

# Unveiling Disparities: Traumatic Brain Injury and Healthcare Inequities Among Sexual and Gender Minority Individuals

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## BACKGROUND

- Traumatic brain injury (TBI) is a serious, lifelong problem that can impact sexual and gender minority (SGM) individuals more frequently and severely than cisgender heterosexual peers (CGH).
- Little is known about the experiences of TBI in SGM adults, a population who also experiences substantial health disparities.<sup>1-5</sup>
- This knowledge gap is an urgent priority.** SGM communities face additional challenges related to social determinants of health (SDoH); marginalization, victimization, and stigma), life experiences, and systemic disparities compared to the general population.<sup>1-3, 6-8</sup>
- These intersecting disparities can result in poorer health outcomes, limited access to and/or discomfort with healthcare, and unmet health needs.
- Prior evidence suggests SGM persons face:
  - Victimization by community and intimate partner violence (IPV),<sup>4</sup>
  - Higher rates of mental health challenges,<sup>9-10</sup>
  - Minority stress,<sup>11</sup> homelessness, and unstable housing.<sup>12</sup>
- These factors can individually and cumulatively increase TBI risk, pose barriers to care-seeking, treatment receipt, and recovery.
- Individuals with multiple marginalized identities face significant barriers in accessing appropriate healthcare that acknowledges and addresses their unique needs.
- However, previous studies in disability and minority populations are lacking and mostly rooted in binary concepts of sex and gender.
- Nearly 24 million adults (7.2%) currently identify as LGBTQ+ in the U.S., a number conservatively expected to exceed 10% in the near future, with more than 1 in 5 adults from Generation Z identifying as LGBTQ+.<sup>13</sup>
- Current Objective: To investigate TBI in SGM individuals and explore the intersection of SGM identity and TBI to elucidate how SDoH (e.g., victimization, income, education, homelessness, rurality, and discrimination) may exacerbate TBI sequelae and create barriers to care.**

## METHOD

**Study Recruitment:** Collaborations between the Brain Injury Research Center of Mount Sinai, 5 Mount Sinai Institutes of Advanced Medicine (IAM), and ~20 LGBTQ+ organizations across New Jersey, New York, Connecticut, Illinois, Indiana, and Nevada. Flyers, referrals, and social media ads were distributed in partnership with our collaborators.

**Participants:** Participants were recruited from June 2023 to January 2024. Inclusion criteria: identify as SGM, at least 18 years old, and English-speaking. 501 participants completed the screening form, meeting the inclusion criteria. Complete data was available for 255 participants, while 246 had missing data. The presence of missing data does not indicate dropped cases, as participants were able to choose which measures to complete, rather than having their cases dropped due to missing data.

**Measures:** Demographic variables including age, race, ethnicity, language, marital status, disability, birth sex, pronouns, sexual orientation, gender identity, residence, education, income, home and food security were collected via self-report. TBI exposure data were obtained through participant responses to the Brain Injury Screening Questionnaire (BISQ).<sup>14</sup> Mental and physical health were assessed using the Patient Health Questionnaire (PHQ-9) Generalized Anxiety Disorder scale-7 (GAD-7), Primary Care PTSD Screen for DSM-5 (PCPTSD-5), and the WHO Alcohol, Smoking and Substance Involvement Screening Test (WHO ASSIST), structured questions about medical comorbidities, general and TBI-specific services and supports, as well as experiences with and barriers to care.

**Data Analysis:** Nominal data, including variables such as state of residence, gender assigned at birth, sexual orientation, gender identity, race, head injury, healthcare barriers, current health conditions, and substance use history, as well as categorical data, such as overall health and life satisfaction, were descriptively characterized with percentages calculated. For continuous variables, including age, PHQ-9 scores, and GAD-7 scores, means, standard deviations, and minimum and maximum score range were calculated.

## RESULTS

Table 1. Demographic Characteristics (n=501)

Characteristic	n (%)	Characteristic	n (%)
Age, mean (SD), range	30.8 (7.0), 18-62	Sex Assigned at Birth, n (%)	
Male	201 (65.2)	Male	163 (44.0)
Female	134 (48.0)	Female	162 (41.4)
Pronouns, n (%)		Trade School	15 (3.8)
She/Her/Hers	180 (49.5)	Some College/Associates Degree	58 (14.9)
He/Him/His	134 (35.3)	Bachelor's Degree	90 (22.7)
They/Them/Theirs	44 (12.1)	Graduate Classes/Graduate degree	111 (30.5)
Trans/Transfem	5 (1.3)	Income, n (%)	
Lesbian or Gay	120 (33.1)	\$0-\$9,999	154 (42.4)
Straight/Heterosexual	14 (3.7)	\$10,000-\$19,999	130 (36.0)
Biethnic	134 (35.3)	\$20,000-\$29,999	77 (21.3)
Two-spirit	2 (0.5)	Disability Status, n (%)	
Gender Identity, n (%)		Yes	130 (35.7)
Woman (cis-gender woman)	170 (46.5)	Ever Homeless, n (%)	
Man (cis-gender man)	119 (32.5)	Yes	72 (20.0)
Transgender Woman/Trans Feminine	3 (0.8)	No	205 (57.4)
Transgender Man/Trans Masculine	2 (0.5)	Currently Homeless, n (%)	
Non-Binary/Genderqueer/Gender Fluid	3 (0.8)	Yes	11 (2.2)
Other	1 (0.3)	No	247 (69.2)
Race, n (%)		Food Insecurity Past Year, n (%)	
White	273 (71.2)	Never	74 (20.8)
Black/African American	35 (9.3)	Rarely	156 (43.9)
American Indian or Alaska Native	1 (0.3)	Sometimes	98 (27.4)
Asian	2 (0.5)	Often	39 (10.8)
Native Hawaiian or Other Pacific Islander	2 (0.5)	Always	9 (2.5)
Ethnicity, n (%)		Health Insurance, n (%)	
Hispanic or Latinx	112 (30.9)	Yes	212 (58.5)
Not Hispanic or Latinx	247 (69.1)	No	139 (37.6)
Unknown/Not Reported	25 (6.6)		

Table 2. Reported Head Trauma Events

Event	Yes N(%)	No N(%)	Don't Know N(%)
Motor Vehicle Accident	73 (23%)	247 (77%)	0 (0%)
Hit by Object	62 (19%)	254 (79%)	6 (2%)
Fall	40 (12%)	277 (86%)	4 (2%)
Sports or Leisure	61 (19%)	252 (78%)	8 (3%)
Physical Abuse or Assault	20 (6%)	298 (93%)	3 (1%)
Military	5 (2%)	311 (97%)	5 (2%)
Other	24 (8%)	297 (92%)	0 (0%)

\*Note: Head trauma exposures (i.e., impacts to the head that may or may not result in LOC, AOC, or PTA) are included in the current results as diagnosed TBI is not yet available. Follow-up data analyses will determine whether head impacts resulted in TBI.

### Other Health Characteristics

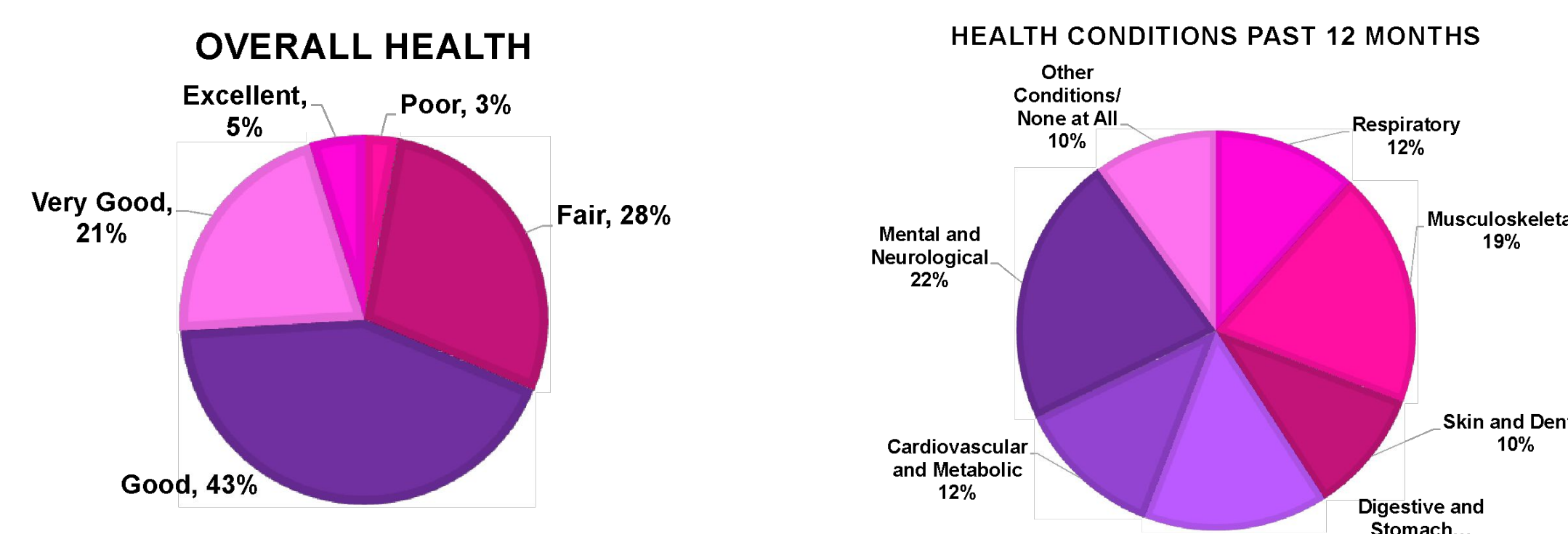


Table 3. Healthcare Access

Healthcare Consultation Preference, n (%)	N (%)	More Likely to Delay or Not Receive Medical Care, n (%)	N (%)
Private Clinic or Doctor's Office	98 (36.4)	Yes	146 (54.3)
HMO Clinic	35 (13)	No	123 (45.7)
Public health clinic or community health center	103 (38.3)	More Likely to Not Receive Prescription Medicine, n (%)	
Hospital outpatient department	78 (28.3)	Yes	109 (40.4)
Hospital emergency room	79 (29.4)	No	161 (59.6)
Urgent care center	64 (23.8)	More Likely to Receive Healthcare Services in Emergency Rooms, n (%)	
Other*	48 (17.1)	Yes	127 (47)
Time Since Last Routine Checkup, n (%)		No	143 (53)
Within the past 12 months	163 (60.6)	Delayed or Avoided Medical Care Due to Provider Disrespect or Discrimination, n (%)	
More than 12 months ago	106 (39.4)	Yes	110 (40.7)
Unmet Medical Care Needs in the Past 12 Months, n (%)		No	160 (59.3)
Yes	126 (46.7)	Ability to Access Gender-Affirming Care Services in the Past 12 Months, n (%)	
No	144 (53.3)	Yes	148 (54.8)
Have a Designated Personal Doctor/Healthcare Provider, n (%)		No	122 (45.2)
Yes	116 (43)	Receipt of Mental Health Treatment in the Past 12 Months, n (%)	
No	154 (57)	Yes	161 (49.6)
		No	109 (40.4)

### Mood and Trauma Outcomes

PHQ-9 = Moderate Depressive Symptoms ( $\bar{x} = 11.3$ )

GAD-7 = Moderate Anxiety Symptoms ( $\bar{x} = 8.7$ )

A third (30%) experienced a traumatic event.

### Top three health issues identified as most impactful within LGBTQ+ communities:

1. Suicide and self-harm (37%)
2. Depression (23%)
3. Loneliness/isolation (22%)

### Barriers to Care

#### Primary reasons for lack of healthcare coverage:

- Financial constraints
- Expiration of benefits
- Changes in family or marital status
- Becoming ineligible due to age or leaving school
- Limitations or restrictions to employer-offered coverage

#### Barriers hindering access to services for physical and mental health care:

- Concerns about fearing a negative reaction to their LGBTQ+ identity
- Past harmful or traumatic experiences in healthcare relating to LGBTQ+ identity
- Geographical distance to LGBTQ+ affirming health providers

#### Perceived discrimination or discriminatory experiences within medical settings:

- Receiving poorer service due to LGBTQ+ identity
- Treated with less courtesy or respect; like a doctor or nurse did not listen to what they were saying
- Negative experiences with healthcare professionals (e.g., provider speaking down to, apparently afraid of, or demonstrating feelings of superiority over the LGBTQ+ patient).

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## DISCUSSION

This is the first study to investigate the head trauma exposures in SGM individuals and assess the barriers to care in an SGM sample with and without head trauma that may exacerbate injury sequelae. These results underscore the significant disparities and challenges faced by the SGM community. Particularly striking is the finding that nearly a quarter of individuals in this community are living with head trauma, highlighting a previously underexplored aspect of health within this population. This sheds light on a critical health issue that warrants further attention and targeted interventions in a population at risk for suboptimal care.

We also found that a significant proportion of SGM individuals reported discrimination, stigma, mental health issues, and high disease comorbidity, which can further compound the health risks faced by this community. This not only highlights the intersectionality of marginalized identities but also emphasizes the need for *culturally competent healthcare* that recognizes and addresses the diverse and complex needs of SGM individuals. This is especially pertinent in SGM individuals with intersecting identities such as being from a racial or ethnic minority or living with disability.

Importantly, the demographic characteristics and health outcomes provide a foundational understanding that is crucial for informing health screening in primary care, rehabilitation needs, intervention development, and support services. Specifically, these data elucidate a critical link between reducing discrimination and improving access to healthcare services. By addressing and mitigating discriminatory practices and understanding the characteristics of the SGM community, healthcare systems can facilitate *more equitable access to care for SGM individuals*, thereby enhancing their overall health outcomes and well-being.

As the broader healthcare landscape strives for inclusivity, this research provides a roadmap for workforce development to optimize SGM health and a valuable resource for guiding policies and practices toward diverse and inclusive care for the SGM population.

## CONCLUSIONS

Overall, we found a gross inadequacy of healthcare access, provider competence, and substantial unmet needs in the SGM community. Further, a high proportion of individuals may be living with the consequences of exposure to head trauma and may not be accessing the services needed. Together, this work demonstrates that culturally competent healthcare that recognizes and addresses the diverse and complex needs of SGM individuals and accounts for their intersecting identities is urgently needed. Future work is needed to implement comprehensive cultural competency training for healthcare providers, develop targeted interventions, and advocate for inclusive policies that address the unique health challenges faced by the SGM population.

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