

Disparities in Tobacco Use Among Individuals With Mental Distress

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INTRODUCTION

Tobacco use remains the leading preventable cause of death and disease in the United States. In 2021, nearly one in five United States (US) adults currently used any tobacco product; more than one-third (31.4%) used both cigarettes and e-cigarettes.¹ These two tobacco products constitute the largest proportion of overall tobacco product use and are cause for concern as there is no safe level of exposure to tobacco.¹ Over time, overall smoking prevalence continues to decline, yet disparities in tobacco use persist. Tobacco use is generally higher among people experiencing poverty, people living with behavioral health conditions (BHC), and people with lower educational attainment; these groups are known to have greater health and economic challenges than the general US population.² Behavioral health broadly covers the areas of mental health, disorders related to substance use, challenges associated with life's stressors and crises, and physical symptoms that are a consequence of stress. According to the American Lung Association, 35% of individuals who smoke cigarettes have a BHC and account for 38% of all US adult cigarette consumption.³ Nationally, in 2022, cigarette smoking in the past year was 1.5 times higher for those with mental illness (any mental, behavioral, or emotional disorder) (32.1%) compared to those without (22.0%).⁴ The prevalence is further elevated to 36.8% when those with serious mental illness (mental, behavioral, or emotional disorder that disrupts major life activities due to significant functional impairment) are considered. This paper examines the prevalence of existing disparities in tobacco use among individuals with mental distress in Rhode Island. All references to tobacco in this article refer to commercial tobacco, not sacred and ceremonial tobacco used by many American Indian communities.

METHODS

Data are from the 2020, 2021, and 2022 Rhode Island Behavioral Risk Factor Surveillance System (BRFSS) Surveys. Three years were combined for a reportable strata sample size and increased the precision and reliability of estimates. The aggregated sample size was 16,880 after combining three years. The RI-BRFSS is a telephone survey that is administered by the Rhode Island Department of Health (RIDOH) with support from the Centers for Disease Control and Prevention (CDC) and is used to measure risk

behaviors and the health of non-institutionalized adults at least 18 years of age. Detailed information on the methodology and sampling for the BRFSS is available from the CDC.⁵ Current tobacco use was defined as using cigarettes, e-cigarettes or Electronic Nicotine Delivery systems (ENDS), and/or smokeless tobacco in the past 30 days. BRFSS does not specifically measure behavioral health conditions. Hence mental distress was used in this paper as a close measure of mental health status. Mental distress is defined as having poor mental health for 14 or more days out of 30 days in the past month, which is reported by respondents in the survey. Adults were classified as having a disability if they reported experiencing one or more of six types of disabilities: hearing impairment, vision impairment, cognitive difficulties, mobility limitations, challenges with self-care, or difficulties with independent living.

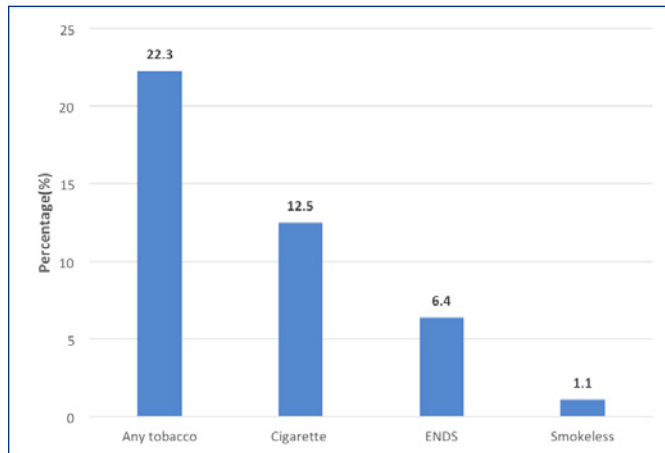
The overall burden of any tobacco use was analyzed for the Rhode Island adult population, and then by individuals' sociodemographic characteristics. Significance was determined by a p-value <.05 using the Chi-square test. Bivariate analyses were calculated to examine associations between individuals using tobacco products with and without mental distress by sociodemographic characteristics. Binary logistic regression was conducted to examine the association between tobacco use and mental distress, adjusting for gender, age, income, educational level, sexual orientation, and disability status. Data were weighted to adjust for survey nonresponse and to provide state-level representative estimates. All analyses were performed using SAS Version 9.4.

RESULTS

The statewide prevalence of any tobacco use during 2020–2022 was 22.3%, equating to approximately one in five Rhode Island adults (**Figure 1**). Cigarette smoking was the most common tobacco product used (12.5%), while smokeless tobacco products had the lowest prevalence (1.1%).

Distribution of sociodemographic characteristics and prevalence of tobacco use is shown in **Table 1**. Non-Hispanic White adults, persons aged 25–44, and adults with a high school degree comprised the majority of individuals who used tobacco products in the past 30 days. Individuals who used any form of tobacco product and reported mental distress were more likely to identify as female (57.9%), have household incomes between \$25K–\$50K (37.6%), and

Figure 1. Tobacco use^a prevalence by product among Rhode Island adults, 2020–2022 RI BRFSS



^aCurrent use of any tobacco (use of cigarettes, ENDS, and/or smokeless tobacco in the past 30 days)

Note: ENDS=Electronic Nicotine Delivery System

have a high school degree (34.1%). When looking at individuals with college degrees, those noted as reporting mental distress had a higher prevalence of use (32.7%) versus those who did not (30.2%).

A notable 12.7% of individuals with mental distress who use tobacco identify as lesbian, gay, or bisexual compared to 6.5% among those without mental distress. Furthermore, a substantial 70.6% of tobacco users with mental distress reported living with some form of disability, which is much higher compared to individuals without mental distress at 28.8%. Nearly two-thirds (66.2%) of individuals who use any tobacco product and report mental distress attempted to quit compared to 56.2% among those without mental distress. (Table 2)

Results from the logistic regression model examining the association between tobacco use and mental distress revealed that tobacco use was significantly more likely among those with mental distress compared to those without [AOR=1.98, 95% C.I. 1.57–2.50], controlling for other variables. (Table 3)

Table 1. Distribution of sociodemographic characteristics and prevalence of tobacco use

| Demographics | | Tobacco use weighted % | p-value | Individuals that use any tobacco products with mental distress weighted % | Individuals that use any tobacco products without mental distress weighted % | p-value |
|--------------------|-------------------|------------------------|---------|---|--|---------|
| Mental Distress | Yes | 29.3 | <.0001* | — | — | |
| | No | 70.7 | | — | — | |
| Sex | Male | 52.9 | <0.01* | 42.1 | 57.4 | <.0001* |
| | Female | 47.1 | | 57.9 | 42.6 | |
| Age group | 18-24 | 13.8 | <.0001* | 21.8 | 10.8 | <.0001* |
| | 25-44 | 38.2 | | 41.1 | 36.8 | |
| | 45-64 | 34.9 | | 28.9 | 37.6 | |
| | 65+ | 13.1 | | 8.2 | 14.9 | |
| Race and Ethnicity | NH white | 73.3 | <0.05* | 72.6 | 73.6 | ns |
| | NH black | 3.3 | | — | 3.3 | |
| | Hispanic | 13.9 | | 13.1 | 14.5 | |
| | Other NH | 9.5 | | 11.0 | 8.7 | |
| Household Income | <\$25000 | 22.2 | <.0001* | 29.8 | 18.8 | <.0001* |
| | \$25,000–\$49,999 | 30.7 | | 37.6 | 28.2 | |
| | \$50,000–\$74,999 | 17 | | 13.6 | 18.5 | |
| | \$75,000+ | 30.1 | | 18.9 | 34.5 | |
| Educational level | <HS | 16.0 | <.0001* | 22.2 | 13.4 | <0.01* |
| | HS/GED | 38 | | 34.1 | 39.6 | |
| | some college | 30.8 | | 32.7 | 30.2 | |
| | College degree | 14.9 | | 11.0 | 16.7 | |
| Sexual orientation | LGB [†] | 8.1 | ns | 12.7 | 6.5 | <0.05* |
| | Not LGB | 91.9 | | 87.3 | 93.5 | |
| Insurance status | Yes | 92.9 | <0.01* | 94 | 93.0 | ns |
| | No | 7.1 | | — | 7.0 | |
| Heavy Drinker | Yes | 13.7 | <.0001* | 16.5 | 12.7 | ns |
| | No | 86.3 | | 83.5 | 87.2 | |
| Disability status | Yes | 41.0 | <.0001* | 70.6 | 28.8 | <.0001* |
| | No | 59 | | 29.4 | 71.2 | |

— Not applicable

[†] LGB = Lesbian, Gay, or Bisexual

*Results of the chi-squared test were statistically significant (p<0.05)

Table 2. Cessation among current tobacco users by behavioral health conditions

| | Individuals that use any tobacco products with mental distress weighted % [95% CI] | Individuals that use any tobacco products without mental distress weighted % [95% CI] |
|---|--|---|
| Tobacco users who have made a quit attempt* | 66.2 [59.7–72.6] | 56.2 [52.4–59.9] |

* Chi-square test $p < 0.05$ **Table 3.** Binary Logistic Regression Results for Tobacco Product Use^a

| | Tobacco product use | |
|------------------|---------------------|-----------|
| | AOR | 95% CI |
| Mental Distress* | 1.98 | 1.66–2.50 |

^a Results display odds of any tobacco use among those who have mental distress compared to those without mental distress. The AOR is adjusted for gender, age, income, educational level, sexual orientation, and disability status.

*Results of the chi-squared test were statistically significant ($p < 0.05$)

DISCUSSION

In Rhode Island, people who report mental distress identify as lesbian, gay, or bisexual, have a lower socioeconomic status, and/or report living with some form of disability exhibit higher rates of tobacco use and may need tailored support in quitting. The results of this analysis highlight the heterogeneity of individuals who experience mental distress and use tobacco products. Focusing on a single attribute does not fully explain who is at increased risk of tobacco-related health disparities. Many factors impact tobacco-related health disparities such as documented predatory targeted marketing by the tobacco industry, trauma, stressors from discrimination and poverty, barriers to healthcare, and unequal distribution of resources.⁶ As such, a social determinants of health approach is necessary to address tobacco-related disparities.

The CDC recommends the following strategies to address these tobacco-related health inequities: integrate clinical screening and treatment for tobacco use into all healthcare settings with all patients; increase access to culturally tailored cessation services; encourage 100% tobacco-free behavioral healthcare settings; and share health messages that feature people with a shared lived experience.⁷ Results of this analysis show the prevalence of tobacco use is higher among those with mental distress; however, this demographic still wants to quit as demonstrated by the findings of this analysis revealing a greater percentage of people with mental distress reporting a quit attempt in the last year compared to those without mental distress. Healthcare professionals play an important role in connecting patients to appropriate resources to help them quit tobacco for good.

To help make these reported quit attempts more successful, patients should be connected to evidence-based treatments, such as a state Quitline.

Rhode Island's Quitline, the Rhode Island Nicotine Helpline (also called QuitNowRI.com),⁸ helps healthcare professionals connect patients with free tobacco treatment and nicotine replacement therapy to Rhode Islanders at least 18 years of age, regardless of income, insurance status, or language. In response to the need for culturally tailored tobacco treatment, Rhode Island's Quitline offers a variety of specialty programs, including a protocol for anyone who self-reports mental health diagnoses or a dual-substance use disorder. In 2023, 55% of Quitline callers were eligible for the behavioral health protocol. The Quitline also has specialty landing pages for populations disproportionately impacted by tobacco to help assess their readiness for change, and link cessation to related health outcomes of interest such as lower long-term anxiety and depression, lower risk of infections, and better control of other medical conditions.

A component of Rhode Island's Quitline directed at healthcare professionals is QuitWorks-RI, which provides free accredited Continuing Medical Education (CME) modules on best practices for tobacco treatment, which includes a module on "Tobacco Cessation for Behavioral Health Populations" and "Screening and Responding to Vaping" to help clinicians engage with priority populations by learning to address patients in a compassionate, specific, and sensitive way.

LIMITATIONS

The findings of our study have several limitations. First, data are self-reported and may be affected by recall bias and social desirability bias. A second limitation is BRFSS data are cross-sectional, and causality cannot be inferred from survey results. Third, analyses were limited to the core questions and state-added questions in the Rhode Island BRFSS survey. Measures of social determinants of health, such as living in poverty or experiences of discrimination, which can increase tobacco use and make it harder to quit, were not available in the BRFSS. We were unable to measure the severity of mental distress using self-reported mentally unhealthy days in the past 30 days. Lastly, the timeline 2020–2022 does overlap the COVID timeline and might have a potential impact on "frequent mental distress" responses. However, when compared to "frequent mental distress" data before 2020, the data presented here is comparable.

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Disclosure

The authors have no financial interests to disclose.

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