

Treatment and Referral Services for Rainbow+ People

Evidence from linked Census and administrative data in Aotearoa New Zealand

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Rainbow youth experience substantial mental-health inequities

Aotearoa survey evidence

- ▶ Depressive symptoms among transgender high-school students: **41.3%**, compared with 11.8% among cisgender peers.
- ▶ Depressive symptoms among same- or both-sex-attracted students: **41.3%**, compared with 11.4% among opposite-sex-attracted peers.
- ▶ Transgender students also reported more difficulty accessing healthcare and more frequent bullying.

International evidence

- ▶ Elevated depression, anxiety, self-harm, and suicidality are consistently reported across sexual and gender minority populations.
- ▶ Transgender and non-binary youth frequently experience larger disparities than cisgender sexual-minority youth.
- ▶ Bisexual populations often report particularly poor mental-health outcomes and barriers to care.

Administrative data address a different evidence gap

Most existing youth evidence

- ▶ Cross-sectional, self-reported survey outcomes.
- ▶ Rich measurement of distress, discrimination, support, barriers, and unmet need.
- ▶ Potential self-selection, recall, and social-desirability biases.
- ▶ Often limited power for fine-grained intersectional groups.

Contribution of this study

- ▶ Population-based linkage of identity information to national service records.
- ▶ Direct observation of funded pharmaceutical treatment, specialist referral, hospital admission, and injury claims.
- ▶ Simultaneous classification of sexual orientation, gender identity, and reported sex at birth.
- ▶ Explicit analysis of 12 intersecting identity groups.

The conceptual focus is intersectional service utilisation

- ▶ **Minority stress:** structural and interpersonal stigma can increase exposure to chronic stressors and adverse mental-health outcomes.
- ▶ **Intersectionality:** sexual orientation and gender identity may jointly pattern risk, resources, healthcare experiences, and service responses.
- ▶ **Compounded disadvantage:** transgender and non-binary sexual minorities may encounter non-conformity with both cisgender and heterosexual norms.
- ▶ **Observed utilisation:** a treatment or referral record reflects the combined influence of underlying need, help-seeking, access, clinical recognition, and provider decision-making.
- ▶ The analysis therefore tests **differences in recorded service uptake**; it does not identify the causal pathway generating those differences.

Study aims

- ▶ Quantify disparities in mental-health-related pharmaceutical treatment and specialist mental-health referral among Rainbow young people aged 16–24 years.
- ▶ Assess whether disparities differ across intersecting sexual-orientation and gender-identity groups.
- ▶ Examine whether patterns differ among young people reporting male versus female sex at birth.
- ▶ Compare mental-health service-use patterns with accident-related hospital admissions and sport- or recreation-related injury claims.
- ▶ Test the sensitivity of results to alternative stratification and a shorter outcome-observation window.

⇒ **Primary expectation: disparities would be largest among young people holding both sexual- and gender-minority identities.**

Population-based cross-sectional linkage study

Design

- ▶ Secondary analysis of linked 2023 Census and administrative records.
- ▶ Outcomes measured during the five years preceding the Census month.
- ▶ National cohort of young people aged 16–24 years at Census.
- ▶ Separate primary analyses by reported sex at birth.
- ▶ Study design supports association, not causal inference.

Ethics and governance

- ▶ AUTECH approval: 17 December 2025.
- ▶ Secondary, de-identified records; no direct participant contact.
- ▶ Individual consent or assent was not required under the approved protocol.
- ▶ Access restricted to approved researchers in Stats NZ's secure environment.

The linked sources capture identity and service contact

Census and mental-health sources

- ▶ **2023 Census:** sex at birth, gender identity, sexual orientation, age, ethnicity, household role, and residential meshblock.
- ▶ First national Census to collect the three identity dimensions separately from age 16.
- ▶ **Pharmaceutical Collection:** publicly funded dispensing.
- ▶ **PRIMHD:** specialist mental-health referrals.

Physical-health sources and governance

- ▶ **Public hospital records:** accident-related admissions.
- ▶ **ACC claims:** sport- and recreation-related injuries.
- ▶ Stats NZ performs the individual-level linkage.
- ▶ Approved researchers analyse de-identified records in a secure environment.

The analytic sample supports within-area comparisons

184,251

young people aged 16–24
years

- ▶ Residential meshblocks were retained when they included at least one Rainbow young person and at least one cisgender heterosexual young person reporting the same sex at birth.
- ▶ Meshblocks are Stats NZ's smallest geographical units and generally represent a small neighbourhood or several city blocks.
- ▶ This restriction enables comparisons among young people with broadly comparable access to local services.
- ▶ It also changes the target sample: young people in areas without within-meshblock identity variation are excluded.

Identity was represented through 12 intersectional groups

Sexual orientation

- ▶ heterosexual or straight
- ▶ gay or lesbian
- ▶ bisexual
- ▶ another identity / not elsewhere classified

The last category included identities such as queer, takatāpui, pansexual, and asexual.

Gender identity

- ▶ cisgender
- ▶ transgender
- ▶ non-binary
- ▶ Crossing the two dimensions produced 12 mutually exclusive groups.
- ▶ Cisgender heterosexual young people were the reference group.
- ▶ Reported sex at birth stratified the primary models rather than entering as a covariate.

Six administrative outcomes

Mental-health outcomes

- ▶ **Anxiety/depression treatment:** relevant publicly funded dispensing.
- ▶ **Disruptive-behaviour treatment:** medicines commonly used for ADHD, conduct disorder, and oppositional defiant disorder.
- ▶ **Sleep treatment:** relevant publicly funded dispensing.
- ▶ **Specialist referral:** at least one referral recorded in PRIMHD.

⇒ **All outcomes indicated at least one event over five years. Medication measures are treatment proxies; they do not establish diagnosis, indication, adherence, severity, or response.**

Physical-health outcomes

- ▶ **Accident admission:** at least one accident-related public hospital admission.
- ▶ **Sport/recreation injury:** at least one approved ACC claim.

Conditional models compare young people within meshblocks

- ▶ One conditional logistic model per outcome, estimated separately by reported sex at birth.
- ▶ Residential meshblock fixed effects remove all characteristics shared within meshblocks.
- ▶ Models adjusted for age, prioritised ethnicity, and household role.
- ▶ Adjusted odds ratios used robust standard errors; Wald tests compared gender groups within sexual-orientation categories.
- ▶ Sensitivity analyses stratified by current gender and used a three-year outcome window.

⇒ **Estimand: the adjusted association between intersectional identity-group membership and observed service uptake relative to local cisgender heterosexual peers.**

Recorded utilisation should not be interpreted as underlying need

What the outcomes capture

- ▶ Contact with publicly funded treatment and referral systems.
- ▶ Clinically or administratively salient events that generate a record.
- ▶ A combination of need, help-seeking, access, provider recognition, and clinical response.

What they do not capture

- ▶ Self-reported distress, impairment, quality of life, or unmet need.
- ▶ Indication, adherence, symptom severity, or treatment response.
- ▶ Whether identity-related stressors caused the observed contact.

⇒ **Higher uptake may reflect greater need, different access, different clinical response, or all three; lower uptake may coexist with unmet need.**

Mental-health disparities were broad and intersectionally patterned

- ▶ Sexual- and gender-minority groups generally had higher adjusted odds of pharmaceutical treatment and specialist referral than cisgender heterosexual peers.
- ▶ Elevated odds occurred across anxiety/depression, disruptive-behaviour, and sleep-treatment indicators.
- ▶ Several intersecting groups had adjusted odds ratios above 3.0 for anxiety/depression treatment and specialist referral.
- ▶ Largest estimates repeatedly occurred among transgender and non-binary sexual minorities.
- ▶ Heterosexual transgender and non-binary groups also showed disparities, but generally smaller ones.
- ▶ The pattern is consistent with compounded disadvantage, but does not identify minority stress as the causal mechanism.

⇒ **Central result: aggregation would conceal marked heterogeneity.**

Male sex at birth: largest observed disparities

- ▶ 5.92 adjusted odds of an anxiety/depression prescription; 4.85 adjusted odds of a specialist mental-health referral
- ▶ Estimates compare transgender bisexual youth with local cisgender heterosexual peers reporting male sex at birth, adjusting for age, ethnicity, and household role.
- ▶ Across mental-health outcomes, disparities were generally largest among transgender and non-binary sexual minorities; odds ratios frequently exceeded 3.0.
- ▶ Within-orientation Wald tests often distinguished cisgender sexual minorities from transgender and non-binary peers; transgender versus non-binary differences were usually not significant.

Female sex at birth: key disparities

- ▶ 4.82 adjusted odds of an anxiety/depression prescription; 7.47 Adjusted odds of a specialist mental-health referral.
- ▶ Estimates compare transgender bisexual youth with local cisgender heterosexual peers reporting female sex at birth, adjusting for age, ethnicity, and household role.
- ▶ Nearly all Rainbow groups had higher adjusted odds of mental-health-related outcomes.
- ▶ Disparities were particularly pronounced among transgender and non-binary bisexual youth.

Within-orientation contrasts sharpen the finding

- ▶ Models used cisgender heterosexual youth as the primary reference, then Wald-tested gender groups **within the same sexual-orientation category**.
- ▶ In the male-sex-at-birth analysis, cisgender sexual minorities often differed significantly from transgender and non-binary peers sharing the same sexual orientation.
- ▶ Transgender versus non-binary contrasts were generally smaller and often statistically indistinguishable.
- ▶ The pattern suggests additional differentiation by gender-minority status, but does not establish a causal or multiplicative interaction between stressors.

⇒ **Analytic implication: reporting only a single “Rainbow versus non-Rainbow” coefficient would mask clinically relevant heterogeneity.**

Physical-health outcomes followed a different pattern

Accident-related admissions

- ▶ Mixed results among youth reporting male sex at birth.
- ▶ More often elevated among minority youth reporting female sex at birth.
- ▶ Mental-health disparities did not translate uniformly into acute accident admissions.

Sport/recreation injury claims

- ▶ Lower adjusted odds for most sexual- and gender-minority groups.
- ▶ May reflect participation, exposure, exclusion, claim-making, or service engagement.
- ▶ Does not necessarily indicate lower underlying injury risk.

⇒ **Sport discrimination and lower competitive participation are plausible mechanisms, but were not measured directly.**

Sensitivity analyses support the stability of the main pattern

Alternative stratification

- ▶ Primary models stratified by reported sex at birth; sensitivity models used current gender identity.
- ▶ Estimates were highly similar across approaches.
- ▶ Largest disparities remained concentrated at intersecting identities.

Alternative time window

- ▶ Primary outcomes used a five-year lookback; sensitivity outcomes used three years.
- ▶ Results were substantively unchanged.
- ▶ Findings were not driven by the selected observation window.

⇒ **Robustness strengthens confidence in the descriptive association, but does not resolve selection into care or causal mechanisms.**

Important limitations constrain clinical interpretation

Measurement

- ▶ **Service contact is not prevalence:** observed uptake excludes distress, impairment, and unmet need outside services.
- ▶ **Indication is uncertain:** records do not reveal the precise reason for medication or referral.
- ▶ **Timing is imperfect:** contacts may pre-date adoption or disclosure of the 2023 identity.

Design and inference

- ▶ **Residual confounding:** individual and family differences remain.
- ▶ **Differential selection:** stigma and barriers may suppress service contact.
- ▶ **No causal attribution:** minority stress, access, and provider response cannot be separated.
- ▶ **Restricted target sample:** estimates require within-meshblock identity variation.

Clinical and service implications

Clinical interpretation

- ▶ Highest recorded disparities occurred among youth holding intersecting sexual- and gender-minority identities.
- ▶ Assessment should be affirming, culturally safe, and attentive to depression, anxiety, sleep, psychosocial stress, and neurodivergence.
- ▶ Treatment patterns should not pathologise Rainbow identities; social conditions producing distress also require attention.

⇒ **Conclusion: sexuality and gender must be considered jointly when interpreting and responding to mental-health service disparities among Rainbow youth.**

Services and research

- ▶ High uptake does not establish adequate access; unmet need may remain substantial.
- ▶ Referral pathways should reduce repeated disclosure, misgendering, discontinuity, and loss of trust.
- ▶ Future work should combine records with self-reported need, barriers, care quality, and qualitative experience.