A Pilot Characterization Study Assessing Health Equity in Mental Healthcare Delivery within the State of Georgia

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Background

Mental health research is of particular to many in different communities across the globe. In the US specifically, the recent unprecedented spike in mental health disorders and surge in adverse outcomes stemming from mental illness (1) underscore the need for better understanding of mental illness. Based on literature about the social determinants of health and health disparities (2), it is known that the health landscape in the US is not equitable; mental healthcare is no exception to that.

For this pilot investigation into mental healthcare delivery, we created a characterization study that characterized patients having conditions of bipolar disorder, depression, and suicidality in the state of Georgia using claims data. We investigated these three conditions because they are some of the more relatively understudied conditions in mental health research (3–5), are costly for both patients (6) and providers, and have high morbidity rates associated with them (1,7). The Georgia patient populations were characterized to determine baseline crude prevalence rates and initial work was done to investigate patients' loss to follow up of care after condition diagnosis.

Methods

For this pilot investigation, CMS claims data from 1999 - 2014 were utilized and went through the OMOP CDM ETL process to create a database adhering to OMOP CDM version 5.4. This database consisted of only patient information from the state of Georgia and totaled to approximately 2.2 million patients. Filtering algorithms were developed in this study's network package to stratify patient populations and subpopulations by strata such as condition, race, sex assigned at birth, and age groups. Crude prevalence rates of these subpopulations were calculated and used to characterize a baseline of these patients and to characterize early investigative questions around patients' loss to follow-up of care.

Results

From this pilot study, three things were demonstrated: 1) There exist large disparities in prevalence rates for Georgia CMS populations that exist acutely within a given general population's subpopulation groups. 2) Characterizations conducted at this fine level of control is not only feasible but flexible enough to motivate further in-depth strata-based analyses of depression, bipolar disorder, and suicidality. 3) Currently existing data collection practices by CMS are insufficient to properly represent the complexity of US minority population groups and future study will need complementary data sources to address this gap (8).

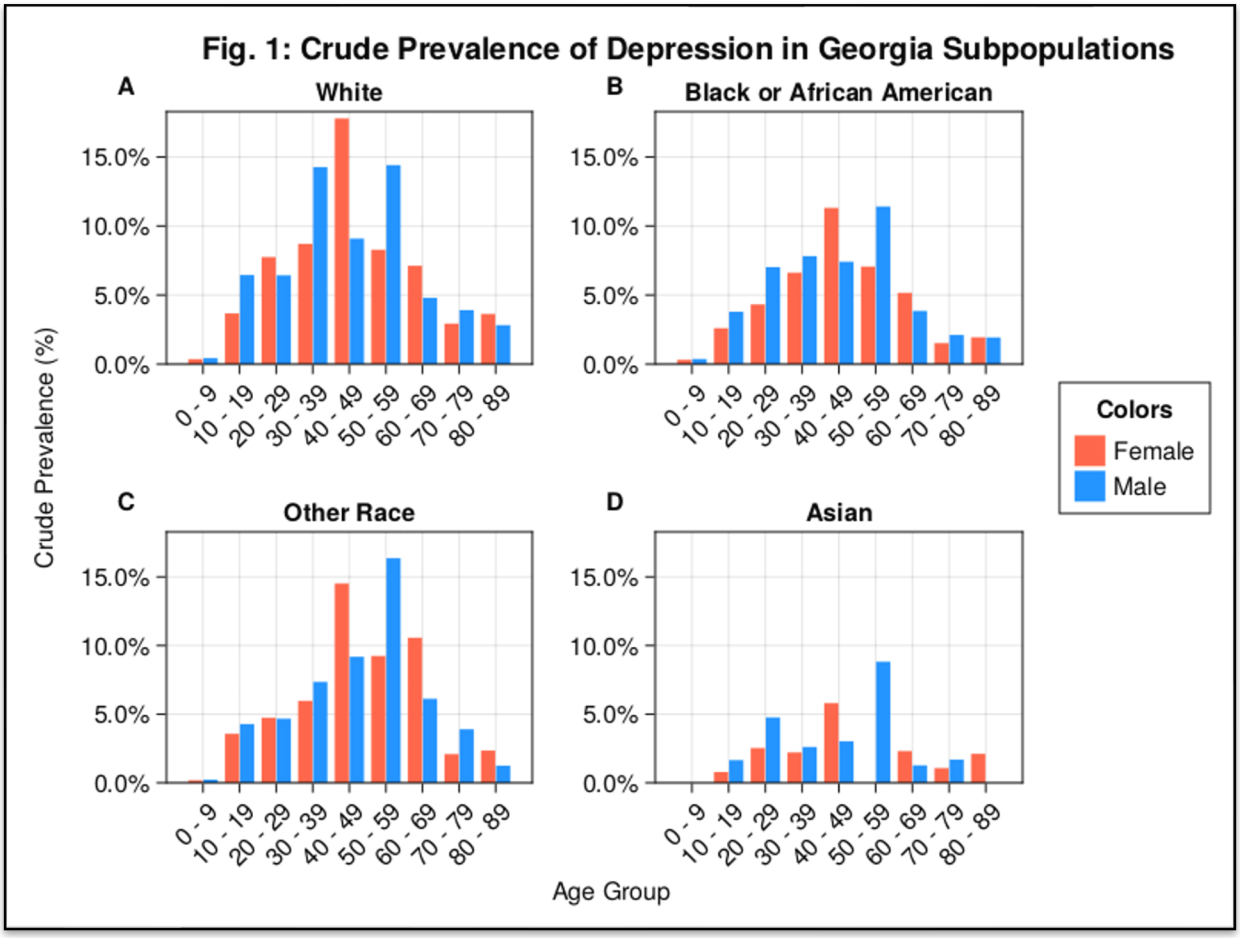

Fig. 1: Crude Prevalence of Depression in Georgia Subpopulations. Subfigures (A) - (D) are grouped bar plots depicting crude prevalence rates (no adjustment was used). On the x-axis is crude prevalence reported as a percentage that was calculated from dividing the subpopulation who have the associated condition (i.e. the numerators) over the subpopulation of those that do not have the associated condition (i.e. the denominators). The y-axis denotes the age groups that were studied. One can see that the representation of populations across age groups and genders is mostly represented with Asians having some missing representation.

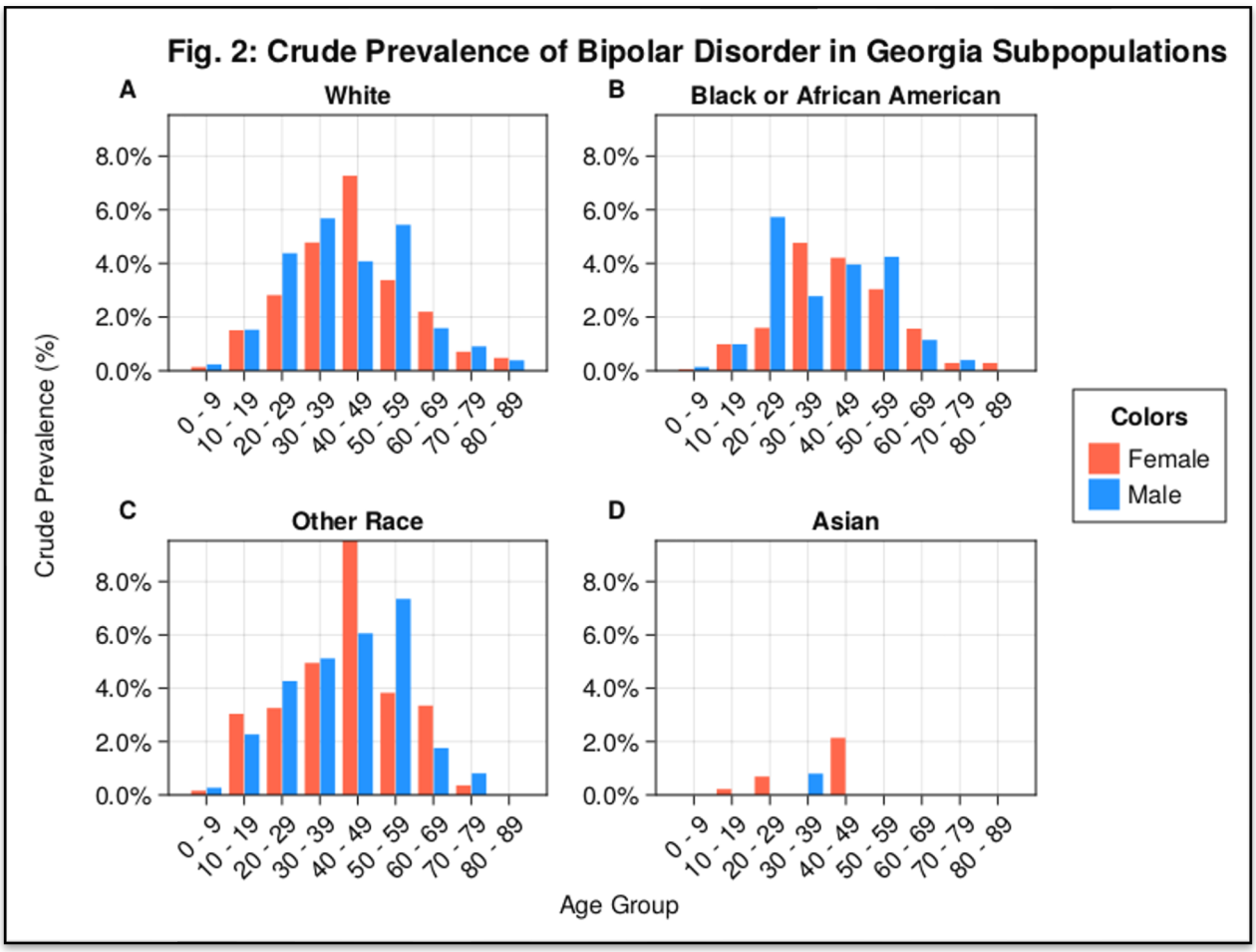

Fig. 2: Crude Prevalence of Bipolar Disorder in Georgia Subpopulations. Subfigures (A) - (D) are grouped bar plots depicting crude prevalence rates (no adjustment was used). On the x-axis is crude prevalence reported as a percentage that was calculated from dividing the subpopulation who have the associated condition (i.e. the numerators) over the subpopulation of those that do not have the associated condition (i.e. the denominators). The y-axis denotes the age groups that were studied. Here, it is readily seen that in populations such as Asians or geriatric populations, there is a severe lack in representation using the CMS data source.

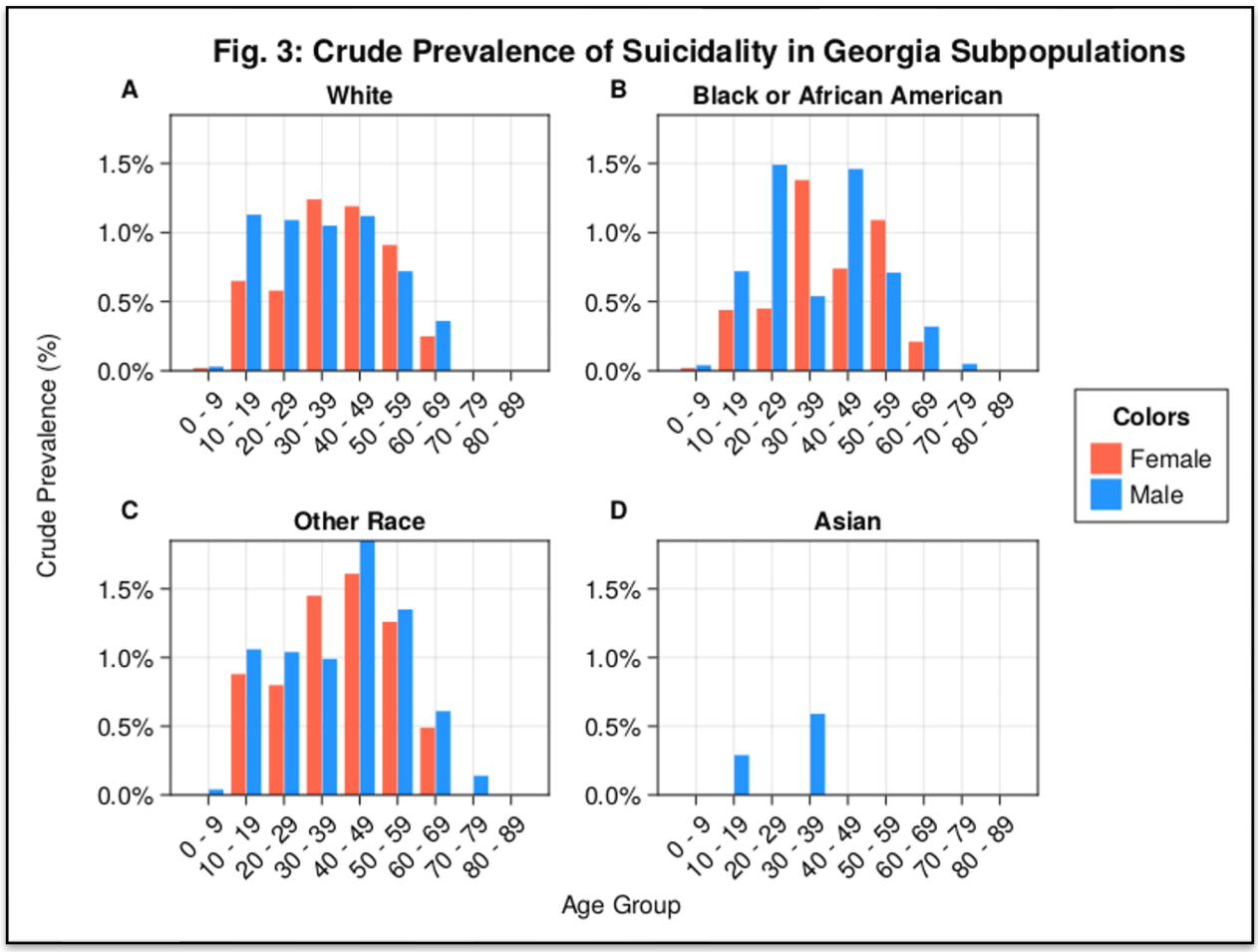

Fig. 3: Crude Prevalence of Suicidality in Georgia Subpopulations. Subfigures (A) - (D) are grouped bar plots depicting crude prevalence rates (no adjustment was used). On the x-axis is crude prevalence reported as a percentage that was calculated from dividing the subpopulation who have the associated condition (i.e. the numerators) over the subpopulation of those that do not have the associated condition (i.e. the denominators). The y-axis denotes the age groups that were studied. Here, many subpopulations are missing from across all race-based populations demonstrating a lack of representation for many populations across the mental healthcare landscape.

Conclusion

As shown in this work, there exist multiple different forms of disparities amongst those diagnosed with conditions related to bipolar disorder, depression, and suicidality. This warrants future study and could potentially lead to informing policy on health equity problems in mental healthcare and further understanding in the mental health of minority groups. Additional study will need to be conducted to address deficiencies in this pilot study such as by using additional data sources to achieve a more equitable representation of populations studied across various strata, additional exploration of population characteristics, and to investigate further questions such as "why" these disparities may be occurring.

References/Citations

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