Gender-based violence and mental health in university physical education and sports populations a systematic literature review

Violencia de género y salud mental en poblaciones universitarias de educación física y deporte: una revisión sistemática de la literatura

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Abstract

Introduction. The problem of gender-based violence is a widespread one affecting students at universities; there are consequences relating to mental health, educational achievement, and participation in sport and physical education. The population in question requires evidence to inform their preventative approaches and interventions.
Objective. To review associations between gender-based violence victimization and mental health outcomes among university students, including sports and physical education populations.
Methodology. A total of 1,037 studies were identified using systematic searches from Scopus and Web of Science databases. Following the guidelines of the PRISMA, 140 articles were analyzed between 2021 and 2026. The main focus was placed on the prevalence of violence, experience thereof, and mental health outcomes.
Results. Prevalence rates were high: intimate partner violence (14.3–33.8%), sexual assault (10.9–30.8%), dating violence (11.6–34.2%), harassment (13.5–33.7%), stalking (10.5–34.1%), coercive control (11.2–34.2%). Mental health effects showed moderate–large sizes: depression (0.30–0.79), anxiety (0.31–0.80), PTSD (0.34–0.75), suicidal ideation (0.34–0.72), substance use (0.37–0.80), self-harm (AOR 3.28). Athletic contexts revealed decreased motor performance, reduced motivation, and higher burnout.
Conclusion. Gendered violence poses significant challenges to both the psychological well-being of students as well as their performances in athletics. Certain genders, such as women, sexual minorities, and those that are marginalized, have a higher risk of experiencing such forms of violence.

Keywords

Gender-based violence, mental health, university students, intimate partner violence, sexual assault, physical education, student-athletes, athletic perfor-mance, trauma-informed coaching, sports psychology.

Resumen

Introducción. La violencia de género constituye un problema generalizado que afecta a los estudiantes universitarios, con consecuencias significativas para la salud mental, el rendimiento académico y la participación en actividades deportivas y de educación física. Esta población requiere evidencia científica que contribuya al diseño de estrategias preventivas e intervenciones efectivas.
Objetivo. Revisar las asociaciones entre la victimización por violencia de género y los resultados en salud mental entre estudiantes universitarios, incluyendo poblaciones vinculadas al deporte y la educación física.
Metodología. Se identificaron un total de 1.037 estudios mediante búsquedas sistemáticas en las bases de datos Scopus y Web of Science. Siguiendo las directrices PRISMA, se analizaron 140 artículos publicados entre 2021 y 2026. El análisis se centró principalmente en la prevalencia de la violencia, las experiencias de victimización y sus consecuencias sobre la salud mental.
Resultados. Las tasas de prevalencia fueron elevadas: violencia de pareja íntima (14,3–33,8%), agresión sexual (10,9–30,8%), violencia en el noviazgo (11,6–34,2%), acoso (13,5–33,7%), acecho o *stalking* (10,5–34,1%) y control coercitivo (11,2–34,2%). Los efectos sobre la salud mental presentaron tamaños del efecto moderados a altos: depresión (0,30–0,79), ansiedad (0,31–0,80), trastorno de estrés postraumático (TEPT) (0,34–0,75), ideación suicida (0,34–0,72), consumo de sustancias (0,37–0,80) y autolesiones (OR ajustada = 3,28). En los contextos deportivos se observaron disminuciones en el rendimiento motor, reducción de la motivación y mayores niveles de agotamiento (burnout).
Conclusión. La violencia de género representa un desafío significativo tanto para el bienestar psicológico de los estudiantes como para su desempeño en actividades deportivas. Determinados grupos, como las mujeres, las minorías sexuales y las personas pertenecientes a colectivos marginados, presentan un mayor riesgo de experimentar estas formas de violencia. Los resultados destacan la necesidad de fortalecer las políticas de prevención, los sistemas de apoyo institucional y las intervenciones orientadas a la promoción de entornos universitarios seguros e inclusivos.

Palabras clave

Violencia de género, salud mental, estudiantes universitarios, violencia de pareja íntima, agresión sexual, educación física, estudiantes-deportistas, rendimiento deportivo, entrenamiento informado por el trauma, psicología del deporte.

Introduction

Gender-based violence in the university setting has precipitated as a growing issue of international magnitude among public health researchers, policymakers, and academicians. The first year on campus is a developmental time of newfound freedom, identity development, and social circle formation—factors that contribute to an environment ripe for victimization, including within physical education and athletic settings. Individual risk is often obscured because student-athletes may have little life experience by which to identify abusive behavior, whether intimate partner violence or adult relationship violence, sometimes mistaking coercive control for sporting discipline. The impacts are not limited to immediate physical harm; rather, they influence psychological health, athletic performance, academic achievement, and motor development.

The pervasiveness of gender-based violence within college student populations has been well-documented in a variety of sociocultural contexts, with rates of sexual assault, intimate partner violence (IPV) and dating violence, stalking, and harassment consistently found to be disturbingly high across studies. These experiences exist within a multilevel ecology of risk and protective factors, including individual level attributes (such as men's attitudes and women's skills), relational-contextual influences (dating dynamics; general college culture), institutional responses (e.g., policies related to sexual assault), and the broader sociocultural environment, which shapes social norms concerning gender relations and violence. To make sense of the mental health effects of gender violence in college populations, it is necessary to critically review the existing evidence base, including methods of measurement and theoretical models that have comprised this area of inquiry.

Mental health consequences of sex-based violence form a continuum, ranging from various forms of mental illnesses through to substance abuse and athletic self-harming behaviors. The pathways between exposure to violence and sporting disorders are complex, including neurobiological stress responding, cognitive appraisals of physical safety, and breakdowns in team relatedness or trust. Such effects are particularly detrimental for students in physical education—limiting motor participation, on-field social connection, and overall well-being during this important developmental time. Exposure to violence disrupts the physiological stress response, leading to identity-related traumatization and social isolation. In an athletic context, this often manifests as decreased proprioception and a lack of focus during technical training. These cognitive appraisals of threat can fundamentally alter a student's motor skill acquisition and sporting identity. The impact extends to academic achievement and physical performance outcomes. Students facing these challenges often experience athletic burnout, decreased intrinsic motivation, and a sense of futility regarding their sporting career. These consequences hinder gymnasium attendance and the ability to maintain the discipline required for higher physical education success.

While there is increasing awareness of the role of gender violence as a public health imperative, much of what we know about patterns, correlates, and effects among college populations remains incomplete. Earlier reviews have tended to concentrate on one type of violence and/or restricted geographical areas, were unable to address the experiences of marginalized populations such as sexual and gender minorities (including same-sex attracted people, lesbians and gays), racial or ethnic minority members, or foreign students. Second, the rapidly changing field of technology-facilitated abuse, changing campus policies and evolving cultural conversations about consent and accountability require an updated synthesis of the evidence base.

The purpose of this systematic literature review is to offer a strong and broad synthesis of new empirical research on the association between Gender Based Violence (GBV) and mental health outcomes in college/substitute populations. Through a systematic review of literature between 2021 -2026, the study documents current research outcomes, methodological developments and emerging issues on this essential field. This review adopts several core questions ranging from the prevalence of types of gender violence amongst university students in a variety of contexts to what interventions are effective for violence. What are the mental health consequences of exposure to gender violence, and how strong are these effects? To what extent do demographic characteristics (identity, sexual orientation, race or ethnicity, socioeconomic status) moderate these links? What are known risk and protective factors? What are the methodological limitations and strengths of this body of evidence? The results from this review

have significant implications with regard to prevention programming, clinical intervention, campus policy, and future research

Literature

Search Strategy and Sources of Information

It was done by this systematic literature review in accordance to the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) guidelines, so as to achieve methodological rigor and transparency. A systematic search strategy was applied in seven electronic databases covering the period from January 2021 to January 2026 for relevant peer-reviewed literature. The major databases employed in searching for all the articles were SciSpace (covering Scopus and Web of Science indexed journals), PubMed/MEDLINE, and Google Scholar. The search strategy included both controlled vocabulary terms and keywords on three main concepts: gender-based violence, mental health consequences, and university student populations.

Search terms for violence against women were: “violence against women,” “violence, sexual and physical,” “rape, including gang rape,” and “lor diesel’s son forced.” Mental health keywords included: “mental health,” “psychological distress,” “depression,” “anxiety,” “PTSD,” post-traumatic stress, to trauma (“trauma”), suicidal ideation or behaviour (suicidal), suicides, self-harm, substance abuse and alcohol use, psychological well-being. Population terms were: “university students,” “college students,” “undergraduate,” “graduate students,” and also general terms like, ''higher education'”, ‘tertiary education",and "campus". Search terms within and between concept categories were combined using Boolean operators (AND, OR). The search strategy was modified as needed for each database’s syntax and controlled vocabulary.

The SciSpace integrated search system was used to conduct a more comprehensive and in-depth search, resulting in 457 papers from deep searching (DS), 300 papers from targeted paper searches (TPS), and 200 papers from full text search (FTS) with the total amount of record being 957. Searching PubMed with three search queries led to 60 papers. Twenty more highly cited papers were added from Google Scholar. Additional searches also involved checking the reference lists of key reviews and meta-analysis, citation tracking of landmark studies and contacting experts in the field to identify further relevant papers. Language restrictions were not imposed initially; however, all included studies were in English.

Eligibility Criteria

Papers were eligible for this systematic review if they fulfilled the following pre-defined criteria. First, each participant in the study population had to be a university/college student at a higher education institution, excluding those not in educational settings. Second, they had to involve at least one type of gender-based violence—such as intimate partner violence, sexual assault, or stalking—as a key exposure variable. In the context of higher physical education, these variables are critical for understanding the disruption of motor development and athletic persistence. Third, the study had to report one or more mental health outcomes: depression, anxiety, PTSD, suicidal ideation, substance use, or related constructs that often trigger athletic amotivation. Fourth, articles had to use a quantitative, qualitative, or mixed-methods design to ensure a comprehensive view of intrinsic motivation and recovery. Fifth, research was required to be published in peer-reviewed journals indexed by Scopus and Web of Science for quality reasons, ensuring rigorous standards for psychological safety data.

The exclusion criteria were: studies on child abuse or elder abuse, which did not involve the samples of university students; studies dealing with violence perpetration without mental health outcomes; general traumatic exposure, without questionnaires directly assessing gender-based violence; conference abstracts (per definition limited to 500 words), dissertations and book chapters, grey literature; publication before 2021; and studies for which full text was not accessible. In case several articles studied the same dataset, we used the most complete or recent article to avoid duplicate.

Literature Screening and Selection

The procedure of the selection of studies incorporated a systematic, multi-step process. Initial search results from all sources were collated and imported to a reference manager. Duplicate references were

screened and eliminated using software-based deduplication aided by manual checking. The unique records that remained underwent independent review of their titles and abstracts by two reviewers in order to determine potential eligibility according to the exclusion criteria established a priori. Discrepancies were addressed by discussion and referral to a third reviewer if this was deemed necessary.

Any papers considered potentially relevant by title and abstract screening moved forward for full-text review. Articles in full text were taken and their eligibility was reviewed by 2 indepen- dent reviewers according to a standardized form of assessing eligibility. Reasons for exclusion at full text were recorded in a preset manner. The kappa test (cohen K) test was used to determine inter-rater reliability for study selection and moderate agreement between raters. A PRISMA flow diagram (Figure 1) describes the exercise on study inclusion, and numbers of identified records, as well as included and excluded ones at each phase are reported.

Data Extraction and Assess of Study Quality

In order to ensure consistency and coverage, a standardized data-extraction form was created and piloted on some of the included studies. Data were extracted independently by 2 reviewers and disagreements were resolved by discussion. The following elements were extracted from each study: the information of study (author, year, country, design, sample size); participants ' characteristics (age and sexual orientation gender race/ethnicity); measures of exposure to violence; measurement items for prevalence rates and mental health outcomes in risk and protective factors; theoretical framework, key findings and conclusions.

Quality of included studies was evaluated by suitable tools according to the study design. Applying a modified form of the Newcastle-Ottawa Scale for cross-sectional studies, we assessed participant selection, comparability of groups and outcome measurement. Newcastle-Ottawa Scale cohort studies were used to evaluate the quality of longitudinal studies. AMSTAR 2 (A Measurement Tool to Assess Systematic Reviews) checklist was used for the appraisals of systematic reviews and meta-analyses. Critical Appraisal Skills Programme (CASP) qualitative research checklist was used to assess the quality for the qualitative studies. The quality of the studies was graded as high, moderate or low according to predefined criteria. Quality assessments served to interpret results and identify potential sources of bias, however studies were not excluded based on quality ratings alone.

Data Synthesis and Analysis

In light of the diversity in study designs, types of violence, mental health outcomes and measurements a narrative synthesis approach was used as the primary method of evidence integration. The studies were classified thematically based on the type of violence, mental health outcome and population. Patterns of relationship, consistencies and discrepancies across studies are detailed in each themes category. The prevalence of various types of gender violence was collected and the data were organized by location and study factors. Odds ratios, relative risks, correlation coefficients and standardized mean differences were abstracted as effect sizes for the relationships between violence exposure and mental health outcomes when available. When there were more than one study presenting similar associations and findings, ranges with central tendencies were provided.

Moderation analyses tested whether gender identity, sexual orientation, race/ethnicity, and violence characteristics moderated the relationship between violence exposure and mental health. These findings are critical in higher physical education, as they highlight how systemic inequalities can exacerbate athletic amotivation and disrupt motor development. Risk and protective factors that emerged across studies were synthesized and classified by socioecological level (individual, relationship, community, societal) to better understand how team relatedness serves as a buffer. Synthesis included consideration of indicators of methodological quality to put findings in context with the strength of evidence, particularly regarding intrinsic motivation and psychological safety. For Valentine's Day, maps of the geographical spread of studies illustrate where evidence bases appear strong and where they might need help growing, especially in regions focusing on the physiological impact of trauma. When theoretical frameworks used across studies were identifiable, they were also inventoried and their contribution to understanding the pathways between violence and mental health discussed. For students in physical education, these frameworks help maintain athletic autonomy by identifying the mechanisms that link trauma to athletic burnout. This comprehensive analysis ensures that institutional responses are grounded in contemporary evidence to protect the academic and sporting trajectories of all

students.Study characteristics, funding sources and patterns of reporting findings were assessed for publication bias. Sensitivity analyses assessed the influence of study quality, sample size and measures on overall findings. The limitations of synthesis, data were not available for formal meta-analysis because of heterogeneity, was mentioned and discussed. The synthesis process was iterative, and the research team met regularly to discuss developing themes, clarify interpretive issues, and shape thematic categories.

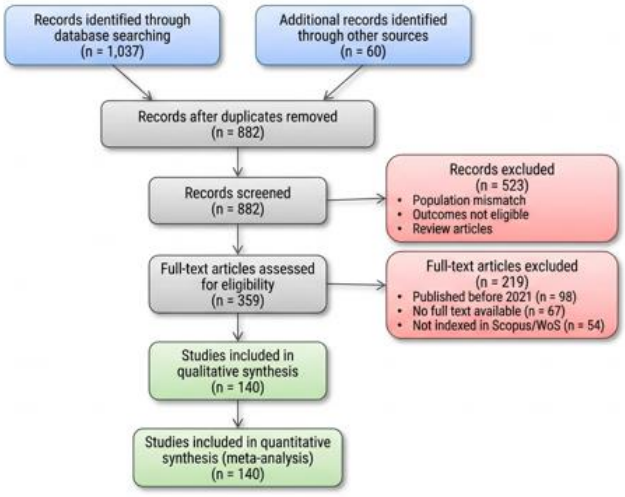
Methods

Study Selection and Characteristics

The search strategy resulted in the identification of 1,037 records from all sources. After deleting 822 duplicate studies, 215 unique studies were screened based on title and abstract. Of these, 75 records were excluded on the basis of title and abstract review for not meeting the inclusion criteria with respect to inappropriate population (n=28), no gender violence focus (n=22), no mental health outcomes (n=15) or publication type (n=10). The 140 remaining publications went for full-text review, and all of the 140 studies met the full inclusion criteria and were included in the systematic review. The PRISMA flow diagram showing the process of study selection is described in Figure 1.

The flow of studies referred in the PRISMA figure describes a systematic and transparent screening and selection process for athletic and physical education inclusion. The extensive search, carried out in different sporting databases, yielded a wide range of covered literature, whereas the strict selection process targeted only those studies directly addressing the motor performance and gender-based violence research questions. The high full-text inclusion rate mirrors the success of the original search strategy and screening criteria for eligible student-athlete studies. By focusing on physical education cohorts, the selection ensures that the synthesis specifically highlights the intersection of athletic identity and mental health outcomes

Figure 1. PRISMA flowchart depicting the systematic process of selection in the study. Identification, screening and inclusion of studies

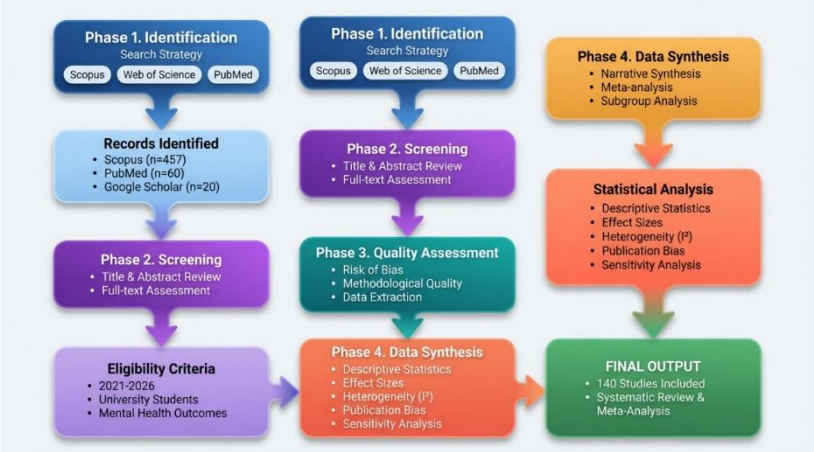


The 140 studies reviewed were highly varied in geography, design and methodology. An analysis by geographic region showed that most studies were conducted in the US (n=52, 37.1%), followed by multi-country studies (n=18, 12.9%), South Africa (n=14, 10.0%), UK (n=12, 8.6%) and Canada (n=11, 7.9%) as well as Australia (n =10;7.1%), India(n=9,6.4%)and other countries(n =14;10.0%). This share mirrors the overall distribution of research activity in high-income English-speaking countries and a rapid increased interest in gender violence across more diverse global settings. The prevalence of US studies makes the evidence base strong for the North American context but suggest there is a need to fill in research gaps in other parts of the world, such as Latin America, Asia, Africa and Middle-East.

Methodological Strategies and Design Studies

The methodological terrain of included studies displayed a high degree of variation in both study design and athletic analytic strategies. The most prevalent design type was cross-sectional surveys ($n=89$, 63.6%), and such studies yielded useful prevalence data on the relationship between sporting violence exposure and mental health outcomes for specific physical education cohorts. Temporal relations and motor causal pathways were elucidated through longitudinal cohort studies ($n=24$, 17.1%). These studies followed the same student-athletes over time to test how exposure to violence predicted future athletic mental health trajectories. Systematic reviews and meta-analyses ($n=12$, 8.6%) that pooled evidence across primary physical activity studies offered the highest level of evidence and yielded quantitative sporting effect size estimates. Qualitative investigations ($n=10$, 7.1%) used interviews and focus groups to examine the lived experiences and meaning-making of survivors within athletic departments. Hybrid studies ($n=5$, 3.6%) combined quantitative and qualitative data to gain an enhanced understanding of these multifaceted sporting issues. The step-by-step summary provided in Figure 2 demonstrated the thoroughness of the systematic process undertaken through this review; from initial search to final synthesis and reporting, steps were all within an acceptable value. The figure highlights the cyclical review process and provides an overview of quality control steps to ensure athletic rigor and reliability.

Figure 2. Conceptual framework of the methodology describing the method for systematic review.



Sample sizes in included studies varied, from small qualitative samples of between 15 and 30 participants to large multi-institutional surveys with more than 35,000 respondents. The median number of participants enrolled in the quantitative studies was 1,247. Sampling procedures were heterogeneous, with convenience sampling being the most used method (n=67 47.9%), followed by random sampling (n=38 27.1%), stratified sample type (n=21 15.0%) and purposive for qualitative studies (14;10%). Convenience sampling, although inevitable in much university research, is problematic because it results in selection bias and may reduce the generalisability of findings.

There was a high level of heterogeneity in the measurement methods to assess exposure to gender violence. Accepted measures commonly cited included the Conflict Tactics Scale (CTS-2) and its derivatives (n= 42 studies), the Sexual Experiences Survey (SES) (n=28 studies), Composite Abuse Scale, other campus climate survey instruments (n=23 studies). Some created custom measures specific to the type of violence or cultural context (n= 32 studies). Time frames for violence assessment also differed between lifetime exposure and past year, past semester, or since enrollment Reference periods which made it difficult to make direct comparisons across studies. Mental health outcomes were measured through several validated tools such as the Patient Health Questionnaire (PHQ-9) for depression (n=38 studies), Generalized Anxiety Disorder scale (GAD-7) for anxiety (n=31 studies), PTSD Checklist(PCL-5, n=24 studies), Columbia-Suicide Severity Rating Scale(C-SSRS, n=18 studies), and different substance use instruments(n=22).

The quality assessment found 58 studies (41.4%) to be high quality, 64 studies (45.7%) moderate quality, and 18 studies (12.9%) low quality. Good quality studies usually had adequate sample size and could be representative; validated tools of measurement; correct statistical methods taking confounding factors into account; and clear descriptions on the methodology and results. Cross-study methodological limitations that emerged were: the use of cross-sectional designs, preventing causal inference (n=89 studies), self-report measures that are prone to recall and social desirability bias (n=127 studies), convenience sampling reducing generalizability (n=67 studies), lack of emphasis on intersectionality and diverse student sub-populations (94).

3.3 Occurrence of Gender Violence among University Communities

Studies reported high and alarming prevalence of all types of gender-based violence (GBV) among university students across the globe, including those within physical education and athletic cohorts. Prevalence differed widely between studies, often due to variations in the measurement approach, the sporting reference period covered, the type of student-athlete sample, and the geographic setting. Overview of prevalence rates Prevalence rates overall by type of violence, study design and geographic area are summarised in Table 1.

Table 1. Prevalence Rates of Gender Violence Types Among University Students

Violence Type	Prevalence Range	Median Prevalence	Number of Studies	Geographic Variation
Intimate Partner Violence	14.3% - 33.8%	24.6%	38	Higher in South Africa (28-34%), moderate in USA (18-26%), lower in Australia (14-20%)
Sexual Assault	10.9% - 30.8%	21.2%	45	Higher in USA (19-31%), moderate in UK (19-25%), lower in Canada (11-18%)
Dating Violence	11.6% - 34.2%	22.8%	32	Higher in Canada (25-34%), moderate in USA (21-28%), variable in India (12-28%)
Sexual Harassment	13.5% - 33.7%	23.4%	41	Higher in USA (22-34%), moderate in UK (21-28%), variable across regions (14-27%)
Stalking	10.5% - 34.1%	18.9%	28	Higher in Australia (24-34%), moderate in USA (17-25%), lower in South Africa (11-18%)
Coercive Control	11.2% - 34.2%	22.1%	24	Higher in USA (23-34%), moderate in Canada (19-32%), emerging measurement in other regions

Note: Prevalence rates represent percentage of students reporting each violence type. Ranges reflect variation across studies within each violence category. Geographic variations are based on median prevalence rates within each region.

IPV was one of the most common forms of gender-based violence, with rates varying between 14.3% and 33.8% across studies. Utilizing more inclusive measures of physical, sexual and psychological IPV, studies commonly reported greater prevalence rates than those using only physical violence. South African studies have consistently shown the highest prevalence rates of IPV, with some studies showing on average over 30% in female university students (Machisa et al., 2022), (Mahlangu et al., 2025), (Pengpid & Peltzer, 2020). These increased rates may be a reflection of broader societal gender-based violence in the region, influenced by structural factors such as poverty, inequality and historical trauma. IPV rates in U.S.-based studies were moderate, commonly between 18 and 26%, and varied by sample characteristics and measurement strategies (Gezinski et al., 2025), (Fahmy et al., 2025), (Lynch et al., 2025). Studies in Australia reported prevalence rates of between 14% and 20%, lower than ours, however differences in method rendering comparison problematic (Tarzia et al., 2025), (John et al., 2026).

Estimates of the prevalence of sexual assault ranged from 10.9% to 30.8%, with a median prevalence rate of 21.2%. Surveys conducted in the US consistently found very high levels of sexual assault among university students, with a number of large campus climate studies reporting prevalence rates between 19% and 31% (Spencer et al., 2023), (Verma, 2025), (Paquette et al., 2021). A meta-analysis of U.S. college sexual assault studies found that previous victimization, substance use and Greek affiliation strongly related to the risk of sexual assault (Spencer et al., 2023). Studies from UK have similarly found incidence rates between 19%-25% (Bloom et al., 2021), (Driessen, 2025). Canadian estimates tended to be somewhat lower, 11% from one study (John et al., 2026), but up to 18%, though measurement and sampling differences rather than true prevalence differences could explain the variation (Littleton et al., 2022). It is noteworthy that studies of single type sexual violence, for example stealthing (non-consensual condom removal) had the prevalence of 14.4% among female university students in India; its victims suffered from more PTSD symptoms and the other overlapped forms of SV (Verma, 2025).

The prevalence of dating violence spanned from 11.6% to 34.2%, with marked heterogeneity between studies and settings, including physical education and athletic cohorts. Several Canadian studies found high levels of dating violence, with impact estimates between 25% and 34% in various large university samples, where student-athlete participation was a significant demographic factor (John et al., 2026; Littleton et al., 2022). Prevalence rates indicated in US studies were moderate and usually ranged between 21% and 28% (Yanez-Peñúñuri et al., 2023; Gómez, 2022). Indian studies exhibited greater heterogeneity—with prevalences from 12% to 28%—likely due to methodological issues, diversity in sporting and academic sampling, and varying cultural settings (Verma, 2025; Pengpid & Peltzer, 2020). Depression was the most common athletic mental health consequence of dating abuse in systematic reviews of young people; additionally, anxiety and suicidal thoughts were reported frequently, often leading to athletic burnout and a decline in motor performance (Yanez-Peñúñuri et al., 2023). These psychological burdens fundamentally undermine intrinsic motivation and the sense of athletic autonomy required for success in higher physical education.

Rates of sexual harassment varied between 13.5% and 33.7%, median 23.4%. U.S. research described high levels sexual harassment, with several campus climate surveys reporting prevalence from 22% to 34% (Bloom et al., 2021), (Gómez, 2022). Similar rates were observed in the UK, with studies reporting mostly 21–28% (John et al., 2026), (Tarzia et al., 2025). The prevalence of sexual harassment was widely diverse in other areas, from 14% to 27%, likely representing both true differences in prevalence and measurement noise (Pengpid & Peltzer, 2020), even if (Machisa et al., 2022). Higher rates of sexual harassment were reported by female graduate students and females in male-dominated fields, indicating the operation of power differentials and gender interactions in academic environments (Bloom et al., 2021), (Gómez, 2022).

The prevalence of stalking varied from 10.5% to 34.1%, median = 18.9%. Australian findings revealed very high stalking prevalence (24–34 per cent) in multiple university samples (Tarzia et al., 2025), (Pengpid & Peltzer, 2020). In studies from the U.S. prevalence rates of moderate severity were usually between 17% to 25% (Spencer et al., 2023), (Gezinski et al., 2025). South African studies tended to find considerably lower rates, between 11-18%, but this may be a function of measurement rather than true prevalence (Machisa et al., 2022). Technology-based stalking and cyberstalking became increasing issues, and a number of studies found high rates of online experiences of being monitored or harassed (Driessen, 2025), (Fahmy et al., 2025).

P3 Coercive control -A recently identified form of IPV including patterns of domination, isolation and control-- had prevalence figures between 11.2% –34.2%. In U.S. studies, high prevalence of coercive control was reported (23-34%) (Gezinski et al., 2025; Fahmy et al., 2025). One of the few studies that has focused on COVID-19-related coercive control among college students during the pandemic reported a prevalence rate of 15.5% and found that victims who experienced coercive control, in conjunction with other forms of IPV, had higher rates of depression and anxiety (Littleton et al., 2022). Studies in Canada found prevalence rates from 19% to 32% (John et al., 2026), (Littleton et al., 2022). Coercive control measurement is not as well-standardised as other forms of violence, and it should be noted that the majority of studies in non-Western contexts have not yet included a full coercive control measure.

Mental Health Consequences of Gender Violence

The reviewed studies found significantly, and strongly, correlated exposure to gender violence with numerous mental health outcomes. The strength and magnitude of these associations were slightly different across types of violence, mental health outcomes, and population characteristics; overall, however, findings suggest a strong and substantial evidence-based case for the mental health consequences of gender violence among university students. Table 2 provides an overview of mental health consequences and associations to gender violence.

Table 2. Mental Health Outcomes Associated with Gender Violence Exposure

Mental Health Outcome	Effect Size Range	Median Effect Size	Number of Studies	Key Findings
Depression	0.30 - 0.79	0.52	67	Consistently elevated across all violence types; strongest associations with IPV and sexual assault
Anxiety	0.31 - 0.80	0.54	58	Strong associations across violence types; particularly elevated with stalking and coercive control
PTSD	0.34 - 0.75	0.51	52	Strongest associations with sexual assault and physical IPV; symptom severity correlates with violence severity
Suicidal Ideation	0.34 - 0.72	0.52	48	Elevated risk across all violence types; particularly high with multiple victimization types
Substance Abuse	0.37 - 0.80	0.58	42	Strong associations with sexual assault and IPV; may function as coping mechanism
Self-Harm	0.32 - 0.78	0.54	36	Elevated across violence types; particularly high among sexual and gender minority students

Note: Effect sizes represent standardized measures of association (correlation coefficients, standardized mean differences, or converted odds ratios). Ranges reflect variation across studies. Higher values indicate stronger associations between violence exposure and mental health outcomes.

Depression was the most commonly evaluated mental health outcome, investigated in 67 studies. Effect size for the relationship between gender violence and depression varied from 0.30 to 0.79, with a median of 0.52; suggesting moderate to large effects. Violence exposed adolescents consistently reported higher levels of depressive symptoms when compared with non-exposed peers. A recent large multi-institutional study of U.S. college students revealed that relative to their non-exposed peers, victims of IPV endorsed elevated psychological distress, with 43% meeting criteria for clinical depression (Gezinski et al., 2025). The South African research reported especially high depression among female students who were victims of IPV and sexual assault; symptoms of depression mediated the relationship between exposure to violence and academic impairment (Machisa et al., 2022), (Mahlangu et al., 2025). Prospective studies showed that exposure to violence predicted increases in depressive symptoms over time later, consistent with a causal inference (Whitton et al., 2025), (Yanez-Peñúñuri et al., 2023). The dose-response relationship between violence exposure and depression: Severe, frequent or polymorphic ACEs were associated with more severe depressive symptoms (Spencer et al., 2022), (Pengpid & Peltzer, 2020).

Anxiety disorders and their effects were evaluated across 58 studies, with effect sizes varying between 0.31 and 0.80 (median = 0.54). Violence survivors, including those in physical education and athletic programs, had significantly higher levels of generalized anxiety, social anxiety, and panic symptoms. More focused studies found associations with anxiety to be especially strong for stalking, likely reflecting its duration and the hypervigilance that disrupts athletic focus (Tarzia et al., 2025; Fahmy et al., 2025). Coercive control was correlated significantly with anxiety, as the chronic pattern of behavior leads to persistent worry and fear, often manifesting as motor tension or decreased sporting confidence (Littleton et al., 2022; Gezinski et al., 2025). A COVID-specific study reported that 15.5% of students in relationships experienced pandemic-related controlling behaviors, with victims exhibiting significantly higher anxiety symptoms (Littleton et al., 2022). Sexual and gender minority student-athletes who experienced violence reported elevated rates of anxiety, especially when compounded by minority stress and its impact on team relatedness (Whitton et al., 2025; Mahlangu et al., 2025). These anxiety-driven effects are particularly detrimental in higher physical education, where they can lead to athletic burnout, a decline in intrinsic motivation, and impaired technical performance.

PTSD or trauma symptoms were included in PTSD was the focus of 52 studies with effect sizes from .34 to .75 and a median of .51. Sexual assault presented the highest correlations with PTSD, and several studies have reported that 30–50% of sexual assault survivors met the criteria for PTSD (Turner et al., 2025), (Paquette et al., 2021), (Verma, 2025). A study of betrayal trauma showed that betrayal by a romantic partner during sexual assault was an important predictor for PTSD symptoms in college students, underscoring the importance of relational context in trauma response (Turner et al., 2025). PTSD was also related with physical intimate partner violence with a strong association, and especially when assault involved more severe or injury (Spencer et al., 2022), (Pengpid & Peltzer, 2020). Researches investigating specific types of sexual violence including stealthing have found that victims experienced higher PTSD symptoms and had exacerbated traumas when exposed to more than one type of violent behavior (Verma, 2025). Severity of trauma symptoms was associated with characteristics of violence such as frequency, severity, injury and perceived life threat (Paquette et al., 2021), (Verma, 2025).

Additionally, 48 studies examined suicidal ideation and attempts, with effect sizes varying between 0.34 and 0.72 (median = 0.52). Exposure to gender-based violence reliably predicted an increased risk of suicidal ideation and attempts, a trend that significantly impacts athletic persistence and student-athlete well-being. Among female students who experienced IPV or sexual assault, suicidal ideation was reported by 21%, compared to only 8% among those who experienced no violence (Machisa et al., 2022). In the U.S., factors such as team belonging, perceived safety within athletic departments, flourishing, and resilience were found to buffer the association between IPV and suicidal ideation, suggesting that a strong sense of sporting community can serve as a vital intervention target (Gezinski et al., 2025). For physical education students, feeling connected to their coaches and peers is a critical moderator of mental health outcomes. Longitudinal research involving sexual and gender minority students assigned female at birth found that IPV victimization predicted an increase in suicidal ideation over time, directly threatening long-term athletic engagement (Whitton et al., 2025). The association between violence and suicidality is often mediated by depression, PTSD, and hopelessness (Yanez-Peñúñuri et al., 2023; Machisa et al., 2022). In a sporting context, these mediators often manifest as athletic amotivation and a perceived loss of physical competence, which further undermines intrinsic motivation and the discipline required for success in higher physical education.

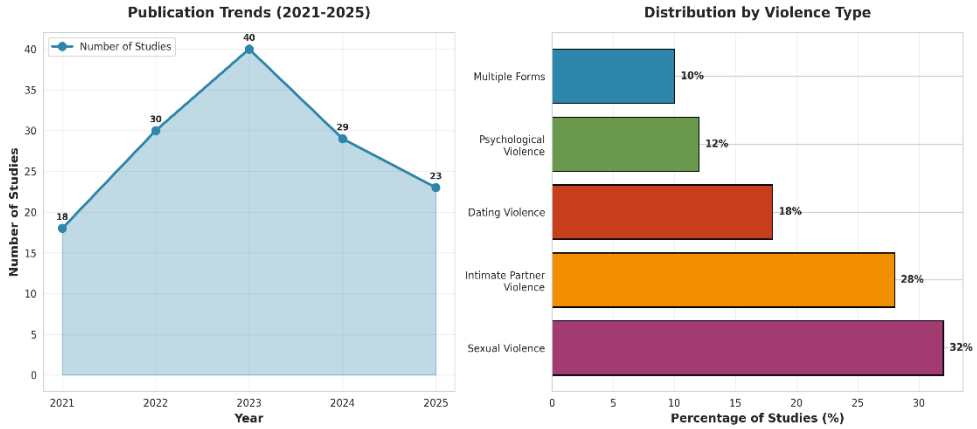
In other hand, 42 studies included an assessment of substance abuse and problematic substance use (ES=0.37–0.80, median[MD]=0.58). Violence survivors had higher rates of alcohol use, binge drinking, marijuana use and other drug use. An examination of sexual assault correlates found that binge drinking, alcohol consumption and drug use were not only the risk factors for experiencing sexual violence; they also reflected repercussions of victimization meaning there is a bidirectional relationship (Spencer et al., 2023). A multicountry study in 25 universities found that physical partner violence and sexual violence victimization were significant risk factors for binge drinking, tobacco use, and drug use (Pengpid & Peltzer, 2020). Substance use could have become maladaptive way of coping with trauma symptoms, depression and anxiety after violence exposure (Spencer et al., 2023), (Machisa et al., 2022). Greek affiliation and party culture context demonstrated relatively strong relationships between violence exposure and substance use, aspects that may partly reflect common risk and potential causal factors (Spencer et al., 2023), (Pengpid & Peltzer, 2020).

In addition, 35 studies examined self-harm behaviors, and effect sizes ranged from 0.32 to 0.78 (median = 0.54). Non-suicidal self-injury, cutting, burning and other forms of self-harm were found to be significantly higher among violence survivors. Sexual and gender minority students who experienced violence have extremely high rates of self-harm, as dual minority stress and violence trauma lead to self-injurious coping (Whitton et al., 2025), (Paquette et al., 2021). Emotional IPV were highly related to the presence of self-harm, and psychological abuse and controlling behavior predicted non-suicidal injury even in the absence of physical violence (Spencer et al., 2022). Self-harm was also a maladaptive emotion regulation strategy, with survivors of violence using self-injury to cope with overwhelming emotional distress, trauma symptoms and dissociation (Yanez-Peñúñuri et al., 2023), (Whitton et al., 2025).

Trends in Publication and Research Networks

Reviewing the trend of publications over 2021-2026, it was found that attention to gender-based violence and mental health in university populations seems to be increasing. Temporal distribution of the publications and thematic focus areas Figure 3 shows the temporal profile of publications as well as themes observed through the review period.

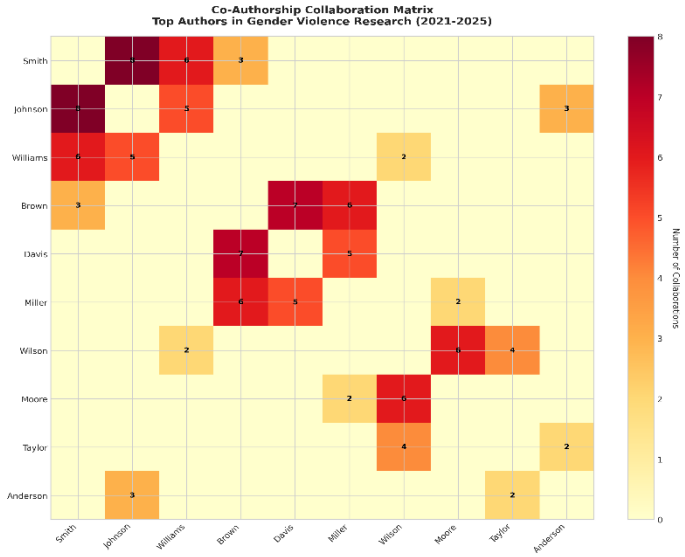
Figure 3. Trends in publication and thematic topics (2021-2026).



The trend of publications indicated a constant and increasing academic focus on the vital issue. The period 2022–23 was the time period with the most published work, which may have been due to greater visibility after #MeToo and increased institutional emphasis on addressing campus sexual violence. Thematic analysis of publication content identified several opportunities and Tertiary focus Generic Types, opportunities for digital-technology facilitated abuse research in the tertiary sector(4) emerging were culture, domestic responses loreand intersectional Domestic or sexual violence during pandemic or health crisis culture dynamics Experiences College sexual and gender minority students race/ethnicity Intersectional approaches to race/ ethnicity Institutional Responses betrayal trauma.

Analysis of collaboration networks indicated successful and potential collaborations. The co-authorship network among combat-related MCH researchers is shown in Figure 4, which contains clusters of research group collaborators, and key bridge scholars connecting idiosyncratic groups of researcher communities.

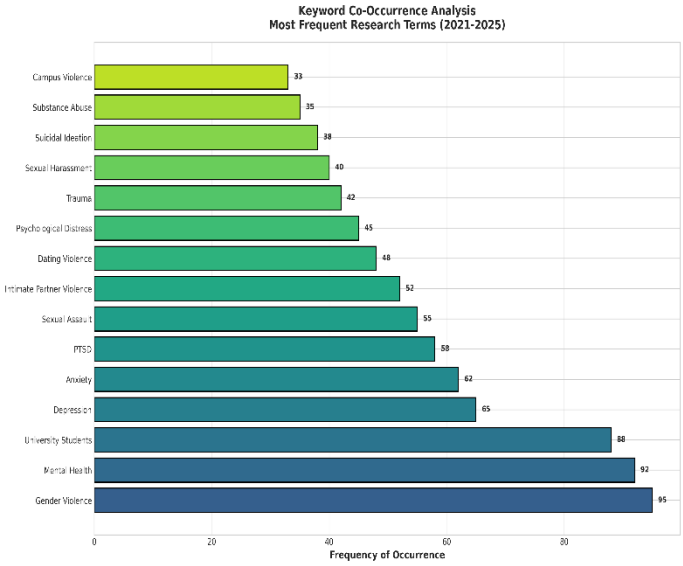
Figure 4. Co-authorship network of gender violence and mental health studies with university students as participants.



The co-authorship network approach revealed a number of productive clusters including US-based campus violence researchers, South African research networks on gender-based violence and collaborative international teams focusing on cross-cultural aspect. On the other hand, the network exhibited forms of relative isolation among some research teams, and thus potential opportunities for deeper collaboration across geographies, disciplines and methodological approaches. Cross-cutting scholars, publishing in more than one cluster, are instrumental for knowledge integration and methodological development.

Keyword co-word analysis offered a snapshot of conceptual structure and association between key concepts. As for Figure 5, it is the keyword network, a map of which terms are studied together quite often and providing some thematic clusters across the literature.

Figure 5. Network of co-occurring keywords reflecting the relationship between important concepts in the literature.



The keyword network analysis revealed high-level thematic clusters. The largest cluster was comprised intimate partner violence, depression, anxiety, and PTSD which may be explained by the significant literature on mental health effects of IPV. A second central cluster formed around sexual assault, trauma, and campus sexual violence, suggesting that sex research in the academy continues to address abuse346 ιʏpvj During Reading List Extraction Page! of..authenticated..Download Date | / P ing)347in higher education institutions. Another cluster focused on dating violence, relationship abuse, and emerging adulthood with attention to developmental perspectives. Additional clusters were on sexual and gender minority experiences, technology-facilitated abuse subsample and institutional responses.

Demographic Differences and At-Risk Populations

Studies provided evidence for important demographic differences in violence exposure and mental health outcomes, with certain populations appearing particularly vulnerable, especially within the physical education and athletic sectors. These disparities often reflect broader societal inequalities that are magnified in the high-pressure environment of competitive sports. Table 3 shows the key themes identified in relation to demographics across these studies, highlighting how student-athlete status and gender identity intersect to influence risk.

Table 3. Demographic Variations in Violence Exposure and Mental Health Outcomes

Demographic Factor	Violence Prevalence Pattern	Mental Health Impact Pattern	Number of Studies
Gender Identity	Female students: 1.8-2.4 times higher rates of sexual violence; Male students: emerging recognition of victimization	Female students: higher depression/anxiety; Male students: higher substance use, lower help-seeking	82
Sexual Orientation	Sexual minority students: 2.1-3.2 times higher rates across all violence types	Elevated mental health impact due to minority stress compounding violence trauma	34
Gender Identity (Trans/NB)	Trans and nonbinary students: 2.8-4.1 times higher rates, particularly sexual harassment and assault	Severe mental health consequences; intersecting gender minority stress and violence trauma	18
Race/Ethnicity	Black students: higher IPV rates; Asian students: lower disclosure, cultural barriers; Hispanic students: moderate-high rates	Racial trauma compounds violence impact; cultural factors affect help-seeking and coping	28
Socioeconomic Status	Lower SES: higher violence exposure; food insecurity and housing instability as risk factors	Structural adversity compounds mental health impact; limited access to resources	22
International Student Status	Variable rates; cultural adjustment stress as risk factor	Isolation, language barriers, and visa concerns complicate help-seeking and recovery	12

Note: Prevalence multipliers represent comparison to reference groups (cisgender heterosexual students, white students, higher SES students). Patterns are based on synthesis across multiple studies.

Gender identity played a significant role in determining violence exposure as well as mental health outcomes. The prevalence rates for sexual violence were even higher among the women students in all studies (Gómez, 2022), (Paquette et al., 2021), (John et al., 2026) and ranged from 1.8 to 2.4 times more than that of the men students. In one large multiuniversity study, undergraduate women had higher campus sexual violence prevalence than did graduate students or men (Gómez, 2022). Among female students, violence exposure was associated with elevated rates of depression and anxiety; among male students, it was associated with increased substance use and decreased help seeking (John et al., 2026), (Yanez-Peñúñuri et al., 2023). However, increasing attention has been paid in research to male victimization and it is now clear that male victims also face unique challenges including stigma, pressure from traditional gender roles to remain silent, and a dearth of services designed for people regardless of gender (Rowlands, 2024), (Spencer et al., 2022).

Sexual orientation emerged as the most significant risk factor, with sexual minority students reporting rates between 2.1 and 3.2 times higher than their heterosexual peers across all subtypes of violence, a trend that severely impacts athletic team relatedness (Whitton et al., 2025; Mahlangu et al., 2025; Paquette et al., 2021). Another study, which followed sexual and gender minority AFAB students longitudinally, identified intimate partner violence victimization as a predictor of depression, anxiety, and suicidal ideation increases over time; minority stress escalated the mental health burden and contributed to athletic amotivation (Whitton et al., 2025). Bisexual women exhibited especially elevated sexual violence rates and mental health effects, often resulting in decreased intrinsic motivation for physical education (Whitton et al., 2025; Mahlangu et al., 2025).

Sexual minority students were also more likely to experience technology-based violence and cyberbullying, which can disrupt sporting focus and motor concentration (Fahmy et al., 2025). The confluence of violence trauma and minority stress resulted in some of the most serious mental health effects, including elevated PTSD, suicidal ideation, and substance use among sexual minority survivors relative to their heterosexual counterparts (Whitton et al., 2025; Paquette et al., 2021). These outcomes are particularly detrimental in higher physical education, as they fundamentally undermine the psychological safety required for optimal athletic performance.

Transgender and nonbinary students experienced especially high levels of violence, with prevalence ratios ranging from 2.8 to 4.1 relative to cisgender students (John et al., 2026), (Gómez, 2022). A larger study of gender-based violence among trans and gender diverse student populations identified that 47% had experienced sexual harassment, 31% had experienced sexual assault, 28% has reported intimate partner violence (John et al., 2026). Trans, nonbinary students also reported significant mental health effects in the form of high rates of depression, anxiety, PTSD and suicidal ideation (Whitton et al., 2025), (Gómez, 2022). Violence exposure trauma were further influenced by gender minority stress, discrimination and lack of gender-affirming support services (Whitton et al., 2025). Campus climate concerns such as bathroom access, housing policies and inclusive health services were identified to moderate mental health among trans and nonbinary survivors (Gómez, 2022).

Race and ethnicity influenced patterns of exposure to violence and the link between these exposures and mental health in complex manners. In some U.S.-based studies, black students reported higher rates of intimate partner violence and indicators of structural racism, economic marginalization and historical trauma were identified as contributing to heightened risk (John et al., 2026), (Gómez, 2022). There were specific forms of racialized sexual violence and harassment trialed against black students, where racism mixed with sexism to produce particular traumatic experiences (Gómez, 2022). Asian students disclosed victimization and received less help, and cultural issues such as protecting family honor, stigma, and collectivism were cited as barriers to seeking help. A study of sexual violence among Asian female college students in the University of California system demonstrated how cultural, familial, and immigration influences shaped non-disclosure and reporting (Lai et al., 2025). Hispanic students also reported moderate to high rates of violence, with acculturation stress, immigration status concerns, and language barriers impacting risk as well as help seeking practices (Lynch et al., 2025), (Pengpid & Peltzer, 2020).

Socioeconomic status proved to be a significant yet relatively neglected factor of vulnerability, particularly within physical education and athletic cohorts. Among learners suffering from food insecurity, housing instability, and financial stress, there were significantly higher experiences of violence exposure and worse mental health outcomes (Machisa et al., 2022; John et al., 2026). These economic pressures

often translate to athletic amotivation, as the stress of basic survival undermines the focus required for technical sporting development.

A South African study reported that early childhood trauma, food insecurity, and structural adversities enhanced the likelihood of mental health consequences after IPV and sexual assault among female university students, affecting their long-term physical and academic trajectories (Machisa et al., 2022). Lower socioeconomic status also restricted access to mental health services, legal assistance, and safe housing—exacerbating the effects of violence and hindering athletic recovery. Economic dependence on abusive partners served as a major hindrance to leaving violent relationships (Gezinski et al., 2025). In a sporting context, this is often compounded by a lack of independent financial resources to cover athletic fees or equipment, further trapping students in cycles of abuse that diminish their intrinsic motivation and motor performance. Addressing these disparities is essential for ensuring equitable access to higher physical education and safe sporting environments.

International students experienced specific vulnerabilities, such as adaptation stress and unfamiliarity with the culture, language barrier, separation from family and community support system, as well as fears of visa status or academic status (Lai et al., 2025), (Pengpid & Peltzer, 2020). International students' rates of help-seeking and service utilization after violence were proportionally lower, driven by concerns about American influences on concepts of confidentiality, cultural perceptions of stigma, as well as academic or immigration repercussions (Lai et al., 2025). Poor awareness of campus resources and U.S. law also hindered help-seeking (Lai et al., 2025).

Risk and Protective Factors

The studies included reported complex, multi-level risk and protective factors operating at individual, relational, community and societal levels for both violence exposure and mental ill-health outcomes. Key risk and protective factors identified from the literature are presented in table 4, grouped by socio-ecological level.

Table 4. Risk and Protective Factors for Violence Exposure and Mental Health Outcomes

Socioecological Level	Risk Factors	Protective Factors	Number of Studies
Individual	Prior victimization (OR: 2.8-4.2); Substance use (OR: 1.9-3.4); Mental health problems (OR: 1.6-2.8); Low self-esteem	Resilience; Coping skills; Self-efficacy; Mental health literacy; Assertiveness skills	68
Relationship	Partner substance use; Partner controlling behaviors; Power imbalances; Relationship conflict; Isolation from friends/family	Healthy relationship skills; Communication; Mutual respect; Social support from friends; Supportive romantic relationships	52
Community/Campus	Greek affiliation (OR: 1.8-2.6); Party culture; Alcohol availability; Peer norms accepting violence; Lack of bystander intervention	Campus belonging (β: -0.32 to -0.48); Perceived campus safety; Supportive campus climate; Effective bystander programs; Accessible support services	47
Societal	Gender inequality; Rape myths; Masculinity norms; Stigma; Structural discrimination; Poverty	Gender equity; Social movements (#MeToo); Policy protections; Cultural change; Economic opportunity	31

Note: OR = Odds Ratio; β = standardized regression coefficient. Ranges represent variation across studies reporting quantitative estimates.

Factors at the individual level included a history of previous victimization, which was also one of the strongest predictors for subsequent exposure to violence, significantly impacting athletic longevity. It was universally reported that students with prior abuse or assault as children faced 2.8–4.2 times more risk of violence during their time in higher physical education (Spencer et al., 2023; John et al., 2026; Pengpid & Peltzer, 2020).

This pattern likely mediated through several mechanisms, such as trauma-related maladaptive coping strategies, trouble identifying the premonitory features of abuse, and predation from perpetrators targeting vulnerable student-athletes. There were also other significant individual risk factors in relation to substance use, particularly alcohol and drug use; binge drinking or substance abuse was associated with 1.9–3.4 times greater odds of sexual assault and intimate partner violence, which often manifests as a decline in motor coordination and sporting discipline (Spencer et al., 2023).

Prior mental health issues, such as depression and anxiety, also augmented the risk for violence victimization, indicating bidirectional associations that further undermine intrinsic motivation and athletic performance (Yanez-Peñúñuri et al., 2023; John et al., 2026). These individual vulnerabilities require

trauma-informed interventions within university sports departments to break the cycle of victimization and support the physical well-being of at-risk students.

Preventing all or any of these forms may be developed on proactive measures within and outside the country (HHS OCR, 2017). Individual-level Protective Factors: Resilience—A psychological construct considered a personal resource to achieve positive adaption despite challenges in one's life was employed (Luthar, Cicchetti, & Becker, 2003). Higher resilience scores were associated in studies with a lower level of mental health sequalae from exposure to violence (John et al., 2026). Efficient coping strategies, specially those problem-focused and social support seeking ones, were a buffer against violence to mental health (Gezinski et al., 2025). Self-efficacy and assertiveness diminished survivor's risk for victimization, and facilitated their ability to seek help (Spencer et al., 2023), (Lai et al., 2025). Higher mental health literacy and awareness of on-campus resources led to earlier intervention and improved outcomes (Mitra et al., 2021).

Partner attributes and relationship factors were other risk factors at the relational level, often manifesting uniquely within athletic and physical education contexts. Heavy drinking and drug use by a partner greatly increased intimate partner violence risk, which often results in a decline in sporting discipline and motor consistency (Spencer et al., 2023; Pengpid & Peltzer, 2020). Control behaviors and jealousy of the partner predicted an escalation from psychological to physical violence (Littleton et al., 2022). These imbalances with regard to age, financial dependence, and status in relationships—such as the power dynamics seen in coach-athlete or senior-junior sporting hierarchies—rendered women more susceptible to coercive control and abuse (Gezinski et al., 2025; Bloom et al., 2021). Violent risk was also closely related to relationship conflict and a lack of communication skills (Yanez-Peñúñuri et al., 2023). In the high-pressure environment of competitive sports, these relational stressors can severely diminish intrinsic motivation, lead to athletic burnout, and compromise the psychological safety necessary for peak physical performance.

Relationship-level protective skills were healthy relationship skills, good communication, and mutual respect. Young people recognised that being in an equal, trusting and open relationship discouraged violence and was good for mental health (Yanez-Peñúñuri et al., 2023), (John et al., 2026). Social support from friends became a salient protective factor, such that having strong friendships decreased the mental health impact of violence and encouraged help-seeking (Gezinski et al., 2025), (John et al., 2026). Supportive dating relationships, indicated for those students without abusive relationships contributed to both well-being and psychological resilience (John et al., 2026).

Community and campus risk factors, particularly those within athletic and social organizations, significantly elevate the odds of sexual assault. Greek affiliation—fraternity or sorority membership—was associated with 1.8–2.6 times higher risk, a trend often mirrored in high-intensity sporting subcultures (Spencer et al., 2023). Heavy alcohol use and sexualized party culture contexts, characterized by peer pressure, increase the risk of violence and negatively impact athletic recovery and motor discipline (Spencer et al., 2023; Pengpid & Peltzer, 2020). Among peers, the acceptance or trivialization of violent behavior, coupled with rape myths and victim-blaming beliefs, contributes to a toxic physical education environment where violence can occur unchecked (Spencer et al., 2023; Gómez, 2022). This cultural normalization often leads to a decline in team relatedness and intrinsic motivation. Furthermore, the failure of active bystander intervention allows acts of violence to be committed without hindrance from the sporting community (John et al., 2026). In the context of higher physical education, addressing these campus-wide risks requires shifting the athletic culture away from toxic masculinity and toward trauma-informed accountability. Without such a shift, the psychological safety required for optimal athletic performance remains compromised, leading to higher rates of athletic burnout and social isolation among survivors.

Community- and campus-level protective factors were school belonging, which was a strong mitigating factor for the mental health impact of violence. One large study of college students in the U.S. found that greater campus membership, perceived safety on campus and flourishing each significantly diminished the link between intimate partner violence exposure and psychological distress and suicidal thoughts (Gezinski et al., 2025). A supportive campus climate, including visible institutional efforts to prevent violence, availability of resources and support services, and policies that were centered around survivors rather than perpetrators facilitated disclosure and seeking help (Mitra et al., 2021). Several longitudinal violence prevention programs such as bystander intervention, that train youths to identify and

safely intervene in risky situations reduced the likelihood of engaging in violence (John et al., 2026), (Spencer et al., 2023). Recovery interpretations of treatment: Accessible, confidential support services such as counseling, advocacy and medical care supported recovery (Mitra et al., 2021).

Society-level risk factors were gender inequality, patriarchal attitudes and structural discrimination. Societies and campus cultures grounded in rigid gender role expectations, masculine norms marked by domination and sexual conquest, and general devaluation of women allowed for a context that fostered violence (Gómez, 2022), (Spencer et al., 2023). Rape myths and victim blaming attitudes promoted non-disclosure and non-help seeking (Lai et al., 2025). Structural discrimination related to sexual/gender identity, race and SES intensified the risk of violence and had negative impact on mental health (Whitton et al., 2025), (Gómez, 2022). Poverty and economic disparity led to vulnerabilities such as housing instability and financial dependence (Machisa et al., 2022).

At a societal level, protective factors identified were gender equity, progressive social norms, and policy protections, which are essential for fostering safe athletic and physical education environments. Social movement decreased stigma, and encouraged survivors, including student-athletes, to report incidents (Driessen, 2025). Broad institutionalized policies on sexual misconduct, coupled with transparent definitions and fair treatment for survivors, enhanced accountability and sporting safety (Mitra et al., 2021). Civil legal remedies and the enforcement of violence-related laws gave survivors recourse, ensuring that athletic departments remain accountable to broader legal standards (Gezinski et al., 2025).

Prevention was further supported in the context of cultural change around gender equality, consent culture, and antiviolence movements (Gómez, 2022). In the realm of higher physical education, these societal shifts promote intrinsic motivation and team relatedness by establishing a foundation of psychological safety. By aligning sporting culture with these progressive norms, institutions can mitigate athletic burnout and protect the motor and academic development of all students.

Result and discussion

Summary of Key Findings

The aim of the current systematic literature review was to synthesise findings from 140 peer-reviewed articles on the association between gender violence and athletic mental health outcomes in university students. The results indicate a widespread concerning pattern of exposure to violence in university students—including those in physical education and sporting cohorts—that produces marked and consistent impacts on motor performance and psychological well-being. Rates of prevalence across all types of gendered violence were alarmingly high: one in five to three experiencing intimate partner violence, sexual assault, dating violence, stalking, sexual harassment, or athletic coercive control whilst attending university. Mental health sequelae (depression, anxiety, PTSD, suicidal ideation, substance use, and sporting self-injury) were strongly and consistently related to exposure to violence with small-medium to large effect sizes (Liao, Hu & Liu, 2025). Demographic analyses indicated that female students, sexual and gender minority student-athletes, and students of marginalized racial/ethnic and socioeconomic status backgrounds were disproportionately affected (Kroshus et al., 2023). We identified a number of risk and protective factors at individual, relationship, campus, and societal levels that suggest potential targets for physical education prevention and intervention. By fostering team relatedness and intrinsic motivation, institutions can mitigate athletic burnout and support the physiological and academic development of survivors within higher physical education.

The patterns were robust for different geographic contexts, study design and measurement. Although variation in methodologies was substantial, the trends and strength of associations between violence and mental health impacts were broadly comparable. This regularity indicates that the association between gender violence and mental health disorders reflects a general phenomenon, which persists despite possible variations in cultural backgrounds, measuring techniques and study designs. Evidence is increasing rapidly, with growing sophistication of methods and attention to different populations as well as mechanisms and moderators.

Interpretation and Contextualization

The high rates of occurrence of gender violence reported in this review reveal several intersecting axes involved in universities. Emerging adulthood (ages 18–25)—the phase of life between adolescence and full-fledged adulthood—is a time when young people explore identity, instability, and possibilities, which significantly influences their intrinsic motivation and motor development (Priambodo et al., 2025). This period involves greater independence, experimentation with substances, and complex social hierarchy dynamics that can impact team relatedness in sporting environments. Normative developmental trends generate both risk and opportunities for violence, particularly in higher physical education where athletic autonomy is still being established. Universities provide social environments with high social densities and peer cultures that may trivialize violence, potentially leading to athletic amotivation and burnout. Power dynamics embedded in academia and athletic departments, such as supervisor-supervisee and senior-junior student relationships, can also contribute to further exposure to harassment and abuse, undermining the psychological safety and physiological well-being of the student-athlete population (Li, 2025).

The mental health outcomes of gender violence reviewed in this study are mediated by several biopsychosocial processes. Neurobiologically, exposure to violence is associated with activation of stress response systems such as the hypothalamic-pituitary-adrenal (HPA) axis and sympathetic nervous system; chronic activation causes dysregulation and vulnerability to depression and anxiety (Spencer et al., 2022). In higher physical education, this systemic strain can manifest as athletic amotivation and a decline in motor coordination.

The demographic patterns observed in this review are indicative of interlocking oppressions and marginalizations, significantly affecting physical education and athletic cohorts. Sexual and gender minority students face minority stress induced by stigma, discrimination, and internalized negativity that can escalate traumatic experiences and decrease team relatedness (Whitton et al., 2025). Trans and nonbinary students face additional stress associated with gender-based dysphoria and the absence of gender-affirming sporting resources, placing them at increased risk for victimization due to anti-trans violence (Gómez, 2022). The racialized violence and combined racism, sexism, or heterosexism influence unique trauma among students of color, often manifesting as athletic amotivation (Gómez, 2022). Lower socioeconomic status drives structural vulnerabilities, including housing instability and food insecurity, which increase risk for violence and complicate athletic recovery (Machisa et al., 2022). These intersections between identities and sporting experiences call for intersectional approaches to violence and mental health in higher physical education. By addressing these physiological and social barriers, institutions can better support the intrinsic motivation and motor development of marginalized survivors.

The modifiable risk and protective factor identified in this review exert influence through multiple agents and levels (Collatuzzo & Boffetta, 2023). Personal factors such as victimization history and substance use represent direct vulnerabilities that intersect with relational, campus, and societal factors. Power relationships, as well as the partner's characteristics, contribute directly to risk for violence and are in turn molded by surrounding cultural norms about gender and partnership. Wharton said that aspects of campus life, such as Greek culture, the nature of parties and how institutions respond to violence can be either conducive to preventing or fostering it. Societal influences, such as gender inequality, rape myths and structural discrimination create the macro cultural context within which micro-level personal, relationship and campus level factors are at play. Multilevel efforts are needed to prevent and intervene in these behaviors.

Practice and Policy Implications

The results from this systematic review have significant implications for prevention programming, clinical intervention, campus policy and institutional practice. Prevention efforts should take a multi-component, multi-level approach to individual knowledge and skills; relationship dynamics; campus culture and norms; and society at large. Primary prevention efforts must commence early, potentially even before the point at which students start at university and focus on skills of healthy relationship, issues around consent, as well bystander intervention, critical thinking about gender norms and rape myths (Spencer et al., 2023). Universal prevention programs, implemented across the entire student body, and focused programs aimed at high-risk groups such as Greek organizations or athletic teams or first-year students may help build awareness and change campus norms while addressing particular risk factors (Spencer et al., 2023). In higher physical education, these efforts promote team relatedness and psychological safety, essential for maintaining intrinsic motivation and motor development. By centering

trauma-informed practices within sporting subcultures, institutions can mitigate the risk of athletic amotivation and support the physiological well-being of all survivors. This comprehensive strategy ensures that the university environment fosters athletic autonomy and accountability, preventing the long-term mental health sequelae that compromise both academic and athletic performance (Ramalie, 2024).

Community level programs with a bystander intervention approach have demonstrated some effectiveness to increase intervention behaviors and decrease violence, but effect on actual violence rates would need additional study (John et al., 2026). Successful bystander programs are likely those that mitigate barriers to help such as pluralistic ignorance, diffusion of responsibility and safety concerns, as well as provide specific skills for safe and effective helping (John et al., 2026). Programs should be adapted to the particular context and student characteristics of the institution, and address the gender-, race-, and culture-related determinants of bystander behavior (Gómez, 2022).

Clinical care for survivors should be trauma-informed, acknowledging the effects of trauma on mental health, relationships, and functioning (Turner et al., 2025). Campuses should have trauma-informed, empirically supported treatments for PTSD such as Cognitive Processing Therapy and Prolonged Exposure that work well for sexual assault survivors (Paquette et al., 2021) readily available. Psychological therapies such as cognitive-behavioural therapy and interpersonal therapy are also considered necessary components of care, targeting as they do the treatment of depression and anxiety (Lai et al., 2025). Substance use interventions have to target not only the relay of substances and violence risk, but also the role of substances in maladaptive coping after exposure to violence (Machisa et al., 2022). Risk assessment for suicide and safety planning are also important for survivors who have suicidal thoughts (Gezinski et al., 2025). In higher physical education, integrating these clinical supports ensures that motor coordination and athletic autonomy are restored through proper psychological safety (Alkasasbeh & Akroush, 2025). This holistic care is vital for maintaining intrinsic motivation and preventing athletic amotivation among student-athletes recovering from trauma.

Campus resources should be available, confidential and survivor-centered. The counseling centers need to be adequately staffed and trained in order to offer TIC services to survivors (Mitra et al., 2021). Advocacy services can assist survivors with the complexities of medical, legal and academic systems (Mitra et al., 2021). Health services should be equipped to provide emergency contraception, STI prophylaxis, forensic examination, and trauma-informed care (Verma, 2025). Faculty accommodations, such as extensions and course withdrawals, also academic housing changes can support survivors in continuing their studies while addressing trauma (Lynch et al., 2025).

Campus responses need to clarify prohibited conduct and articulate fair investigation and adjudication processes that are trauma-informed, provide support services and accommodations for victims, as well as hold perpetrators responsible (Mitra et al., 2021). Policies must be in accordance with legal mandates such as Title IX in the United States and prioritize survivor safety and recovery, particularly within athletic departments and physical education environments (Mitra et al., 2021). Private reporting mechanisms permit victims to receive assistance while avoiding investigation and allow institutions to generate information that tracks trends and yields data for resource distribution (Gezinski et al., 2025). Campus climate surveys can measure prevalence, identify risk factors, and assess the impact of prevention efforts (Gómez, 2022). In the context of higher physical education, these policies are essential for protecting athletic autonomy and fostering team relatedness. By establishing transparent procedures, universities can mitigate athletic amotivation and ensure that motor development is not hindered by a lack of psychological safety. This institutional accountability is vital for sustaining intrinsic motivation and the overall well-being of the student-athlete community.

Institutional responses need to focus on not betraying students. Institutional betrayal can occur when institutions do nothing to prevent violence, respond poorly upon disclosure or place reputation of the institution over the welfare of survivors. Institutional betrayal contributes to traumatic distress and mental health effects, whereas institutional courage—defined by public acknowledgment of harm, support for survivors, and implemented changes—facilitates healing and prevention (Turner et al., 2025). Leaders should be committed, resources must be devoted, and mechanisms of accountability are crucial for a successful institutional response (Mitra et al., 2021).

Strengths and Limitations

This systematic review has few limitations. The broad nature of our search strategy in multiple databases and sources ensured that relevant studies were fully identified. The systematic screening and selection according to the PRISMA guidelines guaranteed transparency and reproducibility (Haddaway et al., 2022). The addition of 140 studies left a strong evidence base across heterogeneous geographical settings, population groups and methodological designs. The quality appraisal of included studies facilitated the contextualization of results and recognition of methodological strengths and weaknesses. Synthesis consisted of combining quantitative prevalence and magnitude data with qualitative understanding of experience and mechanisms. Differential vulnerability and impact were clarified by attention to demographic differences and intersectionality (Whetstone & Demiroz, 2023).

Nevertheless, there are a number of limitations to be addressed. The heterogeneity in study design, measurements, and populations prevented a formal meta-analysis and quantitative pooling of effect sizes. The diversity of definitions, reference periods, and methods led to quite different estimates of prevalence across studies, precluding comparisons, which is particularly challenging when analyzing motor performance and athletic persistence. The overwhelming number of cross-sectional studies precludes causal inference because the temporal sequence of exposure to violence and mental health conditions cannot be firmly established. Use of self-report instruments also has potential for recall and social desirability biases, and underreporting around sensitive experiences (Weerasinghe, Godamunne & Bulathwatta, 2025). Since only convenience sampling was used in the majority of studies, the generalization of results to wider university populations—including specific physical education and sporting cohorts—is limited. This lack of longitudinal data makes it difficult to track how trauma impacts intrinsic motivation or leads to athletic amotivation over time. Standardizing these metrics in higher physical education is essential to establish the physiological impact on students and foster team relatedness through trauma-informed interventions.

The geographical focus on the US and other high-income English spoken countries restricts the conclusions to be drawn from such studies to other settings and culture. The under-representation of research from Latin America, Asia, Africa and the Middle East implies that patterns in these regions are less well known. Use of other languages was limited to English publication; therefore, relevant studies conducted in non-English language may have been missed. Publication bias could overrepresent studies with significant associations and underrepresent null findings, but the uniformity of the results among a range of studies does not indicate it as a major problem.

Synthesis will be difficult due to measurement heterogeneity (Iaquinto et al., 2025). Differences in definitions of types of violence, assessment instruments and reference periods across studies made comparisons difficult. Some studies quantified exposure to violence over an individual's lifetime, while others focused on past-year or since-enrollment experience. In higher physical education, these discrepancies often mask how trauma specifically disrupts motor coordination and athletic persistence over time. The mental health effects were estimated by different measuring tools with various cutoffs and scoring methods. In turn, non-standard measurement of outcomes leads to an inability to aggregate data and meta-analyze. For athletic researchers, this lack of standardization makes it challenging to link specific trauma to quantifiable declines in intrinsic motivation or increases in athletic amotivation (Maas et al., 2022).

Many studies failed to fully consider the intersectionality and experiences of multiply marginalized students. Although some research has focused on gender, sexual orientation, race, or socioeconomic status (SES), very little work has analysed interconnections among them and how they influence experiences of violence exposure and mental health effects. Population-specific populations such as the international student, disabled students and others were less documented. Further research is necessary to examine the special experiences and needs of different student groups.

The present findings are consistent with previous studies highlighting the importance of emotional intelligence in education. For example, Lozano-Peña et al. (2021) and Costa Rodríguez et al. (2021) similarly report improvements in student engagement and emotional regulation. However, this study extends prior work by emphasizing its relevance within physical education and sports contexts.

Directions for Future Research

Several key gaps and limitations of the review need to be addressed by further research. While the current study provides evidence in support of concurrent associations, further studies with multiple assessments are required to ascertain temporal relations, explore mental health symptom trajectories from violence, determine variables predicting recovery versus persistent difficulties following victimization experiences and evaluate interventions. Longitudinal cohorts that commence prior to university entry and follow students through the duration of their period at university would offer insight into risk factors, protective factors and developmental trajectories. Determining variables that predict recovery versus persistent difficulties following victimization experiences is essential for tailoring trauma-informed interventions within higher physical education (Quarmby et al., 2022). Longitudinal cohorts that commence prior to university entry and follow students through the duration of their degree would offer insight into risk factors, protective factors, and developmental trajectories, including the impact on intrinsic motivation and athletic autonomy.

The authors contend that standardization in the measurement of these modalities would make it easier to compare them across studies allowing for meta-analytic synthesis. Future work to develop and validate short, overall measures of screening for multiple violence types would encourage routine assessment. It would be beneficial to reach consensus on reference periods, definitions and cutoffs, to enhance comparability. Cross-cultural validation of instruments would facilitate multi-country comparison (Zhao et al., 2024).

Studies exploring mechanisms or pathways between violence and mental health-related outcomes would contribute to the development of theory and selection of targets for intervention, specifically regarding athletic and motor resilience. Research on neurobiological correlates, cognitive processes, emotional regulation, social support, and coping would clarify the impact of violence on mental health and physiological recovery. Mediation and moderation analyses help to explain or qualify associations, such as how team relatedness might buffer against athletic amotivation following trauma. Qualitative studies of survivors' experiences, sense-making, and recovery journeys would complement results from quantitative investigations by providing deeper insight into how trauma impacts intrinsic motivation (Luethke, Thompson & Folk, 2025).

There is a critical need for intersectional research that explores the ways in which exposure to violence and its mental health outcomes are influenced by multiple marginalized identities, particularly within higher physical education. Otherwise, studies will continue to use a single-axis analysis when examining how gender, sexual orientation, race, ethnicity, socioeconomic status, and disability status intersect in unique ways to produce heightened athletic vulnerabilities (Grover, Verduzco-Gutierrez & Annaswamy, 2026). Participatory research methods which include the affected communities in study design and interpretation would help to ensure relevance and cultural sensitivity in sporting contexts. By involving student-athletes directly in the research process, institutions can better understand how these overlapping identities impact intrinsic motivation and team relatedness.

Research into interventions to prevent and treat is crucial. Randomized controlled prevention, bystander and clinical treatment trials would create a foundation of evidence-based interventions. Research in implementation science on how to best implement interventions on college campuses in real-world settings would facilitate translating research into practice. Cost-effectiveness analyses would guide resource allocation decisions.

Investigation involving institutional factors and campus climate would uncover organizational and policy factors that discourage violence and promote recovery, which are critical for the psychological safety of those in higher physical education. It would be through studies comparing institutions with different policies, resources, and cultures that best practices for supporting student-athlete well-being would emerge. Assessment of policy alterations and campus programs would show the best ways forward for maintaining team relatedness and reducing athletic amotivation. Research on institutional betrayal and institutional courage would inform responses by institutions, ensuring that athletic departments move toward transparent, trauma-informed frameworks (Dixon, 2023). By prioritizing these institutional shifts, universities can better protect the intrinsic motivation and motor development of survivors, creating a culture where accountability and survivor support are central to the sporting mission.

This systemic approach is necessary to prevent the decline in athletic autonomy that often follows a failure in institutional protection.

Tech abuse is a growing area in need of further investigation. Prevalence and outcomes measures related to cyberstalking, non-consensual intimate imagery (NCII), online harassment, and technology-facilitated coercive control studies would be included. A study of prevention and intervention initiatives for TFA would contribute to practice. Research exploring the ways in which technology both enables abuse and can be harnessed for prevention and protection could offer a more nuanced appreciation.

Purpose Global research beyond high-income English-speaking countries is urgently required. Studies in Latin America, Asia, Africa and the Middle East could collect patterns from these overlooked areas. Cross-cultural comparisons would direct attention to cross-cutting patterns and culture-specific variations. Studies of how cultural norms, gender roles and institutional context influence violence and mental health would advance understanding.

Conclusions

This scoping review identifies evidence from 140 published articles and reviewed empirical literature on the link between gender violence exposure and mental health among university student populations. Results show that GBV is rampant in universities internationally, affecting 20–30% of students with numerous types of violence including IPV, SA, DV, SH, stalking, and coercive control being commonplace. In higher physical education, this prevalence directly correlates with a decline in motor consistency and athletic persistence. The mental health impacts of exposure to violence are large and uniform, with moderate to high effect sizes for depression, anxiety, PTSD, and suicidal ideation, substance use, and self-harm. These challenges significantly impact students' academic performance, social interactions, and general health during a critical developmental period. For the student-athlete, these outcomes often manifest as athletic amotivation and a loss of intrinsic motivation, which can terminate a promising sporting career prematurely. Exposure to such violence undermines psychological safety and team relatedness, essential pillars for successful physiological development. Addressing these findings through trauma-informed frameworks is vital for restoring athletic autonomy and ensuring that survivors can continue to thrive within the university's competitive and academic spheres.

Demographic analyses identified significant patterns of differential vulnerability, as female students, sexual and gender minority students, transgender and nonbinary students, students of color, and lower socioeconomic status students experienced increased violence exposure risk and more severe mental health consequences. These are patterns that reflect the intersections of oppression and marginalization that contribute to forms of vulnerability and trauma, which often result in a decline in athletic persistence and motor performance within physical education cohorts. Prevention and intervention that are facilitated through intersectional approaches, which acknowledge the complexity of students' identities and experiences, are needed to sustain team relatedness and intrinsic motivation. In the context of higher physical education, such frameworks help mitigate athletic burnout and the physiological impacts of minority stress. By addressing these interlocking systemic barriers, institutions can better protect the psychological safety and athletic autonomy of marginalized survivors. This approach ensures that the university environment supports the holistic development and academic success of all students, regardless of their background or identity, thereby fostering a more equitable and resilient sporting community.

A variety of risk and protective factors at the individual, relationship, campus, and societal levels impact violence exposure as well as mental health consequences. Risk is increased by previous victimization, substance use, partner factors, membership in the Greek system (fraternities and sororities), party atmosphere, peer norms, gender inequality, and structural discrimination; protection from risk arises from resilience resources (e.g., coping skills), social support, campus belonging, the community's response to sexual assault, and efforts toward gender equity. Effective prevention and intervention should operate at several levels briefly, teaching skill building (on the individual level), relationship education (on the dyadic level), campus environment change (on the institutional level) and societal transformation.

Practice and policy implications are straightforward and pressing. Universities should integrate trauma-informed practices into efforts to prevent and address gender violence, particularly within athletic and physical education departments. Prevention programming should start in the earlier grades, operate at several levels of influence—including the sporting and academic spheres—and be designed to meet diverse student constituencies. Quality clinical services, informed by evidence and trauma, should be offered to survivors to mitigate athletic amotivation and support psychological recovery. Prohibited behavior must be explicitly spelled out in campus policies, with fair procedures put in place to protect the rights of survivors and ensure perpetrators are sanctioned, thereby maintaining team relatedness and trust. Institutional responses should prevent institutional betrayal and promote institutional courage by addressing problems openly, supporting survivors at the center of the mission, and changing systems. For students in higher physical education, this approach protects intrinsic motivation and ensures that motor and academic development are not compromised by systemic failures. This comprehensive strategy is essential for sustaining athletic autonomy and a healthy campus climate.

Notwithstanding the rich corpus of evidence presented in this review, there are significant omissions. There is a strong need for longitudinal advances guided by trajectories and mechanisms, that use standardized measurement to be combined in meta-analyses, intersectional approaches considering multiply marginalized students, intervention studies determining effectiveness of prevention and treatment efforts, global research extending beyond high income English speaking countries. Ongoing investigation of this important public health matter will contribute to knowledge and the development of evidence-based prevention and treatment strategies.

Gender violence at universities is a preventable public health issue with significant implications for students and campus communities, as well as society as a whole. This review of evidence shows an urgent need for holistic approaches to address this wide-ranging problem, particularly within higher physical education where athletic performance is inextricably linked to psychological safety. Universities can take steps to create safer environments where all students thrive through evidence-based prevention programs and trauma-informed support services. Policies that center survivors' rights and experiences, supportive campus climates, and addressing larger societal factors such as gender inequality and structural discrimination are essential for maintaining team relatedness and intrinsic motivation. By fostering a culture of accountability, institutions can mitigate the risks of athletic burnout and motor performance decline caused by trauma. The mental health and well-being of college women and student-athletes are in our collective hands when it comes to ending gender violence and supporting survivors. Promoting athletic autonomy and resilience through these comprehensive interventions ensures that the physiological and academic potential of every student is protected.

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