

# Reaching across the Rainbow with Wearable Devices

**Bringing non-residential withdrawal services to the  
LGBTIQASB+ community**

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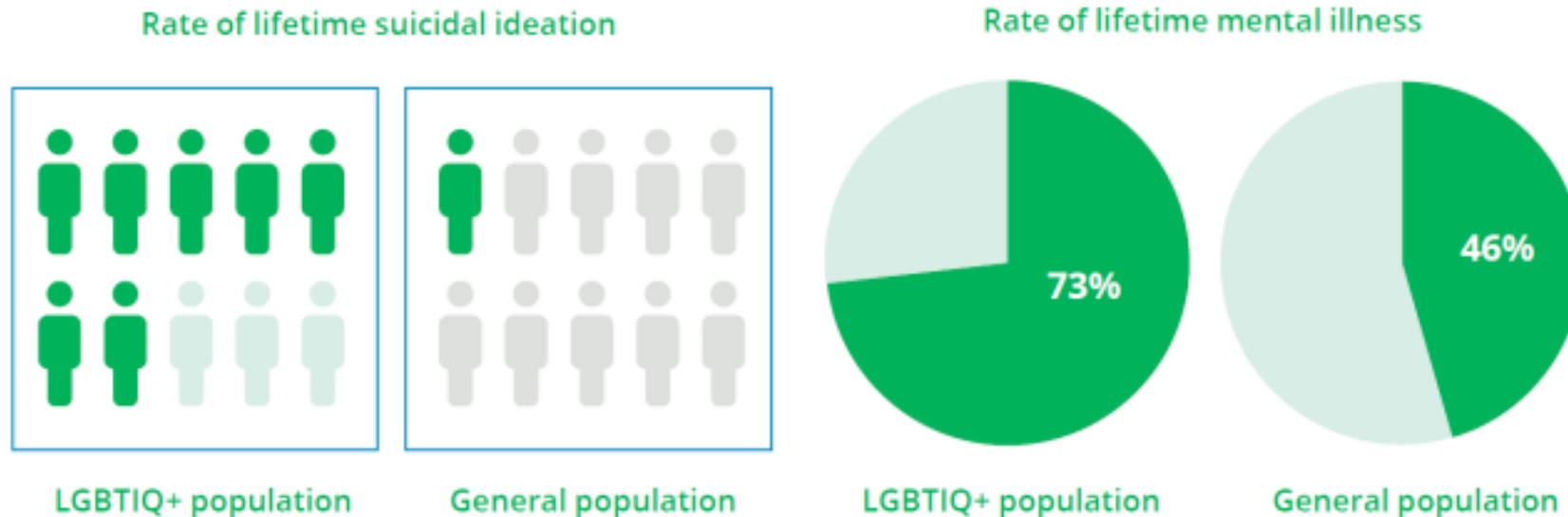
**thorneharbour**  
health\*

# Minority Stress



The chronic stress associated with being a member of a stigmatised minority group. The internal impacts resulting in constant vigilance related to personal safety both physical and emotional. This includes the stress of avoiding discrimination through hiding one's gender identity or sexual orientation by monitoring things like your mannerisms, language, and behavior.

**Figure I: Rates of mental illness in the LGBTQA+/LGBTIQ+<sup>2</sup> population**



(Deloitte, 2022)



# Overcoming Minority Stress within Service Delivery

- Offer opportunities for clients to come out
- Integrate identity-affirming care into all aspects of AOD service
- Integrate AOD & MH especially important for trans and gender diverse people
- Outreach delivery options
- Flexible delivery so that services can be tailored to the individual

# Non-residential withdrawal at Thorne Harbour Health



- Integrated AOD/Mental Health Service
- Collaborative shared-care model
- Nurse-lead with GP oversight
- Alcohol and concurrent cannabis withdrawal
  - 20 standard drinks or less
  - No serious physical health conditions
  - Low prevalence mental health conditions with psychiatrist support considered

# NRW: Increasing Access to Services



## Case studies - confidentiality maintained

### Sarah

- transwoman in her 30's, who is bisexual
- Co-occurring multiple physical and mental health issues
- Currently does not meet criteria for inclusion

### Lorenzo

- cis gay man in his 50s.
- Co-occurring AUD, HIV and mental health issues
- Lives regionally

## Wearable Infrastructure



# Enhanced care potential



- Access and equity (Canali et al, 2022)
- Highly customised client-centred care
- Enhance shared decision-making and collaboration
- Balance dignity of risk with duty of care



# Case Study Lorenzo



Lorenzo cis gay man in his 50 lives / regionally

- Wearables
- Alerts and AI assist with predictive analytics
- Treatment at home
- Integrate care with local providers (GP, Hospital, 24/7 Nurse and Doctors on call)

(Goldfine et al, 2021; Brobbin, et al, 2022; Davis-Martin et al, 2021; Sweeney et al, 2022)





# Case Study Sarah



Sarah is a transwoman in her 30's / seizure risk

- Wearables
- Alerts and AI assist with predictive analytics
- Treatment at home
- Coordinate with medical, mental health, NRW gender affirmation care providers

(Kerr et al, 2024; Brobbin, et al, 2022; Davis-Martin et al, 2021; Sweeney et al, 2022)



# Enhanced care practice



- Access for remote, multiple physical and mental health issues and multiple substance use
- Highly customised client-centred care, shared decision making and collaborative care
- Minimise adverse events through early detection and intervention reduced emergencies
- AOD/MH acute withdrawal treatment and relapse prevention for early recovery phase (digital therapeutics)
- (Kerr et al, 2024; Brobbin, et al, 2022; Davis-Martin et al, 2021; Sweeney et al, 2022)



# Managing Risks

- Data Privacy, Security, and Exploitation
- High Costs and Widening Inequities
- Digital Divide / Accessibility
- Algorithmic bias
- Interoperability and Over-Reliance on Technology

(Canali et al, 2022)



# To wear or not to wear?

- Benefits and risks
- Demonstrated need
- Early adopters
- Clinical effectiveness (Goldfine et al, 2021; Sweeny et al, 2022; Davis Martin et al, 2021)



# References



Amos, Natalie; Lim, Gene; Buckingham, Philippa; Lin, Ashleigh; Liddelow-Hunt, Shakara; Mooney-Somers, Julie; et al. (2023). Rainbow Realities: In-depth analyses of large-scale LGBTQA+ health and wellbeing data in Australia. La Trobe. Report. <https://doi.org/10.26181/24654852.v2>

Canali S, Schiaffonati V, Aliverti A. Challenges and recommendations for wearable devices in digital health: Data quality, interoperability, health equity, fairness. PLOS Digit Health. 2022 Oct 13;1(10):e0000104. doi: 10.1371/journal.pdig.0000104. PMID: 36812619; PMCID: PMC9931360.

Brobbin E, Deluca P, Hemrage S, Drummond C. Accuracy of Wearable Transdermal Alcohol Sensors: Systematic Review. J Med Internet Res. 2022 Apr 14;24(4):e35178. doi: 10.2196/35178. PMID: 35436239; PMCID: PMC9052024.

Davis-Martin RE, Alessi SM, Boudreaux ED. Alcohol Use Disorder in the Age of Technology: A Review of Wearable Biosensors in Alcohol Use Disorder Treatment. Front Psychiatry. 2021 Mar 22;12:642813. doi: 10.3389/fpsyt.2021.642813. PMID: 33828497; PMCID: PMC8019775.

Goldfine C, Lai JT, Lucey E, Newcomb M, Carreiro S. Wearable and Wireless mHealth Technologies for Substance Use Disorder. Curr Addict Rep. 2020 Sep;7(3):291-300. doi: 10.1007/s40429-020-00318-8. Epub 2020 Jun 11. PMID: 33738178; PMCID: PMC7963000.

Kerr WT, McFarlane KN, Figueiredo Pucci G. The present and future of seizure detection, prediction, and forecasting with machine learning, including the future impact on clinical trials. Front Neurol. 2024 Jul 11;15:1425490. doi: 10.3389/fneur.2024.1425490. PMID: 39055320; PMCID: PMC11269262.

Sweeney MM, Holtyn AF, Stitzer ML, Gastfriend DR. Practical Technology for Expanding and Improving Substance Use Disorder Treatment: Telehealth, Remote Monitoring, and Digital Health Interventions. Psychiatr Clin North Am. 2022 Sep;45(3):515-528. doi: 10.1016/j.psc.2022.05.006. Epub 2022 Jul 31. PMID: 36055736; PMCID: PMC9352538.

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