

# Polysubstance Use Among Rhode Island Adults

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## INTRODUCTION

Polysubstance use is the use of more than one substance or drug within a short period of time.<sup>1</sup> This type of drug use can have a synergistic effect and has been associated with numerous poor health outcomes, including increased risk of substance use disorders, resistance to treatment, cancer, cognitive decline, drug overdose, and death.<sup>2-7</sup> While there is data on polysubstance use nationally, there is less information about polysubstance use in Rhode Island (RI). This report examines the prevalence of and factors associated with polysubstance use among RI adults.

## METHODS

Data are from the 2021 Rhode Island Behavioral Risk Factor Surveillance System (RI BRFSS). The BRFSS is a telephone survey of non-institutionalized adults ≥18 years 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 health. Data from the survey sample are weighted to obtain statewide population estimates.

Polysubstance use was defined as those who reported two or more of the following: excessive alcohol use, marijuana use, electronic vapor product (e-vape) use, or cigarette smoking over the past 30 days. Excessive alcohol use was defined as binge drinking (≥4 drinks for women and ≥5 drinks for men on a single occasion) or heavy drinking (consuming ≥8 drinks per week for women and ≥15 drinks per week for men) in the last 30 days. E-vape and cigarette use were defined as use on at least “some days” in the past 30 days and marijuana use was defined as use on at least 1 day in the past 30 days. Prescription opioid misuse was not included in this study because prevalence was low (~1%) and use was not assessed over the same 30-day period. Information on other drug use was not collected.

A three-level measure of substance use was computed, and individuals were categorized as those who used 0 substances, 1 substance only, or 2 or more substances (polysubstance use). The three-level substance use measure was examined by selected demographic characteristics. Multivariable logistic regression models were conducted to examine the association between the three-level substance use measure and health, adjusting for sex, sexual orientation/

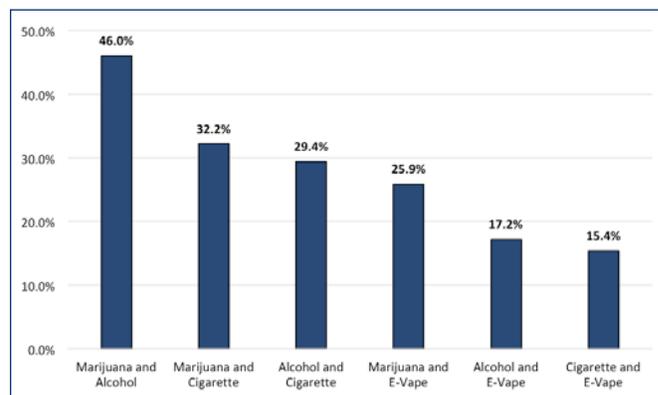
gender identity (SOGI), age group, race/ethnicity, and educational attainment. Health measures of interest included fair/poor overall health (measured from the question: “Would you say your general health is – Excellent, Very Good, Good, Fair, or Poor”), frequent mental distress (≥14 days in the past 30 where mental health was not good), depression diagnosis, chronic disease diagnosis (asthma, arthritis, chronic obstructive pulmonary disease, cancer, cardiovascular disease, diabetes, or kidney disease), and obesity (Body Mass Index ≥30, calculated from reported height and weight).

## RESULTS

Overall, 5,639 individuals completed the BRFSS in 2021, representing a weighted population of 889,340 adults. Among the types of substance use assessed, excessive alcohol use (19.5%) was most common, followed by marijuana use (15.8%), cigarette use (12.4%), and e-vape use (6.2%).

The prevalence of polysubstance use was 13.7%. About two-thirds of adults did not use any of the substances assessed (66.8%), while 19.5% used one substance, 10.4% used two substances, 2.8% used three substances, and 0.5% used all four. Among polysubstance users, the most common substance used was marijuana (77.0%) and the most common type of combined use was marijuana and excessive alcohol use (46.0%) (Figure 1).

Figure 1. Types of concurrent substance, among polysubstance users\*



\*Note: categories are not mutually exclusive – those using 3 or more substances are included in multiple categories

Levels of substance use differed by all demographic measures assessed (**Table 1**). For example, polysubstance use was more common among males (16.9%) than females (10.8%), and more common among younger (18–24 years, 26.0%) and older adults (65+ years, 26.0%) than middle-aged adults (45–64 years, 3.6%). Those who identify as straight/cisgender were more likely to report using no substances (67.1%) than those who identify as lesbian, gay, bisexual, transgender, or other SOGI (LGBTQ, 54.2%).

Results from multivariable logistic regression models examining the association between substance use level and health revealed that polysubstance users were significantly more likely than those who use no substances to report fair

**Table 1.** Substance use, by selected demographic characteristics

	No Substance Use N=543,101 (66.8%)	One Substance Use N=155,675 (19.8%)	Polysubstance Use N=109,526 (13.7%)
<b>Sex*</b>			
Male	61.7%	21.4%	16.9%
Female	71.5%	17.8%	10.8%
<b>Sexual Orientation/ Gender Identity*</b>			
LGBTQ <sup>a</sup>	54.2%	24.8%	21.1%
Straight and Cisgender	67.1%	19.7%	13.3%
<b>Age Group*</b>			
18–24 years	56.9%	17.1%	26.0%
25–34 years	56.8%	23.4%	19.6%
35–44 years	68.1%	22.4%	9.6%
45–64 years	82.1%	14.4%	3.6%
≥65 years	56.9%	17.1%	26.0%
<b>Race/Ethnicity*</b>			
White, Non-Hispanic	64.5%	21.2%	14.3%
Black, Non-Hispanic	74.2%	15.8%	10.0%
Other, Non-Hispanic	74.1%	13.1%	12.8%
Hispanic	71.2%	16.3%	12.4%
<b>Household Income*</b>			
Less than \$25,000	69.2%	15.4%	15.4%
\$25,000–49,999	62.4%	20.7%	16.9%
\$50,000–74,000	63.9%	20.8%	15.3%
≥\$75,000	64.0%	23.7%	12.3%
<b>Education Level*</b>			
Less than High School	68.7%	14.4%	16.9%
High School	63.2%	20.0%	16.9%
Some College	64.2%	20.0%	15.8%
College Graduate	71.5%	20.6%	8.0%

Notes: <sup>a</sup>Lesbian, Gay, Bisexual, Transgender, Queer, or Other.

\*Chi square test p<0.05

or poor overall health (Adjusted Odds Ratio [AOR]=1.86; 95% Confidence Interval [CI]=1.26-2.76) and having been diagnosed with a chronic disease (AOR=1.45; 95% CI=1.05-2.00) Both those who used one substance and polysubstance users were significantly more likely than those who used no substances to report frequent mental distress and having been diagnosed with depression (**Table 2**).

**Table 2.** Adjusted odds of selected health outcomes by substance use<sup>a</sup>

	One-Substance Use		Polysubstance Use	
	AOR <sup>b</sup>	95% CI	AOR <sup>b</sup>	95% CI
Fair/Poor Overall Health	1.20	0.89–1.62	<b>1.86</b>	<b>1.26–2.76</b>
Frequent Mental Distress	<b>1.67</b>	<b>1.25–2.23</b>	<b>2.69</b>	<b>1.88–3.87</b>
Diagnosed with depression	<b>1.47</b>	<b>1.17–1.84</b>	<b>1.92</b>	<b>1.42–2.59</b>
Chronic Disease	1.19	0.96–1.48	<b>1.45</b>	<b>1.05–2.00</b>
Obesity	1.03	0.83–1.29	0.80	0.58–1.11

Notes: (a) Results display odds of health outcomes among one-substance users and polysubstance users compared to those who use no substances. All health outcomes were assessed in separate logistic regression models adjusting for sex, sexual orientation/gender identity, race/ethnicity, and education level. (b) AOR = Adjusted Odds Ratio. **Bold font** indicates statistically significant difference p<0.05.

## DISCUSSION

Data from the RI BRFSS indicated that approximately 1 in 7 (14%) RI adults reported polysubstance use in 2021. Compared to those who reported no substance use or use of one substance, polysubstance users reported a higher prevalence of several health problems.

This study has several limitations. First, data are based on self-report which can be prone to bias. Second, because survey data are cross-sectional, we are unable to ascertain the direction of the relationship between substance use and health. Third, we were only able to assess use of alcohol, cigarettes, e-cigarettes, and marijuana – the exclusion of other drugs likely resulted in an underestimate of polysubstance use. Additionally, the inclusion of other drugs may have resulted in different associations with demographic factors and health. Opioid misuse is of particular concern in RI and nationwide and thus future studies should focus on polysubstance among opioid users.

Results of prior research indicate that polysubstance use addiction can be more difficult to treat than addiction to one substance alone.<sup>5,6</sup> This, along with the poor health outcomes associated with polysubstance use,<sup>3-7</sup> concerns that substance use may be on the rise in wake of the COVID-19 pandemic, and the legalization of marijuana, heightens the need to focus on this high-risk group.

Treatment of polysubstance use can be complex and care coordination is essential as changes in substance-use patterns, such as smoking cessation, may impact patients' psychiatric medication for co-occurring mental health

disorders.<sup>8</sup> The Substance Abuse and Mental Health Services Administration (SAMHSA) published a report summarizing the current evidence-based research.<sup>6</sup> SAMHSA outlined several key components for clinicians to consider optimizing treatment outcomes:

### Engagement and Retention of Clients in Services

Polysubstance users have low rates of treatment completion, and it can be difficult to keep them engaged. Strategies to optimize engagement include strengthening the relationship between clinician and patient (e.g., building rapport and respecting client's goals), identifying barriers to treatment and providing applicable resources (e.g., helping with insurance paperwork, transportation services), and using motivational interviewing to increase self-efficacy.

### Assessment of Risk and Protective Factors

Polysubstance users often have more severe risk factors than single-substance users. It is recommended that clinicians assess client's risk and protective factors that may influence substance use and provide resources when applicable, including gauging socioeconomic factors, examining the role of family members and past trauma, and connecting clients with resources to improve quality of life (e.g., housing authorities, job training programs).

### Motivation and Readiness to Change

Some patients may be unwilling to change and/or may feel helpless if prior treatments have failed. Strategies to address this include tailoring interventions based on individual's readiness and willingness to change and history (e.g., focusing on harm reduction if immediate treatment is not feasible, identifying what has not worked in prior treatment).

### Selection of Treatment Practice

Many factors influence the type of treatment that may be optimal. Factors to consider when choosing the optimal treatment include patient's psychological and pharmacological reasons for combining certain substances, severity of use benefits of combining treatments (e.g., counseling and pharmacological), and patient characteristics and preferences.

### Prevention and Recovery Support

Relapse is common among polysubstance users. Providers should ensure clients have the tools (e.g., understanding triggers and how to cope) and recovery supports (recovery groups, support systems) they need during and after treatment.

Polysubstance use is a health issue of concern worldwide. Healthcare providers should continue comprehensive screening of all patients and researchers should continue to evaluate optimal treatment for this high-risk group. Data from the 2019 BRFSS suggested that cigarette smokers who are also heavy drinkers may be less likely than those who

are not heavy drinkers to receive smoking cessation advice from health-care providers, highlighting not just disparities in risk, but also disparities in care. Providers should integrate cessation interventions into routine substance use disorder care and ensure that all patients are screened for tobacco use, advised to quit, and offered cessation treatment such as a referral to the state Quitline (Quit-Works-RI). Quit-Works-RI provides free evidence-based tobacco treatment to Rhode Islanders. Helping patients quit tobacco helps to improve their chances for sustained recovery from other drugs. In response to polysubstance use, Quit-Works-RI has a specialty program for anyone who self-reports mental health diagnoses or a dual-substance use disorder. Secondly, Quit-Works-RI provides free accredited 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 address priority populations. Smoking-cessation therapies provided during other substance use disorder treatment were associated with a 25% increased likelihood of long-term abstinence from alcohol and illicit drugs.<sup>9</sup> Treatment of polysubstance use may be complex but it can be effective.

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The authors have no financial interests to disclose.

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