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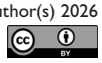

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# Prevalence and Correlates of Adverse Childhood Experiences in LGBTQ+ Populations: A Narrative Review and Meta-Analysis

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## Abstract

Adverse childhood experiences (ACEs) research suggests that marginalized populations experience more ACEs, but there is limited work on lesbian, gay, bisexual, transgender, queer, and questioning (LGBTQ+) populations. To (a) systematically review the literature on ACEs in LGBTQ+ populations via a narrative review and meta-analyses; (b) compare the prevalence of 0, 1, 2, 3, and 4+ ACEs, as well as individual ACE items, between LGBTQ+ and reference populations; and (c) describe the correlates of ACEs within LGBTQ+ populations. MEDLINE, Embase, CINAHL, and PsycINFO were searched for empirical studies that used a 6- to 12-item ACEs questionnaire and assessed maltreatment and household dysfunction. The meta-analyses included 38 samples encompassing 24,133 LGBTQ+ individuals. The prevalence of ACEs was 15.8% for 0 ACE, 16.8% for 1 ACE, 14.9% for 2 ACEs, 13.8% for 3 ACEs, and 38.7% for 4+ ACEs. Compared to the reference samples, LGBTQ+ individuals were less likely to experience 0 ACE and more likely to experience 4+ ACEs. The prevalence of 4+ ACEs was slightly higher in gender-diverse than sexually diverse individuals. LGBTQ+ individuals had higher prevalence of psychological, physical, and sexual violence and household mental health difficulties compared to the reference samples. Correlates of ACEs in LGBTQ+ populations included mental health difficulties and increased engagement in risk-taking behaviors. Comparatively less evidence was available regarding protective factors. LGBTQ+ populations experience a disproportionately high prevalence of ACEs, accompanied by adverse mental and behavioral health outcomes. To guide prevention and intervention efforts, more research is needed on the protective factors that may mitigate these effects.

## Keywords

adverse childhood experiences, child maltreatment, LGBTQ+, prevalence, meta-analysis

## Introduction

Adverse childhood experiences (ACEs) represent a major public health concern worldwide (World Health Organization, 2011). The 10 commonly accepted ACEs include experiences of violence (physical, psychological, and sexual), neglect (physical and psychological), and/or household dysfunction (domestic violence, divorce, household member with a dependence substance-use problem, mental health difficulties, and incarceration) before the age of 18 years (Felitti et al., 1998). Although some have argued for a broader categorization of ACEs (e.g., Cronholm et al., 2015), these 10 categories remain the foundation of epidemiological research and clinical assessment tools used to quantify childhood adversity and its associations with biopsychosocial outcomes (Anda et al., 2009; Felitti et al., 1998).

The rapidly growing literature has demonstrated considerable long-term negative effects of ACEs on mental health (e.g., anxiety, depression, suicidality), physical health (e.g.,

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cardiovascular disease, cancer, premature mortality), and relational functioning (Anda et al., 2009; Hughes et al., 2017; Racine et al., 2021; Sahle et al., 2022; Zhu et al., 2024). There is also considerable evidence of a dose-response relationship between ACEs and negative outcomes, such that as the number of ACEs a person has experienced increases, so too does the risk for problematic health outcomes (Felitti et al., 1998; Madigan et al., 2023).

Recent review evidence suggests that ACEs are, unfortunately, widespread. A meta-analysis of 206 studies, including over half a million adult participants, found that approximately 60% reported exposure to at least one ACE and 16% reported exposure to four or more ACEs (Madigan et al., 2023). This study provided the first systematic global estimate of ACEs prevalence, offering critical benchmarks for research, policy development, and clinical practice across various domains. The meta-analysis by Madigan et al. (2023) also found that members of minoritized groups (i.e., minoritization based on race, ethnicity, and/or socioeconomic status [SES]) reported a higher prevalence of four or more ACEs.

However, due to the small number of studies that reported ACE prevalence separately for specific subgroups, the Madigan et al. (2023) study did not examine differences between lesbian, gay, bisexual, transgender, queer, and questioning (LGBTQ+) individuals. The current study focuses on the prevalence and correlates of ACEs among LGBTQ+ populations, understood as including both sexual and gender minority populations. We use sexual minority to refer to people whose patterns of attraction, behavior, or identity are not exclusively heterosexual (National Academies of Sciences, Engineering, and Medicine, 2022). We use gender minority to refer to people whose gender identity differs from the sex assigned to them at birth (American Psychological Association, 2024). Together, these groups are often described as LGBTQ+ communities.

There are several theoretical reasons why LGBTQ+ populations may be at increased risk not only of exposure to ACEs but also of heightened vulnerability to their resulting negative effects. Developmental psychopathology theory, for instance, posits that early experiences of adversity—such as violence and neglect—can disrupt typical developmental trajectories, increasing the risk for mental health issues later in life (Cicchetti & Rogosch, 2002). Minority stress theory further accounts for this vulnerability by emphasizing how LGBTQ+ individuals are subjected to chronic social stressors, including stigma, discrimination, and violence, which can exacerbate the impact of ACEs on psychological and physical health (Meyer, 2003).

Although minority stress theory is commonly used to frame research on health disparities, recent scholarship has also applied the theory to account for experiences of stigma and rejection—including from parents, peers, and faith communities—that can shape early childhood experiences and increase the risk of victimization due to homophobia and transphobia (Craig et al., 2020; Feinstein & Dyar, 2017; Huang et al., 2022). In fact, such experiences can begin even before a child has publicly disclosed—or is fully aware of—their sexual orientation or gender identity, particularly in response to nonconforming behaviors (Craig et al., 2020). Children with non-normative gender expressions, for example, may be subject to rejection, punishment, or hostility, regardless of explicit LGBTQ+ identification (Clare et al., 2024). The cumulative effect of both direct minority stressors and indirect stressors related to gender nonconformity may heighten the risk of mental health disorders, substance use, and suicidality, particularly in less affirming environments.

Consistent with theoretical frameworks and developmental research making the case for the early emergence of adversity among LGBTQ+ populations, empirical evidence has increasingly considered the prevalence of these early experiences. A 2014 systematic review reports a high prevalence of stressful childhood experiences in LGBTQ+ samples and suggests that these experiences are associated with psychiatric symptoms, substance use, revictimization, and dysfunctional behavioral adjustments, among others (Schneeberger et al., 2014). Similarly, a more recent systematic review and meta-analysis by Jonas et al. (2022) reported higher rates of various "childhood adversities" among LGBTQ+ youth. Despite the strengths of these studies—for example, the inclusion of experiences not traditionally recognized as one of the 10 main ACEs, such as cyberbullying, homophobic teasing, and peer victimization—they did not provide standardized estimates across the 0 to 4+ ACE categories, nor did they disaggregate experiences based on sexual versus gender minority status.

## *Current Study*

Although these two reviews (e.g., Jonas et al., 2022; Schneeberger et al., 2014) provide valuable insights into the prevalence and correlates of different types of adversity in LGBTQ+ populations, several limitations remain that underscore the need for further research. First, to our knowledge, no cross-study estimate of ACEs in LGBTQ+ populations currently exists using the standardized 0, 1, 2, 3, and 4+ ACE categories proposed by Felitti et al. (1998). Even if other methods of assessing ACEs exist, the five-category framework remains a widely used metric for capturing the cumulative impact of childhood adversity, particularly by researchers and clinical practitioners. For example, knowing the number of ACEs a person has experienced helps clinicians assess risk severity and prioritize interventions based on established benchmarks (Anda et al., 2009; Hughes et al., 2017). Moreover, generating reliable estimates using this standardized framework can help catalyze policy efforts by providing clear evidence of LGBTQ+ populations' disproportionate exposure to ACEs. Second, more information is needed to clarify the specific types of adversity—such as violence, neglect, and household dysfunction—to which LGBTQ+ populations may be especially vulnerable. Such

information can help ensure that practitioners tailor care based on the types and frequency of adversity encountered. Third, an updated synthesis of the correlates of ACEs in LGBTQ+ populations is needed to better understand the distinct vulnerabilities that LGBTQ+ populations face and to inform future prevention and intervention strategies.

Accordingly, our first objective was to estimate meta-analytically the prevalence of the standard five categories of ACEs (0, 1, 2, 3, 4+ ACEs) in LGBTQ+ samples. Our second objective was to estimate the prevalence of individual ACE items in LGBTQ+ samples using a meta-analysis. For both goals, we compared the prevalence to within-study non-LGBTQ+ reference samples. Where possible, we also estimated the prevalence separately for sexual and gender diverse samples. Our third objective was to describe the correlates of ACEs in LGBTQ+ populations through a combined meta-analytic and narrative review approach. Our use of meta-analyses and a narrative review not only allows for a more comprehensive understanding of the prevalence of ACEs in LGBTQ+ populations but also insights into the predictors and protective factors associated with ACEs—highlighting areas where future research, clinical practice, and policy can meaningfully intervene.

## Methods

### *Search Strategy & Study Selection: ACEs Hub*

This narrative review and meta-analysis adhered to the standards for systematic reviews of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Page et al., 2021). This study used the *ACEs Hub* (https://www.aceshub.org/; Madigan, 2024), an open-source repository with systematic cataloguing of individual studies assessing ACEs. A health sciences librarian conducted a systematic search for the ACEs catalogue in four databases: MEDLINE, Embase, CINAHL, and PsycINFO. The databases were searched with the phrases "adverse childhood experience*" and "adverse childhood event" as well as the "ACE*" acronym. The search covered publications from January 1998, the publication year of the original ACEs study (Felitti et al., 1998), to 2023. The database search yielded 17,402 unique records (see Figure S1).

Each abstract and full text were screened by two independent coders based on the following inclusion criteria: (a) report on quantitative data (excluding case studies with $N \leq 5$); (b) use the 8- or 10-item ACEs measure ($\pm 2$ items) to align with traditional ACEs literature; (c) assess violence/neglect *and* household dysfunction; and (d) be written in English. The inter-rater reliability was excellent for abstract (93%) and full-text screening (91%). Disagreements were resolved via consensus. After applying these criteria, 3,376 records were included in the ACEs catalogue. An experienced research assistant cataloged each record based on its sociodemographic information and indexed other variables assessed.

### *Search Strategy & Study Selection: Current Review*

To identify records eligible for the current review, we selected studies from the ACEs Hub that were indexed as including LGBTQ+ participants ($k = 150$). Some of these studies reported data specifically for LGBTQ+ participants, while others included LGBTQ+ individuals without differentiating them from non-LGBTQ+ participants. Studies were excluded if they included fewer than 25 undifferentiated LGBTQ+ participants ($k = 54$), as this marks the minimum sample size needed for a valid chi-square test across the five ACEs categories. One study was excluded because it focused exclusively on ACEs in sports contexts, and another was excluded due to a lack of full-text availability. A final sample of 94 studies was eligible for inclusion in this review.

For the meta-analyses, we contacted the authors of studies that did not report ACEs prevalence data—either for total ACEs scores or individual items—for LGBTQ+ participants specifically ($k = 56$). Of these, 27 authors provided the requested data. Of the remaining authors, 6 could not be reached, 4 no longer had access to the data, and 19 did not respond, resulting in the exclusion of 29 studies. In addition, 25 studies were excluded from the meta-analyses due to overlapping samples (see Table S1 for decisions). This resulted in a total of 39 studies (38 unique samples) that reported prevalence data for total ACEs or specific ACE items.

For the narrative review, many studies either reported only the prevalence of ACEs among LGBTQ+ participants or included correlates without distinguishing findings for LGBTQ+ and non-LGBTQ+ participants ($k = 69$). A total of 26 studies (20 samples) were included in the narrative review of ACEs correlates. In total, 52 studies were included in the present review, contributing ACE total score prevalence data, individual ACE item prevalence data, and/or data about correlates of ACEs in LGBTQ+ participants.

### *Data Extraction*

The following characteristics were extracted from included studies using a standardized protocol: publication year, country of data collection, category of LGBTQ+ identification (i.e., cisgender sexual minority or gender minority), percentage of participants from different ethnocultural backgrounds, SES (categorized as low, mixed, or mid-to-high levels of household income), sample participants' age (mean or range), sociodemographic and health-related risk (e.g., whether participants are experiencing homelessness), as well as the type of assessment of ACEs (e.g., questionnaire, file review).

In terms of data to assess prevalence, counts representing the number of study participants reporting exposure to 0, 1, 2, 3, and 4+ ACEs were extracted. Counts representing the number of study participants reporting exposure to each of

the 10 individual ACE items were also extracted. To provide a comparable reference group, data for cisgender and heterosexual participants were also extracted. In addition, descriptions of results related to ACEs correlates were extracted for inclusion in the narrative review ($n = 26$ reported on correlates in LGBTQ+ participants specifically). Twenty percent of the data extracted were double-coded, achieving 95% inter-rater reliability. Disagreements were resolved through consensus.

### *Study Quality Assessment*

We appraised study quality using an adapted version (Table S2) of the Joanna Briggs Institute Checklist for Prevalence Studies (Joanna Briggs Institute, 2017; Migliavaca et al., 2020). All studies were double-coded, achieving an inter-rater reliability of 82%. Coding conflicts were resolved by referring the case to a senior author.

### *Data Preparation and Analysis for the Meta-Analyses*

We used the extracted counts for each of the five categories of ACEs and each of the 10 individual ACE items to derive individual participant data from each included study. We subsequently estimated mean prevalence proportions across studies using a Bayesian framework (Van de Schoot et al., 2021), as recommended by Whitehead et al. (2001) in the context of ordered categorical outcomes. We ran three sets of meta-analyses. In the first meta-analysis, the dependent variable was an ordered categorical variable reflecting the five categories (i.e., 0, 1, 2, 3, and 4+) of ACEs regressed on a fixed factor representing the identity of LGBTQ+ and (non-LGBTQ+) reference samples. In the second set of meta-analyses, the dependent variable was a binomial categorical variable reflecting the presence or absence of each of the 10 individual ACE items regressed on a fixed factor representing the identity of LGBTQ+ and (non-LGBTQ+) reference samples. Separate meta-analyses were performed for each of the 10 individual ACE items. In the final meta-analysis, the dependent variable was an ordered categorical variable representing the five categories of ACEs regressed on a fixed factor representing the identity of cisgender sexual minorities and gender minorities. Twelve meta-analyses were run in total. The probit link function was applied to each meta-analysis to ground the interpretation of model parameters in the context of the cumulative standard normal distribution.

In each meta-analysis, between-study heterogeneity was quantified as *tau*, a standard deviation representing the typical difference in the distribution of ACEs or given ACE item between studies (i.e., how many standard deviations does the average level of ACEs typically vary from study to study; Higgins, 2008). Weakly informative prior distributions were specified in each meta-analysis for all model parameters (Whitehead et al., 2001). Posterior distributions (i.e., observed likelihood combined with knowledge from the prior distribution) of all model parameters were estimated using Markov Chain Monte Carlo (MCMC) sampling (Gelfand & Smith, 1990). The MCMC algorithm was run across four chains for a total of 7,000 iterations; the first half in each chain was discarded as "warm-up" iterations (Van de Schoot et al., 2021).

We assessed the posterior convergence of each model qualitatively by visually inspecting trace plots and quantitatively by evaluating the Gelman-Rubin diagnostic. We used the posterior distributions of the model parameters to generate estimates of mean prevalence proportions for each category of ACEs and their associated 95% credible intervals (i.e., the Bayesian equivalent of the 95% confidence interval in Frequentist statistics). Differences in prevalence proportions between groups (i.e., between LGBTQ+ and non-LGBTQ+ reference samples, and between cisgender sexual minority and gender minority samples) were computed from the posterior distributions as factors and were evaluated according to the following scale of magnitudes: slight: $<1.11$; small: 1.11 to 1.43; moderate: 1.44 to 2.00; and large: $>2.00$ (Madigan et al., 2023). *Tau* values representing between-study heterogeneity were evaluated according to the following scale of magnitudes advocated for by Cohen in the context of differences in means: slight: $<0.2$; small: 0.2 to $<0.5$; moderate: 0.5 to $<0.8$; and large: $>0.8$ (Cohen, 1992). Bayesian models were estimated in the brms package (Bürkner, 2017) in R Studio. Data summaries from the resulting posterior distributions of Bayesian models were performed using the tidyverse package (Wickham et al., 2019). Convergence statistics were evaluated using the ShinyStan interface for exploring the output of MCMC simulations performed in R Studio (Gabry, 2017).

### *Narrative Synthesis*

We conducted a narrative synthesis of studies examining the correlates of ACEs in LGBTQ+ populations. Following standard guidance on narrative synthesis methodology (Popay et al., 2006), we thematically organized studies based on the types of correlates they investigated. We then compared findings across studies to describe convergence and divergence in results, which are then summarized.

## Results

### *Study Characteristics*

Across the 38 samples included in the meta-analyses, 24,133 LGBTQ+ subjects were represented. Among these, 19,152 subjects were cisgender sexual minorities and 1,297 were gender minorities (some studies did not present a breakdown of LGBTQ+ subjects based on identities). LGBTQ+

subjects identified primarily as White (61.2%), as well as Asian (17.7%), Black (14.9%), Hispanic (14.5%), multiracial (10.9%), Indigenous (2.4%), or another ethnocultural background (8.3%). In total, over one-third (34.4%) of LGBTQ+ subjects reported having a minoritized ethnocultural heritage (e.g., African Americans in the United States). The mean sample age across studies was 28 years, ranging from 14 to 89 years. Nine studies reported low SES, four reported mid-to-high SES, 12 reported mixed SES profiles, and the remaining studies did not report SES information.

In these same 38 samples, 307,676 subjects comprised the non-LGBTQ+ reference sample. Non-LGBTQ+ reference subjects also identified primarily as White (60.7%), as well as Asian (15.6%), Black (16.1%), Hispanic (14.3%), multiracial (11.3%), Indigenous (2.1%), or another ethnocultural background (8.3%). In total, 38.6% of reference subjects reported having a minoritized ethnocultural heritage. The mean sample age across studies was 30 years, ranging from 15 to 89 years. Five samples reported low SES, three reported mid-to-high SES, four reported mixed SES, and the remaining studies did not report SES information.

Across the 38 samples, 8 were identified as having sociodemographic or health-related risk factors. Four samples included large proportions of individuals experiencing homelessness, while two included participants with psychological disorders. In addition, one sample was comprised of individuals who were previously in the foster care system, and another included a large proportion of subjects with HIV+. All of these samples, except for the HIV+ one, included both LGBTQ+ and non-LGBTQ+ participants. All studies assessed ACEs via a questionnaire. Study samples were drawn from at least 10 different countries: 30 samples from North America (78.9%), three from Asia (7.9%), three from Europe (7.9%), one from Australia (2.6%), and one multi-country study where most participants were from the United States and India (2.6%).

The mean quality score of studies was 9.1 (range 6–13; Table S3), which suggests an overall moderate-high quality. There was, however, notable variability across domains. The vast majority of studies adequately described their sample, its characteristics, and recruitment settings. They also mostly used standardized ACEs instruments, such as the original ACEs questionnaire or the Behavioral Risk Factor Surveillance System (BRFSS) version. The greatest sources of potential bias were the lack of reporting of ≥50% response rates, the lack of reporting ACEs prevalence, and studies not letting participants to self-describe their identities, potentially constraining their responses. Overall, the risk of bias was low to moderate across the body of research synthesized.

## *Meta-Analysis of Total ACE Prevalence*

The overall meta-analyzed mean prevalence proportions for the five categories of ACEs across LGBTQ+ and non-LGBTQ+ reference samples (drawn from the same studies) are presented in Table 1. The mean prevalence proportions for each of the five categories of ACEs across LGBTQ+ samples were 15.8% for 0 ACE, 16.8% for 1 ACE, 14.9% for 2 ACEs, 13.8% for 3 ACEs, and 38.7% for 4+ ACEs. Compared with the non-LGBTQ+ reference samples, there was evidence of a slight to small difference in the prevalence of 0 ACE (higher in the reference group) and 4+ ACEs (lower in the reference group). The *tau* values representing between-study heterogeneity in LGBTQ+ (*tau* = 0.54, 95% CI [0.42, 0.69]) and non-LGBTQ+ reference samples (*tau* = 0.69, [0.52, 0.94]) were compatible with small-to-moderate and moderate-to-large values, respectively.

We then compared the mean prevalence proportions for each of the five categories of ACEs within LGBTQ+ samples, differentiating between samples with cisgender sexual minorities and gender minority profiles (Table 1). There was clear evidence of only slight differences in 0, 1, 2, and 3 ACEs. However, a non-trivial portion of the credible interval representing the difference in 4+ ACEs covered substantial values, indicating the possibility that the prevalence of 4+ ACEs was reported more frequently among samples identifying with a gender minority identity profile. The *tau* values representing between-study heterogeneity in samples of gender minority (*tau* = 0.42, 95% CI [0.26, 0.67]) and cisgender sexual minorities profiles (*tau* = 0.63, [0.46, 0.88]) were compatible with small-to-moderate and small-to-large values, respectively.

## *Meta-Analysis of Prevalence of Individual ACE Items*

The mean prevalence proportions for each of the 10 individual ACE questionnaire items across LGBTQ+ and non-LGBTQ+ reference samples are presented in Table 1. The mean prevalence rates across LGBTQ+ samples were 50.6% for psychological violence, 33.0% for physical violence, 25.0% for sexual violence, 39.0% for psychological neglect, 17.8% for physical neglect, 36.3% for parental divorce, 23.0% for witnessing domestic violence, 35.1% for having a household member with a substance use problem, 41.8% for having a household member with mental health difficulties, and 14.5% for having a household member who was incarcerated. Within-LGBTQ+ comparison (sexual vs. gender diversity) could not be conducted as the models did not converge. Compared with the non-LGBTQ+ reference samples (drawn from the same studies), there was evidence of larger reported prevalence of psychological, physical, and sexual violence and household members with mental health difficulties in LGBTQ+ samples.

## *Narrative Review of the Correlates of ACEs*

A complete description of the study results is presented in Table S4.

**Table 1.** Prevalence of Adverse Childhood Experiences among LGBTQ+ and non-LGBTQ+ reference samples, and differences in prevalence between groups.

| | LGBTQ+ | | Reference | | Difference[a] | | Gender diverse | | Sexually diverse | | Difference[a] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ACEs score | | | | | | ACEs Score | | | | | |
| # ACEs | Mean | 95% CI | Mean | 95% CI | Mean | 95% CI | Mean | 95% CI | Mean | 95% CI | Mean | 95% CI |
| 0 | 15.8 | [11.5, 20.6] | 27.5 | [20.1, 35.4] | 1.12 | [1.03, 1.21] | 15.2 | [8.7, 23.6] | 17.9 | [12.6, 24.0] | 1.03 | [0.93, 1.21] |
| 1 | 16.8 | [14.3, 19.0] | 21.8 | [19.9, 22.9] | 1.05 | [1.02, 1.08] | 13.5 | [9.7, 17.2] | 18.1 | [15.4, 20.5] | 1.05 | [1.00, 1.09] |
| 2 | 14.9 | [13.9, 15.8] | 14.9 | [14.0, 15.3] | 1.00 | [0.99, 1.01] | 12.7 | [10.2, 15.2] | 15.1 | [14.1, 16.0] | 1.02 | [1.00, 1.05] |
| 3 | 13.8 | [13.1, 14.5] | 11.1 | [9.6, 12.2] | 0.97 | [0.96, 0.99] | 14.7 | [12.6, 16.9] | 12.8 | [11.8, 13.6] | 0.98 | [0.96, 1.00] |
| 4+ | 38.7 | [31.7, 46.3] | 24.7 | [18.1, 32.5] | 0.86 | [0.76, 0.96] | 43.9 | [31.7, 56.6] | 36.1 | [28.1, 44.6] | 0.92 | [0.77, 1.07] |
| Individual ACEs | | | | | | | | | | | | |
| Psychological violence | 50.6 | [45.2, 56.0] | 33.9 | [29.0, 38.8] | 1.17 | [1.16, 1.18] | | | | | | |
| Physical violence | 33.0 | [28.1, 38.2] | 20.0 | [16.3, 24.1] | 1.13 | [1.12, 1.14] | | | | | | |
| Sexual violence | 25.0 | [20.9, 29.8] | 12.2 | [9.7, 15.3] | 1.13 | [1.11, 1.16] | | | | | | |
| Psychological neglect | 39.0 | [29.1, 49.5] | 27.2 | [19.0, 36.5] | 1.13 | [1.09, 1.14] | | | | | | |
| Physical neglect | 17.8 | [11.1, 26.2] | 11.8 | [6.8, 18.3] | 1.06 | [1.04, 1.08] | | | | | | |
| Divorce | 36.3 | [31.6, 41.0] | 26.0 | [22.1, 30.1] | 1.10 | [1.09, 1.11] | | | | | | |
| Domestic violence | 23.0 | [18.1, 28.3] | 14.5 | [10.9, 18.5] | 1.09 | [1.07, 1.10] | | | | | | |
| Substance use | 36.2 | [31.4, 40.9] | 26.0 | [21.9, 30.0] | 1.10 | [1.09, 1.11] | | | | | | |
| Mental health problems | 41.8 | [36.2, 47.8] | 25.3 | [20.8, 30.3] | 1.16 | [1.15, 1.18] | | | | | | |
| Incarceration | 14.5 | [10.5, 19.3] | 8.0 | [5.5, 11.2] | 1.07 | [1.05, 1.08] | | | | | | |

Abbreviations: ACEs = adverse childhood experiences; CI = credible interval; LGBTQ+ = lesbian, gay, bisexual, transgender, queer, and questioning.
[a]Differences are represented as factors, calculated from the difference between the prevalence proportions of non-LGBTQ+ reference and LGBTQ+ samples (i.e., factor = 1 + mean difference/100).

*Mental Health Difficulties.* Consistent associations were observed between ACE exposure and mental health difficulties in LGBTQ+ populations. In correlational studies, higher ACE scores were linearly associated with increased anxiety and depressive symptoms. In a study of men who have sex with men in China, Ding et al. (2019) reported a small positive correlation between total ACE scores and self-reported depressive symptoms. Similarly, in a comparative study of rural and urban men who have sex with men in the United States, Giano and Hubach (2019) found correlations of a similar magnitude, although slightly stronger among those from urban settings.

The odds of experiencing elevated anxiety and/or depression symptoms were reported in three studies. In a large American adult sample ($N = 966$) that included a substantial number of sexual and gender minority participants (~63%), Bond et al. (2021) found that self-reported diagnoses of anxiety and depression were significantly higher among sexual and gender minority participants with higher ACE index scores (i.e., higher scores on the 0, 1, 2, 3, 4+ categorization). Wiss et al. (2022) reported higher odds of moderate-to-severe anxiety symptoms and of exceeding the threshold for clinically significant depressive symptoms among participants with 5 or more ACEs. Suarez et al. (2021) also found increased odds of clinically significant depressive symptoms in a sample of transmasculine American adults.

In two studies of American adults, higher ACE scores were associated with increased odds of experiencing posttraumatic stress disorder (Bond et al., 2021; Suarez et al., 2021). In a single study of Cambodian men who have sex with men, increased levels of family dysfunction were associated with higher psychological distress (Siyan et al., 2016). In addition, in a sample drawn from the U.S. Centers for Disease Control and Prevention 2019 BRFSS, sexual minority adults reported a higher number of poor mental health days per month compared to heterosexual adults (Tran et al., 2022).

Generally consistent associations were observed between ACEs and suicidality. Higher odds of suicidality were identified in three studies. In a large nationally representative sample, Andresen et al. (2022) found a dose-response relationship between 0, 1, 2, and 3+ ACEs and suicidal thoughts/attempts in bisexual and homosexual Danes. Odds of suicidality were higher among bisexual than homosexual participants, particularly bisexual men who experienced neglect. Higher odds of suicidality were also identified as ACE scores increased in sexually diverse American adults (Blosnich et al., 2020) and in transmasculine American adults who experienced 4+ ACEs versus 0-1 ACE (Suarez et al., 2021). A notable cross-sectional exception was Austin et al.'s (2022) study, which did not find associations between the experience of emotional or physical violence and suicidal ideation/attempt in transgender youth. Among these studies examining suicidality, two also examined self-harm and found contradictory findings. Andresen et al. (2022) found that ACE exposure (across 1, 2, and 3+ ACEs) was associated with higher odds of self-harm, particularly in bisexual adults. In contrast, having 4+ ACEs versus 0-1 ACE was not associated with higher odds of self-harm in Suarez et al. (2021).

*Physical Health.* Evidence linking ACEs to physical health outcomes in LGBTQ+ populations was more limited. A consistent finding across two studies links ACEs, particularly among victims of sexual violence, to higher obesity. Specifically, in Huang et al. (2022), gay Taiwanese men with ACEs had higher odds of being obese, as did transmasculine American adults with 4+ ACEs versus 0-1 ACE in Suarez et al. (2021). Associations between ACEs and physical health varied depending on the domain measured. In terms of global health, ACEs were associated with higher odds of self-reported poor or physical health in southwestern American adults, particularly those experiencing sexual minority stress (Schnarrs et al., 2020). Correlational results from a gender diverse population of American adults also suggested an association between ACE scores and worse self-rated global health, with a moderate to large effect size (Sutter, 2018). In terms of specific conditions, the same study identified positive correlations with chronic conditions (e.g., asthma and diabetes; Sutter, 2018). By contrast, in Poteat et al.'s (2021) study, American transgender adults with higher ACE scores did not face higher odds of cardiovascular disease and venous thromboembolism.

*Risk Behaviors.* The available research suggests that ACEs confer risks for some risky behaviors, but not others. Two studies found higher odds of different sexually risky behaviors. In the BRFSS 2019 sample, individuals with 4+ ACEs engaged in more HIV risk behaviors than those with 0 ACE, with a large effect size (Baggio, 2022). Brown et al. (2015) examined the age of first sexual relations in the National Epidemiologic Survey on Alcohol-Related Conditions and found higher odds of early first sexual relations (14 or younger) with higher ACE exposure, with large effect sizes. Odds were particularly high in bisexual, gay, and lesbian participants who experienced sexual violence or who were exposed to intimate partner violence (IPV).

Studies generally find associations between ACEs and cigarette use in LGBTQ+ populations, with a few exceptions. In a large survey of American college students, LGBTQ+ participants had a higher predicted probability of cigarette and e-cigarette use, as well as dual use, over the last 30 days as the number of ACEs they experienced increased (Grigsby et al., 2021). LGBTQ+ participants also had a higher probability of cigarette use when they reported 1 to 7 ACEs compared to non-LGBTQ+ participants. In Poteat et al.'s (2021) study, American transgender adults had higher odds of ever being a smoker and currently being a smoker, with higher ACE exposure. Similarly, ACE score and cigarette use were correlated in American gender diverse adults (Sutter, 2018). In LGBTQ+ American adults, Baishya et al.

(2023) found that individuals with 4+ ACEs used more cigarettes, but the association was no longer significant after accounting for sociodemographic variables. Those individuals did, however, use more e-cigarettes. In contrast to those findings, in transmasculine American adults, those with 4+ ACEs versus 0-1 ACE did not have higher odds of smoking, although those who experienced sexual violence specifically did (Suarez et al., 2021). Rausch (2016) did not find a correlation between ACE score and smoking in Queer American women.

Studies generally support that ACE exposure confers risks for drug use. Giano et al. (2019) found that higher ACEs were associated with more marijuana use in American men who have sex with men. Comparing results between rural and urban participants, associations were similar, but slightly stronger for participants in urban settings. In a cross-sectional study of American gender diverse adults, Sutter (2018) found a significant association between ACE scores and the use of marijuana or other drugs. Similar results were reported by Suarez et al. (2021) in transmasculine American adults; participants with 4+ ACEs had higher odds of using substances over the past 6 months compared to those with 0-1 ACE. In the National Institute on Drug Abuse-sponsored longitudinal study of HIV-positive and HIV-negative American men who have sex with men, Wiss (2022) did not find evidence of a dose-response relationship between ACE scores and drug use, but found an indication of higher drug use in participants with 6+ ACEs, especially those who experienced household dysfunction.

The literature does not indicate higher alcohol use in LGBTQ+ participants with ACEs. In transmasculine American adults, Suarez et al. (2021) did not find that individuals with 4+ ACEs engaged in more binge drinking over the past 6 months than those with 0-1 ACE. In another sample of gender diverse American adults, Sutter (2018) did not find a correlation between ACE scores and alcohol use. In a study on the IPV experiences of Queer American women, there was no association between ACE scores and drinking 3+ alcoholic beverages per day, but there was a *negative* association between ACEs and drinking 5+ alcoholic beverages per day.

*Adult Adversity and Victimization.* Surprisingly, few studies examined associations between ACEs and violence victimization as adults, with two studies suggesting that ACEs are risk factors for adulthood IPV. In a correlational study of Queer American women, women who experienced physical and sexual violence in childhood were more likely to have experienced domestic physical violence and sexual violence, respectively, in the last 6 months (Rausch, 2016). Associations between other forms of victimization in childhood and adulthood were not significant. Suarez et al. (2021) also found that transmasculine American adults with 4+ ACEs had higher odds of ever experiencing IPV as adults than those with 0-1 ACE, with large effect sizes, particularly if they experienced psychological violence as a child.

*Healthcare Utilization.* A handful of studies examined whether ACEs relate to healthcare utilization in LGBTQ+ populations, with mixed findings depending on the domain of utilization. In Sutter's (2018) correlational study of American gender diverse adults, higher ACE exposure was correlated with lesser intent to use healthcare, delayed healthcare utilization, and negative attitudes toward healthcare, with moderate to large effect sizes. Despite these intentions and attitudes toward healthcare, ACEs were not correlated with the number of visits with primary physicians, mental health professionals, or other professionals. Results differed for the association with psychological support. In a nationally representative sample of bisexual, homosexual, and heterosexual Danes, sexually diverse participants with ACEs had higher odds of having ever received a treatment for mental health difficulties at every ACE level (1, 2, 3+) compared to heterosexual participants with ACEs (Andresen et al., 2022). Similarly, Rausch (2016) found that ACE exposure was correlated with receiving counseling in Queer American women.

*Protective Factors.* Evidence remains limited on protective factors that may mitigate the influence of ACEs in LGBTQ+ populations. Two studies examined whether ACE exposure was associated with lower resilience, with mixed evidence. In a study of LGBT+ adults in the southwestern United States (Schnarrs et al., 2020), participants who experienced psychological violence and neglect, physical neglect, or household mental illness were less likely to be in the high resilience group than the normal and low resilience groups. By contrast, in a correlational study of men who have sex with men in China, ACEs were not correlated with resilience (Ding et al., 2019).

Findings were similarly mixed regarding the buffering effect of resilience (i.e., the ability to cope with stress or challenges; Connor & Davidson, 2003). Ding et al. (2019) reported that resilience moderated the association between ACEs and depressive symptoms. By contrast, Schnarrs et al. (2020) found no evidence of resilience's protective role for the association between ACE scores and mental and physical health.

Across a dissertation and an article, Wiss (2022; Wiss et al., 2022) examined social support and sleep as protective factors in the National Institute on Drug Abuse-sponsored longitudinal study of HIV-positive and HIV-negative American men who have sex with men. In the association between ACE score and drug use in the past 6 months, social support was a significant moderator, particularly among participants with household substance users. No moderating effects were found for sleep in relation to depression or anxiety. Other combinations of protective factors and outcomes were not assessed.

**Table 2.** Critical Findings of the Review.

| Domain | Key findings |
|---|---|
| Overall prevalence of ACEs | 84.2% of LGBTQ+ individuals reported ≥1 ACE; 38.7% reported ≥4 ACEs, which is higher than in same-study non-LGBTQ+ comparison groups. |
| Group differences | LGBTQ+ samples had fewer 0 ACE and more 4+ ACEs compared to non-LGBTQ+ reference groups. Gender minorities may face a higher prevalence of 4+ ACEs compared to cisgender sexual minorities. |
| Types of ACEs | Psychological violence (50.6%) and neglect (39.0%) were most prevalent among LGBTQ+ populations. Household member mental illness was more prevalent in LGBTQ+ samples. |
| Correlates: mental health | ACEs were consistently associated with increased depression, anxiety, suicidality, and self-harm. Dose-response patterns were observed. |
| Correlates: physical health | Some links between ACEs and obesity and poorer self-rated health; limited associations with specific conditions (e.g., cardiovascular disease). |
| Correlates: risky behaviors | ACEs were linked to smoking and drug use, but not consistently with alcohol use. Early sexual debut and HIV risk behaviors were more common in LGBTQ+ individuals with higher ACEs. |
| Correlates: adult adversity | Childhood ACEs were linked to higher odds of IPV in adulthood among LGBTQ+ populations. |
| Correlates: healthcare utilization | ACEs were sometimes associated with reduced healthcare use (delayed care, lower intent) but also with higher mental health treatment utilization. |
| Correlates: protective factors | Limited evidence available, but social support and resilience may buffer the effects of ACEs in LGBTQ+ populations, but the findings are inconsistent. |

ACEs = adverse childhood experiences; LGBTQ+ = lesbian, gay, bisexual, transgender, queer, and questioning.

## Discussion

This systematic review offers a synthesis of the literature on ACEs in LGBTQ+ populations, using both meta-analytic and narrative review methodologies (see Table 2 for summary of findings). Our first goal was to estimate the prevalence of the five standard ACE categories (0, 1, 2, 3, and 4+) within LGBTQ+ populations, to establish robust and comparable benchmarks for research, clinical work, and policy development (see Table 3 for implications). In a meta-analysis of 38 samples representing 24,133 LGBTQ+ people from 10 countries, the prevalence of 0, 1, 2, 3, and 4+ ACEs was 15.8%, 16.8%, 14.9%, 13.8%, and 38.7%, respectively. Thus, 84.2% (approximately 4 in 5) LGBTQ+ people reported experiencing at least one ACE before age 18, with nearly two in five experiencing at least four ACEs. Although these results suggest that LGBTQ+ populations face greater adversity than the general population, where three in five experienced at least one ACE and one in six experienced 4+ ACEs (Madigan et al., 2023, 2024), our study also provided a direct comparison with non-LGBTQ+ populations from selected studies. Compared to non-LGBTQ+ reference samples, LGBTQ+ samples had a lower prevalence of 0 ACE and a higher prevalence of 4+ ACEs.

Our findings are consistent with minority stress theory, which suggests that children and youth who are perceived as gender nonconforming or different—even before formal sexual orientation or identity disclosure—may already face elevated risk for adversity (Meyer, 2003). These youth may experience both acute forms of adversity (e.g., physical or verbal attacks) and more chronic adversity (e.g., familial rejection; Craig et al., 2020), to which their non-LGBTQ+ peers are less likely to be exposed. This may be due to heterosexist attitudes among people in their environment (Meyer, 2003; Senreich et al., 2020). Broader ecological factors (Belsky, 1980), including societal norms that devalue LGBTQ+ identities and expressions of difference, may also shape how parents, peers, and communities respond to LGBTQ+ youth.

We also found the prevalence of 4+ ACEs to be larger in samples with gender minority identity profiles compared to cisgender sexual minority samples. It is, however, worth noting that there was uncertainty in this estimate, but that the 95% CI was also compatible with substantial mean differences between the groups. This uncertainty is possibly due to the large diversity of identity profiles within gender minority groups (Kuper et al., 2012). For example, past work has demonstrated that transgender people with binary identities (e.g., woman, man) compared to nonbinary identities (e.g., genderqueer, agender) tend to face somewhat different forms of stigma, violence, and marginalization (Fiani & Han, 2019; Goldberg et al., 2019).

Going forward, it will be important to further examine the experiences of different groups within LGBTQ+ populations, and to consider how intersecting identities may compound the risk of ACEs exposure (Crenshaw, 1991). Conventional assumptions about which subgroups within LGBTQ+ populations are most at risk may not always hold; for instance, some studies have found higher adversity scores among White LGBTQ+ youth from more socioeconomically advantaged backgrounds (Mersky et al., 2024).

Our second goal was to estimate the prevalence of the 10 most commonly used ACEs items in LGBTQ+ populations. Psychological violence and neglect were the most prevalent

**Table 3.** Implications of the Review for Policy, Practice, and Research.

| Domain | Implications |
|---|---|
| Policy | • There is a need for targeted prevention and intervention efforts addressing the disproportionately high prevalence of ACEs in LGBTQ+ youth.<br>• Policy efforts could expand ACE measurement frameworks to include adversities relevant to LGBTQ+ populations (e.g., bullying, discrimination, harassment).<br>• It is critical to address global inequities, especially in regions where LGBTQ+ identities are criminalized, by supporting safe disclosure and support. |
| Practice | • Practice should move beyond general trauma-informed care toward identity-informed, LGBTQ+-affirming care.<br>• It should be a priority to train clinicians, child protection workers, and educators in LGBTQ+ cultural competency and minority stress frameworks.<br>• We should prioritize family-based interventions (e.g., parent support, family therapy) to reduce rejection and strengthen protective bonds.<br>• It is essential to partner with LGBTQ+ community organizations to co-create these initiatives. |
| Research | • It is important to conduct more studies that evaluate ACEs disaggregated by sexual orientation (e.g., bisexual vs. gay/lesbian) and gender identity (e.g., non-binary vs. trans).<br>• It is critical to continue expanding research beyond North America to improve global generalizability.<br>• Research should examine under-studied correlates (physical health, adult victimization, healthcare access), as well as protective factors (resilience, social support, community belonging) and mechanisms that mitigate ACE effects. |

ACEs = adverse childhood experiences; LGBTQ+ = lesbian, gay, bisexual, transgender, queer, and questioning.

forms of adversity, affecting approximately half and two-fifths of LGBTQ+ individuals, respectively. Comparative analyses revealed that LGBTQ+ individuals consistently reported higher rates of all forms of violence—psychological, physical, and sexual—compared to their non-LGBTQ+ counterparts. By contrast, group differences in neglect were less pronounced, indicating that heightened exposure to violence—rather than neglect—may be a more distinct risk factor for LGBTQ+ populations. The lack of conformity to sex and gender norms may stimulate direct adversity due to discomfort or aversion by the perpetrator (Craig et al., 2020). These adversities create significant risks for long-term trauma, including disruption of developmental processes and difficulties with child-caregiver attachment.

We also found evidence that LGBTQ+ samples were more likely (than the non-LGBTQ+ reference group) to report having a household member with mental health difficulties. Differences in other indicators of household dysfunction (witnessing IPV, parental divorce/separation, substance use, and incarceration) were not observed. Although it is unclear why LGBTQ+ individuals would be more likely to have a household member with mental health difficulties, a few possibilities warrant consideration. One possibility is that siblings of LGBTQ+ individuals experience a "transfer effect" from the increased parental violence directed at their LGBTQ+ sibling, potentially leading to their own exposure and resulting mental health difficulties. Previous research has shown that parents of children with mental health difficulties often experience chronic stress, which may lead to mental health issues in the parents themselves (Mackler et al., 2015; Mevorach et al., 2021; Perez Algorta et al., 2018). Thus, the effects of violence against LGBTQ+ youth may extend beyond the individual, influencing the mental health of siblings and/or caregivers and contributing to family-wide distress.

Our third goal was to narratively review the literature on the correlates of ACEs among LGBTQ+ individuals. Consistent with findings in the general population (e.g., Hughes et al., 2017), elevated ACE exposure in LGBTQ+ populations was consistently associated with increased depressive and anxiety symptoms, self-injurious behavior, and suicidality. The evidence did not indicate that ACEs are associated with additional mental health risk for LGBTQ+ individuals compared to non-LGBTQ+ individuals. However, because LGBTQ+ individuals are exposed to more ACEs overall, they may experience more cumulative or severe effects (McCabe et al., 2020). Moreover, LGBTQ+ youth frequently reach developmental milestones/stages with elevated mental health difficulties, largely due to experiences of discrimination. When compounded by ACE exposure, these pre-existing vulnerabilities may contribute to more severe psychological outcomes in this population group (e.g., Clements-Nolle et al., 2018). The literature also indicated that LGBTQ+ individuals with higher ACE exposure were more likely to engage in smoking and drug use, but no consistent association was found with alcohol use. Further research is needed to understand why smoking and drug use may be higher in this population, while alcohol use is not.

The evidence linking ACEs to physical health outcomes in LGBTQ+ populations is more limited. Although sexual violence has been associated with higher body mass index in men (e.g., Huang et al., 2022; Suarez et al., 2021), few studies have explored the association between ACEs and specific health conditions, underscoring the need for further research in this area. Of particular concern is how the limited healthcare access may exacerbate these health difficulties. LGBTQ+ individuals—especially transgender people—frequently encounter interpersonal and structural barriers to healthcare access (Kcomt et al., 2020). This issue may be

further complicated by evidence that ACE exposure is associated with reduced access to preventative healthcare services among LGBTQ+ populations (Qureshi et al., 2023). A key question, with significant implications for intervention and policy, is how to improve healthcare access for this population, who may be at heightened risk for adverse health outcomes, in part due to their elevated exposure to ACEs.

Overall, the literature on other correlates of ACES in LGBTQ+ populations remains limited, with only a handful of studies examining links to adult victimization, perpetration, or other relational variables. Exploring these associations is essential, considering that LGBTQ+ populations may be at heightened risk for relational difficulties, including IPV (Scheer & Baams, 2021). Moreover, few studies have explored protective factors that may buffer the negative effects of ACEs in LGBTQ+ populations. Research on resilience-promoting factors—such as social support, community belonging, and access to affirming care (Masten, 2011)—could provide valuable direction for targeted intervention efforts. In addition, LGBTQ+ communities may act as a source of growth and healing to overcome these difficult experiences, as it has been shown that strong community belonging can help offset negative mental health outcomes for LGBTQ+ people (Dulai et al., 2023).

## Clinical Implications

The findings from this review underscore the widespread prevalence of ACEs among LGBTQ+ individuals, indicating that exposure to childhood adversity is more often the norm rather than the exception in this population. The elevated risk of ACEs necessitates a shift in clinical practice to better address their unique needs, particularly given the long-lasting ramifications of ACEs on mental and physical health. Tailoring general trauma-informed approaches to incorporate strategies that specifically account for the challenges faced by LGBTQ+ individuals appears key to supporting these individuals.

To effectively support LGBTQ+ youth, it is important to address family dynamics, particularly in the context of familial rejection or lack of acceptance. Family-centered interventions, such as therapy or parent support groups, provide a platform to help parents understand how their responses to their child's identity impact the child's emotional and psychological well-being (Clark et al., 2022). These interventions not only educate parents about the importance of unconditional support but also foster healthier communication patterns and stronger emotional bonds within the family (Ryan, 2010). By engaging parents in learning about LGBTQ+ experiences and the harmful effects of rejection, clinicians can facilitate shifts in family attitudes and behaviors, thereby promoting a more nurturing environment for LGBTQ+ youth. This approach can reduce the risks associated with parental rejection by reinforcing the family's role as a primary source of support and affirmation (Ryan et al., 2010).

It is imperative that clinicians and other healthcare professionals receive ongoing training in LGBTQ+ cultural competency (Klein & Nakhai, 2016). Such training should include an understanding of the specific dynamics of family rejection, the challenges faced by gender nonconforming youth, and how to navigate the social and legal complexities that disproportionately affect LGBTQ+ children. Enhancing cultural competence among clinicians and healthcare professionals will improve the ability to recognize and respond to the signs of ACEs in LGBTQ+ youth, thereby facilitating timely and effective support and intervention, where necessary (Rhoten et al., 2022). Collectively, these steps advance the field toward trauma-informed care that is also identity-informed, developmentally sensitive, and embedded within broader systemic supports.

## Limitations

This study includes methodological limitations. First, we were unable to include studies that did not report (or share after our data requests) the prevalence across five categories of ACEs (i.e., 0, 1, 2, 3, and 4+) or individual ACEs for LGBTQ+ populations separately. As a result, a number of LGBTQ+ people who have completed an ACEs questionnaire are not included in this meta-analysis. Second, we were unable to provide estimates for specific sexual orientation (e.g., bisexual, gay, lesbian) or gender identity (e.g., trans, non-binary) given that studies did not always report this information, or did so in inconsistent manners (e.g., grouping gay and lesbian groups in some studies, but not others). It is thus critical for future research to report the prevalence of ACEs across multiple LGBTQ+ groups, especially considering that some groups are more at risk of experiencing stigma and discrimination (e.g., bisexual vs. lesbian/gay groups), and consequently suffer from more mental health difficulties (Feinstein & Dyar, 2017). Third, the vast majority of participants were from North America. As a result, our findings are not generalizable worldwide. When it comes to the victimization of LGBTQ+ populations, many contextual factors may be especially meaningful, including the country and region where people reside, and the setting (e.g., urban vs. rural; Hulko & Hovanes, 2018; Moreno et al., 2020). At the time of writing this study, 64 countries in the world still have laws that criminalize homosexuality (Amnesty International, 2025). Although understanding LGBTQ+ people's experiences in these countries is important, many may not be able to disclose their identity for fear of safety. Unfortunately, these people may face greater mental health difficulties, not only due to ACEs but also due to the forced concealment of their identities (Le Forestier et al., 2023, 2024).

This study also had limitations due to the focus on the ACEs framework used. First, the traditional ACE measure captures whether an individual has experienced specific

types of adversity, but does not assess important dimensions such as severity, frequency, duration, or escalation of those experiences. It is possible that these dimensions may also vary between LGBTQ+ and non-LGBTQ+ individuals and could be especially important to consider when examining the consequences of ACEs. Second, studies included in this review relied on self-reported ACEs. Prospective and retrospective ACE measures have low levels of agreement (Baldwin et al., 2019), with discrepancies partly due to perceptual biases, particularly among individuals with mental health disturbances, who may be more likely to recall and report negative events (Colman et al., 2016). That said, retrospective reports are predictive of various outcomes, showcasing their predictive validity. More prospective or multi-informant studies are required to examine whether differences between LGBTQ+ and non-LGBTQ+ participants are consistently identified across study designs. Relatedly, given that we cannot assume causal links from cross-sectional designs, more longitudinal studies are needed when examining the correlates of ACEs in LGBTQ+ populations.

Lastly, this study focused on the 10 ACE items included in the original ACE measure. However, it is possible that LGBTQ+ populations could experience additional forms of adversity captured in expanded ACE definitions (Cronholm et al., 2015), such as discrimination or bullying (Gower et al., 2018). As such, the meta-analytic findings of this study likely represent a lower-bound estimate of the full range of adversity experienced by LGBTQ+ individuals. Recent scholarship lends further support to this point by calling for the development of an ACE measure that more accurately reflects the extended set of adversities—such as discrimination, exclusion, harassment, violence, and stigma—experienced by LGBTQ+ youth (Jones & Worthen, 2023).

## Conclusion

This study found that a majority of LGBTQ+ individuals have experienced at least one ACE, with many reporting multiple forms of adversity. LGBTQ+ individuals face a comparatively greater risk of psychological, physical, and sexual violence. Consistent links were observed between ACEs and mental health challenges and risk behaviors, while research on protective factors remains limited. Early intervention and supportive environments—particularly within families and communities—can foster inclusion and reduce stigma, helping to mitigate the effects of early adversity and promote resilience across the lifespan.

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### Supplemental Material

Supplemental material for this article is available online.

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**Will Beischel** is an assistant professor of Social Psychology at Loyola University Chicago. Their research on gender and sexual diversity largely focuses on the positive aspects of gender/sex and LGBTQ+ life and how people's identities are shaped developmentally by their social experiences.

**Nicole Racine** is an associate professor in the School of Psychology at the University of Ottawa and a Scientist at the Children's Hospital of Eastern Ontario Research Institute. Their research explores the impact of early adversity on children's health and development.

**Milica Djordjevic** is an MSc student in psychology at Université de Montréal. Her research focuses on the impacts of childhood attachment on many factors related to the LGBTQ+ population, such as the coming out experience and mental health outcomes.

**Maya MacIsaac-Jones** is studying Education at the University of Alberta, after completing a Bachelor in Psychology at the University of Calgary. She is a former national team cross-country skier and a skiing coach, and is passionate about incorporating sport and outdoor learning into education to support youth mental and physical health outcomes.

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**Ross D. Neville** is an associate professor in the School of Public Health, Physiotherapy and Sports Science at University College Dublin. He is a developmental scientist specializing in mixed-effects modelling to identify barriers to and enablers of child and adolescent behavioural and mental health. His research applies multivariate longitudinal models incorporating stable and time-varying confounding and multilevel multivariate meta-analyses to investigate adversity, health behaviours, and developmental outcomes.