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Can Support for Homosexuality Reduce the Prevalence of Mental Health Problems among LGBTQ+ Individuals to Levels Comparable to the General Population? A Second-Order Systematic Review with Thematic Analysis

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Abstract

Objective: This article addresses whether extensive support for homosexuality—accompanying its increased prevalence—has been able to reduce the prevalence of mental disorders among homosexuals in supportive countries to normal population levels.
Method: This study was conducted in two phases. The first phase employed a secondary systematic review method and examined 68 reviews on the public health and mental health of homosexuals in supportive countries. In the second phase, using the thematic content analysis method, the semantic units extracted from the articles were condensed under sub-themes, which then formed themes at a higher level.
Results: Supporting homosexuality has not reduced mental health issues in this group to levels observed in the general population, even in supportive countries. In addition to minority stress, other stressors (such as infectious diseases, cancer, childlessness, and the pathologic nature of homosexuality) are the main barriers to reducing the prevalence of mental disorders among homosexuals.
Conclusion: Based on these findings, this study suggests revisiting the policy of extreme support for homosexuality and preventing scientific research concerning the correlation between this behavior and criminality and other mental disorders—under the pretext of homophobia.

Key words: *Homosexuality; LGBTQ+; Mental Health; Minority Stress; Stigma*

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In 1973, homosexuality was expunged from the diagnostic criteria of the DSM. This significant alteration ensued following intense deliberations among divergent theoretical frameworks regarding the origins and characteristics of homosexuality. The acceptance of homosexuality within the American Psychiatric Association (APA) transpired primarily through a voting process, influenced by social dynamics, with approximately 42% of votes in opposition, rather than being predicated on empirical scientific findings (1).

The expungement of homosexuality from the catalogue of disorders in the Diagnostic and Statistical Manual was not predicated upon empirical scientific evidence but was rather shaped by sociopolitical influences. An analysis of health criteria as delineated by the APA revealed that homosexuality does not align with these established criteria (2).

In 2003, Mayer (3) while acknowledging the higher prevalence of mental disorders in homosexuals, introduced “minority stress” as the main factor causing this phenomenon and called on policymakers, legislators, psychologists and social activists to rise up in defense of the oppression of homosexuals. Since then, and over two decades, many legal and social efforts have been made to support homosexuality, such that today in many western countries, homosexuality is not a crime and their marriage is legal. Pride parades are held every year in different countries; homosexuality education has been made mandatory in elementary schools; the production of films and series with the theme of supporting homosexuality has increased, and even the opening ceremony of the 2024 Paris Olympics was used as a platform to promote homosexuality. In the field of health and wellness, a search for LGBT in PubMed alone yields more than 3,700 records, almost all of which date back to after 2003.

Literature confirms the negative impact of "minority stress" on the mental health of homosexuals. These studies show that supporting sexual minorities has a positive effect on improving their mental health indicators. This support has led to a decrease in anxiety, depression, suicide, etc. A 2024 longitudinal study (n = 307) demonstrated that heterosexist discrimination significantly predicts psychological distress through serial mediation by internalized homonegativity and emotion dysregulation, with sexual minority men experiencing 2-3 times higher depression/anxiety risks compared to heterosexual peers (4). These findings align with Meyer's Minority Stress Model, as evidenced by a 2023 study showing that everyday discrimination, concealment behaviors, and internalized stigma independently predict poorer mental health outcomes across diverse sexual minority populations (5). Cross-cultural validation emerges from a 2015 Indian study of MSM and transgender individuals, where criminalization-related stressors and identity non-acceptance significantly predicted anxiety, depression, and substance abuse through mediated pathways (β = 1.40, OR = 4.06 for depression) (6). Notably, a 2015 structural equation model (n = 200) revealed that concealment stress directly increases major depression risk (OR = 4.06) while positive identity development mediates its effects through social support pathways (7).

Emerging evidence identifies resilience factors that mitigate minority stress impacts. While mindfulness and self-compassion reduce internalized homonegativity's development from discrimination (β = -0.527, $P < 0.001$) (4), their role in later stress pathways appears complex, potentially intensifying emotion regulation challenges during advanced identity integration stages (4). Protective mechanisms include sexual minority-specific social support networks, shown to buffer against substance use disorders in a 2015 study of 1,381 sexual minority women (56% variance explained in mental health outcomes) (8).

Statement of the Problem

Removing homosexuality from the circle of pathological behaviors and normalizing it reduces the stress caused by receiving a diagnosis of a mental disorder. As with other mental disorders, there has always been the concern that diagnosing and labeling individuals as mentally ill may have unwanted negative consequences, such as stress, for them (9). However, simply reducing stress is not a sufficient reason to remove a diagnostic label because that would eliminate the basis for diagnosing mental disorders. In other words, it is an obvious proposition that does not require scientific research that removing homosexuality from the category of mental disorders and normalizing it will reduce the anxiety symptoms of homosexuals. But the question is, can this reduction in the prevalence and severity of homosexuals’ mental disorders bring them back to normality? Otherwise, to be sure, the normalization of homosexuality cannot be justified, especially if this normalization only slightly reduces the anxiety and psychological symptoms of homosexuals and instead causes this behavior to be more prevalent in society.

This article seeks to answer this question and explain the answer: Has two decades of support for homosexuality been able to normalize the prevalence of mental disorders and diseases in homosexuals in supporting countries? Countries supporting homosexuality are those that have adopted policies that support homosexuality in general. To identify these countries, the world's leading deep reasoning artificial intelligences (i.e. ChatGPT-4O, Gemini-deep research, Grok-deeper search, Deep Seek, Perplexity- deep research) were used. Deep reasoning is a new generation of response using language models that is based on multi-layered reasoning and thinking. This method of reasoning and response is highly powerful for paradigms with analysis and research content. Artificial intelligences were asked to determine criteria for determining the status of a country in the field of supporting the rights of sexual minorities by weighting each indicator. Each of these linguistic models provided

an answer by searching hundreds of websites and studying various criteria mentioned for the level of support of a country, comparing and analyzing them. The results were then compared and combined to create a table of criteria for the level of support of a country for sexual minorities.

Table 1. Criteria of Support for Homosexuality

Row	Criterion	Description	Weight (out of 10)
1	Legality of Same-Sex Marriage	Legal recognition of marriage for same-sex couples	10
2	Adoption Rights for Same-Sex Couples	Legal ability for same-sex couples to adopt children	8
3	Anti-Discrimination Laws	Existence of anti-discrimination laws in areas such as employment, housing, healthcare, etc.	9
4	Gender Transition Laws	Legal facilitation of gender transition for transgender individuals without excessive barriers	7
5	Military Service and Employment	Permission for sexual minorities to serve in the military without discrimination	6
6	Medical and Psychological Support	Coverage of medical services tailored to the needs of sexual minorities (e.g., hormone therapy for transgender individuals)	8
7	Participation in International Human Rights Forums	Commitment to international treaties supporting the rights of sexual minorities	5
8	Presence of Advocacy Groups	Existence of human rights organizations and freedom of expression supporting sexual minorities	6
9	Anti-Violence and Hate Crime Laws	Special laws protecting sexual minorities from hate crimes	9

Language models were tasked to analyze various countries and score them based on the aforementioned criteria to identify the top 50 countries in terms of support for sexual minorities. The countries were categorized into three levels: no support, low support, and high support. The results of these comprehensive machine-driven analyses were compared, ultimately leading to the identification of the top 50 LGBTQ-supportive countries. After excluding cases identified as supportive by three or fewer sources, a refined list of 37 supportive countries was obtained: Austria, Uruguay, Spain, Australia, Ecuador, Argentina, Germany, Brazil, Belgium, Portugal, Thailand, Taiwan, Denmark, Sweden, Switzerland, Chile, Finland, Costa Rica, Canada, Cuba, Luxembourg, Malta, Mexico, Norway, New Zealand, the Netherlands, Greece, Estonia, Slovenia, the United States, Ireland, Andorra, the United Kingdom, France, Colombia, Nepal, Liechtenstein.

Materials and Methods

This study was conducted in two phases. The first phase employed a secondary systematic review method. A secondary systematic review is an advanced research approach that aggregates and analyzes independent meta-analyses within a specific scientific domain, thereby evaluating existing evidence with greater precision. Secondary systematic reviews hold particular significance in medical sciences, psychology, and public health, as they enable the provision of more comprehensive and robust evidence for clinical decision-making and health policy development (10).

This review was conducted based on the PRISMA guidelines. The search term used was ((LGBT) OR (homosexual)) AND ((disease) OR (mental problem) OR (psychiatric illness) OR (disorder)) AND (review), which yielded 3,120 citations in the PubMed database (Figure 1). After identifying and removing 93 duplicates, the time frame of 2010 to 2025 was selected. The inclusion criteria consisted of studies conducted in countries supportive of homosexuality and those comparing health outcomes between homosexuals and the general population. The exclusion criteria included non-review articles, articles published in languages other than English, studies with insufficient methodological rigor (e.g., lack of clear definitions, small sample sizes, inappropriate methodology), and studies focused on specific subgroups of homosexuals (e.g., male sex workers). Due to the emphasis on thematic synthesis rather than meta-analysis, the heterogeneity of the included reviews in terms of methodology and scope, and the exploratory nature of the analysis, a set of pragmatic criteria—such as recency, number of included primary studies, citation breadth, and the apparent low

risk of bias in the original first-order systematic reviews—was used to guide selection. Moreover, the findings across the included reviews showed a high degree of convergence with minimal contradictions, which further justified the use of these practical criteria in lieu of formal scoring tools. Based on these qualitative and pragmatic criteria, the risk of bias of the articles was assessed at low, medium, and high levels. A total of 478 articles proceeded to the abstract screening stage. At this stage, 410 articles were excluded, and 68 articles advanced to the final analysis phase. The results are given in Table 2.

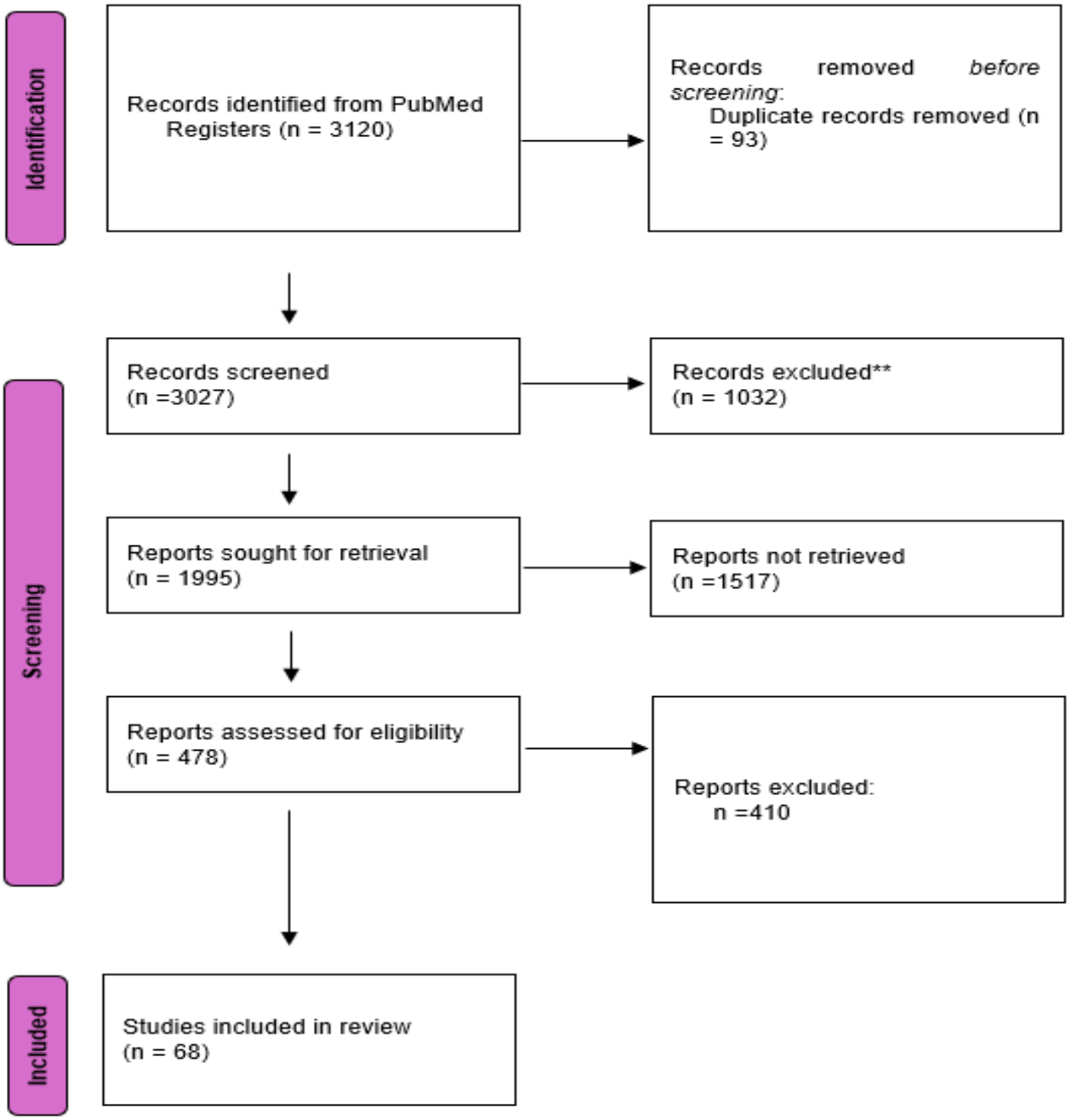

Figure 1. PRISMA Flow Diagram Describing the Inclusion Process of Reviews on the Public Health and Mental Health of Homosexuals in Supportive Countries.

Table 2. Studies and Main Outcomes of Reviews on the Public Health and Mental Health of Homosexuals in Supportive Countries.

Authors (year)	Number of reviewed studies	Main outcomes	Level for risk of bias
Valencia et al. (2018) (11)	21	Among adolescent males who self-identify as gay or bisexual, 62% have ever had sex with a male, and 67% of participants in ASMM studies reported recent sexual activity. Of those who had sex in the past six months or were classified as sexually active, 44% engaged in condomless anal intercourse during that period, 50% did not use a condom at the last sex, and 32% used alcohol or drugs during their most recent sexual encounter. These data suggest that sexual risk behaviors are common among ASMM.	low
Shen et al. (2022) (12)	39	Barriers to condom use included physical discomfort, limited HIV/STI knowledge, and substance use at the individual level; stigma and discomfort discussing condoms at the interpersonal level; and unavailability, cost, and power imbalance at the structural level.	medium
chan et al. (2024)(13)	18	Meta-analysis revealed disparities in up-to-date cervical and breast cancer screening, but not in prostate or colorectal screening. Quantitative findings showed no significant variation in lifetime screening attendance. Lower participation in cervical and breast cancer screening was observed among TGD individuals, both for up-to-date and lifetime measures.	medium
Andani et al. (2023)(14)	118	Person-to-person hepatitis A transmission declined among children but rose in other high-risk groups, particularly men who have sex with men (MSM), with sexually transmitted outbreaks among MSM peaking around 2017. Travel-related outbreaks were rare and declined over two decades, while domestic cases increased. Despite risk-based vaccination guidelines, transmission shifted from travelers and children to MSM and older adults.	low
Jordan et al. (2017)(15)	42	The pooled anti-HCV prevalence among HIV-positive MSM was 8.1%, with active HCV ranging from 5.3% to 7.3%. Prevalence was 40.0% among those who inject drugs and 6.7% among non-injection drug users. Over time, HCV rates rose among overall and non-injecting HIV+ MSM, but declined in the injecting group. Moderate and increasing prevalence was noted, with overall rates exceeding those of the 1945–1965 U.S. birth cohort.	low
Stockdale et al. (2020)(16)	282	Anti-HDV prevalence was estimated at 4.5% among HBsAg-positive individuals and 16.4% among hepatology clinic patients. Globally, 0.16% of the population—around 12 million people—were anti-HDV positive. Prevalence was highest in Mongolia, Moldova, and parts of Africa, and elevated among people who inject drugs, haemodialysis patients, MSM, sex workers, and those with HCV or HIV. Among HBsAg-positive individuals, HDV was linked to 18% of cirrhosis and 20% of liver cancer cases.	low

Falla et al. (2018)(17)	68	Across 23 EU/EEA countries, 68 HBsAg/anti-HCV prevalence estimates were reported, 42 of which met the WHO's intermediate/high endemicity threshold (≥2%). High HBsAg and anti-HCV rates were found primarily among people in prison and PWID, with lower rates among MSM. HBsAg prevalence ranged up to 25.2% in prisons, while anti-HCV reached 86.3% in the same setting.	low
Steffen et al. (2020)(18)	104	Studies covered general, clinical, and high-risk populations including PWID, MSM, prisoners, healthcare workers, and migrants. Sex workers were underrepresented. Strong evidence existed for HBV/HCV prevalence and vaccination coverage in general populations, but was limited in high-risk groups. Major data gaps persisted regarding incidence, mortality, sequelae, and HDV-related outcomes.	low
Hagan et al. (2014)(19)	12	This review aimed to identify modifiable risk factors and intervention settings for viral hepatitis, and to inform the design of intervention strategies that maximize health impact.	low
Baral et al. (2013)(20)	39	Global pooled HIV prevalence among transgender women was 19.1%. Prevalence was 17.7% in LMICs and 21.6% in high-income countries. Transgender women had 48.8 times higher odds of HIV infection compared to reproductive-age adults, with no significant variation by income level of country.	low
Harfouche et al. (2021)(21)	102	HSV-2 seroprevalence averaged 20.6% in general populations, 33.3% in intermediate-risk groups, and was highest among sex workers and MSM/transgender individuals (up to 74.8%). Rates rose with age and were lower in men (ARR 0.68). Seroprevalence declined 2% annually over three decades. HSV-2 was detected in 41.4% of genital ulcer disease cases and 91.1% of genital herpes cases.	low
AlMukdad et al. (2022)(22)	47	HSV-2 seroprevalence was 10.0% in general Canadian populations, rising to 44.5% among STI clinic attendees and 60.7% in HIV-positive individuals or discordant couples. In Australia/New Zealand, it was 15.4% in general populations, 27.8% in MSM, and 37.2% in STI clinic populations. Seroprevalence was consistently lower in men (RR = 0.64). No time-based decline was observed. HSV-2 was detected in 62.1%–71.9% of lab-confirmed genital herpes and 17.4% of genital ulcer disease cases.	low
Malekinejad et al. (2021)(23)	26	MSM with infections such as *Treponema pallidum* (syphilis), *Neisseria gonorrhoeae*, or *Chlamydia trachomatis* had significantly elevated HIV acquisition risks (RR ≥ 1.66). These associations remained robust across different study designs and regions, particularly for low-bias datasets.	low
Latimer et al. (2020)(24)	46	Mycoplasma genitalium (MG) prevalence in MSM was 5.0% (urethra), 6.2% (rectum), and 1.0% (pharynx). Rates were higher in symptomatic individuals and in HIV-positive MSM compared to HIV-negative peers, particularly at urethral sites.	low

King et al. (2016)(25)	26	Oral HPV16 prevalence was 3.0% in HIV-negative and 4.7% in HIV-positive MSM. Median age explained 38% of prevalence heterogeneity. Overall oral HPV prevalence was 17% and 29% in HIV-negative and HIV-positive MSM, respectively. Comparison with heterosexual men revealed no significant difference (OR = 1.07). Concordance between oral and anogenital HPV types was rare.	medium
Machalek et al. (2012)(26)	53	MSM, especially those living with HIV, exhibited high rates of anal HPV and high-grade intraepithelial neoplasia. However, progression to anal cancer was slower than cervical cancer progression.	low
Tsuboi et al. (2021)(27)	275	Global syphilis prevalence among MSM from 2000–2020 was 7.5%, with regional variations (1.9% in Australia/NZ to 10.6% in Latin America/Caribbean). These findings underscore a critical need for targeted interventions.	low
Cantor et al. (2016)(28)	9	No direct evidence supported syphilis screening efficacy in clinical outcomes outside MSM or HIV-positive men. Four international studies favored quarterly over semiannual/annual screening for early syphilis detection in these high-risk groups.	low
Rosser et al. (2016)(29)	30	The relationship between HIV and prostate cancer remains ambiguous; while early studies suggested increased risk, newer findings indicate protective effects, potentially via antiretroviral therapy. GBM may face poorer sexual health and quality of life post-diagnosis, with lower screening rates.	low
Robinson et al. (2017)(30)	11	Bisexual women showed higher rates of chronic pelvic pain and cervical cancer compared to heterosexual women, while lesbian women had reduced uterine cancer risk. No major differences emerged for other gynecological conditions.	low
Chancellor et al. (2017)(31)	21	Cohort studies revealed increased oral cancer risk in individuals in same-sex relationships and in men whose wives had cervical cancer, suggesting sexual behavior as a contributing factor.	low
Boehmer et al. (2012)(32)	47	Cancer research in sexual minority populations disproportionately focuses on infection-related cancers, with limited exploration of other cancer types and broader social determinants of health disparities.	low
Moreira et al. (2023)(33)	12	GAHT in transgender individuals affected vascular health: trans men showed increased carotid thickness and arterial stiffness, while trans women showed reduced inflammatory and fibrinolytic markers. Effects varied based on treatment type and administration route.	low
Turino Miranda et al. (34)(2022)	5	Despite consistent reporting of lipid levels in GAET studies, few examined clinical outcomes like mortality or cardiovascular events. Existing studies showed high heterogeneity and insufficient data on blood pressure or treatment route effects.	low

Quintela-Castro et al. (2023)(35)	11	Hormone therapy in transgender individuals generally did not affect cholesterol or triglyceride levels, though 7 of 11 studies observed reduced HDL. No consistent anthropometric changes indicated increased cardiovascular risk.	low
Ignacio et al. (2022)(36)	19	Hormonal therapy in MTF transgenders may confer cardiovascular risks.	low
Dominoni et al. (2025)(37)	25	Post-surgical complications in transgender individuals were frequent. Trans women experienced sexual dysfunction (25–75%), urinary symptoms (20%), and incontinence (15%). Trans men had higher urinary issues (up to 50%) and sexual dysfunctions (54%) post-hysterectomy/phalloplasty.	low
Caceres et al. (2017)(38)	31	Sexual minority individuals showed elevated cardiovascular risk behaviors (e.g., smoking, alcohol use), though objective CVD diagnoses were infrequent. Most studies relied on self-reports, limiting diagnostic validity.	low
Ceolin et al. (2024)(39)	9	Evidence highlights a significant proportion of TGD individuals at elevated risk for cardiovascular conditions, mental health issues, and reduced engagement in major preventive screenings.	low
Meads et al. (2018)(40)	16	Increased mortality among same-sex cohabiting women due to CVD and respiratory illnesses; higher asthma prevalence in lesbian and bisexual women; no significant disparities found in CVD, hypertension, or diabetes.	low
van Zijverden et al. (2024)(41)	22	Transgender women exhibited higher incidence rates of stroke and venous thromboembolism compared to cisgender men; transgender men showed increased stroke and VTE risk relative to cisgender women.	low
Rosendale et al. (2021)(42)	348	Autism spectrum disorder was associated with gender dysphoria in over half the studies reviewed; higher ischemic stroke risk reported in transgender women; HIV dominated neuroinfectious disease literature.	Low
Allely, Pickard (2024)(43)	11	SO-OCD remains prevalent yet frequently misunderstood in OCD populations, often leading to misdiagnosis or misinterpretation.	low
Frías et al. (2016)(44)	78	Childhood sexual trauma is a non-specific risk factor for BPD, linked to identity instability, impulsive sexual behavior, and elevated sexual health risks; little systematic research on trauma-informed treatment.	low
Liang, Nolan (2022)(45)	11	Prevalence of DSD based on karyotyping was 0.88%; case reports emphasize distinct management issues including infertility, VTE risk, and cancer monitoring.	low
Lerario et al. (2023)(46)	26	Multiple studies observed elevated rates of selected health conditions among transgender populations.	low

Thrower et al. (2020)(47)	30	ASD prevalence among transgender individuals ranged from 6% to 26%, exceeding general population rates but comparable to psychiatric cohorts; limited ADHD data available.	low
Peitzmeier et al. (2020)(48)	85	Transgender individuals faced higher prevalence of lifetime and past-year IPV compared to cisgender counterparts, with a 1.7-fold increased overall risk.	low
Shokoohi et al. (2022)(49)	105	Bisexual individuals, particularly women, exhibited higher rates of alcohol use and heavy episodic drinking; gender significantly influenced these disparities.	low
Shokoohi et al. (2021)(50)	47	Bisexuals reported consistently higher rates of smoking than heterosexuals and lesbians/gays; gender moderated the strength of these associations.	low
Connolly, Gilchrist (2020)(51)	41	Transgender people experienced disproportionately high substance use, influenced by discrimination, unemployment, sex work, and identity-related stressors; data insufficient for precise prevalence estimates.	low
Íncera-Fernández et al.(2021)(52)	12	MSM engaging in sexualized drug use, particularly slamsex, displayed elevated levels of mental health issues, including anxiety, depression, and substance dependence.	medium
Maxwell et al. (2019)(53)	38	Prevalence estimates for sexualized injection drug use varied widely; associated with increased condomless sex and elevated STI transmission risks.	low
Tomkins et al. (2019)(54)	112	Chemsex is linked with unsafe sexual practices and mental health consequences, including hospitalizations; research on access to treatment remains limited.	low
Moradi et al. (2022)(55)	8	Methamphetamine use among MSM was associated with significantly increased numbers of sexual partners across all subgroups.	low
Jones et al. (2016)(56)	26	Body dissatisfaction plays a central role in distress among transgender individuals and may contribute to disordered eating behaviors.	low
Nowicki et al. (2022)(57)	136	Sexual minority men often report more negative body image than heterosexual men, with strong links to stigma, mental health, and sexual behavior.	low
Dotan et al. (2021)(58)	21	Lesbians showed more binge eating and less restriction; bisexual and "mostly heterosexual" women had higher rates of overall disordered eating and restrictive behaviors.	medium
Meneguzzo et al. (2018)(59)	45	Sexual minority women exhibited higher ED rates, marked by more bingeing and purging, and lower body dissatisfaction and drive for thinness.	low
Miller, Luk (2020)(60)	32	Sexual orientation disparities in disordered eating and BMI were more evident in males; minority females showed more positive body image yet notable weight-related differences.	low
Marshall et al. (2016)(61)	31	Transgender individuals exhibited higher rates of NSSI and suicidality compared to cisgender people, with trans men being particularly vulnerable.	low

Marchi et al. (2022)(62)	50	Elevated risk of suicidality, SI, and NSSI among LGBTQ groups; bisexuals showed highest overall risk, followed by lesbians/gays (SA), and trans/intersex individuals (SI, NSSI).	low
Nouri et al. (2023)(63)	27	Suicidal ideation and attempt rates among MSM far exceeded general population levels; regional differences were observed between Europe and the U.S.	low
Barbonetti et al. (2019)(64)	4	Homosexual orientation was associated with increased odds of ED and decreased odds of PE compared to heterosexual orientation.	low
Sobecki-Rausch et al. (2017)(65)	20	Sexual dysfunction is common in lesbian women and may differ qualitatively from dysfunction in heterosexual women.	low
Marchi et al. (2023)(66)	27	LGBTQ individuals showed elevated PTSD prevalence, with transgender and bisexual people at greatest risk; notable variability across studies.	medium
Millet et al. (2016)(67)	25	Anxiety disorders were more prevalent among transgender individuals, especially transgender men; prevalence estimates varied widely across studies.	low
Lucassen et al. (2017)(68)	23	Sexual minority youth experienced significantly more depressive symptoms than heterosexual peers; female minority youth reported higher symptom levels than males.	low
Cai et al. (2024)(69)	48	Major depressive disorder is prevalent among LGBTQ+ populations.	low
Selten et al. (2024)(70)	13	Findings support an elevated risk of psychosis among LGB individuals.	low
Ross et al. (2018)(71)	52	Heterosexuals had the lowest depression and anxiety rates; bisexual individuals showed higher or comparable levels relative to gay/lesbian groups.	low
Pinna et al. (2022)(72)	165	Transgender individuals have a higher overall burden of mental health disorders than cisgender or general population groups.	low
O'Shea et al. (2024)(73)	13	SGD youth exhibited heightened risk and severity of psychiatric disorders, including depression and anxiety, especially during the COVID-19 pandemic.	low
Mezzalira et al. (2022)(74)	33	TGD youth demonstrated high rates of anxiety, depression, and comorbid behavioral issues such as disordered eating and substance use.	low
Simoni et al. (2017)(75)	11	LGBTQ+ individuals showed disparities in asthma, obesity, arthritis, physical health ratings, and CVD; limited evidence for cancer, diabetes, or cholesterol.	low
Eliason et al. (2015)(76)	37	Lesbian and bisexual women had consistently higher BMI than heterosexual women from adolescence onward; physical illness rates did not increase proportionally.	low

Scheim et al. (2024)(77)	328	Global transgender populations face significant and variable health burdens, especially in mental health and substance use; research gaps persist in several domains.	medium
Haarmann et al. (2024)(78)	32	Chronic respiratory diseases, notably asthma, were more common in SMM; bisexual men showed higher rates of multiple chronic physical conditions than gay men.	low

In the second phase, using the thematic content analysis method, the semantic units extracted from the articles were condensed under sub-themes, which then formed themes at a higher level (79).

Results

The meaning units, sub-themes, and themes derived from the articles are reported in Table 3.

Table 3. Meaning Units, Sub Themes and Themes Derived from Included Reviews on the Public Health and Mental Health of Homosexuals in Supportive Countries.

Meaning Units	Sub-Themes	Themes
Approximately half engaged in unprotected anal sex, and one-third consumed alcohol during sex. Factors contributing to non-condom use included reduced pleasure. The reasons for non-condom use among them.	Condoms and prevention.	Healthcare
Cancer screening among transgender and gender-diverse individuals is comparable to the general population over a lifetime.	Cancer screening.	
Men who have sex with men (MSM) are at a high risk for hepatitis A. They have a higher prevalence of hepatitis C. Men who have sex with men (MSM) are among the high-risk groups for hepatitis D. Hepatitis B and C are more prevalent among European homosexuals. Various types of hepatitis are more common among German homosexuals. Hepatitis C is more prevalent among them.	Types of hepatitis	Infectious Diseases
Transgender women have a high burden of HIV. HSV-2 infection is prevalent among them. HSV-2, chlamydia, papillomavirus, and HIV are more prevalent among them. Chlamydia trachomatis (CT), Neisseria gonorrhoeae (NG), Treponema pallidum (TP), and HIV are higher.	AIDS, herpes simplex, chlamydia, papillomavirus.	
Mycoplasma genitalium (MG) is significantly more prevalent among MSM. Oral HPV in homosexuals is as prevalent as in the general population. HPV, precancerous lesions, and anal cancer are more prevalent among homosexuals.	Sexually transmitted infections.	

The prevalence of syphilis is higher among them. Among high-risk groups for syphilis, screening is clinically effective only for MSM.	Syphilis.	
Prostate cancer is more prevalent among men who have sex with men (gay and bisexual men). Bisexual women may experience chronic pelvic pain and cervical cancer more frequently than heterosexual women. Homosexual sexual behaviors are associated with a higher prevalence of oral and oropharyngeal cancers. Anal, oral, and throat cancers are more common in men who have sex with men.	HPV, precE7:E27ancerous lesions, anal cancer, prostate cancer, cervical cancer, oral cancer, oropharyngeal cancer, throat cancer.	Cancers
Hormone therapy in transgender women and men increases the risk of atherosclerosis. Estrogen therapy for transgender men raises cardiovascular risk. Unfavorable changes in lipid profiles occur in transgender individuals undergoing hormone therapy. Male-to-female hormone therapy leads to cardiovascular risks.	Hormone therapy.	Consequences of Gender Transition on General Health and Mental Health
Transgender surgery increases the risk of pelvic floor disorders and sexual dysfunctions, including pelvic organ prolapse, urinary incontinence, urinary urgency symptoms, and sexual disorders.	Transgender surgery.	
Cardiovascular diseases are more prevalent among them. Transgender individuals experience higher rates of cardiovascular disease, depression, and indecision in old age. Lesbian women have worse outcomes than bisexuals for cardiovascular disease and asthma, suggesting that the issue stems from behavior rather than minority status. Cardiovascular issues are prevalent among them.	Cardiovascular diseases.	Cardiovascular Diseases
There is a link between autism spectrum disorder and gender dysphoria, as well as a higher risk of ischemic stroke among transgender women. Sexual obsession is common among obsessive-compulsive individuals but is often misunderstood by therapists and patients, supporting the hypothesis that homosexuality may be a form of obsession. Homosexuality is more prevalent among individuals with borderline personality disorder. Klinefelter syndrome is more common in transgender individuals. Functional neurological disorders such as fibromyalgia, functional neurological disorder, somatic symptom disorder, chronic fatigue syndrome, and irritable bowel syndrome are more frequent among them. Autism spectrum disorder (ASD) and attention-deficit/hyperactivity disorder (ADHD) are more common among individuals with gender dysphoria compared to the general population.	Disorders and diseases where homosexuality is more prevalent.	Diseases and Disorders Associated with Homosexuality
Physical and sexual intimate partner violence (IPV) rates are nearly double the norm among them.	Criminality and violence.	Criminality and Violence

Alcohol consumption is higher among bisexuals than homosexuals, and both are higher than the general population. Smoking prevalence is higher among bisexuals than homosexuals, and both exceed normal levels. Drug use rates are significantly higher than those in the general population. Chemsex (drug use for sexual enhancement) is common due to unhealthy homosexual behaviors leading to severe psychological symptoms; stopping these behaviors is advised. Chemsex prevalence is high among them. Sexual substance use is more frequent among homosexuals. Methamphetamine use correlates with the number of sexual partners among homosexuals.	Alcohol and drug use.	Mental Disorders (Anxiety, Depression) and Other Chronic Conditions
Body dissatisfaction (a key factor in gender dysphoria) and eating disorders are prevalent among them. They have worse body image issues.	Body dysmorphic disorder.	
Unlike men, there is no significant difference between the rates of eating disorders in lesbian women compared to the normal population. Eating disorders are more frequent in lesbian women than normal levels observed in heterosexual women. Evidence supporting sexual orientation disparities in disordered eating and weight-related behaviors was more consistent among males than females.	Eating disorders.	
Suicide rates and non-suicidal self-harming behaviors (often linked to borderline personality disorder) are high among them. Suicide rates are elevated among them. Suicide attempts and suicidal ideation are frequent within this group.	Suicide.	
Erectile dysfunction occurs at higher rates within this group compared to heterosexual individuals. Sexual dysfunctions are more common in lesbian women compared to heterosexual women.	Sexual dysfunctions.	
PTSD prevalence is higher among them.	PTSD.	
Anxiety-related symptoms and disorders are more prevalent.	Anxiety.	
Depression is more common among young individuals in this group. Depression is also more prevalent overall.	Depression.	
The risk of psychosis is higher among them.	Psychosis.	
Anxiety and depression are more prevalent among bisexuals than homosexuals, and both are higher than in heterosexuals. A collection of mental health disorders.	Overall mental health conditions.	

During the COVID-19 pandemic, mental vulnerability was higher among homosexuals than in the general population.	
Anxiety, depression, mood disorders, and substance use were more common among homosexual adolescents.	
Lesbian women experience more asthma, obesity, arthritis, and cardiovascular diseases than heterosexual women.	Chronic conditions.
Lesbian women have higher body mass indexes and body weight compared to heterosexual women.	
Overall, they experience a higher burden of diseases.	Whole diseases.
A comprehensive review of physical health conditions (diseases).	

Healthcare

According to the categorization in Table 3, in countries supportive of homosexuality, cancer screening among homosexuals is comparable to that of the general population, indicating the effectiveness of supportive policies. Undoubtedly, the primary behavior supported by governmental institutions is homosexuality. Examples of this support include mandatory education on homosexuality, government-funded gender reassignment surgeries, hormone injections, and the organization of events. Despite extensive interventions aimed at reducing high-risk sexual behaviors associated with HIV, the consistent use of condoms among men who have sex with men (MSM) remains below optimal levels. The main reason for this is the stigma associated with condom use (12). This suggests that there is a need for a new perspective on the prevalence of high-risk sexual behaviors among homosexual men.

Infectious Diseases

Homosexuality has a deep connection with infectious diseases. Despite decades of supportive policies, homosexuals continue to experience higher rates of various hepatitis, AIDS, herpes simplex, chlamydia, papillomavirus, mycoplasma genitalium (MG), oral HPV, and syphilis. Additionally, unprotected sexual relationships are prevalent among homosexuals, indicating a need for a change in attitudes regarding this issue. It is also important to note that condom use cannot completely prevent the transmission of certain diseases, especially those spread through skin-to-skin contact.

Cancers

Despite strong support, homosexuality remains strongly linked to various precancerous lesions and cancers. These include anal cancer, prostate cancer, cervical cancer, oral cancer, oropharyngeal cancer, and throat cancer, which are more prevalent in this group compared to the general population. These cancers are often a result of high-risk sexual behaviors, which supportive policies for homosexuality have criticized as homophobic.

Consequences of Gender Transition on General Health and Mental Health

Gender transition (whether through surgery or hormone therapy) can have significant consequences. Transgender surgery is associated with increased risks of pelvic floor disorders and sexual dysfunctions, including pelvic organ prolapse, urinary incontinence, urinary urgency symptoms, and sexual disorders. Hormone therapy in transgender men and women is linked to an increased risk of atherosclerosis and cardiovascular diseases.

Cardiovascular Diseases

Despite strong governmental support in countries supportive of homosexuality, cardiovascular diseases remain more prevalent among homosexuals than in the general population.

Diseases and Disorders Associated with Homosexuality

Conditions such as autism, ADHD, Klinefelter syndrome, borderline personality disorder, obsessive-compulsive disorder, and fibromyalgia are more common in homosexuals. This suggests that homosexuality is a behavior associated with other diseases or disorders. It is important to note that research in this area is limited. The creation of restrictions on free scientific research regarding homosexuality has resulted in very few studies on the comorbidity of homosexuality with other diseases and mental disorders. This is despite homosexuality having been considered a mental disorder until 1973 and still being viewed as such based on health criteria.

Criminality and Violence

In the context of extreme support for homosexuality, there is a significant scientific gap regarding crime rates among homosexuals, as this group is often studied as victims. However, some indicators, such as intimate partner violence (IPV), can provide estimates. Since an intimate partner of a homosexual is also homosexual, IPV rates among homosexuals can reflect the level of violence in their intimate relationships. Table 3 shows that violence in intimate relationships among homosexuals is nearly twice the normal rate.

Mental Disorders (Anxiety, Depression) and Other Chronic Conditions

Similar to high-risk sexual behaviors, other risky behaviors such as alcohol and drug consumption are also prevalent among homosexuals. A notable phenomenon in drug use among homosexuals is chemsex. The use of drugs to enhance sexual experiences can be explained by the unhealthy nature of homosexual relationships, which often lead to anal diseases, cancers, and sexually transmitted infections. The higher prevalence of two types of obsessive disorders, namely eating disorders and body dysmorphic disorders, among homosexuals supports the hypothesis that homosexuality has an obsessive nature (43). Self-harming behaviors and suicidal tendencies, which are more commonly observed in borderline personality disorder, also have a higher prevalence among homosexuals. This aligns with previous findings, indicating a higher prevalence of homosexuality among individuals with borderline personality disorder (44).

In mediation models, lower social support was associated with reduced resilience for all sexual minority subgroups except lesbian/gay women (80).

In rural areas, access to support and opportunities to connect with other gay men may be relatively limited. A study in Australia examined differences in the well-being of young gay men in rural and urban Australia, including mental health, resilience, stigma-related challenges, and social support. While resilience was lower among the rural group, this was no longer significant after adjusting for sociodemographic factors (81).

Whole of Disease

Despite supportive policies, the prevalence and severity of many diseases and mental disorders among homosexuals—excluding homosexuality itself as a disorder—are higher than normal.

Discussion

Mayer argued that the primary factor contributing to the higher prevalence of mental disorders among homosexuals is minority stress (3). The results of this secondary systematic review show that there are differences between different mental health domains regarding the impact of social support on homosexuality. While the minority stress theory and the prescriptions derived from it have been able to have a positive effect on the general reduction of anxiety, depression, and suicide among homosexuals, there has been no clear effect in some other domains, such as the prevention of sexually transmitted infections and chemsex. This indicates that the minority stress theory is insufficient, despite its power to explain part of the variance in mental health problems of homosexuals compared to the general population. However, after two decades of supporting homosexuality, various mental disorders continue to have a higher prevalence among homosexuals. A secondary systematic review and thematic analysis of the findings from this review indicate that while minority stress can be an effective external stressor, it is also important to consider the role of other stressors. Firstly, it should be noted that a homosexual individual—due to homosexual behavior rather than social pressures—is at a higher risk of infectious diseases, cancers, and the consequences of gender transition (whether through surgery or hormone therapy). It is crucial to recognize that these diseases are inherent to homosexuality and cannot be eliminated even by creating a supportive environment, such as what has occurred in supportive countries. Naturally, this increased risk regarding the prevalence of various diseases can serve as a stressor that threatens the mental health of homosexuals. Nevertheless, there is a significant research gap in the psychological impacts of the higher risk of contracting diseases associated with homosexuality. The impact of fear of contracting various cancers, types of hepatitis, AIDS, etc., on the mental health of homosexuals warrants further investigation.

Secondly, another stressor that deserves examination is the stress of childlessness. A systematic review shows that childlessness leads to anxiety, depression, and a diminishment in quality of life (82). This area reveals a significant research gap.

The third component is the comorbidity of homosexuality with other diseases and mental disorders. As previously explained, homosexuality frequently co-occurs with other diseases and mental disorders. Despite decades of unequivocal support for homosexuality, this group continues to exhibit non-normalized rates of mental disorders. This suggests that the role of "minority stress" in explaining mental health disparities among homosexuals has been overstated. Findings from a European systematic review indicate that concealing one's sexual identity does not significantly contribute to minority stress (83).

The results of this study are consistent with neuroscience findings that brain function and structure are influenced by culture and behavior. According to the culture-behavior-brain (CBB) loop model, culture and behavior can affect brain function and even brain structure in homosexual individuals (84). Therefore, we are witnessing a two-way effect of homosexual culture and behavior on brain function and structure, such that on the one hand, reducing cultural conflicts through explaining minority stress theory can moderate mental health problems in these individuals, and on the other hand, their behaviors can maintain or even exacerbate their mental health problems. It is possible that homosexual behavior itself and exposure to specific environments may lead to changes in the brain, which in turn could contribute to changes in mental health status.

Another evident research gap in this systematic review is the phenomenology of how the general population perceives homosexuality. While the general population is often accused of negative judgment and prejudice against homosexuals, it is necessary to study their

reasons and perceptions of homosexuality as well. Given the higher prevalence of infectious diseases among homosexuals, it is not surprising that healthcare providers or the general public might exercise more caution in interactions with homosexuals. Additionally, considering the higher rates of harmful behaviors, borderline behaviors, intimate partner violence, and more, self-protection and child protection against this group are understandable. To these factors should be added the higher prevalence of alcohol and drug abuse.

Limitation

The primary limitation of this research was the scarcity of studies on the prevalence of criminality among homosexuals and the lack of research on mental disorders and diseases where homosexuality is more common than normal.

Conclusion

This study demonstrates that despite extensive support for homosexuality, mental disorders and public health issues remain more prevalent in this group compared to the general population. The "minority stress" theory, by overlooking other stressors associated with homosexuality and excessively emphasizing the role of minority stress, cannot comprehensively improve mental health. Although recommended support based on this theory has reduced anxiety and mental health issues among homosexuals, homosexuality, as a behavior linked to various mental disorders, has become more prevalent in supportive societies. Consequently, these supportive policies have involved more individuals in mental health and public health problems.

It is clear that the relationship between support for homosexuality and mental health outcomes is not straightforward and simple, as mental health is influenced by a variety of factors, including socioeconomic status, community support, access to health care, cultural attitudes, and personal experiences. Precisely because of this complexity, it cannot be claimed that the mental health of homosexuals is determined solely by social support or that homosexuality itself has no influence on it. In this article, we have presented evidence that no level of support for homosexuals can equalize their mental health outcomes to those of the general population. We have also presented evidence that homosexuality itself is detrimental to mental health.

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Conflict of Interest

None.

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