

Review

Beyond Risk: Revisiting Suicide Risk and Protective Factors Among LGBTQIA+ Populations and Anticipating Future Directions

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Abstract

Suicide research concerning lesbian, gay, bisexual, transgender, queer, intersex, asexual, and other sexually and gender-diverse (LGBTQIA+) populations has established a consistent pattern of inequity, but it has too often described disparity without adequately specifying how risk is produced, interrupted, or prevented. This Review revisits the evidence through a multilevel, intersectional, and prevention-oriented lens. LGBTQIA+ identities are not intrinsic causes of suicidality. Excess risk is better understood as an outcome of exposure to structural stigma, discrimination, violence, family rejection, conversion practices, socioeconomic exclusion, barriers to affirming care, and the psychological and interpersonal processes through which these conditions are embodied. At the same time, family acceptance, school connectedness, peer and community belonging, identity affirmation, inclusive policies, accessible gender-affirming and culturally responsive care, and timely evidence-based suicide interventions can alter trajectories. Yet the literature remains constrained by cross-sectional designs, inconsistent measurement, aggregation of heterogeneous populations, underrepresentation outside high-income Western settings, and a tendency to label correlates as “protective” without establishing causal or contextual validity. The next phase of the field should combine better population surveillance with longitudinal and quasi-experimental designs; distinguish ideation, self-harm, attempts, and suicide mortality; evaluate structural and service interventions; and govern digital prediction with privacy, fairness, and community accountability. The central task is no longer to document that inequities exist, but to identify which modifiable conditions reduce them, for whom, under what circumstances, and at what level of intervention.

Keywords: LGBTQIA+; suicide; suicidal ideation; suicide attempt; minority stress; protective factors; structural stigma; intersectionality; prevention; gender-affirming care



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1. Introduction: Why “Beyond Risk” Matters

Suicide remains a major global public-health challenge. The World Health Organization estimates that approximately 727,000 people died by suicide in 2021, with a large majority of deaths occurring in low- and middle-income countries [1]. These deaths represent only the most visible endpoint of a broader continuum that includes suicidal thoughts, plans, attempts, non-suicidal self-injury, bereavement, and recurrent crises. Contemporary suicide science therefore treats suicide as a complex, multiply determined outcome rather than the inevitable consequence of a single diagnosis, exposure, or identity [2].

Within this wider challenge, lesbian, gay, bisexual, transgender, queer, intersex, asexual, and other sexually and gender-diverse (LGBTQIA+) populations experience marked and persistent inequalities. Recent syntheses confirm elevated levels of suicidal ideation, suicide attempts, and self-harm, particularly among adolescents and young adults, while also showing considerable heterogeneity between subgroups and settings [3,4]. The central interpretive principle must be stated without qualification: LGBTQIA+ identities do not cause suicidality. Risk is produced when identities are devalued, punished, erased, pathologized, or rendered unsafe within families, schools, workplaces, health systems, communities, and legal regimes.

Minority stress theory provided the field with a durable explanation for how distal stressors—including discrimination, victimization, and institutional exclusion—interact with proximal processes such as expectations of rejection, concealment, and internalized stigma [5]. Subsequent work clarified the psychological mechanisms through which stigma may affect emotion regulation, social isolation, cognitive vulnerability, and access to coping resources [6]. The gender minority stress and resilience model extended this reasoning to transgender and gender-diverse people and explicitly incorporated resilience processes alongside stigma-related stressors [7]. These frameworks align productively with contemporary suicide theories: the integrated motivational–volitional model distinguishes the emergence of suicidal ideation from the transition to suicidal behavior [8], while the three-step theory emphasizes psychological pain, hopelessness, disrupted connectedness, and capacity for suicide [9]. Their integration helps explain why a stigmatizing exposure may affect one person through entrapment, another through perceived burdensomeness or disconnection, and another not at all when strong protective systems are present.

An updated account must also be intersectional. Sexual orientation, gender identity and expression, and variations in sex characteristics intersect with racism, ableism, ageism, poverty, migration status, rurality, religion, and other structures of power. Intersectionality is not achieved by adding demographic covariates to a regression model; it requires attention to qualitatively different social positions, exposures, resources, and institutional responses [10]. A Black transgender woman, a displaced gay adolescent, an autistic non-binary adult, an older lesbian living alone, and an intersex child subjected to non-consensual medical intervention cannot be adequately represented by a single “sexual and gender minority” coefficient.

This Review argues for a shift beyond risk catalogues toward causal explanation, protective systems, and accountable prevention. It revisits what is known, identifies what remains uncertain, and proposes a research and policy agenda organized around a practical question: which modifiable conditions reduce suicidal suffering and behavior among which LGBTQIA+ people, in which contexts, and through which mechanisms?

Review Approach

This article is a critical narrative review rather than a systematic review or meta-analysis. Literature was identified through targeted searches of PubMed, PsycINFO, and Scopus, supplemented by backward citation searching of major reviews and consensus reports. Searches were last updated on 28 July 2026 and combined identity terms (lesbian, gay, bisexual, transgender, gender diverse, queer, intersex, asexual, and sexual and gender minority) with outcome and intervention terms (suicide, suicidality, suicidal ideation, suicide attempt, self-harm, risk factor, protective factor, prevention, and intervention).

English-language peer-reviewed reviews, meta-analyses, population surveillance studies, longitudinal and quasi-experimental studies, intervention evaluations, and major public-health or consensus reports were considered when they directly addressed suicidal thoughts or behaviors, relevant mechanisms, or prevention among LGBTQIA+ populations.

Sources were selected purposively to represent foundational frameworks, recent syntheses, major subgroups, and structural, institutional, interpersonal, and clinical levels of explanation. The search was intended to support a conceptually integrative account rather than exhaustive study identification. No formal risk-of-bias instrument or quantitative pooling was undertaken. Claims are therefore calibrated to study design, consistency, directness, and population coverage, and the review may underrepresent non-English-language and unpublished evidence.

2. What the Updated Evidence Shows—And What It Does Not

The evidence for inequity is neither new nor confined to one life stage. An early systematic review found higher rates of mental disorder, suicidal ideation, substance misuse, and deliberate self-harm among lesbian, gay, and bisexual people than among heterosexual people [11]. Meta-analytic evidence subsequently showed a substantial disparity in suicidality among sexual-minority youth [12], and a later meta-analysis reported an elevated prevalence of attempted suicide among sexual-minority adolescents compared with heterosexual peers [13]. Among adults, pooled estimates have likewise indicated higher lifetime suicide-attempt prevalence in sexual-minority populations, although estimates vary materially according to sampling, definitions, and subgroup composition [14].

Recent surveillance adds specificity. In the 2023 United States Youth Risk Behavior Survey—the first national cycle to assess transgender identity—transgender students reported substantially worse mental-health indicators, violence exposure, unstable housing, and suicidal thoughts and behaviors than cisgender peers [15]. The 2024 Trevor Project national survey similarly documented a high burden of seriously considering and attempting suicide among LGBTQ+ young people, especially transgender and non-binary respondents [16]. Because the latter used a non-probability online sample, its estimates should not be treated as population prevalence; its value lies in describing experiences and disparities within a very large community sample. The 2022 U.S. Transgender Survey, also based on community recruitment, offers complementary evidence concerning discrimination, material insecurity, health, and well-being among transgender adults [17].

The expansion of the acronym has not always been matched by expansion of the evidence. Intersex people remain particularly underrepresented in population surveillance, despite reports of stigmatization, medical trauma, identity invalidation, and mental-health inequities among intersex youth [18]. Asexual people are also frequently omitted or misclassified. Available studies associate minority stress with suicidality among asexual individuals [19]. Meta-analytic evidence indicates higher depressive symptoms among asexual than heterosexual participants, but no significant difference in self-harm or suicide-attempt risk; comparisons with bisexual and gay or lesbian groups also vary by outcome [20]. These findings do not justify treating either population as homogeneous; they demonstrate why direct, respectful measurement, outcome-specific interpretation, and adequately powered subgroup analyses are necessary.

Subgroup specificity is essential when interpreting these findings. Evidence concerning sexual orientation has often been generated in samples combining lesbian, gay, and bisexual participants, whereas evidence concerning gender identity frequently comes from transgender and gender-diverse samples with different exposures, care pathways, and measurement practices. Findings for bisexual, non-binary, intersex, and asexual people are comparatively sparse and should not be inferred from studies of gay and lesbian or transgender participants. Throughout this Review, group-specific labels are retained when evidence comes from a defined population; the umbrella term LGBTQIA+ is used for genuinely inclusive evidence or for shared structural questions. Similarity across subgroups is treated as a proposition to test rather than an assumption.

Evidence outside the United States also shows both shared mechanisms and contextual variation. Canadian population data indicate higher suicidality among sexual- and gender-minority youth and adults and point to potentially protective roles for social and material resources [21]. A meta-analysis of lesbian, gay, bisexual, and transgender young people linked minority stressors to suicidality while underscoring substantial between-study heterogeneity [22]. Among transgender young adults, gender-related stressors, social support, and gender affirmation have been associated with psychological distress and suicidality, but relationships differ across gender identities and social locations [23].

Longitudinal research is especially valuable because temporal ordering cannot be inferred from cross-sectional associations. Prospective studies of lesbian, gay, bisexual, and transgender youth have identified victimization, depressive symptoms, hopelessness, impulsivity, and prior self-harm or suicidality as predictors of later suicidal ideation or attempts [24,25]. Nevertheless, even longitudinal cohorts can be affected by selective attrition, low event counts, short follow-up, and measurement schedules that miss rapid changes. Most importantly, studies often combine outcomes that should remain distinct. Passive death wishes, active ideation, planning, non-suicidal self-injury, interrupted attempts, suicide attempts, and suicide deaths have overlapping but non-identical determinants. Elevated ideation must never be presented as if it were evidence about mortality.

The field must therefore hold two conclusions simultaneously. First, the disparity is robust enough that inaction is indefensible. Second, the magnitude, mechanisms, and optimal responses cannot be reduced to a single pooled estimate. Prevalence comparisons establish inequality; they do not, by themselves, explain how to prevent it.

Evidence is interpreted according to design strength. Cross-sectional studies identify associations and subgroup disparities but cannot establish temporal order or intervention effects. Longitudinal studies strengthen temporal inference but remain vulnerable to attrition, residual confounding, and changing exposure measurement. Quasi-experimental studies provide stronger evidence about policy or structural change when assumptions are credible, although concurrent social changes may still affect estimates. Controlled intervention studies offer the most direct evidence of preventive effects, but the LGBTQIA+ intervention literature remains small, heterogeneous, and often underpowered for suicide attempts or deaths. Accordingly, observational findings are used to identify plausible targets for prevention and practice, not to claim that modifying a correlate will necessarily reduce suicidality.

Generalizability is also constrained geographically and institutionally. Most cited studies were conducted in the United States, Canada, Western Europe, or Australia, often with community or online samples and within settings where at least some LGBTQIA+-affirming services and legal recognition exist. The prevalence, meaning, and consequences of disclosure, family response, community connectedness, and service access may differ in low- and middle-income countries and in criminalizing or rapidly changing legal environments. Conclusions about risk and protective factors are therefore most secure for the populations and settings actually studied; transfer to other contexts requires local measurement, community partnership, and evaluation rather than presumption of universality.

3. From Identity Categories to Causal Pathways

The highest modifiable risks are located in social conditions and their psychological consequences. Sexual-minority people disproportionately report childhood abuse, peer victimization, harassment, and violence and contribute to later mental-health disparities [26]. School-based victimization predicts poorer young-adult health and adjustment among lesbian, gay, bisexual, and transgender youth [27]. Minority stress may also heighten depression and perceived burdensomeness, thereby connecting stigmatizing conditions

with constructs that are proximally relevant to suicidal desire [28]. Among transgender and gender-diverse adults, minority stress and interpersonal suicide-theory variables have shown independent and interacting associations with suicidal ideation [29].

Some exposures are explicitly identity-targeted. Sexual-orientation change efforts have been associated with greater odds of suicidality among LGBTQ young people [30], and recalled gender-identity conversion efforts have been associated with severe psychological distress and lifetime suicide attempts among transgender adults [31]. These studies are observational and cannot resolve every source of confounding or recall bias. Yet they converge with clinical ethics and human-rights principles: practices organized around rejecting or suppressing a person's sexual orientation or gender identity should not be framed as neutral therapeutic options.

Structural stigma is more than a background variable. Cross-national evidence links structural stigma with life satisfaction and suicide-related outcomes among sexual- and gender-minority adults [32]. Within the United States, lesbian, gay, and bisexual youth living in more supportive social environments have shown lower suicide-attempt risk, even after individual-level risk factors were considered [33]. Changes in same-sex marriage policy have also been associated with reductions in adolescent suicide attempts, with particularly notable changes among sexual-minority students [34]. Such natural experiments cannot isolate every mechanism, but they remind researchers that laws and public norms may influence mental health through recognition, material access, expectations of safety, family responses, and institutional behavior.

These pathways are recursive. A discriminatory law may increase public hostility; hostility may alter parental or school behavior; anticipated rejection may encourage concealment; concealment may reduce access to support; and isolation may intensify hopelessness during an acute crisis. Conversely, affirming policy may be weakened by poor implementation, inaccessible services, family rejection, or local violence. This is why simple lists of independent "risk factors" are inadequate. Prevention requires models that connect structural exposure, institutional practice, interpersonal experience, psychological processes, acute states, and access to lethal means over time.

Clinical vulnerability also matters, but diagnosis must not become an explanatory shortcut. Depression, post-traumatic stress, substance-use problems, eating disorders, and anxiety can increase suicide risk, yet their unequal distribution may itself reflect chronic exposure to stigma and adversity. Asking whether suicidality is "because of mental illness" or "because of minority stress" creates a false dichotomy. The clinically useful question is how social stress, psychiatric symptoms, relational disruption, and acute capability interact in a particular person's trajectory—and which links can be changed.

4. Protective Factors as Multilevel and Dynamic Assets

The study of protection has lagged behind the study of risk. Too often, a variable is called "protective" because it is inversely associated with suicidality in a cross-sectional model. A genuine protective factor should precede the outcome, remain meaningful under relevant exposure conditions, and ideally be shown to modify a trajectory when strengthened. Protection is also dynamic: a supportive peer may be available at one moment but not another; an affirming service may exist but be geographically or financially inaccessible; disclosure may create connection in one context and danger in another.

For clarity, this Review distinguishes three levels of evidence. A protective correlate is inversely associated with suicidality at one point in time; a prospective protective factor precedes and predicts a more favorable subsequent outcome; and a protective mechanism is supported when changing the factor produces, or plausibly mediates, a reduction in suicidality. Most evidence discussed below concerns protective correlates, fewer findings

meet prospective criteria, and very few establish mechanisms through experimental or strong quasi-experimental designs. Terms such as “buffer,” “protect,” and “reduce risk” are therefore reserved for evidence that supports temporal or causal interpretation; otherwise, the text describes lower observed risk or an inverse association.

4.1. Family, Chosen Family, and Close Relationships

Family processes are among the most consequential and potentially modifiable relational conditions. High levels of family rejection during adolescence have been associated with adverse health outcomes in lesbian, gay, and bisexual young adults [35]. In contrast, family acceptance is associated with better mental health and lower suicidality among lesbian, gay, bisexual, and transgender young adults [36]. These findings support family-based prevention, but “family” should not be restricted to biological or legal relatives. Chosen family, partners, peers, mentors, and community elders may provide identity affirmation, practical assistance, crisis recognition, and reasons for living—especially when families of origin are unavailable or unsafe.

Support must be operationalized rather than romanticized. A family can use a young person’s name and pronouns while obstructing care; a parent may be emotionally accepting but unable to protect a child from school harassment; a peer network can offer belonging while normalizing substance use or concealing escalating risk. Effective programs should therefore target observable practices: affirming communication, non-punitive listening, protection from abuse, assistance in accessing care, collaborative safety planning, and reductions in lethal-means access during periods of crisis.

4.2. Schools and Community Settings

Research with sexual-minority adolescents has long suggested that family connectedness, adult caring, and school safety are associated with lower suicidal behavior [37]. School support groups and other indicators of a safer climate have been linked to better adjustment among sexual-minority students [38]. Participation in, or access to, gay–straight alliances and related student organizations may offset some risks by increasing visibility, peer support, and institutional accountability [39]. Inclusive anti-bullying policies have also been associated with lower suicide-attempt risk among lesbian and gay youth than policies that do not explicitly protect sexual orientation [40].

These are not arguments for isolated symbolic actions. A poster, alliance, or policy is insufficient if staff fail to intervene, students are involuntarily outed, bathrooms are unsafe, curricula erase diversity, or disciplinary practices disproportionately affect marginalized youth. School connectedness should be understood as a property of an institution as well as a feeling reported by an individual. Its components include predictable protection, respectful relationships, participation, equitable discipline, confidentiality, and credible pathways to help.

Community belonging can similarly buffer adversity, but LGBTQIA+ communities are not automatically accessible or universally protective. Racism, transphobia, biphobia, ableism, ageism, and socioeconomic exclusion can be reproduced within community spaces. The prevention value of “community connectedness” therefore depends on whose community is available, who holds power within it, and whether participation brings safety, material resources, mutual recognition, and continuity of care.

4.3. Gender Affirmation and Access to Care

Studies with transgender populations illustrate the importance of modifiable social and service conditions. In Ontario, social support, reduced transphobia, and access to documents consistent with lived gender were among factors statistically associated with lower suicide risk [41]. Among transgender youth in Canada, family connectedness, school

connectedness, and gender support were associated with more favorable mental-health outcomes despite the effects of enacted stigma [42]. Supported transgender children have shown levels of depression comparable to those of cisgender controls and only modest elevations in anxiety, challenging assumptions that severe psychopathology is an intrinsic feature of transgender childhood [43].

Access to gender-affirming care is also relevant. Receipt of gender-affirming hormone therapy has been associated with lower depression and suicidality among transgender and non-binary youth in observational analyses [44]. Prospective cohort evidence has linked initiation of puberty blockers or gender-affirming hormones with lower odds of depression and suicidality over 12 months [45], while access to pubertal suppression has been associated with lower lifetime suicidal ideation among transgender adults who wanted such treatment [46]. These studies do not constitute randomized evidence, and each has methodological limitations. It would be equally inappropriate, however, to ignore convergent observational findings or to impose evidentiary standards that are infeasible or unethical for routine, individualized health care. The responsible conclusion is that timely, developmentally appropriate, multidisciplinary, and person-centered gender-affirming care should be accessible, while outcomes and implementation should continue to be studied rigorously.

Protection must not become an obligation placed on individuals to become resilient to preventable harm. Teaching coping skills can be valuable, but it cannot substitute for ending violence, conversion practices, discriminatory policy, housing exclusion, or denial of care. The most ethical account of resilience treats it as a relational and structural achievement supported by resources—not a test of whether marginalized people can endure hostile environments.

5. Clinical and Service Implications

Clinical practice should combine universal suicide-prevention competence with LGBTQIA+-responsive care. This begins with direct, respectful assessment of suicidal thoughts, intent, behavior, access to means, acute stressors, and protective anchors. It also requires understanding identity-related contexts without assuming that identity is the presenting problem. Clinicians should ask how the person names themselves, who knows, which relationships are safe, whether records or communications could expose them, and whether identity-based violence, rejection, housing loss, or care interruption is contributing to the crisis.

Family-based treatment can be adapted when family involvement is safe and desired. Attachment-based family therapy has shown promising outcomes in suicidal lesbian, gay, and bisexual adolescents, although the evidence base remains small [47]. Safety planning is a brief, collaborative intervention that identifies warning signs, internal coping strategies, social settings and people that can provide distraction or help, professional resources, and steps to make the environment safer [48]. When combined with follow-up contact after emergency-department discharge, safety planning has reduced subsequent suicidal behavior and increased treatment engagement in general clinical populations [49].

For LGBTQIA+ patients, safety plans should identify affirming contacts, include chosen family where appropriate, anticipate identity-specific triggers, address privacy, and specify alternatives when a household or local service is unsafe. They should also include collaborative lethal-means counselling. A safety plan is not a “no-suicide contract,” not a form completed for liability protection, and not a replacement for clinical formulation, indicated treatment, or emergency intervention when imminent risk cannot be managed safely.

Affirmative psychological interventions are developing. A transdiagnostic lesbian, gay, and bisexual-affirmative cognitive-behavioral intervention reduced several mental-health problems in a randomized trial with young gay and bisexual men [50]. AFFIRM, an affirmative cognitive-behavioral group intervention for sexual- and gender-minority youth, has demonstrated improvements in coping and mental-health outcomes [51], including when delivered online [52]. A guided internet-based intervention adapted for LGBTQ participants has also shown efficacy for depression and anxiety in a randomized trial [53]. These interventions are encouraging, but most trials were not powered to detect changes in suicide attempts, and favorable changes in distress should not be described as definitive suicide-prevention effects.

The broader intervention literature remains thin relative to the size of the problem. Reviews of LGBTQIA+ youth suicide prevention identify a small number of tested interventions, frequent reliance on uncontrolled designs, limited follow-up, and inadequate attention to subgroups [54]. A recent systematic review spanning LGBTQIA+ youth and adults reached similar conclusions: among 39 intervention studies, evidence for reducing suicidal ideation was limited, no controlled study demonstrated a significant reduction relative to its comparator, and key suicide-prevention components such as safety planning were often absent [55]. Health systems should therefore implement established suicide-care practices—screening where clinically appropriate, comprehensive assessment, safety planning, lethal-means safety, caring follow-up, evidence-based treatment, and continuity after discharge—while adapting delivery to minority-stress exposures and affirming care needs. Cultural responsiveness without suicide competence is insufficient; suicide competence without cultural responsiveness can alienate patients, conceal critical stressors, and undermine engagement.

Services must also avoid coercive or unsafe disclosure. Sexual orientation, gender identity, pronouns, and variations in sex characteristics should be recorded only when relevant, with transparent explanations of who can access the information and how it will be used. For minors, migrants, people in criminalized settings, and those dependent on rejecting caregivers, careless documentation or messaging can create material danger. Good care maximizes both recognition and control.

6. What to Expect in the Future: A Research and Prevention Agenda

The next decade should be defined less by another accumulation of disparity estimates and more by evidence capable of guiding decisions. Major consensus work has already emphasized the need for standardized measurement, data disaggregation, life-course perspectives, and attention to structural conditions affecting LGBTQI+ well-being [56]. Five linked shifts are especially urgent.

The agenda is prioritized in three tiers. The immediate priorities are (1) standardized, disaggregated, privacy-preserving surveillance; (2) longitudinal and quasi-experimental studies capable of separating temporal and causal pathways; and (3) adequately powered evaluations of multilevel interventions with suicidal outcomes. The next tier comprises the enabling conditions required for those studies to matter: subgroup-specific analysis, community governance, inclusion of underrepresented global settings, and implementation measures that reveal reach and sustainability. Digital phenotyping and artificial intelligence are conditional priorities: they should proceed only when linked to a safe intervention pathway and when privacy, fairness, and clinical utility can be demonstrated. This ordering reflects evidentiary need and potential public-health impact rather than technological novelty.

6.1. Better Measurement Without Forced Disclosure

Surveillance and clinical systems need validated, culturally adaptable measures of sexual orientation, gender identity, gender expression, and variations in sex characteristics. Two-step assessment of sex assigned at birth and current gender identity can improve identification of transgender participants, but measures must accommodate non-binary identities, local terminology, and changing self-understanding. Trans-inclusive quantitative methods also require appropriate denominators, non-pathologizing comparison groups, transparent handling of small cells, and meaningful involvement of transgender communities [57].

Measurement improvement should never mean compelled disclosure. Researchers and services must assess privacy risks, explain data use, permit non-response, and separate identity recognition from unnecessary exposure. Direct questions about suicide are appropriate: a meta-analysis found no evidence that asking about suicide induces suicidal ideation [58]. The ethical distinction is not between asking and remaining silent; it is between asking competently with a response pathway and collecting sensitive information without the capacity to protect or help.

6.2. From Static Correlates to Dynamic and Causal Evidence

Risk prediction remains a humbling field. A meta-analysis covering five decades found that traditional risk factors predicted suicidal thoughts and behaviors only modestly and with limited improvement over time [59]. Reviews of suicide prediction models have likewise identified high risk of bias, poor reporting, and limited evidence of clinical utility [60]. LGBTQIA+ status should therefore never be used as a crude risk score. Identity may indicate exposure to particular social conditions, but prediction and intervention require person-specific, time-sensitive information.

Future cohorts should use repeated assessment, event-history methods, experience sampling, and linkage to service and mortality data where consent and governance permit. Analyses should distinguish factors associated with the onset of ideation, escalation to planning, transition to attempt, recurrence, recovery, and death. Protective processes should be tested for temporal precedence, dosage, durability, and interaction with adversity. Quasi-experimental studies can evaluate policy changes, service expansions, school reforms, housing interventions, and restrictions on conversion practices. Natural experiments will not remove all confounding, but triangulation across designs can support stronger causal inference than a succession of cross-sectional surveys.

6.3. Digital Phenotyping and Artificial Intelligence: Promise Under Constraint

Smartphones and connected devices can capture sleep, mobility, communication patterns, language, and self-reported states at a frequency unavailable to traditional assessment, creating possibilities for digital phenotyping [61]. For a person whose risk changes rapidly, just-in-time support may eventually be more useful than a static annual assessment. Yet the same systems can misclassify distress, expose identity, intensify surveillance, or trigger coercive responses. Analyses of mental-health apps have already shown important gaps in privacy and data-sharing transparency [62].

Artificial intelligence in LGBTQIA+ suicide prevention should therefore advance only under explicit safeguards: informed and revocable consent; data minimization; encryption; independent security review; subgroup fairness testing; explainability proportionate to clinical impact; human oversight; and a clear prohibition on secondary use for advertising, policing, immigration enforcement, or identity inference. World Health Organization guidance emphasizes autonomy, safety, transparency, accountability, inclusion, and sustainability in health-related artificial intelligence [63]. Its later guidance on large multimodal

models reinforces the need for governance across development, deployment, and post-release monitoring [64]. Community governance is indispensable because a technically accurate alert can still be harmful if it outs a user, contacts an unsafe relative, or directs them to a hostile service.

Digital systems should augment, not replace, trusted human care and robust social policy. Their value must be demonstrated through prospective studies measuring not only predictive accuracy but also help received, false-alarm burden, disengagement, privacy harms, equity, and suicidal outcomes. A model that performs well statistically but cannot produce a safe, acceptable intervention is not clinically useful.

6.4. Structural Prevention as Suicide Prevention

The World Health Organization's LIVE LIFE framework identifies restricting access to means, responsible media reporting, socio-emotional skills in adolescents, and early identification and support as core evidence-based strategies [65]. For LGBTQIA+ populations, these universal pillars should be joined to targeted structural actions: enforcing anti-violence and anti-discrimination protections; ending conversion practices; ensuring safe housing and income support; creating inclusive schools; protecting access to affirming physical and mental health care; and removing administrative barriers to identity documents and continuity of care.

Recent school surveillance shows that protective factors such as school connectedness, adequate sleep, physical activity, and supportive adults are associated with lower mental-health and suicide risk among adolescents [66]. The next step is to evaluate whether changing school structures actually increases these assets and reduces inequities. Outcomes should include safety, attendance, disciplinary exclusion, help-seeking, service access, ideation, attempts, and unintended effects—not simply whether a policy was adopted.

Structural prevention also requires better mortality data. Death records rarely capture sexual orientation reliably and may misclassify gender identity, obscuring who dies and under what conditions. Linkage strategies may improve ascertainment but create privacy risks, especially where identities are criminalized or politicized. Data systems should be designed with community oversight, restricted access, disclosure controls, and an explicit public-health purpose.

6.5. Community-Led, Global, and Implementation-Focused Science

LGBTQIA+ people should be co-designers, investigators, governance partners, and interpreters of suicide research—not only participants recruited after priorities have been set. Ethical guidance for transgender health research emphasizes community engagement, respectful methods, transparency, and attention to the consequences of knowledge production [67]. These principles should extend across LGBTQIA+ populations and include people with lived experience of suicidal thoughts, attempts, caregiving, and bereavement.

The geographical imbalance of the literature is equally important. Most evidence comes from high-income countries in which at least some legal recognition, community infrastructure, and specialist services exist. Research in settings where same-sex behavior or gender diversity is criminalized demands heightened attention to anonymity, remote participation risks, data localization, and the possibility that publication itself can expose communities. Global research should not export measures or interventions without linguistic, cultural, clinical, and political adaptation.

Finally, efficacy is not enough. Hybrid effectiveness–implementation designs can test clinical outcomes and implementation strategies in the same program of research [68]. Evaluation should include acceptability, adoption, appropriateness, feasibility, fidelity, cost, penetration, and sustainability alongside mental-health and suicide outcomes [69].

These outcomes reveal whether an intervention reaches people facing the greatest barriers, whether it survives changes in funding or leadership, and whether its benefits are distributed equitably.

Table 1 summarizes a forward agenda capable of moving the field from descriptive disparity research to accountable prevention.

Table 1. A forward research agenda for LGBTQIA+ suicide prevention.

Priority	Persistent Limitation	Recommended Next Step	Decision-Relevant Outcomes
Disaggregated surveillance	Heterogeneous groups are pooled; sex characteristics and non-binary identities are often absent	Use validated, culturally adapted measures with privacy protections and sufficiently powered subgroup analyses	Coverage, missingness, subgroup precision, disclosure harms
Temporal and causal inference	Cross-sectional correlates are labelled as risk or protection	Use longitudinal, intensive repeated-measure, quasi-experimental, and data-triangulation designs	Onset, escalation, attempts, recovery, mortality, mechanism
Structural intervention	Laws and institutional climates are treated as context rather than intervention targets	Evaluate policy change, implementation fidelity, and material access using natural experiments	Safety, housing, care access, school participation, suicidality
Clinical adaptation	Affirmative care and suicide care are developed in parallel	Integrate culturally responsive assessment, safety planning, lethal-means safety, treatment, and follow-up	Engagement, attempts, crisis-service use, continuity, adverse effects
Digital innovation	Accuracy is prioritized over utility, privacy, and equity	Conduct prospective trials with consent, fairness audits, human oversight, and community governance	Help received, false alerts, disengagement, privacy harms, equity
Global implementation	Evidence is concentrated in high-income Western settings	Fund locally led adaptation and effectiveness–implementation research	Reach, acceptability, cost, sustainability, equitable benefit

7. Conclusions

The evidence is clear enough to reject two harmful narratives: that suicidality is intrinsic to LGBTQIA+ identity and that resilience alone can compensate for hostile environments. Suicide inequities are produced through modifiable systems—families, schools, health services, communities, economies, laws, and public discourse—and through the psychological and interpersonal pathways by which these systems shape pain, hopelessness, belonging, and access to help.

The field's future lies in moving from broad labels to precise pathways, from one-time correlations to trajectories, from individual coping to structural prevention, and from prediction alone to safe and effective action. It also lies in recognizing heterogeneity: an intervention that benefits housed urban youth with affirming caregivers may not reach an isolated rural adult, an undocumented migrant, an intersex person affected by medical trauma, or a transgender person navigating criminalization. "LGBTQIA+" should function as an invitation to disaggregate responsibly, not as permission to presume sameness.

Protection is not the absence of risk. It is the presence of credible safety, affirming relationships, material resources, accessible care, institutional accountability, and a future that feels possible. Research should now determine how those conditions can be built, sustained, and equitably distributed. The goal is not merely to understand why LGBTQIA+ people survive stigmatizing systems, but to transform the systems that make survival harder.

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