

Multiple Chronic Conditions and General Health in Transgender Individuals in the U.S.

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Transgender

- ▶ Transgender individuals are a growing medically underserved population with unique health concerns and health disparities.^{1,2}
- ▶ The terms “*transgender*” and “*gender nonconforming*” refer to individuals who have a gender identity, behavior, or self-expression that is different from their biological sex at birth.¹
- ▶ Transgender identities include male to female (MTF, transwomen) or female to male (FTM, transmen)¹ transition.

Transgender Health

- ▶ The 2011 Institute of Medicine (IOM)¹ report:
 - ▶ **Gap in knowledge and scientific research to better understand and act on the health disparities that are grounded on a person's racial or ethnic group, socioeconomic status (SES), gender, mental health, sexual orientation, and other concerns related to discrimination or exclusion.**¹
- ▶ The *Healthy People 2020* also recognized Lesbian, Gay, Bisexual, and Transgender (LGBT) individuals as an **at-risk** population.²

Background

Research studies conducted with the transgender community have been limited to:

- ▶ mental health issues,^{7,8}
- ▶ risk for suicide⁹
- ▶ substance abuse¹⁰
- ▶ cigarette smoking¹¹
- ▶ HIV status and other sexually transmitted diseases (STDs)¹²
- ▶ stigma¹⁻³ and discrimination^{9,13}
- ▶ lack of equitable access to health care^{1,13,14}
- ▶ violence,^{9,13} victimization,^{1,13} abuse,^{9,13} low SES,^{1,7,13} and limited employment opportunities.^{1,7,13}

Few studies have focused on physical health including the prevention and burden of chronic conditions among the transgender community.^{6,7,15}

Chronic Conditions

- ▶ The significance of accounting for multiple chronic conditions is because they contribute to the increase in the risks of mortality, poor functional status, unnecessary hospitalizations, duplicative medical tests, and conflicting medical advice provided to the patient.^{18–20}
- ▶ Transgender individuals are at an increased risk for adverse health outcomes^{1,2,7–9} due to heightened exposure to multiple stressors such as stigma,^{1,2,5} discrimination,^{11,15} lack of equitable access to health care,^{1,15,16} violence,^{11,15} victimization,^{1,15} abuse,^{11,15} and other health and social stressors.

Research Status

- ▶ Before 2013, most of the large publicly available population-based databases on chronic diseases have not collected participants' sexual orientation.
- ▶ The disparities and adversities encountered by transgender individuals are explained in part by minority stress^{22,23}
 - ▶ **Discrimination, internalized stigma, and other stressors related to the social reaction to their sexual minority status leads to adverse physical and mental health outcomes.**^{10,22,23}

Purpose

- ▶ The purpose of this study was to examine the sociodemographic characteristics, general health, and chronic conditions (i.e., hypertension, hypercholesterolemia, cardiac disease, stroke, asthma, cancer, arthritis, kidney disease, and diabetes) in transgender individuals using the 2015 Behavioral Risk Factor Surveillance Surveys (BRFSS).

Research Questions

1. Are there differences in sociodemographic characteristics, general health, and multiple chronic conditions among transgender individuals as compared to nontransgender individuals?
2. Are there differences in sociodemographic characteristics, general health, and multiple chronic conditions within the transgender groups (i.e., male-to-female, female-to-male, and gender nonconforming)?
3. Are there differences in sociodemographic characteristics and general health among transgender individuals with zero, one, and two or more chronic conditions?

Sample

- ▶ The BRFSS is a U.S. national system of health-related surveys that annually collects data about health-related risk behaviors, chronic health conditions, and use of preventive services.
- ▶ Of the 441,456 participants in the 2015 survey, statistical analysis was restricted to 164,437 (37.2%) participants who responded to the question:
 - ▶ “*Do you consider yourself to be transgender?*”
- ▶ Around 752 (0.46%) stated that they were transgender
 - ▶ **361 MTF**
 - ▶ **237 FTM**
 - ▶ **154 gender non-conforming**

Analysis

- ▶ Demographic characteristics were summarized using frequencies for categorical variables, means and standard deviations for quantitative measures.
- ▶ Nine chronic conditions were coded as binary variables and a composite score was created counting the unique number of prevalent chronic conditions for everyone.
 - ▶ **Hypertension, hypercholesterolemia, cardiac disease, stroke, asthma, cancer, arthritis, kidney disease, and diabetes**
- ▶ Statistical analysis was stratified by transgender status.

Overall Sample Description

- ▶ A majority (58.6%) of participants were between 55 years and older.
- ▶ Most were White (78.7%), married (53.3%), and employed (49.6%).
- ▶ Many had a four year or more of college education (38.7%) with income of \$75,000 or less (65.7%) and reported to have health insurance (92.9%).
- ▶ There were no differences in age groups or race/ ethnicity among transgender and nontransgender participants.

Sample Description

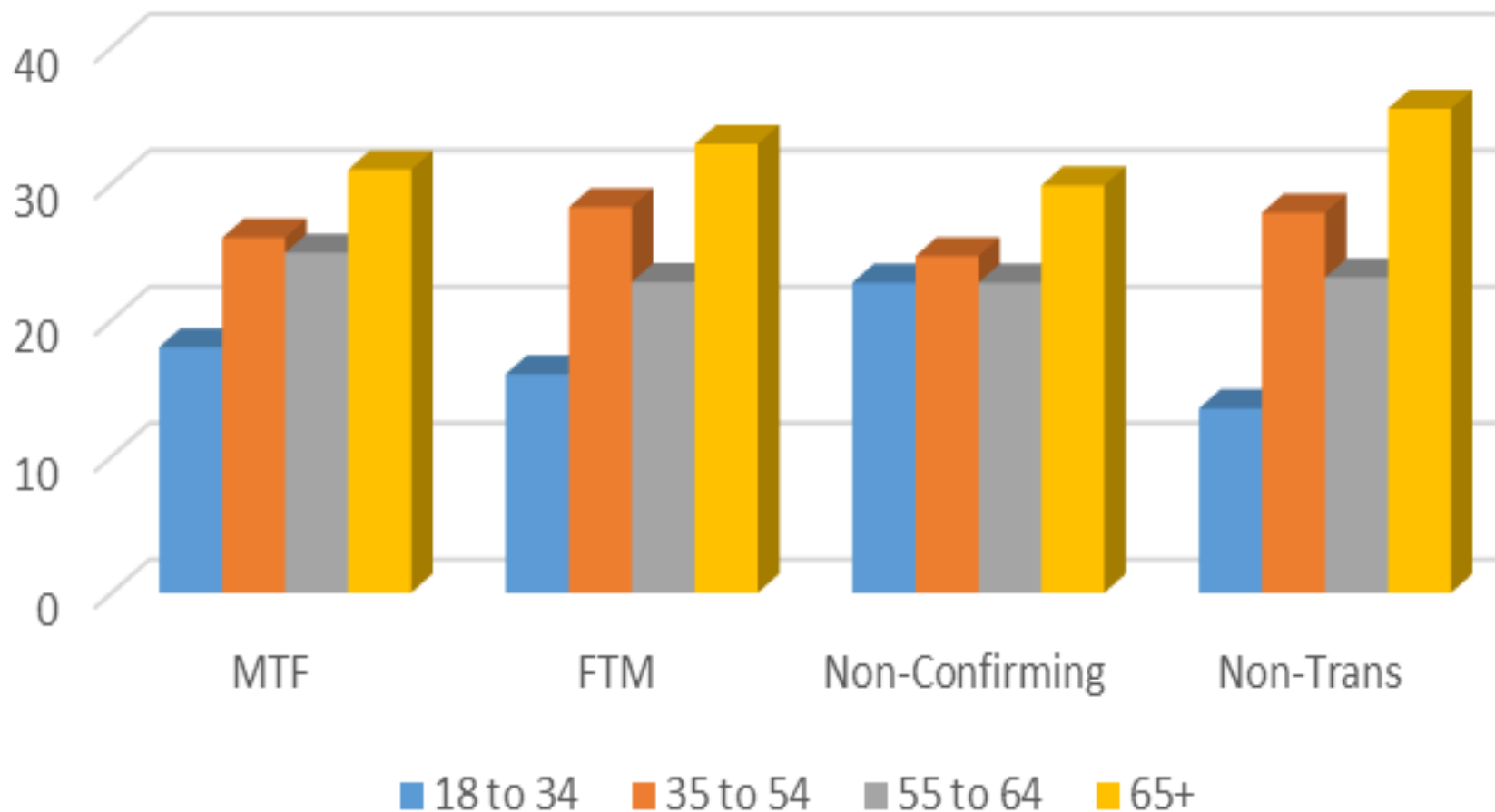
- ▶ More transgender individuals reported “never being married” (22.3% vs. 14.9%) and “separated” (3.0% vs. 1.9%).
- ▶ Fewer transgender individuals completed high school (13.4% vs. 6.9%) and graduated from a 4-year college (23.0% vs. 38.8%).
- ▶ Transgender individuals reported higher rates of unemployment (6.2% vs. 3.9%) and inability to work (11.3% vs. 6.6%) with less likelihood of earning \$75,000 or more (24.4% vs. 34.3%).
- ▶ Transgender individuals also had lower prevalence of having health insurance (10.6% vs. 6.5%).

General Health Status

	Trans- gender: MTF (n=361)	Trans- gender: FTM (n=237)	Trans- gender: gender non- conforming (n=154)	Non- Transgender (n=163685)	p-value*
General Health (SRH)					<.0001
Excellent or Very Good	155	105	56	83,890	
Good	123	81	49	50,344	
Fair or Poor	83	50	49	28,967	

*Chi-squared test p-value <0.05

Prevalence of Chronic Conditions by Age



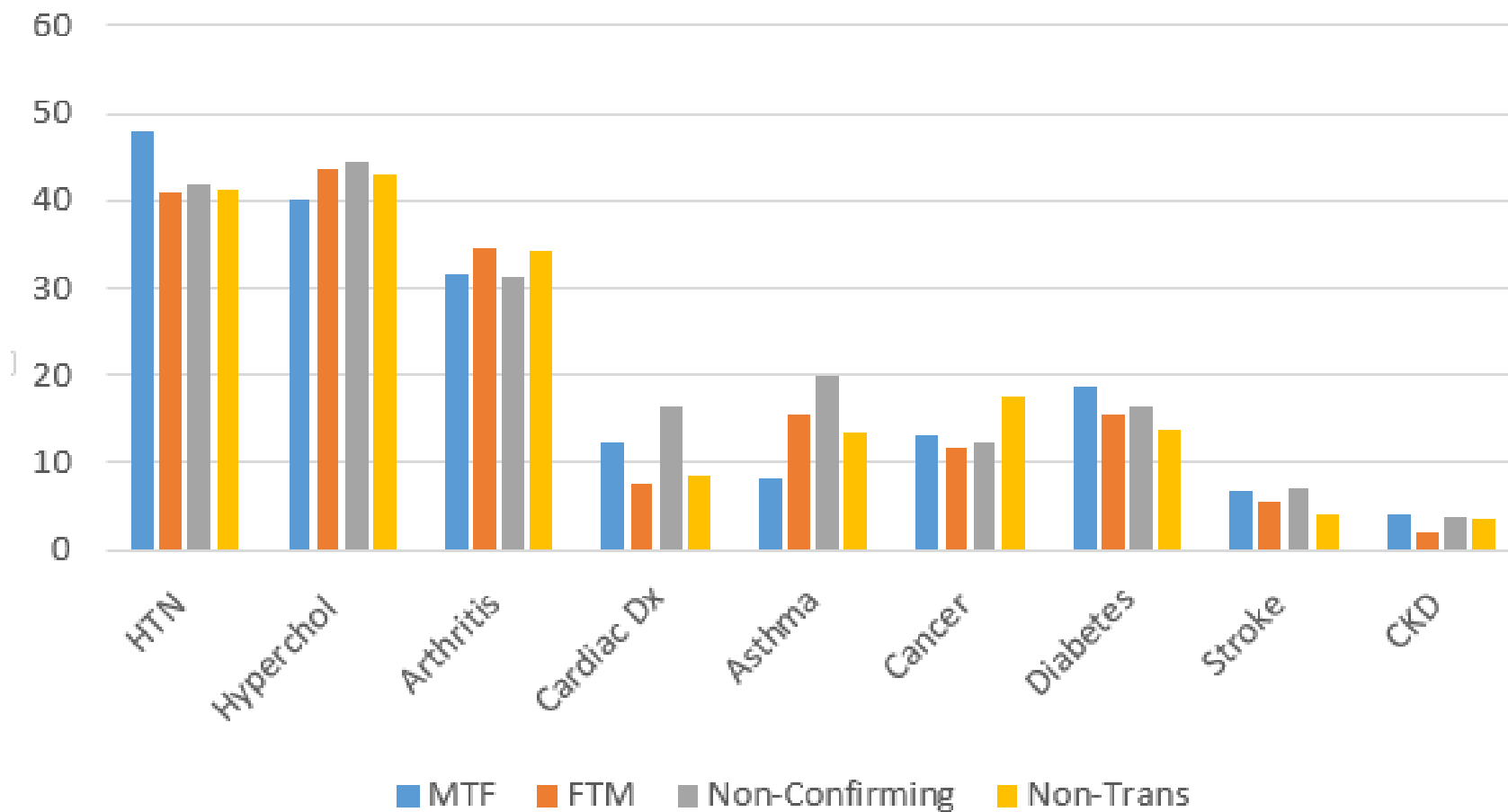
Multiple Chronic Conditions

- ▶ Around 47% had at least one chronic condition.
- ▶ The most common chronic conditions with prevalence >10% were:
 - ▶ **Hypercholesterolemia (43%)**
 - ▶ **Hypertension (41.4%)**
 - ▶ **Arthritis (34%)**
 - ▶ **Cancer (18%)**
 - ▶ **Diabetes (14%)**

Multiple Chronic Conditions

- ▶ Transgender individuals had a significantly:
 - ▶ **Higher burden of:**
 - ▶ Cardiac disease (11.6% vs. 8.6, $p=0.0042$)
 - ▶ Stroke (6.4% vs. 41%, $p=0.0018$)
 - ▶ Diabetes (17.2% vs. 13.8%, $p=0.0070$),
 - ▶ **Lower burden of :**
 - ▶ Cancer (12.7 vs. 17.6%, $p=0.0004$).

Crude prevalence of Individual Conditions



Chronic Health Conditions Adjusted Odds Ratios for un-pooled Transgender Groups

Chronic Condition	Transgender: Male to female (n=361)	Transgender: Female to male (n=237)	Transgender: gender non-conforming (n=154)	LR Test p-value*
Hypertension	1.380 (1.096, 1.739) *	0.901 (0.672, 1.206)	1.039 (0.721, 1.497)	0.0454*
Hypercholesterolemia	0.902 (0.708, 1.149)	1.018 (0.749, 1.385)	1.113 (0.767, 1.616)	0.7951
Stroke	1.699 (1.101, 2.622)	1.352 (0.762, 2.400)	1.832 (0.971, 3.454)	0.0165*
Cardiac Disease	1.561 (1.113, 2.189)	0.774 (0.458, 1.310)*	2.263 (1.415, 3.617)*	0.0002**
Asthma	0.542 (0.367, 0.798)**	1.111 (0.770, 1.604)	1.365 (0.896, 2.078)*	0.0073**
Cancer	0.790 (0.567, 1.103)	0.661 (0.430, 1.017)	0.858 (0.515, 1.431)	0.1220
Arthritis	0.967 (0.757, 1.236)	1.034 (0.765, 1.399)	0.981 (0.671, 1.436)	0.9882
Kidney Disease	1.077 (0.616, 1.884)	0.597 (0.245, 1.454)	0.946 (0.385, 2.327)	0.7116
Diabetes	1.368 (1.032, 1.814)	0.974 (0.663, 1.430)	1.169 (0.742, 1.843)	0.1561

The referent category is participants who answered 'No' to the question Are you a transgender?

*Testing Global Null Hypothesis: BETA=0, Likelihood Ratio (LR) Test Chi-squared p-value<0.05

**Logistic regression models Adjusted for age, race, marital status, education, health insurance

Discussion

- ▶ The transgender community is marginalized and suffers from multilevel stressors that negatively impact their health outcomes thus creating a health disparity that needs immediate attention.
- ▶ Our findings underscored the socioeconomic, health inequity and disparities that were highlighted in the literature.
- ▶ The exposure to multi-level stressors and chronic conditions risk factors contributes to the increased prevalence of chronic conditions in the transgender community.

Discussion

- ▶ The findings recognize that transgender individuals have a higher risk of chronic conditions such as diabetes, cardiac disease, and stroke.
- ▶ These results shed light on the health disparities facing the transgender community and ascertains the need for transgender-specific research and interventions to prevent and manage chronic diseases.
- ▶ These findings pave the way for nurses and other healthcare providers to be cognizant of the unique disease profiles to design and implement studies that prevent and better manage chronic conditions in transgender individuals.

Implications

- ▶ The burden of chronic disease disproportionately affects certain populations hence creating a major public health concern.
- ▶ The transgender community is at the center of disproportionate socioeconomic conditions, access to healthcare, and heightened risk factors of major chronic conditions.

Future Plans

- ▶ Further research is needed to examine risk factors for specific conditions and to identify interventions that help promote the wellbeing of transgender individuals.
- ▶ Community-specific interventions that create awareness and decrease the risk of different chronic conditions is warranted.
- ▶ Enhancing the health of transgender individuals using community specific interventions is needed.

Questions?

Thank you!

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