | Croatia       | 2011–2013               | Men who have sex with men (18–50 years old) | Convergence; cross-sectional                                       | Lifetime experience of physical abuse (hit or beaten) | 507         | Hit: N/A (23.4%); Beaten: N/A (10.6%) |
| Kossow et al., 2014      | USA           | 2013                   | Lesbian, gay, bisexual and transgender youth (11–21 years old) | Convergence; cross-sectional                                       | In the past 12 months been physically assaulted at school | 7998        | Physical abuse based on sexual orientation: N/A (16.5%); gender expression: N/A (11.4%) |
| Lea et al., 2014         | Sydney, Australia | 2010                   | Lesbian, gay and bisexual people (18–25 years old) | Convergence; cross-sectional                                       | Ever or in the past 12 months been physically abused | Gay: 301    | Physical abuse in past 12 months: 27 (9.0%); lifetime: 67 (29.6%) |
|                         |               |                        |                                           |                                                                     | Bisexual male: 17                                      | N/A         | Physical abuse in past 12 months: 0 (0.0%); lifetime: 2 (11.8%) |
|                         |               |                        |                                           |                                                                     | Lesbian: 146                                          | N/A         | Physical abuse in past 12 months: 9 (6.2%); lifetime: 35 (24.0%) |
|                         |               |                        |                                           |                                                                     | Bisexual female: 108                                   | N/A         | Physical abuse in past 12 months: 2 (1.9%); lifetime: 21 (19.4%) |
| Menech et al., 2014      | New England, USA | 2001–2003              | Sexual and gender minorities              | Convergence; cross-sectional                                       | Lifetime experience of physical attack                | 1417        | Physical violence: 246 (16.9%) |
| Nuttbrock et al., 2014   | New York, USA  | 2004–2007              | Transgender women                         | Convergence; cross-sectional                                       | In the last 6 months been physically abused           | 230         | Physical abuse: N/A (100%) |
| Scuton, 2014             | Canada        | 2013–2014              | Transgender people                        | Convergence; cross-sectional                                       | Lifetime experience of physical violence or sexual assault | 267        | Physical violence: N/A (22%); Sexual assault: N/A (19%) |
| Smith et al., 2014       | Australia     | 2014                   | Transgender and gender variant people (age 14–25 years) | Convergence; cross-sectional                                       | Lifetime experience of physical abuse                 | 189         | Physical violence: 38 (28.1%) |
| Stroet et al., 2014      | Spain and USA  | N/A                    | Lesbian, gay, bisexual and queer people   | Convergence; cross-sectional                                       | In the past year had object thrown. Lifetime experience of physical or sexual assault | USA: 83     | Object thrown: N/A (14%); Physical assault: N/A (6.9%); Sexual assault: N/A (9.7%); Physical abuse: N/A (6.0%); Sexual assault: N/A (9.0%); Physical abuse: N/A (27.2%); N/CI: 19.0–27.3% |
| Bauer et al., 2015       | Ontario, Canada | 2009–2010              | Transgender and gender variant people (age 14–25 years) | Cross-sectional; respondent-driven Sampling                      | Lifetime experience of physical or sexual harassment and violence | USA: 83     | Object thrown: N/A (14%); Physical assault: N/A (6.9%); Sexual assault: N/A (9.7%); Physical abuse: N/A (6.0%); Sexual assault: N/A (9.0%); Physical abuse: N/A (27.2%); N/CI: 19.0–27.3% |
| Burks et al., 2015       | Houston, USA  | 2015                   | Lesbian, gay, bisexual and transgender people | Convergence; cross-sectional                                       | Lifetime experience of physical attack or sexual assault | All groups: 336                                     | Physical attack: 61 (18.2%); Sexual assault: 34 (10.1%) |
| Felsatte et al., 2015    | British Columbia, Canada | 2011–2012          | Lesbian, gay, bisexual and transgender people | Convergence; cross-sectional                                       | Lifetime experience of physical and sexual violence (unwanted sex) | 8382        | Physical violence: 1044 (12.5%); Sexual violence: 985 (11.8%) |
| Goldbach et al., 2015    | USA           | 2000                   | Lesbian, gay and bisexual people (12–18 years old) | Convergence; cross-sectional                                       | Lifetime experience of beating, physical violence or having object thrown | Gay: 325    | Beaten: 167 (10%); Physical violence: 421 (25%); Physical assault: 305 (18%) |
| Barrientos et al., 2016  | Arica, Valparaíso, and Santiago, Chile | 2011                  | Men who have sex with men and male-to-female transgender people | Cross-sectional; respondent-driven sampling (men who have sex with men and transgender people) | Lifetime experience of physical or sexual aggression or violent assault (robbery with violence) | Gay: 325    | Physical violence: 54 (16.6%); Sexual assault: 37 (11.9%); Assault: 44 (13.3%); Physical assault: 68 (21.3%); Sexual assault: 45 (14.9%); Physical assault: 59 (19.3%) |
| D'haese et al., 2016     | Flemish Community, Belgium | 2013                  | Lesbian, gay and bisexual people          | Convergence; cross-sectional                                       | Lifetime experience of physical violence               | All groups: 1402                   | Physical violence: 436 (31.1%) |
| Kramer et al., 2016      | 38 European countries | 2011                  | Men who have sex with men                 | Convergence; cross-sectional                                       | In the past 12 months been physically assaulted at school | Male: 916   | Physical violence: 318 (34.7%) |
| Rodriguez-Mateo et al., 2016 | San Juan, Puerto Rico | 2011–2013               | Transgender women                         | Respondent-driven sampling, cross-sectional                        | Lifetime experience of physical or sexual violence    | 91 477      | Physical violence: 11 (weighted percentage: 24%); Sexual violence: 8 (weighted percentage: 16%) |

† CI: confidence interval; N/A: data not available; SD: standard deviation; USA: United States of America.
†† Definitions of terms were based on the 2010 Joint United Nations Programme on HIV and AIDS terminology guidelines (Box 1) .
§ We only report violence perceived by the victim to be based on sexual orientation or gender identity/expression. Specific descriptions and definitions of physical and sexual violence that were used to elicit participants' responses varied across studies (Box 2).
* Numbers of cases are not reported in all articles, notably for respondent-driven sampling where different weights are given to different participants
1 Data from a presentation of the study
2 Data provided by the author
3 Data from the technical report of the study.