HEALTH OF BOSTON 2024

THE MENTAL HEALTH REPORT

BISOLA OJIKUTU MD, MPH, FIDSA
COMMISSIONER OF PUBLIC HEALTH, CITY OF BOSTON
EXECUTIVE DIRECTOR, BOSTON PUBLIC HEALTH COMMISSION

BOSTON PUBLIC HEALTH COMMISSION

ACKNOWLEDGEMENTS

This report was prepared by Helen Ayanian, Morgan Chen, MPH, Jaylen Clarke, MSc, Dan Dooley, Samara Grossman, MSW, LICSW, Kathryn Hall, PhD, Julia Hansen, MPH, Melanie Mackin, MPH, Johnna S. Murphy, MPH, Nikki Shen, MHS, Kevin M. Simon, MD, MPH, and Soraya Underwood, MPH.

We would like to acknowledge the Boston Public School's Office of Health and Wellness for providing guidance on analysis and interpretation of Youth Risk Behavior Survey (YRBS) data.

SUGGESTED CITATION

Boston Public Health Commission, *Health of Boston 2024: The Mental Health Report (Boston, Massachusetts 2024)*

FOREWORD

Welcome to the Boston Public Health Commission's (BPHC) Health of Boston 2024: The Mental Health Report. This is one of a series of reports providing topic-specific surveillance data on the health of Boston. This resource provides residents, community advocates, medical professionals, public health experts, and policymakers actionable mental health information about Boston.

The report highlights trends and patterns in mental health condition prevalence for youth and adults, mental health support, emergency department visits related to mental health, and suicide. Data sources include the United States (U.S.) Census, death registries, hospital emergency department and inpatient discharge databases, and surveys that describe individual health conditions and behaviors of Boston adults and public high school students.

For many indicators, we highlight trends over time. Additionally, we emphasize differences across neighborhoods and between various subgroups. These subgroups include sex, racial and ethnic groups, as well as factors like employment, education, and housing status.

Mental health is influenced by individual characteristics, behaviors, experiences, and life circumstances. Additionally, social and economic factors — such as prolonged exposure to racism, discrimination, oppression, or exclusion — can lead to sustained stress, further affecting mental health outcomes. Boston Public Health Commission acknowledges the role of racism in creating and perpetuating systems of oppression that undermine the social determinants of health and have resulted in the historic marginalization and subsequent inequities in health outcomes of Boston residents of color.

The mental health information presented here is largely based on studies and understandings from the United States context. We must remain cognizant of the rich tapestry of cultures and backgrounds that make up our beautiful city of Boston. Many of our residents have roots in various countries and cultures, each with their own perceptions and interpretations of mental well-being. Mental health, as conceptualized in the American context, might not align seamlessly with the experiences or definitions from other cultural perspectives. As the Boston Public Health Commission strives for inclusivity and understanding, it's crucial to recognize that how we discuss and understand mental health may not universally resonate. In our diverse city, where so many have journeyed from distant shores to call Boston home, we must approach mental health with an open heart, respecting the myriad of cultural nuances and interpretations. We hope you find the information presented here useful in your own efforts to educate, inspire, advocate, and intervene in the interest of optimal health for all Boston residents.

DATA SUMMARY

From 2015 to 2021, Boston's youth increasingly reported feelings of persistent sadness, and adults increasingly reported feelings of persistent sadness or anxiety. The rates of these feelings surged particularly during the peak of the COVID-19 pandemic, which brought challenges such as job and income loss, social isolation, and grief due to the death of loved ones. Each of these factors has potentially negative implications for mental health and well-being.

Interestingly, while the prevalence of poor mental health symptoms rose, there was a decline in the use of hospital emergency departments for mental health care from 2017 to 2021. This wasn't isolated to mental health; many non-COVID-19-specific diagnoses saw decreased hospital visits. Barriers to accessing care increased during the pandemic, stemming from factors like emergency department restrictions, delayed non-emergency services, healthcare workforce shortages, and a loss of health insurance from job cuts. Given the broader impact of COVID-19 on emergency department utilization, the decline in mental health visits is thought to be largely attributed to the pandemic's ripple effects, and likely not an indication of improvement in the mental well-being of Bostonians.

In assessment of racial/ethnic differences, Black and Latinx residents more frequently reported experiencing poor mental health symptoms. Between 2017 and 2021, Latinx youth reported feelings of persistent sadness at a higher rate than their White counterparts. Moreover, Boston Black and Latinx youth had higher rates of attempted suicides than White youth. When asked about school relationships, these groups were less likely to report feeling close to someone at school, especially Black and Latinx female youth.

These racial and ethnic disparities were mirrored in the adult population. Latinx adults, for instance, more frequently reported feelings of persistent sadness compared to White adults. Asian, Black, and Latinx adults reported not having someone for emotional support at higher rates than White adults. In 2021, unhoused adults in Boston revealed alarming disparities: they were almost twice as likely to feel persistent anxiety and three times as likely to feel persistent sadness compared to their housed counterparts.

Youth who describe themselves as lesbian, gay, bisexual, questioning their sexual identity, or some other identity (LGBQ+) and adults who describe themselves as lesbian, gay, bisexual, transgender, or something else (LGBTQ+) experienced a notably higher prevalence of poor mental health than their heterosexual and non-LGBTQ peers. The data from 2021 is particularly telling for LGBQ+ youth, who experienced higher rates across a range of distressing experiences, including self-harm (non-suicidal self-injury; NSSI), suicidal ideation, and suicide attempts. Examining data from 2017, 2019, and 2021 combined showed that LGBTQ adults

were more likely than non-LGBTQ adults to report feeling persistent sadness and persistent anxiety.

Black youth and adults had higher rates of emergency department (ED) visits related to mental health than White residents. In 2021, Black adults experienced the highest rates of ED visits for various conditions: anxiety disorders, depressive disorders, schizophrenia spectrum disorders, and trauma-related disorders, including post-traumatic stress disorder (PTSD). Similarly, from 2017 to 2021, Black adolescents experienced higher rates of mental health ED visits across multiple age groups (10-14 years, 15-17 years, and 18-19 years) than White youth of the same age group, with the highest rates observed among Black female youth.

Geographically, the South End neighborhood (including zip codes 02111 and 02118) experienced the highest rate of mental health-related emergency department visits in 2021. Roxbury (including zip codes 02119 and 02120) experienced the next highest rate. When excluding ED visits that involved substance use-related diagnoses, the South End's mental health ED visit rate halved but remained the highest among all neighborhoods for non-substance use-related mental health ED visits. Other neighborhoods that experienced notably higher rates of mental health ED visits compared to the rest of Boston include Dorchester (02121, 02122, 02124, 02125), Mattapan (02126), and Back Bay (02108-02110, 02113-02114, 02116, 02199). Of note: there was only a significant difference for Back Bay when including patients with a substance use diagnosis. When these were excluded, the rate for Back Bay was similar to the rest of Boston.

Additional analysis further revealed that the rate for mental health emergency department visits for the Back Bay was lower than for the rest of Boston when individuals experiencing homelessness were excluded (data not shown). Additionally, the rate for the South End decreased by nearly half, though remained significantly higher than that for the rest of Boston. These results reflect the impact of shelter addresses on the geographic presentation of hospital data. Thus, it is important to assess the rate of ED visits with and without unhoused Boston residents to get a deeper understanding of the mental health needs of housed residents in each neighborhood, and the unmet needs of unhoused residents associated with certain shelter addresses.

TABLE OF CONTENTS

INTRODUCTION

We recognize that the Health of Boston 2024: The Mental Health Report discusses themes that can be upsetting, including depression, anxiety, self-harm, suicide, and more. If at any time during your review of this material you feel overwhelmed, or you are experiencing suicidal thoughts, substance use, or other mental health crises please call or text 988. Trained crisis counselors are available for free, 24 hours a day, seven days a week to assist you as needed.

Note on mental health contexts and related stigma

Discussing mental health issues and symptoms does not come naturally to many people, given the nuances of their ethnic, racial, cultural, generational, religious, or community backgrounds. Different cultures and communities in the US often have their unique ways of experiencing, labeling, expressing, and addressing mental health issues. These approaches may differ from the mainstream US discourse and the Western medical understanding of mental health. While this introduction presents one method of addressing mental health and its treatment, there are numerous other ways to converse, identify, and assess mental health challenges and interventions.

It's crucial to account for the effects of bias, racism, and discrimination when diagnosing and treating mental health issues. The variance in prevalence and service access also demands such consideration. Moreover, the stigma surrounding mental health isn't solely born from misunderstandings or lack of exposure. It can be fueled by incidents of cultural incompetence and insensitivity from institutions or individual care providers. Discrimination, racism, and other oppressive actions within mental health institutions further exacerbate this stigma. Such experiences can harm individuals, leading to a distrust and apprehension of the mental health system. This mistrust is sometimes mistakenly attributed to general stigma against mental health treatment.

About Mental Health

Mental health, encompassing emotional, psychological, and social well-being, is as fundamental to overall health as physical well-being. It serves as the underpinning framework that influences how we perceive, process, and respond to our thoughts and feelings (1). However, the significance of mental health goes beyond mere perception; it profoundly affects daily living. When mental health issues escalate to overwhelming levels, they become obstacles that can disrupt the ability to carry out ordinary daily tasks, such as working or attending school, and can

strain interaction with family, friends, and community members. These challenges underscore the necessity of acknowledging and addressing mental health with the same diligence as physical health (2).

In the US, mental illnesses are not isolated occurrences; they are widespread and deeply ingrained in the healthcare landscape. Approximately 1 in 5 Americans will experience mental illness in a given year, a statistic that underscores the pervasiveness of these health conditions (3). Furthermore, the World Health Organization (WHO) has conducted extensive research that reveals an even more startling fact: nearly half of the US population will be diagnosed with a mental illness at some stage in their lives. This alarming figure emphasizes the critical need for effective mental health support systems and interventions (4).

The scope of mental health challenges is vast, with the US Centers for Disease Control and Prevention (CDC) identifying over 200 types of diagnosable mental illnesses. These illnesses range from mild, short-term conditions to severe, chronic disorders that can drastically alter an individual's quality of life (3). Alongside mental health disorders, problematic substance use remains an important public health issue in the US. It is not only intertwined with mental health but also compounds the difficulties faced by those struggling with mental illness (5). Many people grappling with problematic substance use also face other mental health challenges, and the reverse is often true as well. However, this relationship is complex and multifaceted, and one does not necessarily cause the other. Understanding the interplay between mental health disorders and problematic substance use can lead to more nuanced and effective treatment strategies, underscoring the importance of a comprehensive approach to mental health care.

Influences on Mental Health

Mental health is shaped by a combination of biological or genetic, behavioral, situational, and environmental factors.

Biological and Genetic Factors: While certain biological and genetic factors can predispose individuals from birth to a heightened likelihood of experiencing mental health challenges, they do not guarantee this outcome (6).

Behavioral Factors: Personal health behaviors, such as poor sleep patterns, low physical activity, dietary choices, and smoking habits, can amplify the risk of certain mental disorders (7).

Situational Factors: Life experiences and events, including factors like where one resides or stressful incidents like losing housing, job loss, or the death of loved ones, can adversely impact mental health. Trauma, characterized by physically or emotionally harmful experiences, is a

situational factor with long-term implications for individual well-being (8). A direct response to traumatic events can be conditions like Post-Traumatic Stress Disorder (PTSD).

Environmental Factors: Residing in areas marked by low income, high crime rates, or elevated unemployment rates can also play a role in negatively influencing mental health (9).

Importantly, societal and environmental conditions influence the prevalence of mental disorders, making certain population groups more vulnerable. Specifically, marginalized populations or those facing various forms of oppression tend to experience exacerbated mental health challenges. This is because they often face discrimination, social exclusion, trauma, adverse childhood experiences, limited access to healthcare, job insecurity, poverty, and other societal inequities, which contribute to their mental health struggles (10).

Mental Health Disparities: Identifying At-Risk Populations

The complex interplay between race, ethnicity, and mental health continues to be a great concern in public health. Notably, certain racial and ethnic groups, including Asian, Black, Latinx, and Native Hawaiian or Other Pacific Islander adults, report a lower prevalence of any mental illness than White adults (11). However, such statistics might not fully capture the reality. The lower reported rates could be influenced by factors such as cultural stigma, which might deter individuals from these communities from seeking care or reporting their symptoms. It's imperative to understand that prevalence rates are often determined by self-reported symptoms from individuals who actively seek care. Thus, higher instances of stigma in Asian, Black, and Latinx communities might result in underreporting, leading to an underestimated prevalence of mental health conditions in these communities (12, 13). The repercussions of such under-diagnosing are significant, especially if untreated and undiagnosed individuals in these communities bear a disproportionate burden of mental illness, as some research suggests (14, 15).

Discrimination based on sexual orientation and gender identity has profound implications for the mental health of the LGBTQ+ community. For instance, LGB adults in the US are more than twice as likely to experience a mental disorder compared to their heterosexual counterparts (16). Furthermore, LGB youth have reported feeling persistently sad or hopeless at double the rate of their heterosexual peers (17). Transgender adults in the US are nearly twice as likely to report severe mental distress than cisgender adults (18). The intersectionality of discrimination is particularly evident in LGBTQ+ individuals of color, who face compounded stressors from both racial and LGBTQ+ specific discrimination, further elevating their risk (19).

Gender disparities are also evident in mental health. Women consistently show a higher prevalence of anxiety disorders compared to men, both in terms of lifetime occurrence and past

year incidents (20, 21). Sociocultural factors, including gender roles and societal expectations, may contribute to these disparities. Such factors not only place greater stressors on women but might also influence how both genders perceive, handle, and report their mental health symptoms (22).

Aging presents a unique set of mental health challenges. As individuals age, they often confront numerous stressors, including physical health decline, loss of loved ones, and cognitive changes, which can profoundly affect mental well-being. These challenges can be further exacerbated for elders belonging to historically marginalized and culturally diverse groups (23). Systemic discrimination and cultural stigma may deter many from seeking and accessing appropriate mental health care. These individuals have lived through decades of social change. They may have faced prolonged discrimination or social exclusion, leaving them particularly vulnerable to feelings of isolation, anxiety, and depression in their later years. Moreover, language barriers, mistrust of medical systems due to historical injustices, and a lack of culturally competent care can hinder their ability to receive the support they need.

Alarming differences and trends have emerged in youth demographics. For example, the percentage of US adolescent girls reporting feelings of persistent sadness or hopelessness in 2021 stood at a staggering 57%, nearly double that of boys. This marked an almost 60% increase from 2011 and was the highest level observed in the past decade (24). Mental health disparities are also evident among youth from specific racial, ethnic, and LGBQ+ groups. These youth consistently report higher levels of poor mental health than their counterparts. For instance, LGBQ+ high school students were significantly more likely to report recent experiences of poor mental health in comparison to heterosexual students (24). Despite these concerning figures, these youth often access mental health care at lower rates (25, 26).

It's vital to recognize that mental health is intersectional. Multiple group identities, whether based on race, gender, sexual orientation, or religion, can compound the effects of stigma and discrimination on an individual's mental health. Addressing these multifaceted challenges requires a nuanced and holistic public health approach.

Racism and Mental Health

Racism is a significant and harmful situational factor affecting mental health in the US. Its effects are felt most acutely by people of color.

Everyday Discrimination: People of color are more likely to experience routine race-based discrimination than their White counterparts, which can have profound effects on both their mental and physical well-being (27).

Racism in Mental Health Services: There is evidence of racial bias in the diagnosis and treatment of mental health disorders. Specifically, some providers, when assessing Black individuals, tend to emphasize psychotic symptoms more than they would for individuals from other racial/ethnic groups presenting similarly (28). This leads to the underdiagnosis and undertreatment of mood disorders, such as depression and bipolar disorder, for Black individuals. Conversely, there's an overdiagnosis of schizophrenia, especially among Black men, who are three to five times more likely to be diagnosed with this disorder than White men (28, 29). Such misdiagnoses can result in improper treatments, extended illness durations, and worsened health outcomes.

Racism in the Criminal Justice System: The intersection of racism and mental health is also evident in the criminal justice system. Here, individuals of color with mental or behavioral health challenges are more likely to be incarcerated rather than placed in specialty mental health care institutions, compared to White individuals (30). Incarceration can intensify or even instigate mental health issues, heightening the risk of adverse outcomes for these individuals. Once incarcerated, people of color may also be less likely to receive the necessary treatment for their mental health conditions (31).

The examples provided elucidate the traumatizing effects of racism, revealing how it creates or exacerbates mental health issues. The chronic exposure to discrimination and stressors inherent in a racially biased society contributes to disparities in mental healthcare access and the quality of treatment.

Understanding Common Mental Health Disorders

Mental health disorders are prevalent and can significantly influence various aspects of an individual's life, from interpersonal relationships to workplace efficiency. This section delves into the specifics of some of the most common mental health conditions.

Anxiety

Anxiety disorders are characterized by enduring feelings of tension and frequent, intrusive worries. These disorders can also manifest physically with symptoms like elevated blood pressure, muscle tension, an accelerated heartbeat, excessive sweating, nausea, and dizziness (32). Research indicates that nearly 30% of adults will experience an anxiety disorder at some point in their life (33). The yearly prevalence of diagnosed anxiety disorders among adults includes 3% for Generalized Anxiety Disorder, 7% for Social Anxiety Disorder, 0.9%-1.9% for Separation Anxiety Disorder, 2%-3% for Panic Disorders, and 8%-12% for Specific Phobias. The likelihood of developing an anxiety disorder can increase due to factors such as genetics, environmental triggers, and developmental issues (34). Demographic data from the National Health Interview Survey reveals that women are more susceptible to anxiety symptoms

compared to men. The age group of 18-29 years reports the highest prevalence of anxiety symptoms. In terms of race/ethnicity, Asian adults tend to experience lower rates of anxiety symptoms, while Latinx, White, and Black adults exhibit higher rates (20).

Depression

Depressive disorders are prominent mental health disorders marked by enduring feelings of sadness, hopelessness, and a lack of interest, influencing thoughts, emotions, behaviors, and overall health. Unlike fleeting moments of sadness, clinical depression is a lasting ailment with a profound effect on daily life and overall well-being. Symptoms of depressive disorders encompass feelings of emptiness, irritability, loss of interest in favorite activities, sleep irregularities, fatigue, appetite shifts, weight changes, concentration difficulties, suicidal thoughts, and physical ailments like cardiometabolic conditions (35). Notably, symptoms can manifest differently across racial and ethnic groups. For example, Black women often exhibit depressive signs through physical symptoms such as insomnia and fatigue and through self-critical thoughts, differentiating their experience from others (36). Risk factors enhancing susceptibility to depression include a familial history of the condition, existing health issues or certain medications, and significant life events like bereavements or job transitions (35). The ramifications of racism, oppression, and discrimination further amplify disparities tied to race, ethnicity, gender identity, and sexual orientation (30). National Survey on Drug Use and Health statistics from 2020 revealed that nearly 1 in 10 Americans, or 9.2%, experienced a major depressive episode within the past year (37). Between 2015-2019, depression rates surged across various demographics — spanning age groups, racial and ethnic distinctions, genders, income levels, and educational backgrounds, indicating the deteriorating state of mental health in the US even before the onset of the COVID-19 pandemic.

Substance Use Disorder and Co-occurring Disorders

Substance use and substance use disorder (SUD) cover a spectrum. While some patterns of use may lead to occasional detrimental outcomes in daily life, at the other extreme end lies SUD, a profound mental health condition marked by an overwhelming urge and, frequently, a dependence on substances which can severely disrupt an individual’s ability to live a healthy balanced life (38). It's not uncommon for those diagnosed with SUD to simultaneously navigate other mental health challenges.

To effectively address the nuances of substance misuse and SUD, the terminology we adopt is crucial. Prioritizing first-person language when discussing these disorders is a way to humanize the topic, centering the discussion on the person rather than their condition. For instance, rather than using terms like "addicts" or "drug users," it's more respectful and accurate to say,

"people with substance use disorders" or "individuals experiencing addiction." This linguistic transition focuses on the individual's humanity beyond their diagnosis, fostering empathy, understanding, and a comprehensive perspective on their journey.

Substance Use Disorder (SUD) is defined as a recurrent pattern of substance consumption that results in significant distress or impediments in an individual's existence (5). SUD affects the brain's functions and behaviors, often leading to the person's incapacity to regulate their substance intake. While its intensity varies, addiction is its most severe form.

Beyond the primary intricacies of SUD, we find a complex nexus of disorders. Individuals with SUD often concurrently face other mental health issues. In the same vein, those diagnosed with mental health conditions might battle substance misuse. The simultaneous presence of these conditions is labeled as a co-occurring disorder. According to SAMHSA's 2021 National Survey on Drug Use and Health, approximately 9.2 million US adults suffer from a co-occurring disorder (39). Many seeking interventions for SUD also present with associated conditions, encompassing anxiety, mood disorders, schizophrenia, bipolar disorder, major depressive disorder, conduct disorders, and PTSD. It's noteworthy that people diagnosed with a mental illness typically have a heightened risk of additionally developing SUD in comparison to those undiagnosed.

Trauma and PTSD

Most individuals will encounter a traumatic event at some point. Such events can stem from domestic violence, natural disasters, wartime experiences, mass violence, and so forth (40). Nationally, statistics indicate that around 60% of men and 50% of women will experience at least one traumatic event in their lifetime. While reacting to such incidents is normal, many individuals naturally recover with time (41). However, a subset may develop Post-Traumatic Stress Disorder (PTSD) following these events. PTSD symptoms can differ widely, with individuals potentially facing flashbacks, disturbing dreams, heightened emotional responses, avoidant behaviors, mood changes, heightened alertness, sleep disturbances, concentration issues, or engaging in risk-prone activities (42).

Trauma isn't solely a product of singular events. Ongoing circumstances, like adverse childhood experiences (ACEs), can also be profoundly impactful. ACEs include experiences in childhood such as abuse, neglect, or having an incarcerated family member (43). In the US, 61% of adults report having endured at least one of eight studied ACEs, with 16% reporting four or more. Black and Latinx adults consistently report higher exposure to ACEs compared to their White and Asian counterparts across most US regions (44).

Negative social determinants of health (SDOH), such as poverty, racism, neighborhood crime and violence can increase the risk that a person will experience trauma. Racism and other forms of discrimination on the interpersonal level, and systemic racism and oppression on a societal level can also be associated with trauma (45). Racial trauma, or the emotional impact of stress related to racism, racial discrimination, and race-related stressors, can negatively influence mental health, and can increase the risk of PTSD (46).

Suicide

Suicide is death caused by injuring oneself with the intent to die (47). It's often linked to challenges with mental well-being; it can be influenced by long-term stressors such as abuse or harassment, sudden, devastating events like the loss of a home, a loved one, financial hardships, or relationship breakdowns. Importantly, research indicates that almost half (46%) of those who tragically died by suicide in America have been identified with a mental health condition (48).

In 2020, suicide featured prominently among the top 10 leading causes of death in the US (49). However, the prevalence and patterns of suicide have shown disparities across various demographic lines.

Age and gender play critical roles. Older adults, males, youth, and young adults have been identified as high-risk groups. Furthermore, certain ethnicities, particularly non-Hispanic American Indian/Alaska Native (AIAN) and White individuals, face higher suicide rates (47). Geography and occupation are also risk factors: residents of rural areas and those working in sectors like construction or mining experience elevated risk.

Noteworthy too are special groups like veterans and LGBTQ+ individuals. The latter, especially transgender people, report staggeringly high rates. A distressing 40% of transgender individuals have attempted suicide in their lifetimes, dwarfing the 5% rate seen in the general population (50). Additionally, 22% of LGBQ+ youth reported a suicide attempt in 2021, nearly quadruple the rate among their heterosexual counterparts (24).

The focus becomes even more intense when zeroing in on the youth. Recent data paints a grim picture: in 2021, nearly one-third of adolescent girls contemplated suicide, marking a nearly 60% surge from a decade ago. Moreover, 24% of these girls made a suicide plan, and 13% made an attempt (24). This increasing trend isn't confined to adolescent girls. Over the past ten years, Black, Hispanic, and White youth reported rising rates of suicidal thoughts and planning. From 2011 to 2021, both Black and White youths also recorded an uptick in suicide attempts.

Lastly, gender disparities remain a salient aspect of this concern. In 2021, despite males comprising roughly half the US population, they accounted for a disproportionate 80% of all suicides. Alarmingly, the suicide rate for males was four times that of females (51).

COVID-19 and Mental Health

The COVID-19 pandemic profoundly impacted mental well-being. Factors such as isolation, job loss, financial uncertainty, grief, illness, and fear have been major contributors to the observed increase in feelings of anxiety and depression. A survey from the American Psychological Association revealed that approximately 30% of psychologists reported seeing an increase in patients since the pandemic's onset (52). This observation aligns with a CDC analysis, which highlighted an uptick in the percentage of adults receiving mental health treatments—including medications, counseling, or both—between 2019 and 2021 (53).

Racial and ethnic groups experienced the pandemic's mental health effects differently. For instance, relative to White adults, Black, Hispanic, and Asian adults saw a more pronounced increase in self-reported depression or anxiety symptoms during the early pandemic months compared to 2019. This disparity is unsurprising considering these groups faced a higher rate of job and income loss and increased childcare needs (54). The stress was further compounded by racially motivated violent events in 2020 and 2021. Hate crimes against Asian communities rose due to racist narratives about the origin of COVID-19, and the tragic killings of Breonna Taylor and George Floyd sparked global racial justice protests (54). The dual challenges of the pandemic and escalating racial tensions amounted to a "dual pandemic" for many Americans of color, adversely affecting their mental health (55, 56).

Prior to the pandemic, lower access to mental health treatments was a concern for Black and Latinx populations. This disparity put these communities at a higher risk of experiencing exacerbated symptoms during the pandemic (57).

Children and adolescents, despite being at a lower risk of severe COVID-19 symptoms compared to adults, were not spared the mental toll. Factors like isolation, reduced school-based support, altered family circumstances, and losing a loved one to COVID-19 contributed to heightened mental health issues among the youth. The 2021 Adolescent Behaviors and Experiences Survey found that 37% of high school students felt their mental health deteriorated during the pandemic (58). Additionally, the 2021 Youth Risk Behavior Survey showed a 5% increase in students feeling consistently sad or hopeless compared to 2019 data (24, 59).

Efforts were made to enhance the availability and accessibility of mental health services during the pandemic. The adoption of telehealth surged after many states modified their policies via temporary licensing waivers (52). However, challenges remain. The cost of treatment, limited

network coverages, and navigating the mental health care system are persistent barriers to accessing care.

Mental Health Support

Treatment can significantly assist those living with mental illness in managing their symptoms and even achieving full recovery. Diagnosis and medication treatment can be provided by primary care providers, psychiatrists, psychiatric nurse practitioners, and other advanced practice providers. For counseling and therapy, individuals can connect with therapists, counselors, or other mental health specialists through insurance, state or local agencies, federal entities like SAMHSA or HRSA, or community-based health providers. Massachusetts recently introduced the Behavioral Health Help Line in 2023, a valuable resource guiding individuals to suitable treatments and supports (60). More information can be found in the resources section below.

Certain groups, such as those in rural communities or those with financial constraints, face higher barriers when accessing mental health support and treatment. In 2020, under half of US adults with mental illness reported receiving treatment. Among these individuals, the primary deterrent was the inability to afford care (61). Geographical barriers also play a significant role. For instance, rural residents typically travel twice the distance to the nearest hospital compared to their suburban or urban counterparts and often lack robust broadband internet access, hindering telehealth options (62). Alarmingly, less than a third of the US population resides in areas with enough mental health professionals (63).

Despite the availability, accessibility, and affordability of many mental health services, treatment outcomes can still fall short. These shortcomings can especially affect groups that face discrimination within healthcare and mental health services (64). Furthermore, a lack of cultural sensitivity, competence, or a mismatch in racial, gender, cultural, ethnic, or other identities between the mental health provider and the individual can exacerbate these disparities (65). Such misalignments can result in dissatisfaction, subsequently diminishing the efficacy of the treatment.

Protective factors

Mental health is shaped by risk factors and protective factors that shield against the onset or escalation of mental health issues. On an individual scale, personal resilience, effective coping strategies, and positive self-esteem often play crucial roles in navigating life's challenges (66). One's perceived family support is an anchor, providing emotional and psychological stability during tumultuous times. This bond is often vital in promoting an individual's sense of security and belonging, which are fundamental to good mental health.

Moving beyond the individual to the broader social context, a robust sense of cultural identity serves as a touchstone, grounding individuals and providing a framework for understanding oneself and the surrounding world. Cultural traditions and practices can act as regular sources of comfort and can provide a sense of purpose and direction (67). Another pivotal protective factor lies in the realm of community and societal connections. Being integrated and feeling valued in larger community structures, such as religious institutions, schools, or community centers, fosters a sense of purpose and communal unity. These institutions not only offer supportive environments but also provide opportunities for social interaction and shared experiences, further reinforcing one's place within a collective (67).

A prime example of the profound influence of community institutions is seen in the context of schools. School connectedness, characterized by the level to which students feel cared for and valued by both peers and adults in the school environment, is a cornerstone of adolescent well-being. This connectedness during formative years like middle and high school not only shapes immediate experiences but also leaves lasting imprints, influencing adult behavior. As evidence suggests, young individuals who perceive high levels of connectedness during these years tend to exhibit fewer issues related to problematic substance use, mental health challenges, suicidal tendencies, and risky sexual behaviors in their subsequent adult years (68). This underscores the ripple effect that protective factors can have, echoing their benefits well beyond immediate contexts and into the broader trajectory of an individual's life.

Recovery and Thriving

A mental health diagnosis is not a barrier to leading a vibrant, enriched life. Many find solace and empowerment in understanding their condition, viewing the diagnosis as a starting point on their journey to well-being. Medication can offer remarkable relief from symptoms and coupling it with supportive conversations—whether with a spiritual guide, a skilled mental health professional, peers in a support group, or other therapeutic avenues—provides a holistic approach to healing. These modalities act as bridges, connecting individuals to a world where they don’t feel isolated, providing strength and solace in the collective experience. It's true that pinpointing an exact diagnosis and curating a tailored treatment plan may demand patience and persistence. However, walking this path with a dedicated mental health expert ensures clarity, understanding, and progression.

History shows us that recovery from mental illness is not just a possibility—it's a reality that becomes even more attainable as individuals age (69). The landmark 2003 President’s New Freedom Commission Report on Mental Health revolutionized our perspective by introducing "recovery" as a central tenet in the conversation surrounding mental illness (70, 71). This pioneering document asserted that the aim of mental health services is to foster recovery,

underscoring the invaluable role of peer support in this journey. SAMHSA echoes this sentiment and champions recovery as the heart of behavioral health care (72). Today, the ethos of recovery and the advocacy for systems oriented towards this goal resonates profoundly across the nation. Esteemed institutions and figures, from the US Surgeon General to the National Academy of Medicine, vocally endorse the notion of recovery. Their collective voice reaffirms a singular, uplifting truth: with the proper support and resources, every individual can recover, manage, and, indeed, thrive despite their conditions (73).

Mental Health Resources in Massachusetts

Behavioral Health Help Line
Phone/Text: 833-773-2445
Availability: 24/7, 365 days a year
Details: This service is free, confidential, and offers real-time interpretation in over 200 languages. It is broadly inclusive, providing services for LGBTQ+, BIPOC, deaf or hard of hearing, individuals with disabilities, and non-English speakers. Callers receive assistance from qualified professionals for mental health assessments, crisis services, substance use treatment, and more, with community-specific options. Staff ensure callers are connected to their next step and provide clinical follow-up.

988 - National Suicide Prevention Lifeline
Availability: 24/7, 365 days a year
Details: Direct connection to trained call takers for emotional distress or suicidal thoughts. While they are not licensed clinicians, they offer free, confidential emotional support. It is important to note that anyone can call 988, even if they aren't experiencing suicidal ideation.

Massachusetts Substance Use Helpline
Phone: 1-800-327-5050
Details: A free, confidential statewide resource offering assistance for substance use treatment, recovery, and problem gambling. Trained specialists guide callers through treatment options and the system.

SafeLink Hotline
Phone: 1-877-875-2020
Availability: 24/7, 365 days a year
Details: A free, confidential, multi-lingual hotline for individuals experiencing abuse or assault in domestic or sexual contexts. Trained advocates offer support, resources, and connections to local programs.

Mayor's Health Line
Phone: 617-534-5050

Email: mayorshealthline@bphc.org
Availability: Monday-Friday, 9:00 am-5:00 pm
Details: This free, confidential, multilingual service aids Boston residents, irrespective of immigration status. It facilitates access to health-promoting services and programs, answers health insurance queries, provides referrals, locates free clinics, and more.

METHODS

This report presents data related to mental health among Boston residents from 2015 to 2021 derived mainly from five data sources:

(1) data related to the mental health of Boston public high school students are from the Youth Risk Behavior Survey (YRBS), Centers for Disease Control and Prevention and Boston Public Schools

(2) housed Boston adult health-related data are from the Boston Behavioral Risk Factor Surveillance System (Boston BRFSS), Boston Public Health Commission (BPHC)

(3) data describing the health of unhoused adults are from the Health of Boston Survey of People Experiencing Homelessness (HOB SPEH)

(4) data describing acute care hospital utilization (i.e., hospital patient encounters) are from the Case Mix Databases, Massachusetts Center for Health Information and Analysis (CHIA)

(5) data describing suicides among Boston residents are from the Massachusetts Resident Death files, Massachusetts Department of Public Health (DPH)

Data across these five sources were analyzed and presented in a manner seeking to maximize their contribution towards furthering our understanding of Boston resident mental health.

Youth data from the Boston YRBS are derived from random sample surveys administered approximately every other year as specified. Data from the survey were adjusted (i.e., weighted) to permit generation of rates (i.e., percentages) that represent the entire Boston Public High School population. In some cases, survey data for multiple years were combined to increase stability of estimates. Logistic regression was used for comparing two demographic groups within a given time period ($p<.05$).

Adult data from the Boston BRFSS were derived from random sample surveys with approximately 3,000 respondents administered approximately every other year as specified

from 2015 to 2021. The resulting data from the past four survey years were adjusted (i.e., weighted) to permit generation of rates (i.e., percentages) that represent the entire Boston resident population of adults living in households. In some cases, survey data for multiple years were combined to increase stability of estimates. Logistic regression was used to determine the direction of change over time (i.e., increasing, decreasing or stable) and for comparing two demographic groups within a given time period ($p<0.05$).

Emergency department visit and mortality rates within this report were age-adjusted using the US 2000 standard population to permit comparisons that mitigate the impact of differences in age distributions of their respective underlying populations. The resulting comparisons allow consideration of observed differences in terms of factors other than population age differences. Age-specific results for emergency department visits are also provided. Definitions used to measure mental health emergency department visits for several conditions provided in this report (any mental health disorder, anxiety disorders, depressive disorders, bipolar disorders, schizophrenia spectrum disorders, trauma-related disorders, ADHD, disruptive behavioral and impulse control disorders, OCD, and eating disorders) were adopted from definitions used in a CDC analysis published in 2022 that identified such disorders using International Classification of Diseases, Ninth Revision, Clinical Modification codes (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification codes (ICD-10-CM) (74).

For Boston hospital-patient encounters (HPE), and mortality comparisons, rate change over time for the five years (2017-2021) and rate differences between two demographic groups for the most recent year or time period were assessed using statistical procedures. Whether hospitalization and mortality rates increased or decreased was determined by assessing linear change across the entire 5-year time period using Poisson regression ($p<0.05$).

Similarly, a rate for a given demographic group is described as higher or lower than the comparison group (i.e., reference group) only when the comparison test indicated statistical significance ($p<0.05$). When two rates were compared and the difference was not found to be statistically significant, the two rates are described as “similar” if mentioned in text. Demographic group differences for mental health emergency department visits and suicide mortality were based on a comparison of single-year rates for the most recent data year, 2021, if there were sufficient cases In some instances, data for multiple years were combined to increase stability of estimates and comparisons.

Boston population data used as denominators in the rate calculations were produced internally by the BPHC Population Health and Research Boston Population Estimates Project (B-PEP). B-PEP uses 2010 and 2020 US Census data and 2019 American Community Survey data for Boston to generate population estimates for years between the 2010 and 2021 via interpolation and

extrapolation of age, race/ethnicity, sex, and neighborhood population change from 2010 to 2020. For more information on B-PEP, please contact the BPHC Population Health and Research office at populationhealth@bphc.org. Of note, B-PEP population estimates will be revised as the US Census Bureau releases further delineated 2020 Census population data.

All racial and ethnic designations except those from the death certificate, some hospital discharge data, and some emergency department data are self-reported. Several cautions should be kept in mind when using data reported by race/ethnicity. Race and ethnicity are social constructs, not biological facts. There is often more genetic variation between members of the same race than between members of different races. In addition, the meanings of these designations are highly subject to historical, cultural, and political forces. Not only do these designations change over time, but there is also a very subjective element that influences who is considered a member of one group or another. The concept of race can be notably broad: the term "Black," for example, includes people describing themselves as African American, African diaspora, or Caribbean, groups with distinct histories and differing health risks. Nevertheless, racial designations are useful in that they are nearly universally used by people in the United States to describe themselves, and they permit us to identify and address health inequities that exist across racial and ethnic groups.

For racial/ethnic group comparisons we used White residents as the reference group and assessed the difference between each non-White resident group rate (e.g., rate for Black residents) and the White resident (reference group) rate. For sex-based comparisons, males were the reference group. Neighborhood comparisons involved assessing the difference between a given neighborhood's rate and the rate for the rest of Boston (those residents not living in the specified neighborhood). These comparisons are considered more accurate than comparisons to Boston overall.

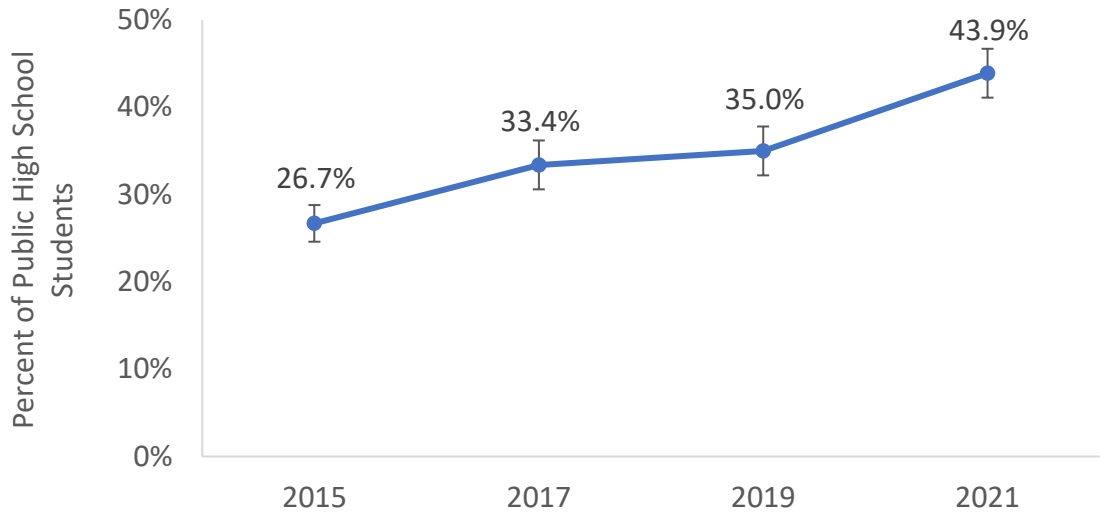
Hispanic and or Latinx people can be of any race. In this report, data for persons of Hispanic and/or Latin descent are described as Latinx and presented alongside non-Latinx racial groups. Boston-specific data by race and Latinx ethnicity is presented for non-Latinx Asian residents, non-Latinx Black residents, non-Latinx White residents, and Latinx residents of any race. Few sources have data in large enough counts to allow presentation of data about smaller groups such as the many ethnicities included under the category "Asian." Additionally, small survey sample size and case numbers limit the ability to identify and describe health disparities for indigenous people.

For additional information regarding the analytical methods used within this report, please contact the Boston Public Health Commission Population Health and Research (PHAR) Office at populationhealth@bphc.org.

SECTION 1. PREVALENCE-YOUTH

Experiencing symptoms of poor mental health during adolescence can be associated with negative health outcomes for teens, which can carry into adulthood. This section describes trends and patterns in the prevalence of persistent feelings of sadness or hopelessness, and suicidal thoughts and behaviors.

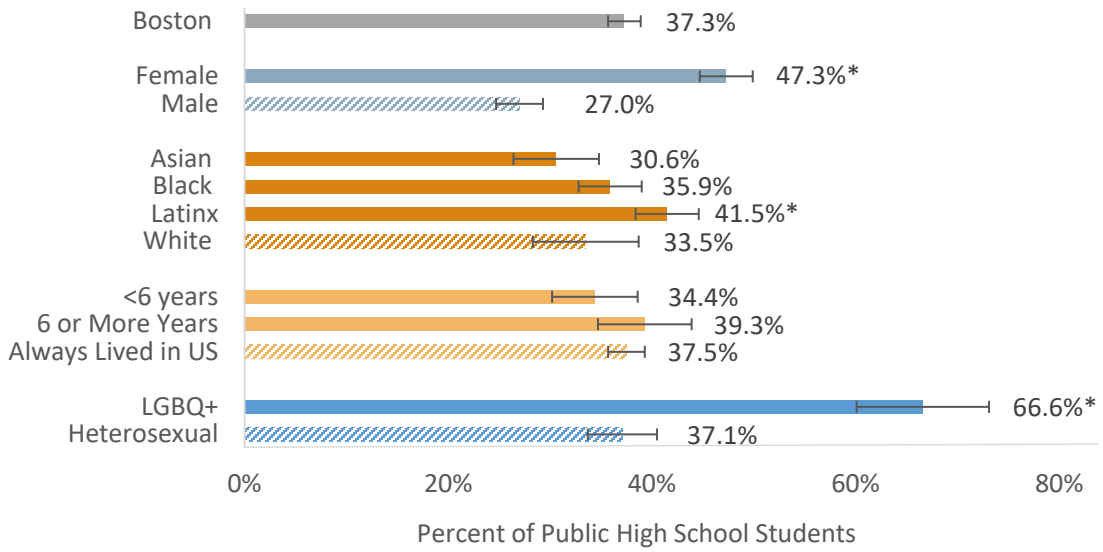
Figure 1. Persistent Sadness Among Boston Public High School Students by Year, 2015, 2017, 2019, 2021



NOTE: BPHC may utilize a different methodology than CDC when computing prevalence estimates, which could yield slightly different results as disseminated from Boston Public Schools (BPS). Specifically, BPHC assesses item non-response (i.e., those who respond "don't know" or "refused to answer") but typically excludes these from consideration when calculating point estimates (i.e., percentages). For further explanation of observed differences and applied analytical methods please contact populationhealth@bphc.org.
DATA SOURCE: Youth Risk Behavioral Survey (2015, 2017, 2019, 2021), Centers for Disease Control and Prevention, Boston Public Schools

2015-2021: Students were asked if during the past 12 months they felt sad or hopeless every day for two weeks or more (persistent sadness). The percentage of Boston public high school students reporting persistent sadness increased steadily from 2015 (26.7%) to 2021 (43.9%) (Figure 1).

Figure 2. Persistent Sadness Among Boston Public High School Students by Selected Demographics, 2017, 2019, 2021 Combined



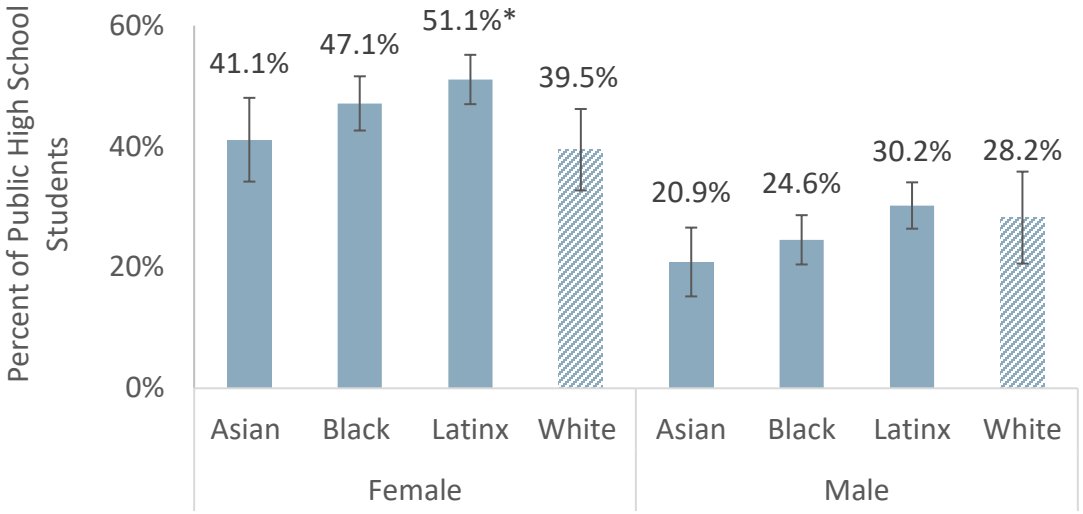
* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator.
DATA SOURCE: Youth Risk Behavior Survey (2017, 2019, 2021), Centers for Disease Control and Prevention and Boston Public Schools. (LGBQ+ and Heterosexual contains data from 2021 only due to change in survey question format).

2017, 2019, and 2021 Combined: As seen in Figure 2, more than one in three (37.3%) Boston public high school students reported experiencing persistent sadness for two weeks or more during the past year. The percentage of Boston public high school students who reported experiencing persistent sadness was higher for female students (47.3%) compared with male students (27.0%).

The percentage of Boston public high school students who reported experiencing persistent sadness was higher for Latinx students (41.5%) compared with White students (33.5%).

2021: The percentage of Boston public high school students who reported experiencing persistent sadness was higher for lesbian, gay, bisexual, questioning, and students who describe their sexuality in some other non-heterosexual way (LGBQ+) (66.6%) compared with heterosexual students (37.1%) (Figure 2).

Figure 3. Persistent Sadness Among Boston Public High School Students by Sex and Race/Ethnicity, 2017, 2019, 2021 Combined



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Youth Risk Behavior Survey (2017, 2019, 2021), Centers for Disease Control and Prevention and Boston Public Schools

2017, 2019, and 2021 Combined: A higher percentage of Latinx female students (51.1%) reported experiencing persistent sadness for two weeks or more compared with White female students (39.5%) (Figure 3). Among male students, there were no significant racial/ethnic differences.

Table 1. Suicide-Related Indicators Among Boston Public High School Students by Year, 2015, 2017, 2019, 2021

Suicide-Related Indicators	2015	2017	2019	2021	Trend
Felt sad or hopeless for 2+ weeks	26.7% (24.6-28.7)	33.4% (30.6-36.2)	35.0% (32.2-37.8)	43.9% (41.2-46.7)	↑
Purposely hurt self	14.4% (12.6-16.3)	16.3% (14.6-18.1)	15.4% (13.3-17.4)	19.1% (16.7-21.4)	↑
Considered suicide	11.0% (9.1-12.8)	11.9% (10.1-13.6)	15.6% (13.4-17.7)	15.6% (13.5-17.8)	↑
Planned suicide	9.7% (8.0-11.4)	10.1% (8.6-11.5)	12.7% (10.4-14.9)	14.1% (12.1-16.1)	↑
Attempted suicide	8.1% (6.6-9.7)	5.6% (4.4-6.8)	9.3% (7.4-11.1)	7.0% (5.6-8.5)	No significant change
Treated by doctor following suicide attempt	2.4% (1.6-3.2)	1.7% (1.0-2.3)	3.2% (1.9-4.4)	2.1% (1.3-3.0)	No significant change

DATA SOURCE: Youth Risk Behavior Survey (2015, 2017, 2019, 2021), Centers for Disease Control and Prevention and Boston Public Schools

2015-2021: From 2015 to 2021, suicide-related indicators such as the percentage of Boston public high school students who felt sad or hopeless for two weeks or more, purposely hurt themselves, considered suicide, and planned suicide increased (Table 1). However, the percentage of students who attempted suicide or were treated by a doctor following a suicide attempt did not change from 2015 to 2021.

Table 2. Suicide-Related Indicators Among Boston Public High School Students by Selected Demographics, 2017, 2019, 2021 Combined

Suicide-Related Indicators	Boston	Sex		Race/Ethnicity				Sexual Identity		Years in the US		
		Female	*Male*	Asian	Black	Latinx	*White*	LGBQ+	*Hetero-sexual*	<6 years	6+ years	*Always lived in the US*
Felt sad or hopeless for 2+ weeks	**37.3%** (35.7-39.0)	**47.3%** (44.7-49.8)	***27.0%*** ***(24.7-29.3)***	**30.6%** (26.4-34.7)	**35.9%** (32.8-39.0)	**41.5%** (38.4-44.5)	***33.5%*** ***(28.3-38.7)***	**66.6%** (60.1-73.1)	***37.1%*** ***(33.7-40.6)***	**34.4%** (30.2-38.5)	**39.3%** (34.7-43.9)	***37.5%*** ***(35.7-39.4)***
Purposely hurt self	**16.9%** (15.7-18.1)	**21.9%** (20.0-23.8)	***11.3%*** ***(9.5-13.0)***	**15.8%** (12.7-18.8)	**13.8%** (11.6-16.1)	**19.1%** (16.9-21.2)	***16.5%*** ***(13.0-20.0)***	**38.3%** (32.7-43.9)	***12.3%*** ***(10.0-14.5)***	**15.0%** (11.6-18.3)	**15.5%** (12.1-18.9)	***17.6%*** ***(16.1-19.0)***
Considered suicide	**14.3%** (13.1-15.5)	**18.9%** (17.1-20.7)	***9.3%*** ***(7.8-10.8)***	**14.6%** (11.8-17.5)	**14.3%** (11.9-16.6)	**14.0%** (12.1-15.9)	***14.0%*** ***(10.5-17.5)***	**31.4%** (25.9-36.8)	***10.6*** ***(8.3-12.9)***	**12.5%** (9.7-15.3)	**15.2%** (12.1-18.4)	***14.4%*** ***(13.1-15.8)***
Planned suicide	**12.2%** (11.1-13.3)	**16.5%** (14.8-18.3)	***7.4%*** ***(6.1-8.8)***	**11.4%** (8.4-14.3)	**12.8%** (10.7-14.8)	**12.3%** (10.6-14.1)	***10.6%*** ***(7.7-13.4)***	**29.3%** (24.0-34.6)	***8.9%*** ***(6.7-11.1)***	**11.2%** (8.3-14.2)	**14.3%** (11.2-17.3)	***12.0%*** ***(10.6-13.3)***
Attempted suicide	**7.3%** (6.4-8.1)	**8.6%** (7.2-10.0)	***5.4%*** ***(4.1-6.6)***	**4.8%** (2.7-7.0)	**6.7%** (5.1-8.4)	**8.8%** (7.2-10.4)	***3.5%*** ***(1.5-5.5)***	**16.2%** (12.4-20.0)	***3.4%*** ***(1.8-4.9)***	**7.9%** (4.9-10.8)	**9.0%** (5.9-12.0)	***6.7%*** ***(5.7-7.6)***
Treated by doctor following suicide attempt	**2.3%** (1.8-2.9)	**2.6%** (1.7-3.5)	***1.9%*** ***(1.1-2.6)***	n<5	**1.6%** (0.8-2.5)	**3.2%** (2.2-4.3)	***2.2%*** ***(0.5-3.9)***	**4.8%** (2.4-7.2)	***1.0%*** ***(0.3-1.7)***	**3.4%** (1.5-5.3)	**4.0%** (1.8-6.1)	***1.7%*** ***(1.2-2.3)***

NOTE: Italicized font indicates reference group; Purple fill indicates statistically significant rate **higher** than the reference group within each selected indicator
DATA SOURCE: Youth Risk Behavior Survey (2017, 2019, 2021), Centers for Disease Control and Prevention and Boston Public Schools. (LGBQ+ and Heterosexual contains data from 2021 only due to change in survey question format).

2017, 2019, and 2021 Combined: As seen in Table 2, female youth had a higher prevalence of feeling sad or hopeless for 2+ weeks (47.3%) compared to male youth (27.0%), purposely hurting themselves (21.9% compared to 11.3%), considering suicide (18.9% compared to 9.3%), planning suicide (16.5% compared to 7.4%) and attempting suicide (8.6% compared to 5.4%)

Latinx youth had a higher prevalence of feeling sad or hopeless for 2+ weeks (41.5%) compared to White youth (33.5%).

Black and Latinx youth had a higher prevalence of attempting suicide (6.7% and 8.8%, respectively) compared to White youth (3.5%).

Foreign-born youth who had been in the US for fewer than 6 years and 6+ years had a higher prevalence of being treated by a doctor following a suicide attempt (3.4% and 4.0%, respectively) compared to youth who always lived in the US (1.7%).

2021: LGBQ+ youth had a much higher prevalence of feeling sad or hopeless for 2+ weeks (66.6%) compared to heterosexual youth (37.1%), purposely hurting themselves (38.3% compared to 12.3%), considering suicide (31.4% compared to 10.6%), planning suicide (29.3% compared to 8.9%), attempting suicide (16.2% compared to 3.4%), and being treated by a doctor following a suicide attempt (4.8% compared to 1.0%) (Table 2).

Table 3. Suicide-Related Indicators Among Boston Public High School Students by Sex and Race/Ethnicity, 2017, 2019, 2021 Combined

Suicide-Related Indicators	Boston	Females				Males			
		Asian	Black	Latinx	***White***	Asian	Black	Latinx	***White***
Felt sad or hopeless for 2+ weeks	**37.3%** (35.7-39.0)	**41.1%** (34.2-48.1)	**47.1%** (42.6-51.6)	**51.1%** (47.0-55.2)	***39.5%*** ***(32.7-46.2)***	**20.9%** (15.2-26.6)	**24.6%** (20.5-28.6)	**30.2%** (26.4-34.1)	***28.2%*** ***(20.6-35.8)***
Purposely hurt self	**16.9%** (15.7-18.1)	**20.5%** (15.6-25.4)	**18.1%** (14.3-21.9)	**24.3%** (21.0-27.6)	***23.2%*** ***(17.3-29.2)***	**11.5%** (7.0-16.0)	**9.3%** (6.6-11.9)	**12.6%** (9.8-15.3)	***10.4%*** ***(6.4-14.3)***
Considered suicide	**14.3%** (13.1-15.5)	**18.6%** (13.9-23.4)	**20.4%** (16.5-24.2)	**17.6%** (14.7-20.5)	***16.8%*** ***(11.1-22.6)***	**11.0%** (6.8-15.3)	**8.4%** (5.8-10.9)	**9.1%** (6.9-11.4)	***11.6%*** ***(6.7-16.5)***
Planned suicide	**12.2%** (11.1-13.3)	**13.5%** (8.5-18.4)	**19.7%** (16.2-23.2)	**14.9%** (12.3-17.5)	***15.7%*** ***(10.9-20.6)***	**9.4%** (5.9-12.9)	**5.7%** (3.6-7.8)	**8.6%** (6.5-10.7)	***6.1%*** ***(2.3-9.9)***
Attempted suicide	**7.3%** (6.4-8.1)	**4.5%** (1.9-7.1)	**8.4%** (5.7-11.0)	**9.7%** (7.3-12.1)	***6.0%*** ***(2.3-9.7)***	**5.0%** (1.5-8.7)	**5.0%** (2.8-7.0)	**7.0%** (4.5-9.1)	***n<5***
Treated by doctor following suicide attempt	**2.3%** (1.8-2.9)	n<5	**1.3%** (0.2-2.3)	**3.5%** (1.9-5.0)	***5.0%*** ***(1.1-8.0)***	n<5	**2.0%** (0.6-3.4)	**2.6%** (1.1-4.0)	***n<5***

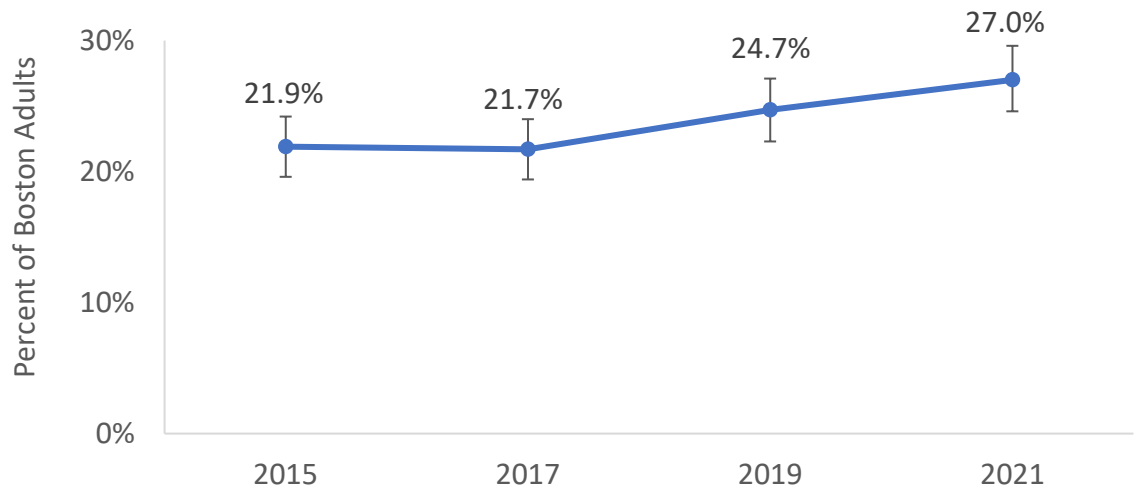
NOTE: Italicized bold font indicates reference group; Yellow fill indicates statistically significant rate **lower** than the reference group within each selected indicator; Purple fill indicates statistically significant rate **higher** than the reference group within each selected indicator
DATA SOURCE: Youth Risk Behavior Survey (2017, 2019, 2021), Centers for Disease Control and Prevention and Boston Public Schools.

2017, 2019, and 2021 Combined: During 2017, 2019, and 2021 combined, Latinx female youth had a higher prevalence of feeling sad or hopeless for 2+ weeks (51.1%) compared to White female youth (39.5%) (Table 3). Black female youth had a lower prevalence of being treated by a doctor following a suicide attempts (1.3%) compared to White female youth (5.0%) (Table 3).

SECTION 2. PREVALENCE-ADULT

This section describes trends and patterns in the prevalence of persistent feelings of anxiousness, sadness or hopelessness among housed and unhoused Boston adults. Although these are measures indicating the prevalence of poorer emotional health, these are not measures of the prevalence of diagnosed mental health conditions.

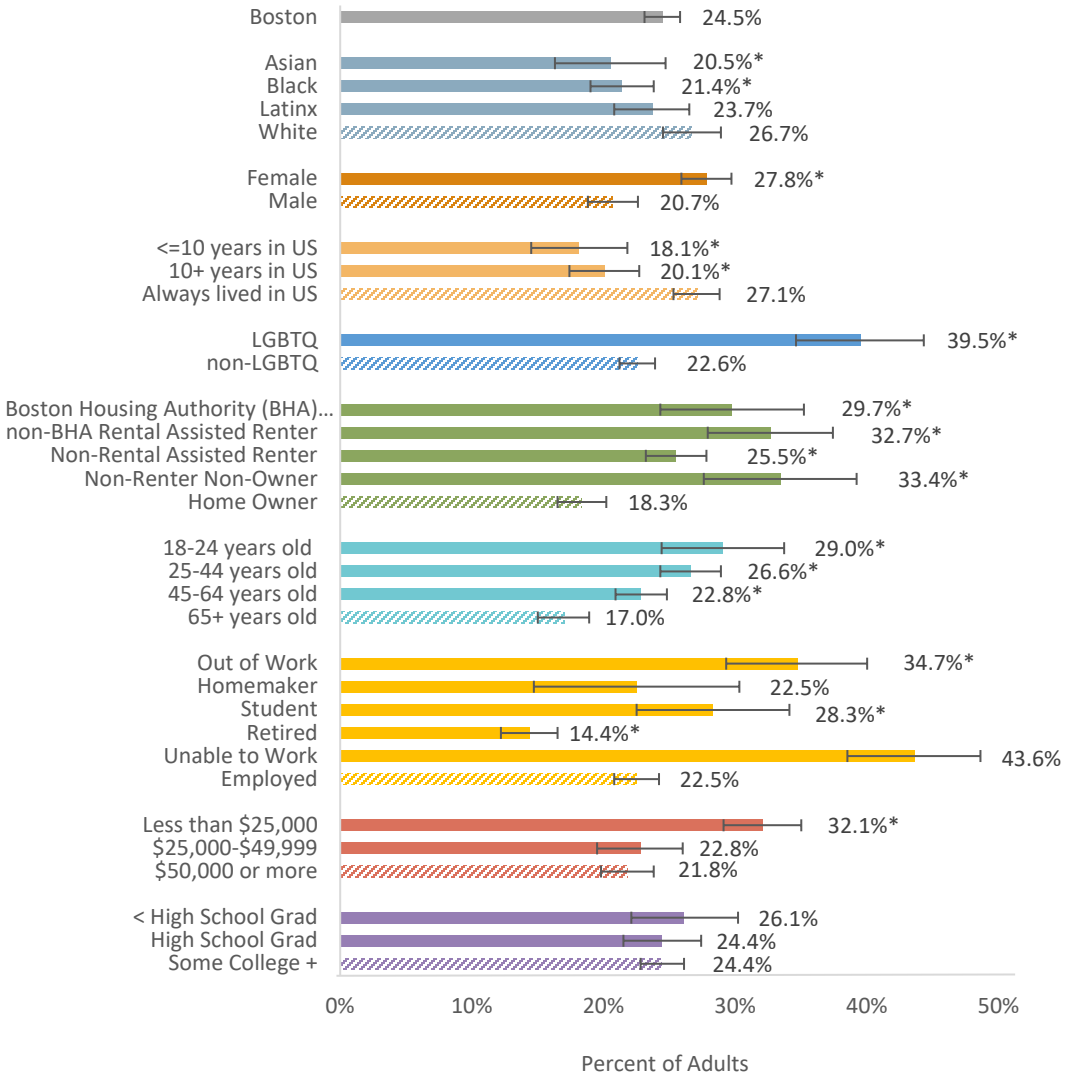
Figure 4. Persistent Anxiety Among Adults by Year, 2015, 2017, 2019, 2021



DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2015, 2017, 2019, 2021), Boston Public Health Commission

2015-2021: The percentage of Boston adults reporting persistent anxiety (feeling anxious, worried, or tense for at least 15 days in the past 30 days) increased from 2015 (21.9%) to 2021 (27.0%) (Figure 4).

Figure 5. Persistent Anxiety Among Adults by Selected Demographics, 2017, 2019, 2021 Combined



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator.
DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2017, 2019, 2021), Boston Public Health Commission

2017, 2019, and 2021 Combined: As shown in Figure 5, approximately 25% of Boston adults reported experiencing persistent anxiety for 15 or more days.

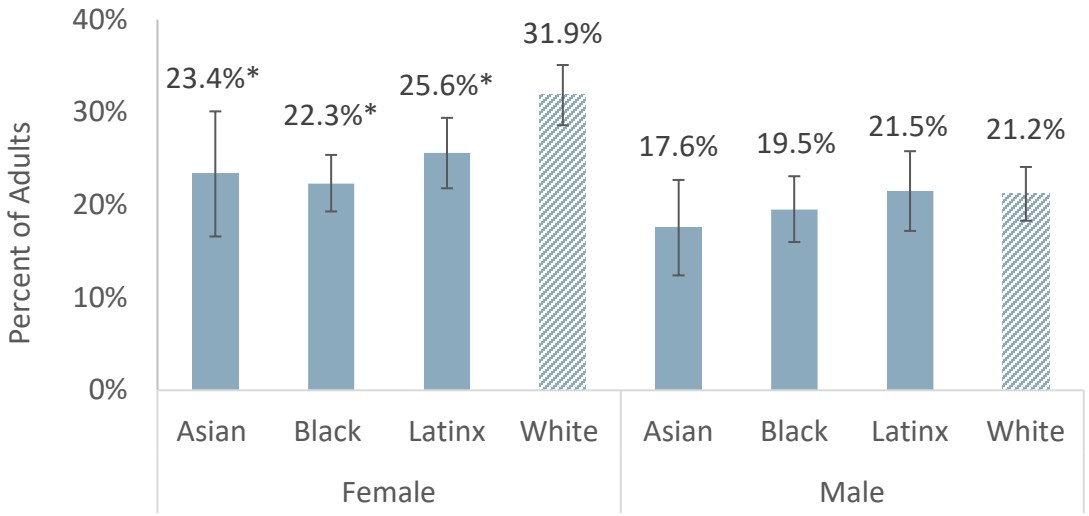
The percentage of adults with persistent anxiety was higher for the following groups:

- Female adults (27.8%) compared with male adults (20.7%)
- Lesbian, gay, bisexual, transgender, and queer or questioning (LGBTQ+) adults (39.5%) compared with non-LGBTQ+ adults (22.6%)
- Adults who were Boston Housing Authority (BHA) residents (29.7%), non-BHA rental assisted renters (32.7%), non-rental assisted renters (25.5%), and non-renter non-owners (33.4%) compared with homeowners (18.3%)
- Adults ages 18-24 (29.0%), ages 25-44 (26.6%), and ages 45-64 (22.8%) compared with adults ages 65+ (17.0%)
- Adults who were out of work (34.7%), students (28.3%), and adults who were unable to work (43.6%) compared with employed adults (22.5%)
- Adults living in households with an annual income of less than $25,000 (32.1%) when compared with adults living in households with an annual income of $50,000 or more (21.8%)

The percentage of adults with persistent anxiety was lower for the following groups:

- Asian adults (20.5%) and Black adults (21.4%) compared with White adults (26.7%)
- Foreign-born adults who lived in the US for 10 years or fewer (18.1%) and foreign-born adults who lived in the US for over 10 years (20.1%) compared with adults who were born in the US (27.1%)
- Retired adults (14.4%) compared with employed adults (22.5%)

Figure 6. Persistent Anxiety Among Adults by Sex and Race/Ethnicity, 2017, 2019, 2021 Combined

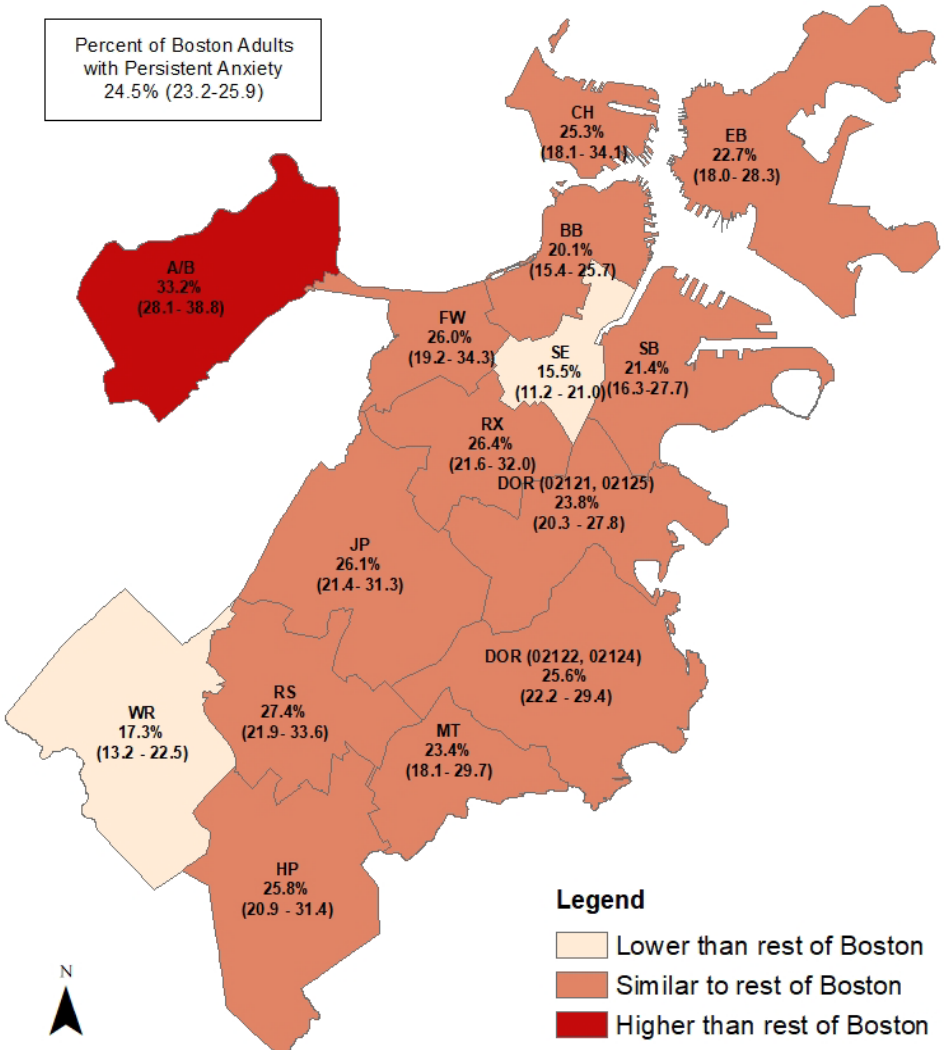


* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2017, 2019, 2021), Boston Public Health Commission

2017, 2019, and 2021 Combined: The percentage of adults with persistent anxiety for 15 or more days by sex and race/ethnicity was lower for Asian female (23.4%), Black female (22.3%) and Latinx female (25.6%) adults compared with White female adults (31.9%) (Figure 6).

Among male residents, there were no significant differences across the racial/ethnic groups presented.

Figure 7. Persistent Anxiety Among Adults by Neighborhood, 2017, 2019, 2021 Combined



DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2017, 2019, 2021), Boston Public Health Commission

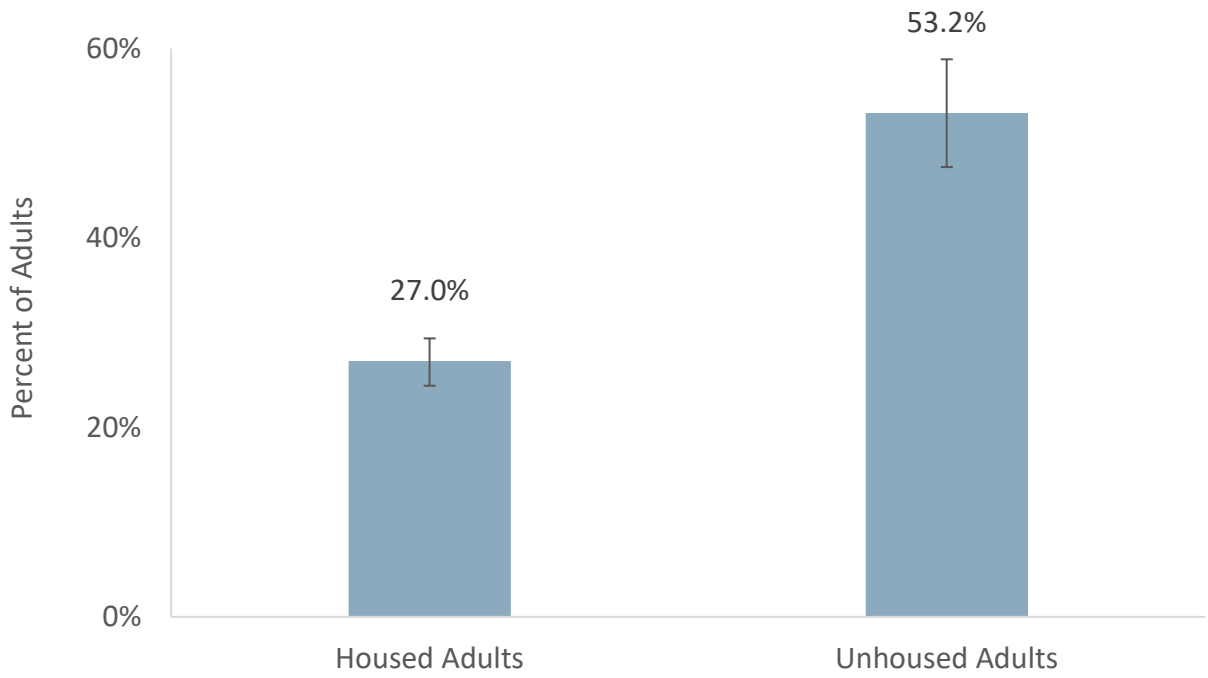
2017, 2019, and 2021 Combined: The percentage of adults in Boston who reported experiencing persistent anxiety for 15 or more days was 24.5%. When compared to the rest of Boston, the percentage of adults who reported experiencing persistent anxiety was higher for Allston/Brighton (33.2%) (Figure 7). The percentage of adults who reported experiencing persistent anxiety was lower for West Roxbury (17.3%) and the South End (15.5%) when compared to the rest of Boston (Figure 7).

Table 4. Persistent Anxiety Among Adults by Neighborhood, 2017, 2019, 2021 Combined

Neighborhood, associated ZIP code(s)	Estimate	95% Confidence Interval
Allston/Brighton (AB), 02134, 02135, 02163	33.2	(28.1- 38.8)
Roslindale (RS), 02131	27.4	(21.9- 33.6)
Roxbury (RX), 02119, 02120	26.4	(21.6- 32.0)
Jamaica Plain (JP), 02130	26.1	(21.4- 31.3)
Fenway (FW), 02115, 02215	26.0	(19.2- 34.3)
Hyde Park (HP), 02136	25.8	(20.9 - 31.4)
Dorchester (DOR), 02122, 02124	25.6	(22.2 - 29.4)
Charlestown (CH), 02129	25.3	(18.1- 34.1)
Dorchester (DOR), 02121, 02125	23.8	(20.3 - 27.8)
Mattapan (MT), 02126	23.4	(18.1- 29.7)
East Boston (EB), 02128	22.7	(18.0- 28.3)
South Boston (SB), 02127, 02210	21.4	(16.3-27.7)
Back Bay, Downtown, Beacon Hill, North End, West End (BB), 02108-02110, 02113-02114, 02116, 02199	20.1	(15.4- 25.7)
West Roxbury (WR), 02132	17.3	(13.2 - 22.5)
South End (SE), 02111, 02118	15.5	(11.2 - 21.0)

DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2017, 2019, 2021), Boston Public Health Commission

Figure 8. Persistent Anxiety Among Housed and Unhoused Adults, 2021

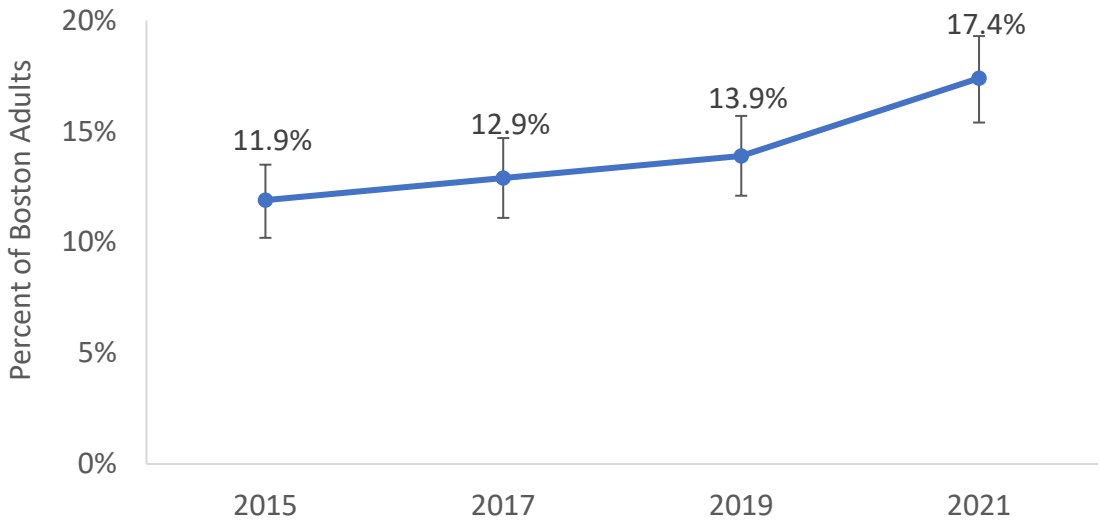


DATA SOURCES: Boston Behavioral Risk Factor Surveillance System, BPHC (2021); Health of Boston Survey of People Experiencing Homelessness, Boston Public Health Commission (2021)

2021: Over half (53.2%) of unhoused (i.e., homeless) adults experienced persistent anxiety for 15 or more days compared to 27.0% of housed adults (Figure 8).

For more information on the health of Boston's unhoused adults, please see Unhoused and Uncounted: Health of Boston Survey of People Experiencing Homelessness or contact the Population Health and Research Office at populationhealth@bphc.org.

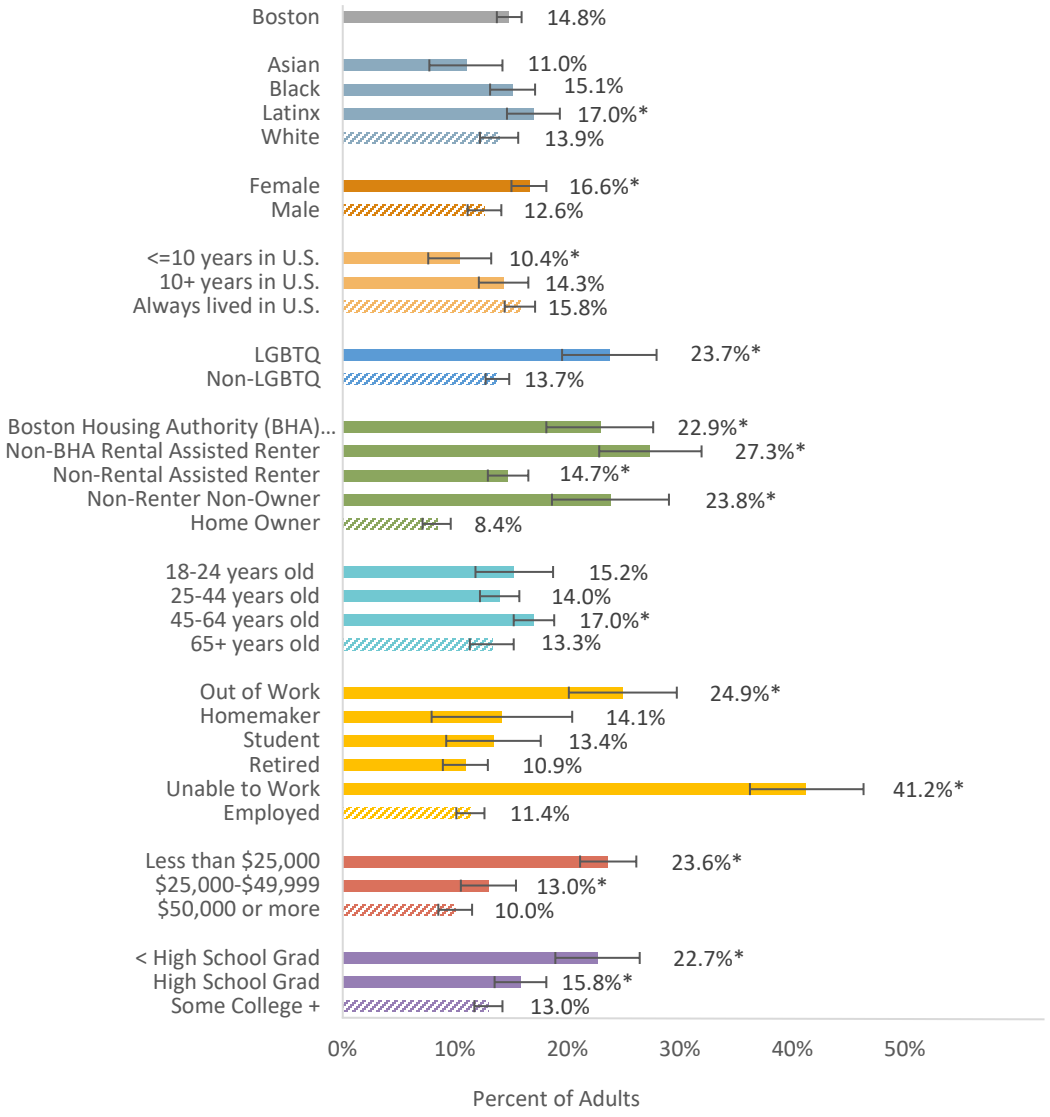
Figure 9. Persistent Sadness Among Adults by Year, 2015, 2017, 2019, 2021



DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2015, 2017, 2019, 2021), Boston Public Health Commission

2015-2021: The percentage of Boston adults who reported feeling persistent sadness (feeling sad, blue, or depressed for more than 15 days within the past 30 days) increased from 2015 (11.9%) to 2021 (17.4%) (Figure 9).

Figure 10. Persistent Sadness Among Adults by Selected Demographics, 2017, 2019, 2021 Combined



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2017, 2019, 2021), Boston Public Health Commission

2017, 2019, and 2021 Combined: The percentage of Boston adults who reported experiencing persistent sadness for 15 or more days was 14.8% (Figure 10).

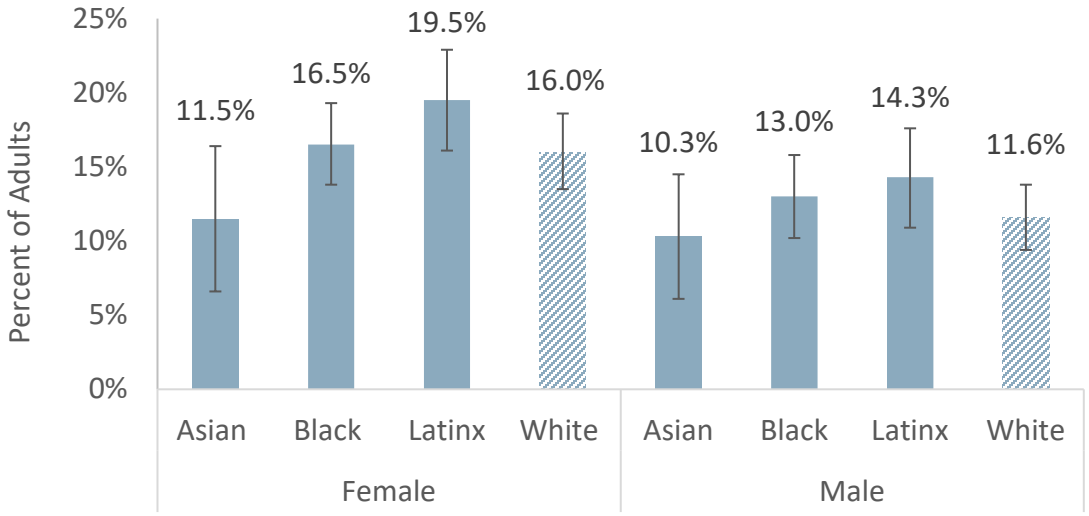
The percentage of Boston adults who reported experiencing persistent sadness for 15 or more days was higher for the following groups:

- Female adults (16.6%) compared with male adults (12.6%)
- Latinx adults (17.0%) compared with White adults (13.9%)
- LGBTQ+ adults (23.7%) compared with non-LGBTQ+ adults (13.7%)
- Adults who were Boston Housing Authority (BHA) residents (22.9%), non-BHA rental assisted renters (27.3%), non-rental assisted renters (14.7%), and non-renter non-owners (23.8%) compared with homeowners (8.4%)
- Adults who were ages 45-64 (17.0%) compared with adults who were ages 65+ (13.3%)
- Adults who were out of work (24.9%) and unable to work (41.2%) compared with employed adults (11.4%)
- Adults living in households with an annual income of less than $25,000 (23.6%) or $25,000-$49,999 (13.0%) compared with adults living in households with an annual income of $50,000 or more (10.0%)
- Adults with less than a high school diploma (22.7%) and adults with a high school diploma (15.8%) compared with adults who received at least some college education (13.0%)

The percentage of Boston adults who reported experiencing persistent sadness for 15 or more days was lower for the following groups:

- Foreign-born adults who have lived in the US for 10 years or fewer (10.4%) compared with adults who were born in the US (15.8%)

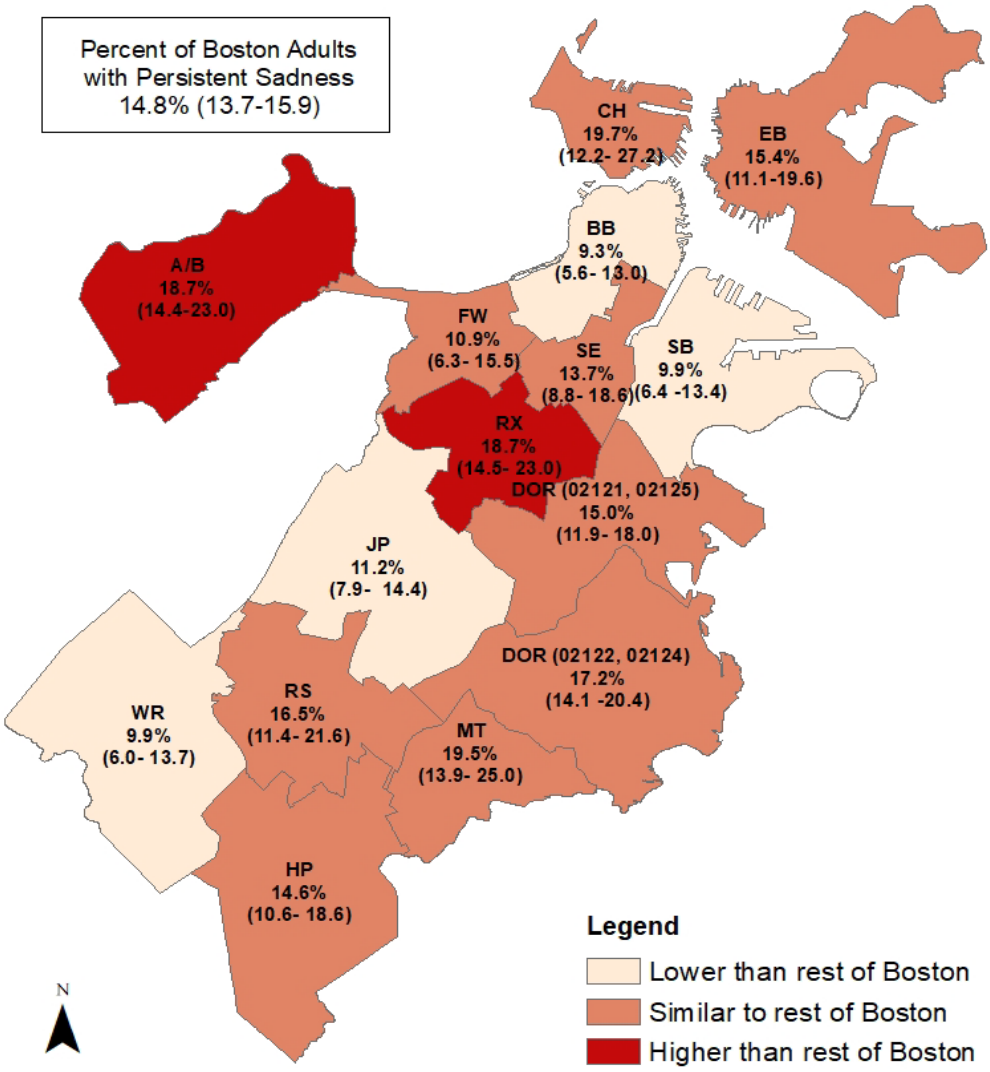
Figure 11. Persistent Sadness Among Adults by Sex and Race/Ethnicity, 2017, 2019, 2021 Combined



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group.
DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2017, 2019, 2021), Boston Public Health Commission

2017, 2019, and 2021 Combined: There were no significant differences in adults who reported experiencing persistent sadness for 15 or more days across race/ethnicity for male or female residents (Figure 11)

Figure 12. Persistent Sadness Among Adults by Neighborhood, 2017, 2019, 2021 Combined



DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2017, 2019, 2021), Boston Public Health Commission

2017, 2019, and 2021 Combined: As seen in Figure 12, the percentage of adults in Boston overall who reported experiencing persistent sadness for 15 or more days was 14.8%. When compared to the rest of Boston, the percentage of adults who experienced persistent sadness was higher for Allston/Brighton (18.7%) and Roxbury (18.7%). The percentage of adults who experienced persistent sadness was lower for Jamaica Plain (11.2%), South Boston (9.9%), West Roxbury (9.9%), and the Back Bay (9.3%) when compared to the rest of Boston.

In Figure 12, the percent for each neighborhood is described as higher or lower than the rest of Boston only when the comparison test indicated statistical significance ($p<.05$). The percent for the "rest of Boston" is different for each neighborhood (for example, when testing the percent for Mattapan against the rest of Boston, the rest of Boston would include all neighborhoods **except** for Mattapan) and is not presented in the report. On occasion, a percent for a given neighborhood is higher or lower than its corresponding percent for the rest of Boston, but when compared, the comparison test does not indicate statistical significance ($p=>.05$). These neighborhoods are subsequently described as "similar" to the rest of Boston.

This application of statistical testing to assess percentage differences helps identify differences across neighborhoods that are not likely the result of random variation and as a result are considered more reliable. To what extent these differences carry real-world importance is a subjective decision on the part of public health practitioners and other data consumers.

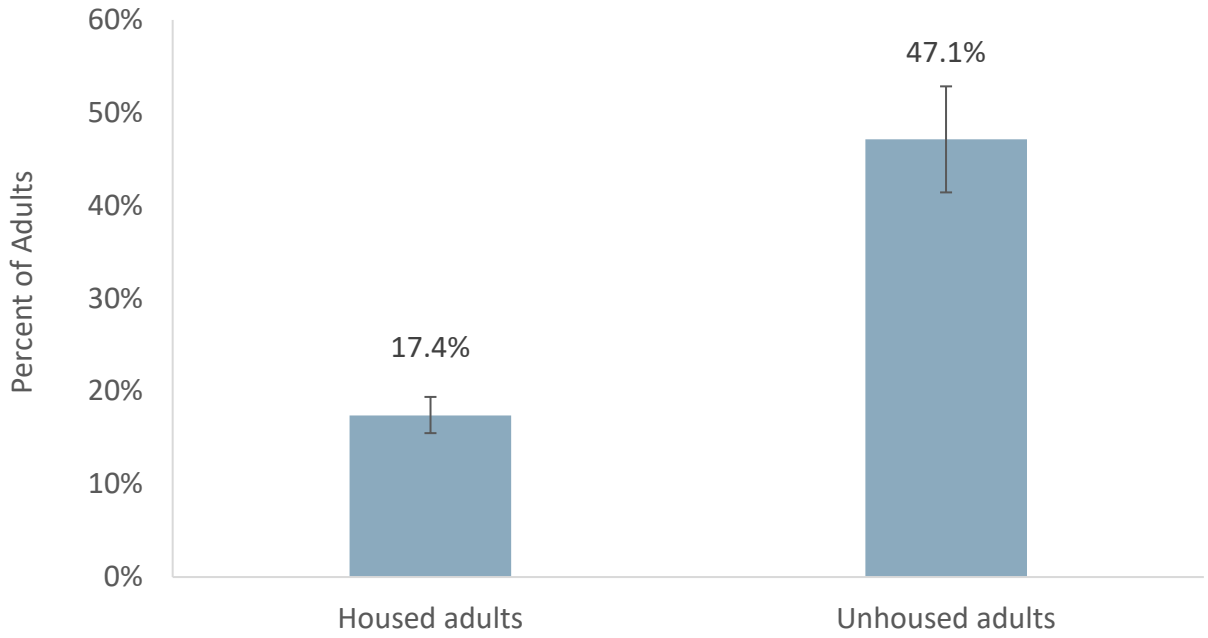
For more information, please contact the BPHC Population Health and Research Office at populationhealth@bphc.org.

Table 5. Persistent Sadness Among Adults by Neighborhood, Ranked in Descending Order, 2017, 2019, 2021

Neighborhood	Estimate	95% Confidence Intervals
Charlestown (CH), 02129	19.7	(12.2 - 27.2)
Mattapan (MT), 02126	19.5	(13.9 - 25.0)
Allston/Brighton (AB), 02134, 02135, 02163	18.7	(14.4 - 23.0)
Roxbury (RX), 02119, 02120	18.7	(14.5 - 23.0)
Dorchester (DOR), 02122, 02124	17.2	(14.1 - 20.4)
Roslindale (RS), 02131	16.5	(11.4 - 21.6)
East Boston (EB), 02128	15.4	(11.1 - 19.6)
Dorchester (DOR), 02121, 02125	15.0	(11.9 - 18.0)
Hyde Park (HP), 02136	14.6	(10.6 -18.6)
South End (SE), 02111, 02118	13.7	(8.8 - 18.6)
Jamaica Plain (JP), 02130	11.2	(7.9 - 14.4)
Fenway (FW), 02115, 02215	10.9	(6.3 - 15.5)
South Boston (SB), 02127, 02210	9.9	(6.4 - 13.4)
West Roxbury (WR), 02132	9.9	(6.0 - 13.7)
Back Bay, Downtown, Beacon Hill, North End, West End (BB), 02108-02110, 02113-02114, 02116, 02199	9.3	(5.6 - 13.0)

DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2017, 2019, 2021), Boston Public Health Commission

Figure 13. Persistent Sadness Among Housed and Unhoused Adults, 2021



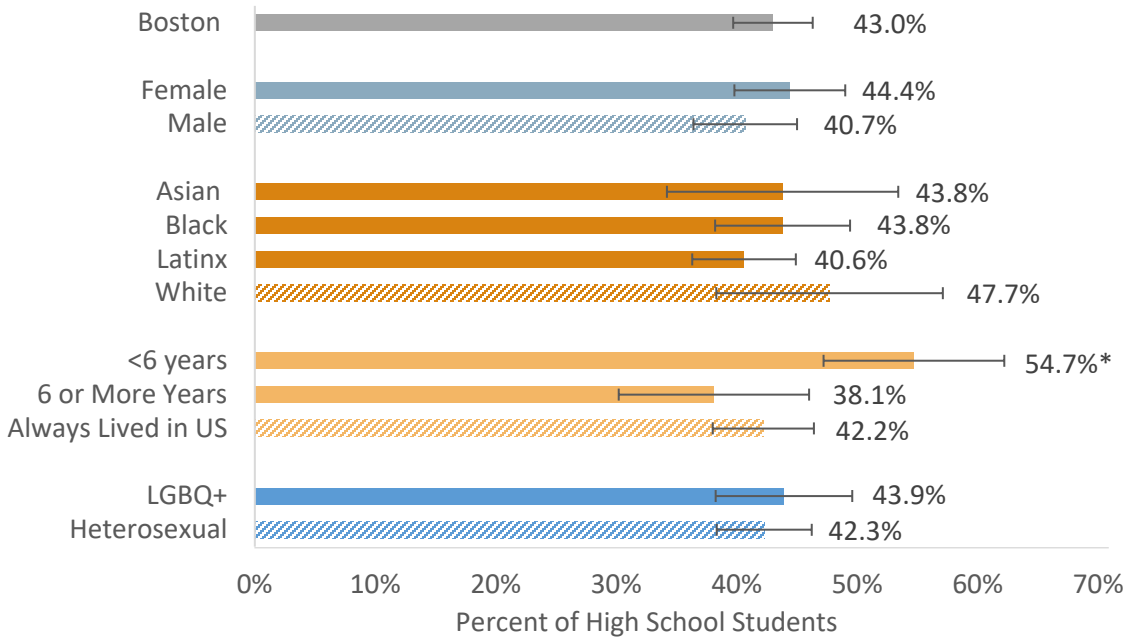
DATA SOURCES: Boston Behavioral Risk Factor Surveillance System, BPHC (2021); Health of Boston Survey of People Experiencing Homelessness, Boston Public Health Commission (2021)

2021: 47.1% of unhoused adults experienced persistent sadness compared to 17.4% of housed adults (more than two times the percentage) (Figure 13).

SECTION 3. SUPPORT

It can be helpful to talk about mental health challenges with peers, family members, friends, faith leaders, or other trusted people within an individual's support system. Support can also come from professionals who provide mental health services such as therapy. This section describes trends and patterns in the prevalence of public high school students who receive the emotional help they need and those who feel close to people at school; and, the prevalence of adults who cannot count on someone for emotional support, who would seek therapy, and those who could not see a mental health professional due to cost.

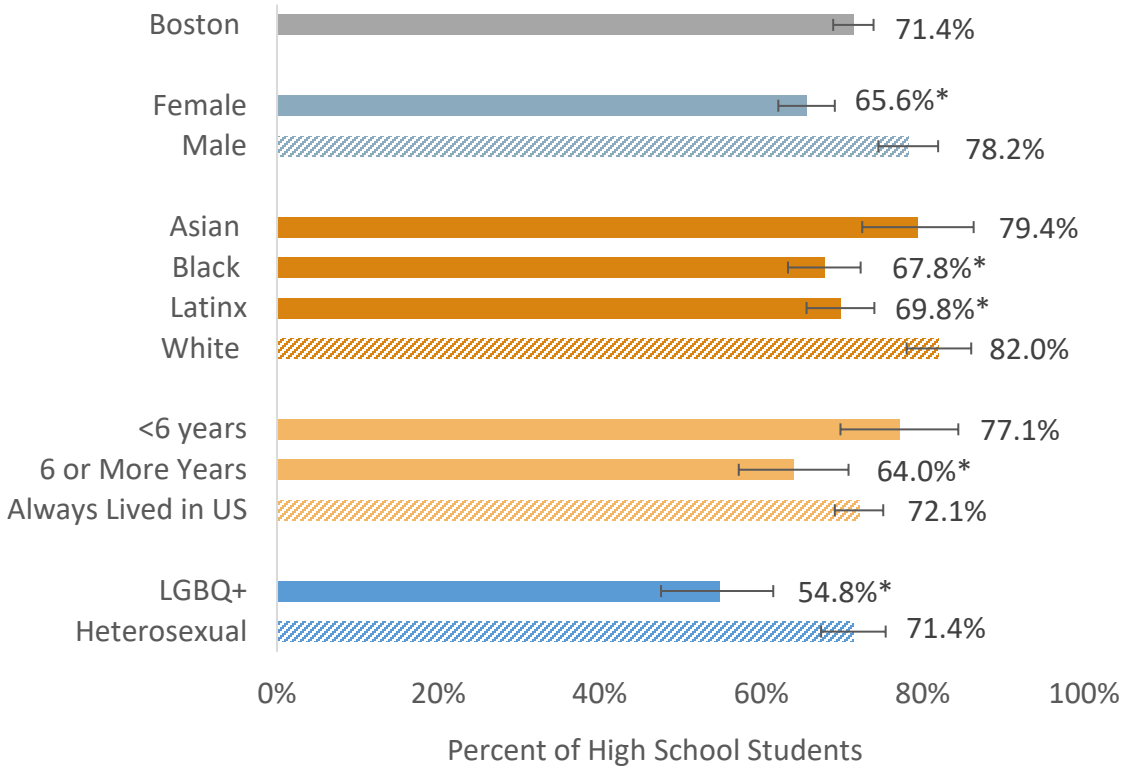
Figure 14. Boston Public High School Students Who Receive Needed Help When Feeling Sad, Empty, Hopeless, Angry by Selected Demographics, 2021



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Youth Risk Behavior Survey (2021), Centers for Disease Control and Prevention and Boston Public Schools. (LGBQ+ and Heterosexual only contains data from 2021 due to change in survey question format).

2021: The percentage of Boston public high school students who reported that they either sometimes, most of the time, or always received the help they needed when they felt sad, empty, hopeless, angry, or anxious was 43.0% (Figure 14). The percentage was higher for foreign-born students who have lived in the US for fewer than 6 years (54.7%) compared to students who always lived in the US (42.2%).

Figure 15. Boston Public High School Students Who Feel Close to People at School by Selected Demographics, 2019 and 2021 Combined



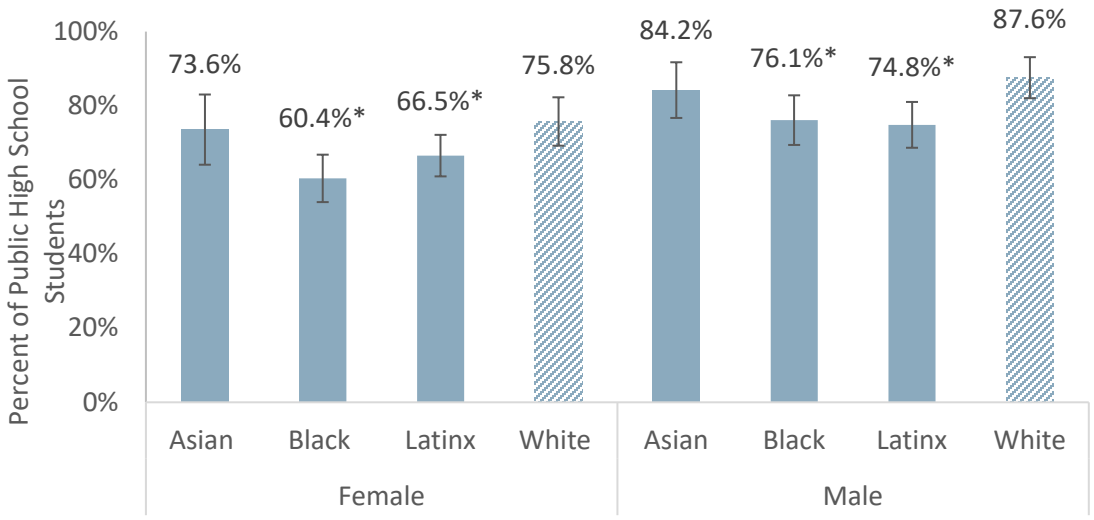
* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Youth Risk Behavior Survey (2021), Centers for Disease Control and Prevention and Boston Public Schools. (LGBQ+ and Heterosexual contains data from 2021 only due to change in survey question format).

2019 and 2021 Combined: The percentage of Boston public high school students who reported feeling close to people at their school was 71.4% (Figure 15). The percentage was lower for the following groups:

- Female youth (65.6%) compared with male youth (78.2%)
- Black youth (67.8%) and Latinx youth (69.8%) compared with White youth (82.0%)
- Foreign-born youth who have lived in the US for over 6 years (64.0%) compared with youth who have always lived in the US (72.1%)

2021: The percentage of Boston public high school students who reported feeling close to people at their school was lower for LGBQ+ youth (54.8%) compared with heterosexual youth (71.4%) (Figure 15).

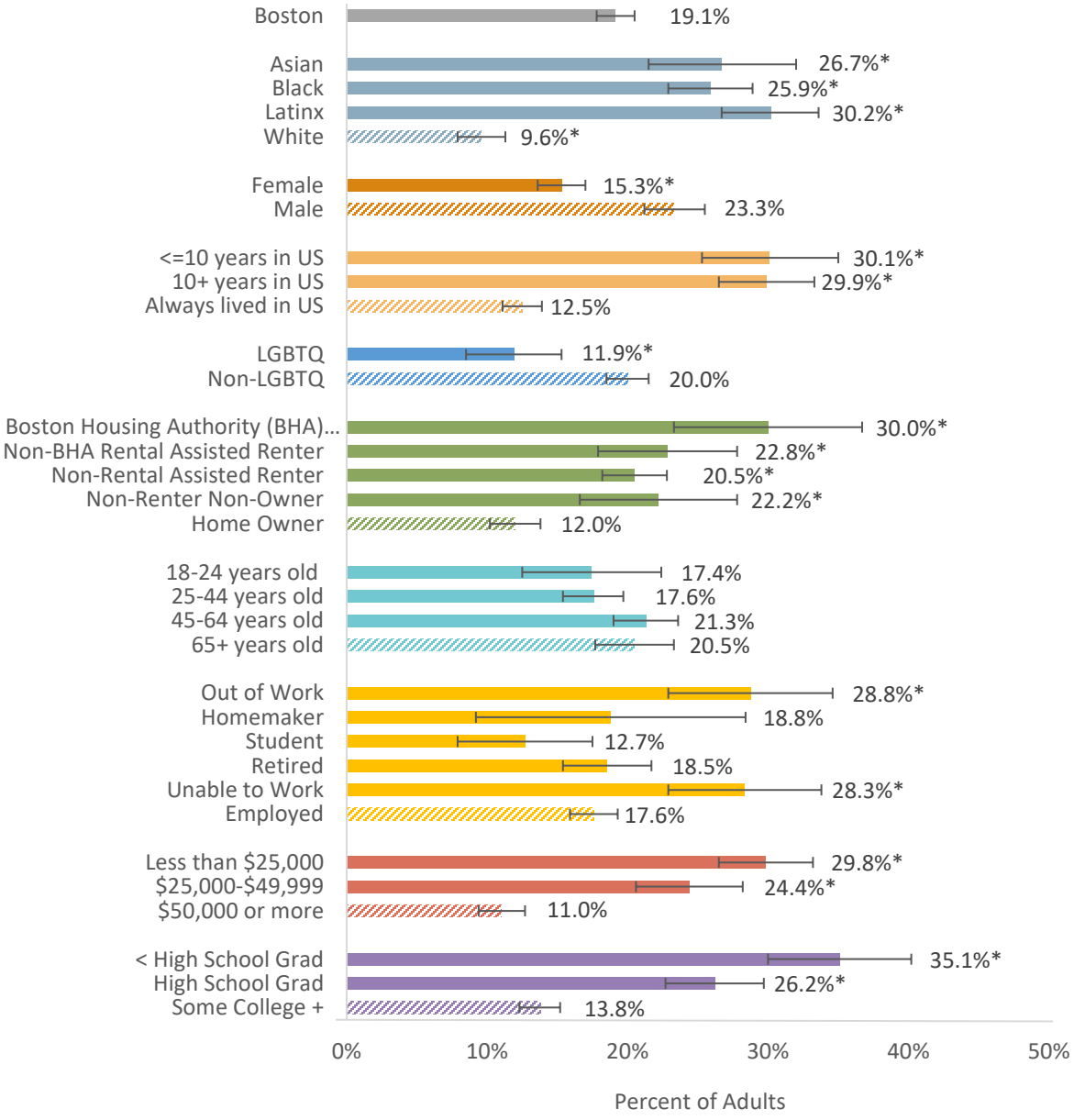
Figure 16. Boston Public High School Students Who Feel Close to People at School by Sex and Race/Ethnicity, 2019 and 2021 Combined



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Youth Risk Behavior Survey (2019 and 2021), Centers for Disease Control and Prevention and Boston Public Schools

2019 and 2021 Combined: The percentage of Boston public high school students who reported feeling close to people at their school was 71.4% (Figure 16). Among females, the percentage of students who reported feeling close to people at their school was lower for Black (60.4%) and Latinx (66.5%) female students compared with White female students (75.8%) (Figure 16). Among males, the percentage was lower for Black (76.1%) and Latinx (74.8%) male students compared with White male students (87.6%) (Figure 16).

Figure 17. Adults Who Cannot Count on Someone for Emotional Support by Selected Demographics, 2019 and 2021 Combined



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

2019 and 2021 Combined: The percentage of Boston adults who reported they could not count on anyone to provide them with emotional support such as talking over problems or helping them make a difficult decision was 19.1% (Figure 17).

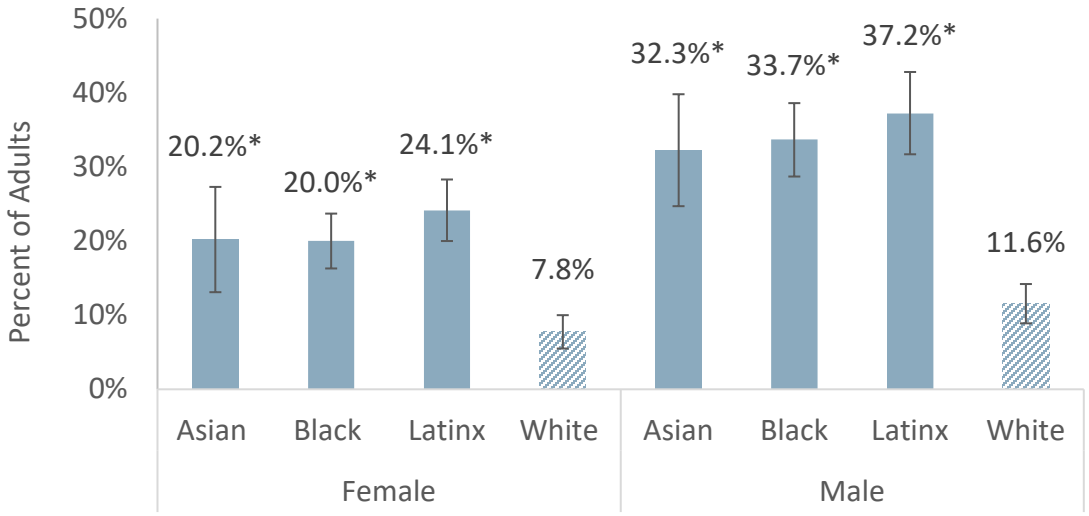
As seen in Figure 17, the percentage of Boston adults who reported they could not count on anyone to provide them with emotional support was higher for the following groups:

- Asian adults (26.7%), Black adults (25.9%), and Latinx adults (30.2%) compared with White adults (9.6%)
- Foreign-born adults who have lived in the US for 10 years or fewer (30.1%) and foreign-born adults who have lived in the US for over 10 years (29.9%) compared with adults who were born in the US (12.5%)
- Adults who were Boston Housing Authority (BHA) residents (30.0%), non-BHA rental assisted renters (22.8%), non-rental assisted renters (20.5%), and non-renter non-owners (22.2%) compared to homeowners (12.0%)
- Adults who were out of work (28.8%) or unable to work (28.3%) compared with employed adults (17.6%)
- Adults living in households with an annual income of less than $25,000 (29.8%) or $25,000 to $49,999 (24.4%) compared with adults living in households with an annual income of $50,000 or more (11.0%)
- Adults with less than a high school diploma (35.1%) and adults with a high school diploma (26.2%) compared with adults with at least some college education (13.8%)

The percentage of Boston adults who reported not having emotional support was lower for the following groups:

- Female adults (15.3%) compared with male adults (23.3%)
- LGBTQ adults (11.9%) compared with non-LGBTQ adults (20.0%)

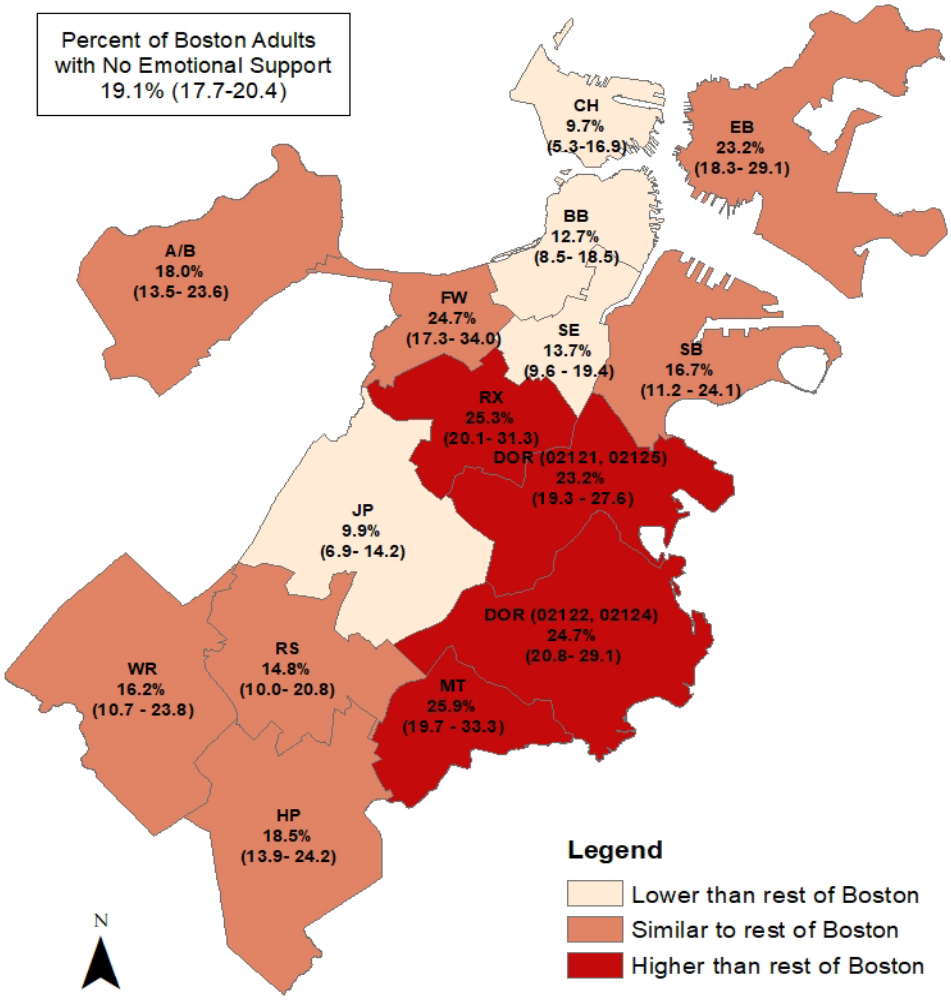
Figure 18. Adults Who Cannot Count on Someone for Emotional Support by Sex and Race/Ethnicity, 2019 and 2021 Combined



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

2019 and 2021 Combined: The percentage of Boston adults who reported they could not count on anyone to provide them with emotional support was higher for Asian male (32.3%), Black male (33.7%), and Latinx male (37.2%) adults when compared with White male adults (11.6%) (Figure 18). The percentage was higher for Asian female (20.2%), Black female (20.0%), and Latinx female (24.1%) adults when compared with White female adults (7.8%).

Figure 19. Adults Who Cannot Count on Someone for Emotional Support by Neighborhood, 2019 and 2021 Combined



DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

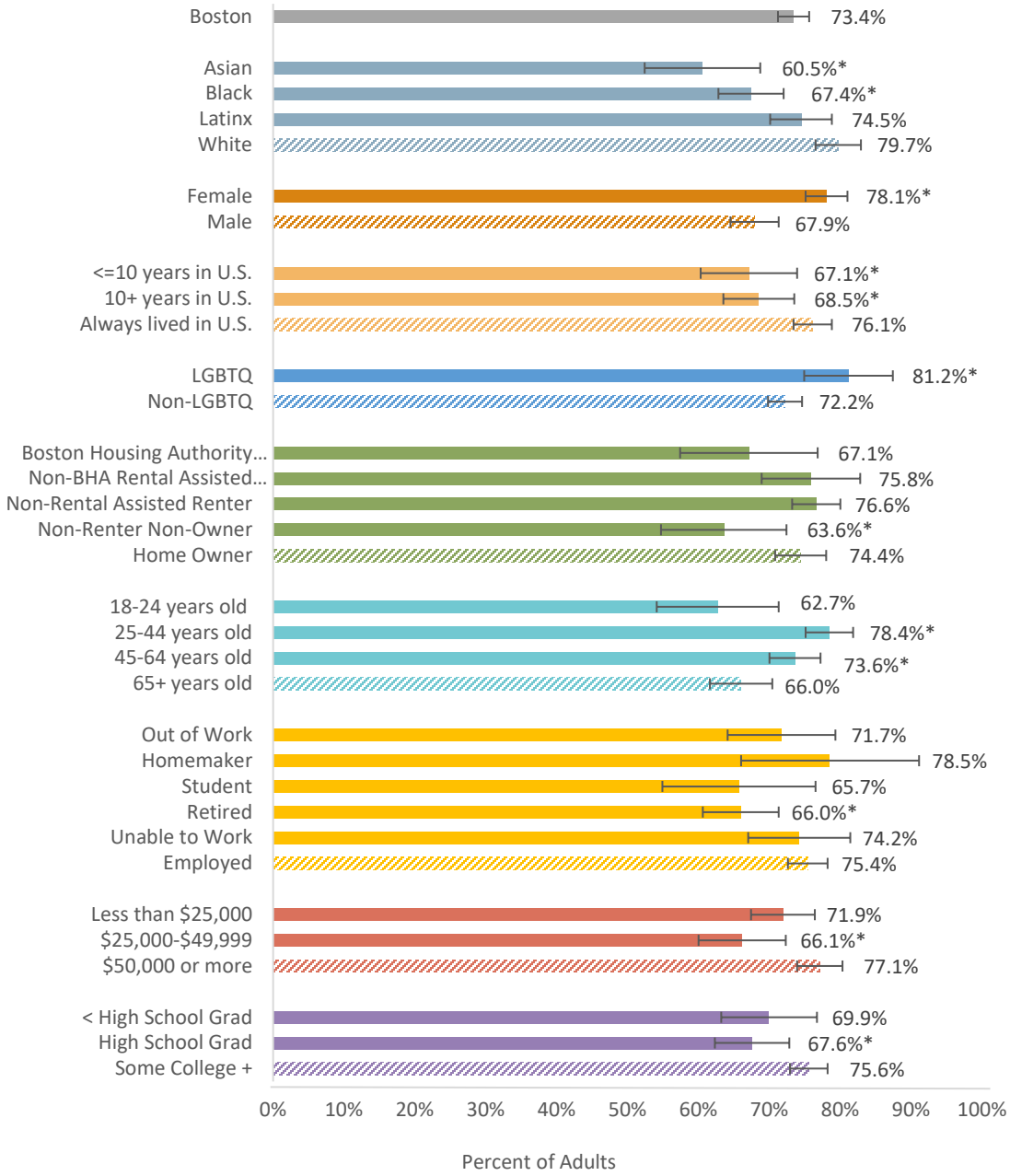
2019 and 2021 Combined: The percentage of adults in Boston overall who reported they could not count on anyone to provide them with emotional support was 19.1%. As seen in Figure 19, the percentage was higher for Roxbury (25.3%), Mattapan (25.9%), Dorchester (02122, 02124) (24.7%), and Dorchester (02121, 02125) (23.2%) compared with the rest of Boston. The percentage was lower for Charlestown (9.7%), Back Bay (12.7%), the South End (13.7%), and Jamaica Plain (9.9%) when compared with the rest of Boston.

Table 6. Adults Who Cannot Count on Someone for Emotional Support by Neighborhood, Ranked in Descending Order, 2019 and 2021 Combined

Neighborhood	Estimate	95% Confidence Intervals
Mattapan (MT), 02126	25.9	(19.7 - 33.3)
Roxbury (RX), 02119, 02120	25.3	(20.1 - 31.3)
Dorchester (DOR), 02122, 02124	24.7	(20.8 - 29.1)
Fenway (FW), 02115, 02215	24.7	(17.3 - 34.0)
Dorchester (DOR), 02121, 02125	23.2	(19.3 - 27.6)
East Boston (EB), 02128	23.2	(18.3 - 29.1)
Hyde Park (HP), 02136	18.5	(13.9 - 24.2)
Allston/Brighton (AB), 02134, 02135, 02163	18	(13.5 - 23.6)
South Boston (SB), 02127, 02210	16.7	(11.2 - 24.1)
West Roxbury (WR), 02132	16.2	(10.7 - 23.8)
Roslindale (RS), 02131	14.8	(10.0 - 20.8)
South End (SE), 02111, 02118	13.7	(9.6 - 19.4)
Back Bay, Downtown, Beacon Hill, North End, West End (BB), 02108-02110, 02113-02114, 02116, 02199	12.7	(8.5- 18.5)
Jamaica Plain (JP), 02130	9.9	(6.9 - 14.2)
Charlestown (CH), 02129	9.7	(5.3 - 16.9)

DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

Figure 20. Adults Who Would Seek Therapy During an Emotional Crisis by Selected Demographics, 2019 and 2021 Combined



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

2019 and 2021 Combined: The percentage of Boston adults who reported they would likely consult with a mental health professional or therapist during an emotional crisis or need was 73.4% (Figure 20).

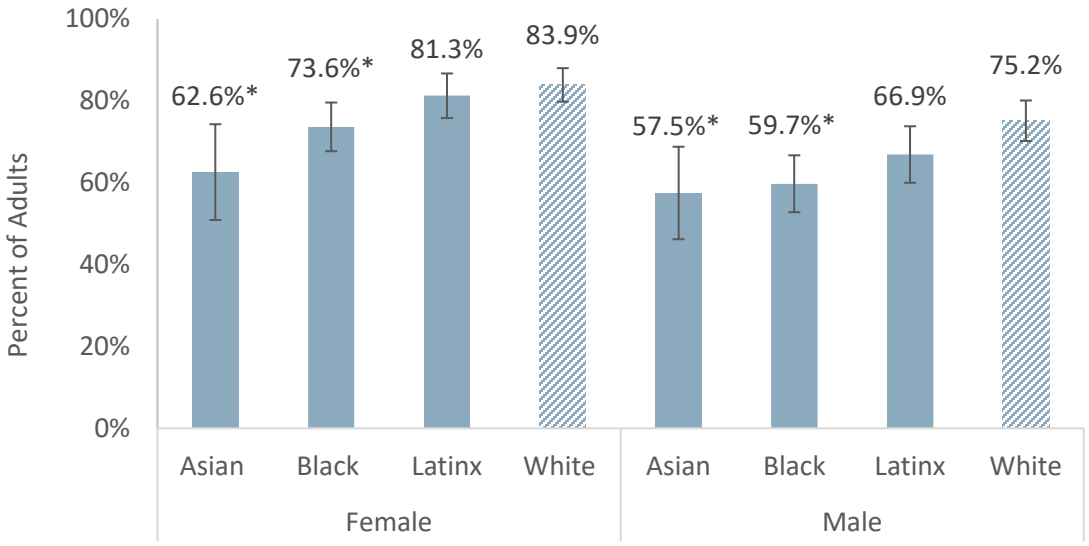
As shown in Figure 20, the percentage of Boston adults who would consult with a mental health professional or therapist during an emotional crisis or need was higher for the following groups:

- Female adults (78.1%) compared with male adults (67.9%)
- LGBTQ adults (81.2%) compared with non-LGBTQ adults (72.2%)
- Adults who are ages 25-44 (78.4%) and ages 45-64 (73.6%) compared with adults ages 65+ (66.0%)

The percentage of Boston adults who would consult with a mental health professional or therapist during an emotional crisis or need was lower for the following groups:

- Asian adults (60.5%) and Black adults (67.4%) compared with White adults (79.7%)
- Foreign-born adults who have lived in the US 10 years or fewer (67.1%) and foreign-born adults who have lived in the US for over 10 years (68.5%) compared with adults who were born in the US (76.1%)
- Adults who were non-renter non-owners (63.6%) compared with homeowners (74.4%)
- Retired adults (66.0%) compared with employed adults (75.4%)
- Adults living in households with an annual income of $25,000 to $49,999 (66.1%) when compared with adults living in households with an annual income of $50,000 or more (77.1%)
- Adults with a high school diploma (67.6%) compared with adults with at least some college education (75.6%)

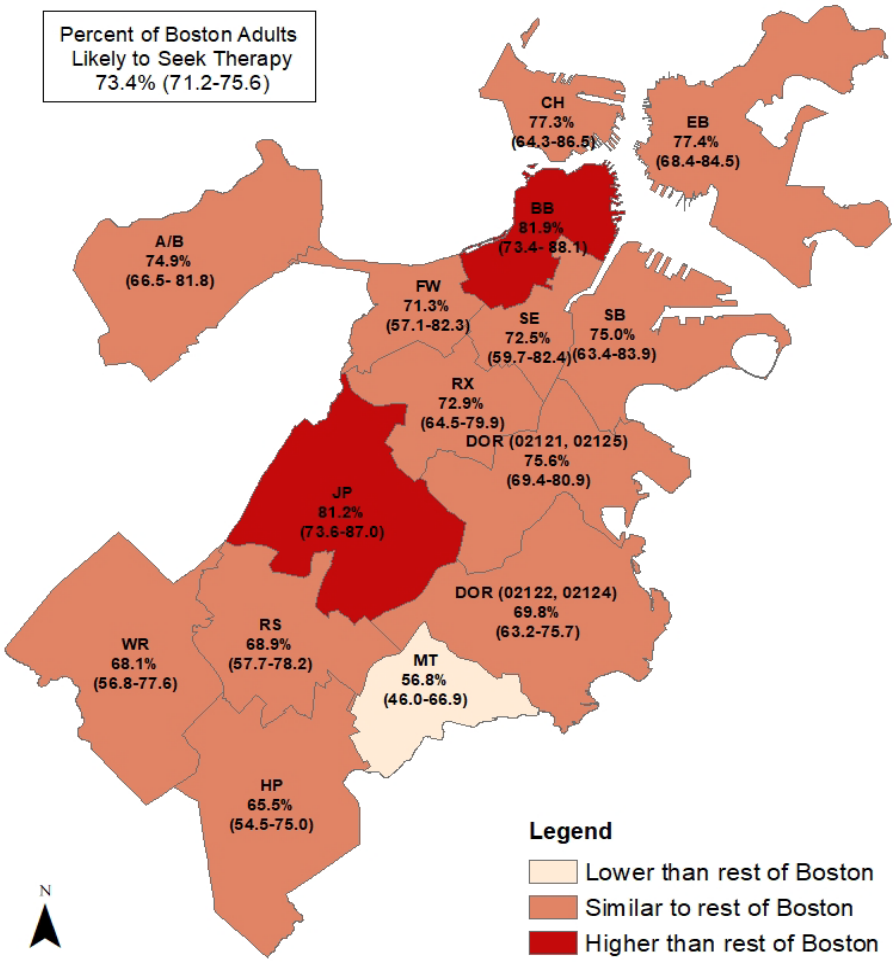
Figure 21. Adults Who Would Seek Therapy During an Emotional Crisis by Sex and Race/Ethnicity, 2019 and 2021 Combined



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

2019 and 2021 Combined: The percentage of Boston adults who reported that they would consult with a mental health professional or therapist during an emotional crisis or need was lower for Asian (62.6%) and Black (73.6%) female adults compared with White female adults (75.2%), and Asian (57.5%) and Black (59.6%) male adults compared with White male adults (83.9%) (Figure 21).

Figure 22. Adults Who Would Seek Therapy During an Emotional Crisis by Neighborhood, 2019 and 2021 Combined



DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

2019 and 2021 combined: The percentage of adults in Boston overall who would consult with a mental health professional or therapist during an emotional crisis or need was 73.4%.

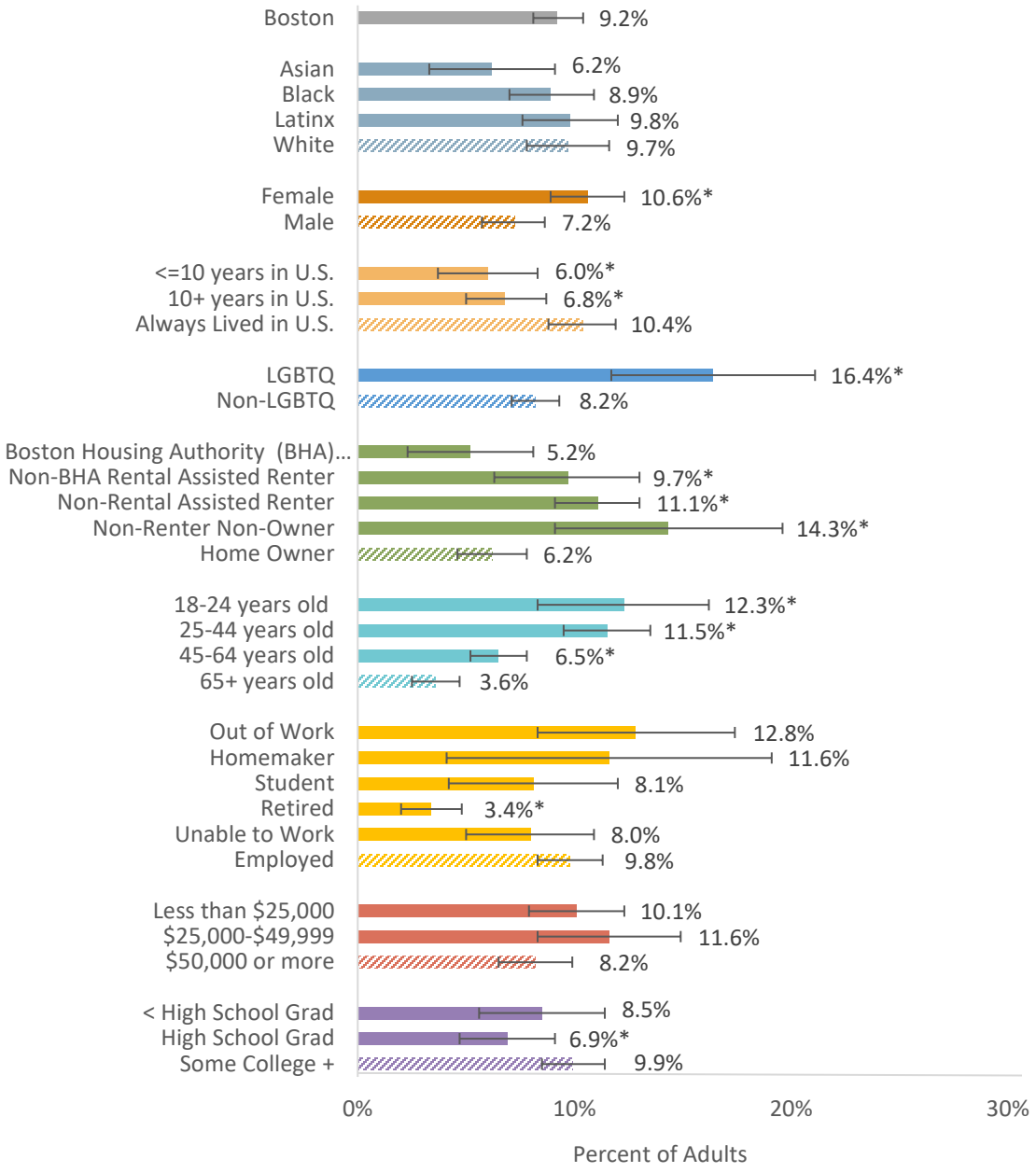
As shown in Figure 22, when compared with the rest of Boston, the percentage of adults who would consult with a mental health professional or therapist during an emotional crisis or need was higher for Back Bay (81.9%) and Jamaica Plain (81.2%). The percentage was lower for Mattapan (56.8%) when compared with the rest of Boston.

Table 7. Adults Who Would Seek Therapy During an Emotional Crisis by Neighborhood, Ranked in Descending Order, 2019 and 2021 Combined

Neighborhood	Estimate	95% Confidence Intervals
Back Bay, Downtown, Beacon Hill, North End, West End (BB), 02108-02110, 02113-02114, 02116, 02199	81.9	(73.4 - 88.1)
Jamaica Plain (JP), 02130	81.2	(73.6 - 87.0)
East Boston (EB), 02128	77.4	(68.4 - 84.5)
Charlestown (CH), 02129	77.3	(64.3 - 86.5)
Dorchester (DOR), 02121, 02125	75.6	(69.4 - 80.9)
South Boston (SB), 02127, 02210	75.0	(63.4 - 83.9)
Allston/Brighton (AB), 02134, 02135, 02163	74.9	(66.5 - 81.8)
Roxbury (RX), 02119, 02120	72.9	(64.5 - 79.9)
South End (SE), 02111, 02118	72.5	(59.7 - 82.4)
Fenway (FW), 02115, 02215	71.3	(57.1 - 82.3)
Dorchester (DOR), 02122, 02124	69.8	(63.2 - 75.7)
Roslindale (RS), 02131	68.9	(57.7 - 78.2)
West Roxbury (WR), 02132	68.1	(56.8 - 77.6)
Hyde Park (HP), 02136	65.5	(54.5 - 75.0)
Mattapan (MT), 02126	56.8	(46.0 - 66.9)

DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

Figure 23. Adults Who Did Not See a Mental Health Professional Due To Cost by Selected Demographics, 2019 and 2021 Combined



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

2019 and 2021 Combined: The percentage of Boston adults who reported wanting to consult with a mental health professional but could not because of cost was 9.2% (Figure 23).

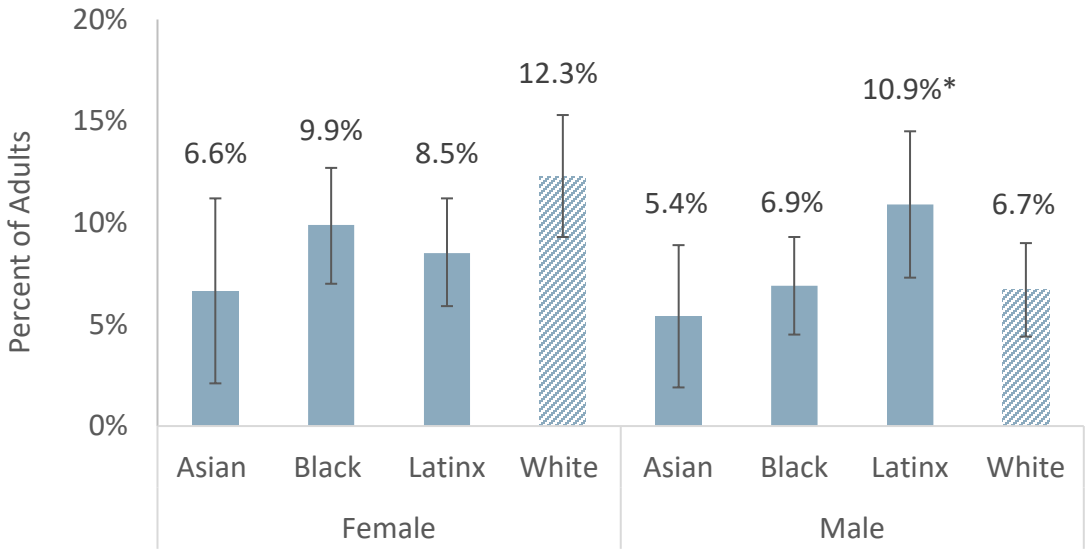
As shown in Figure 23, the percentage of Boston adults who did not consult with a mental health professional due to cost was higher for the following groups:

- Female adults (10.6%) compared with male adults (7.2%)
- LGBTQ adults (16.4%) compared with non-LGBTQ adults (8.2%)
- Adults who were non-BHA rental assisted renters (9.7%), non-rental assisted renters (11.1%), and non-renter non-owners (14.3%) compared with homeowners (6.2%)
- Adults who were ages 18-24 (12.3%), ages 25-44 (11.5%), and ages 45-64 (6.5%) compared with ages 65+ (3.6%)

The percentage of Boston adults who did not consult with a mental health professional due to cost was lower for the following groups:

- Foreign-born adults who have lived in the US 10 years or fewer (6.0%) and foreign-born adults who have lived in the US for over than 10 years (6.8%) compared with adults who were born in the US (10.4%)
- Retired adults (3.4%) compared with employed adults (9.8%)
- Adults with a high school diploma (6.9%) compared with adults with at least some college education (9.9%)

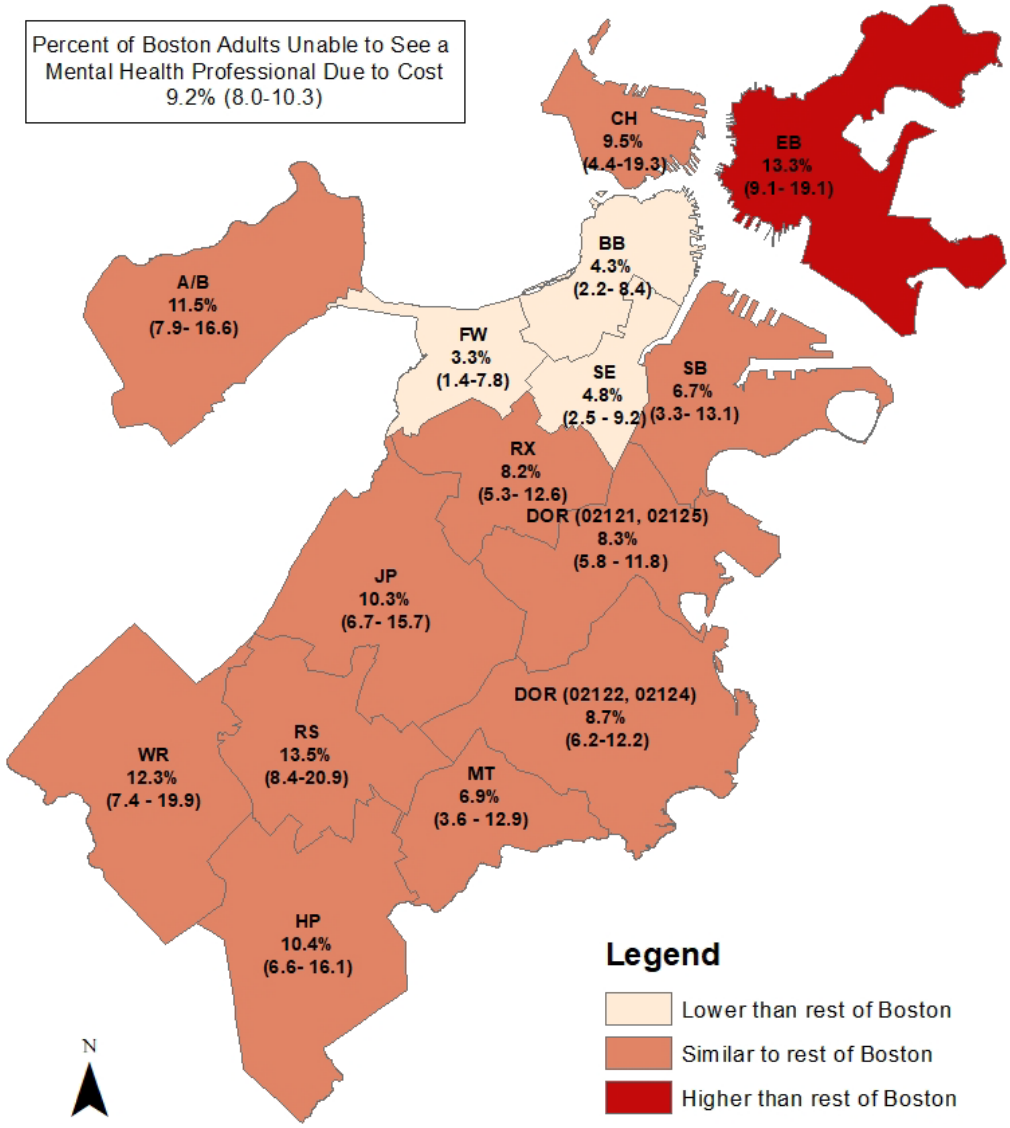
Figure 24. Adults Who Did Not See a Mental Health Professional Due to Cost by Sex and Race/Ethnicity, 2019 and 2021 Combined



* Statistically significant difference when compared to reference group
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

2019 and 2021 Combined: The percentage of Boston adults who reported wanting to consult with a mental health professional but could not because of cost was higher for Latinx male adults (10.9%) when compared with White male adults (6.7%) (Figure 24). Among female adult residents, were no significant racial/ethnic differences in the percentages of residents who reported wanting to consult with a mental health professional but could not because of cost.

Figure 25. Adults Who Did Not See a Mental Health Professional Due to Cost by Neighborhood, 2019 and 2021 Combined



DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

2019 and 2021 Combined: The percentage of adults in Boston overall who reported wanting to consult with a mental health professional but could not due to cost was 9.2%. As shown in Figure 25, when compared with the rest of Boston, the percentage was higher for East Boston (13.3%). The percentage was lower for Fenway (3.3%), the Back Bay (4.3%), and the South End (4.8%) when compared with the rest of Boston.

Table 8. Adults Who Did Not See a Mental Health Professional Due to Cost by Neighborhood, Ranked in Descending Order, 2019 and 2021 Combined

Neighborhood	Estimate	95% Confidence Intervals
Roslindale (RS), 02131	13.5	(8.4 - 20.9)
East Boston (EB), 02128	13.3	(9.1 - 19.1)
West Roxbury (WR), 02132	12.3	(7.4 - 19.9)
Allston/Brighton (AB), 02134, 02135, 02163	11.5	(7.9 - 16.6)
Hyde Park (HP), 02136	10.4	(6.6 - 16.1)
Jamaica Plain (JP), 02130	10.3	(6.7 - 15.7)
Charlestown (CH), 02129	9.5	(4.4 -19.3)
Dorchester (DOR), 02122, 02124	8.7	(6.2 -12.2)
Dorchester (DOR), 02121, 02125	8.3	(5.8 - 11.8)
Roxbury (RX), 02119, 02120	8.2	(5.3 - 12.6)
Mattapan (MT), 02126	6.9	(3.6 - 12.9)
South Boston (SB), 02127, 02210	6.7	(3.3 - 13.1)
South End (SE), 02111, 02118	4.8	(2.5 - 9.2)
Back Bay, Downtown, Beacon Hill, North End, West End (BB), 02108-02110, 02113-02114, 02116, 02199	4.3	(2.2 - 8.4)
Fenway (FW), 02115, 02215	3.3	(1.4 - 7.8)

DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2019, 2021), Boston Public Health Commission

SECTION 4. EMERGENCY DEPARTMENT VISITS

Trends and patterns in mental health-related emergency department visits are an important indicator of the burden of mental health challenges among Boston residents, and potential unmet mental health care needs. This section presents trends and patterns in the rates of emergency department visits for any mental health condition and for nine specific mental health disorders.

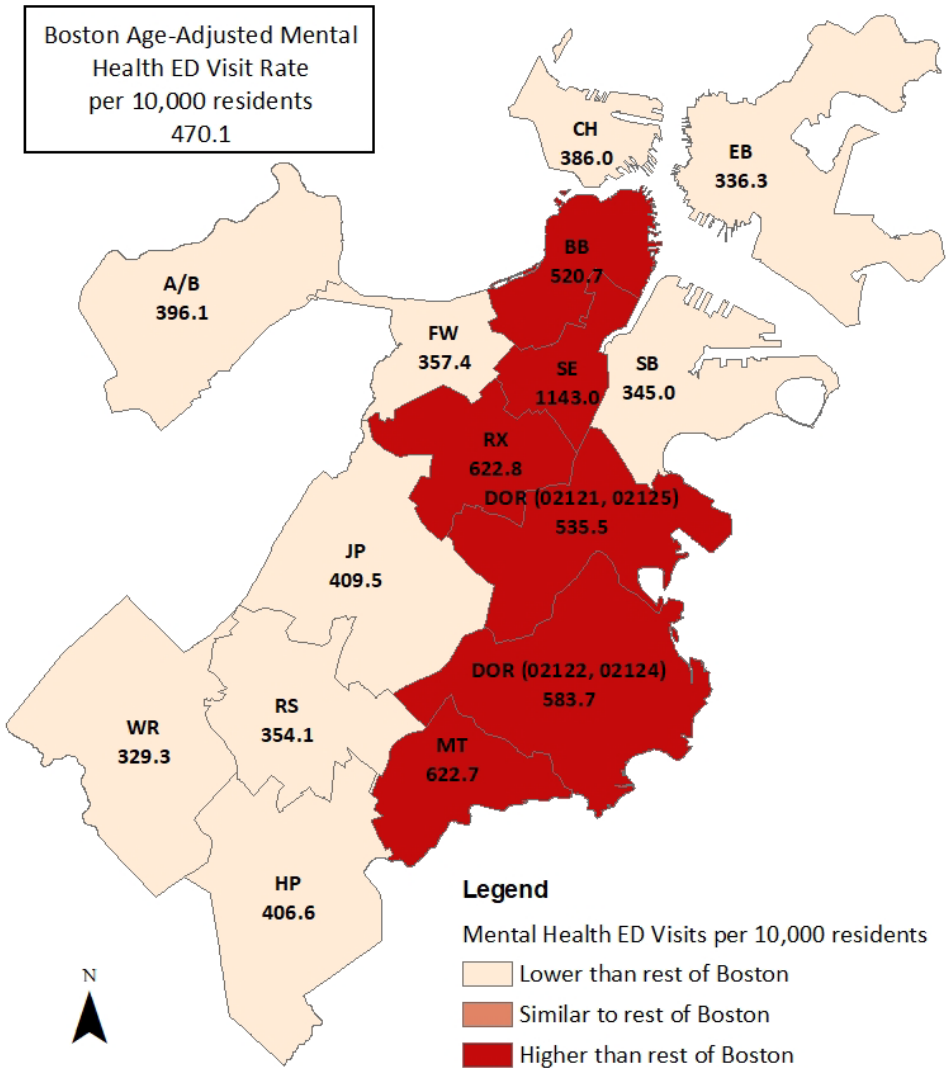
Figure 26. Mental Health Emergency Department Visits†, With and Without Substance Use-Related, by Year, 2017-2021

† Age-adjusted rates per 10,000 residents
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2017-2021: The age-adjusted rate of mental health emergency department visits among Boston residents dropped by 17.1% (Figure 26). When excluding substance use-related emergency department visits, the rate of mental health emergency department visits dropped by 20.5% from 2017-2021 (Figure 26). This trend may be a result of lower utilization of hospitals due to the COVID-19 pandemic.

2021: The age-adjusted rate of mental health emergency department visits per 10,000 residents was 470.1 for Boston overall, and 371.9 for Boston overall when excluding substance use-related visits (Figure 26).

Figure 27. Age-Adjusted Rate of Mental Health Emergency Department Visits by Neighborhood, 2021



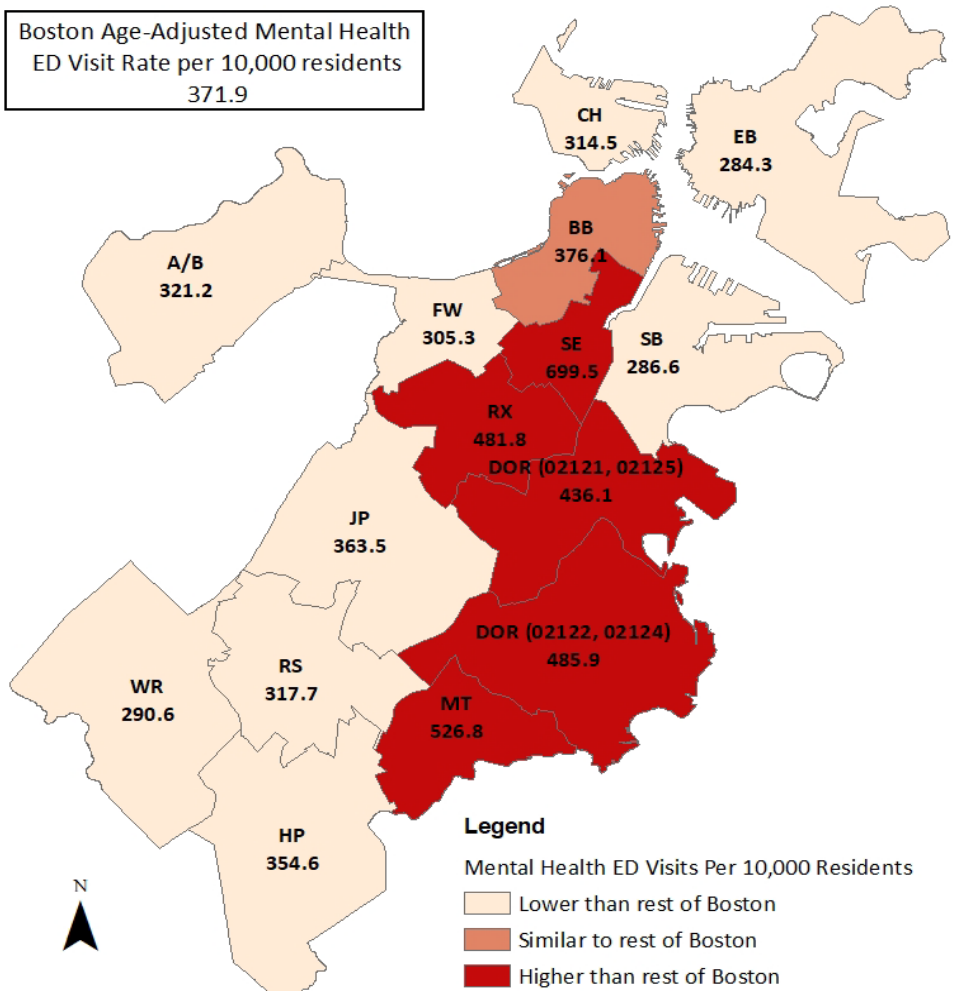
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2021: The age-adjusted rate of mental health emergency department visits per 10,000 residents in Boston overall was 470.1. As shown in Figure 27, when compared to the rest of Boston, the rate was higher for Back Bay (520.7), Dorchester (02121, 02125) (535.5), Dorchester (02122, 02124) (583.7), Mattapan (622.7), Roxbury (622.8), and the South End (1143.0).

The rate of was lower for Allston/Brighton (396.1), Charlestown (386.0), East Boston (336.3), Fenway (357.4), Hyde Park (406.6), Jamaica Plain (409.5), Roslindale (354.1), South Boston (345.0), and West Roxbury (239.3) when compared with the rest of Boston.

Additional analysis (data not shown) revealed that when individuals experiencing homelessness were excluded, the rate for the South End decreased by nearly half but remained significantly higher than the rest of Boston. Further, when excluding persons experiencing homelessness, the rate for the Back Bay became significantly lower than for the rest of Boston.

Figure 28. Age-Adjusted Rate of Mental Health Emergency Department Visits, Excluding Substance Use-Related, by Neighborhood, 2021



DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2021: The age-adjusted rate of mental health (but excluding substance use-related) emergency department visits per 10,000 residents in Boston overall was 371.9. As shown in Figure 28, when compared to the rest of Boston, the rate was higher for Dorchester (02121, 02125) (436.1), Dorchester (02122, 02124) (485.9), Mattapan (526.8), Roxbury (481.8), and the South End (699.5).

The rate of was lower for Allston/Brighton (321.2), Charlestown (314.5), East Boston (284.3),

Fenway (305.3), Hyde Park (354.6), Jamaica Plain (363.5), Roslindale (317.7), South Boston (286.6), and West Roxbury (290.6) when compared with the rest of Boston (Figure 28).

Additional analysis (data not shown) revealed that when individuals experiencing homelessness and with substance use disorder were excluded, the rate for the Back Bay became significantly lower than for the rest of Boston. The rates for Hyde Park and Jamaica Plain became similar to the rest of Boston.

Table 9. Mental Health Emergency Department Visits†, With and Without Substance Use-Related, by Neighborhood, Ranked in Descending Order, 2021

Neighborhood	Mental Health Emergency Department Visits†	Mental Health Emergency Department Visits, Excluding Substance Use†
South End (SE), 02111, 02118	1,143.0	699.5
Roxbury (RX), 02119, 02120	622.8	481.8
Mattapan (MT), 02126	622.7	526.8
Dorchester (DOR), 02122, 02124	583.7	485.9
Dorchester (DOR), 02121, 02125	535.5	436.1
Back Bay, Downtown, Beacon Hill, North End, West End (BB), 02108-02110, 02113-02114, 02116, 02199	520.7	376.1
Jamaica Plain (JP), 02130	409.5	363.5
Hyde Park (HP), 02136	406.6	354.6
Allston/Brighton (AB), 02134, 02135, 02163	396.1	321.2
Charlestown (CH), 02129	386.0	314.5
Fenway (FW), 02115, 02215	357.4	305.3
Roslindale (RS), 02131	354.1	317.7
South Boston (SB), 02127, 02210	345.0	286.6
East Boston (EB), 02128	336.3	284.3
West Roxbury (WR), 02132	329.3	290.6

† Age-adjusted rates per 10,000 residents
NOTE: Table is ranked in descending order by Mental Health Emergency Department Visits
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

Table 10. Mental Health Emergency Department Visits†, by Condition, 2021

	Boston Overall	Asian	Black	Latinx	*White*	Female	*Male*
Any Mental Health-Related ED Visit	470.1	97.7	802.0	449.7	*460.5*	425.8	*515.3*
Individual Conditions:							
Anxiety Disorders	188.4	40.7	250.3	193.8	*210.4*	201.1	*172.4*
Depressive Disorders	191.4	37.6	282.6	200.7	*199.5*	186.6	*195.4*
Bipolar Disorders	59.9	8.0	105.1	36.8	*68.5*	51.0	*69.4*
Schizophrenia Spectrum Disorders	60.7	15.6	169.4	41.3	*41.5*	35.2	*88.1*
PTSD and Trauma-Related Disorders	69.6	12.3	121.2	60.3	*71.0*	67.5	*72.0*
Attention Deficit Hyperactivity Disorder (ADHD)	36.0	3.8	47.1	27.7	*41.9*	27.5	*45.0*
Disruptive Behavioral and Impulse-Control Disorders	13.4	2.7§	28.6	10.9	*9.1*	8.8	*18.3*
Obsessive Compulsive Disorder (OCD)	3.5	n<11	3.2	1.9	*5.5*	3.2	*3.9*
Eating Disorders	2.1	n<11	1.6	1.5	*2.9*	3.6	*0.6*

† Age-adjusted rates per 10,000 residents
§ Rates are based on 20 or fewer cases and should be interpreted with caution.
NOTE: Italicized font indicates reference group; Yellow fill indicates statistically significant rate **lower** than the reference group; Purple fill indicates statistically significant rate **higher** than the reference group.
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2021: As shown in Table 10, when compared to White residents, Black residents had a 74.1% higher age-adjusted rate of emergency department visits per 10,000 residents for any mental health disorder (802.0 compared to 460.5), an 18.9% higher rate for anxiety disorders (250.3 compared to 210.4), a 41.7% higher rate for depressive disorders (282.6 compared to 199.5), a 53.4% higher rate for bipolar disorders (105.1 compared to 68.5), over four times higher rate for schizophrenia spectrum disorders (169.4 compared to 41.5), a 70.6% higher rate for PTSD and trauma-related disorders (121.2 compared to 71.0), a 12.4% higher rate for ADHD (47.1 compared to 41.9), and over three times higher rate of disruptive and impulse-control disorders (28.6 compared to 9.1).

When compared to male residents, female residents had a 16.6% higher rate of emergency department visits per 10,000 residents for anxiety disorders (201.1 compared to 172.4) and approximately a six times higher rate for eating disorders (3.6 compared to 0.6).

Table 11. Mental Health Emergency Department Visits†, by Condition, Sex and Race/Ethnicity, 2021

	Female				Male			
	Asian	**Black**	**Latinx**	***White***	**Asian**	**Black**	**Latinx**	***White***
Any Mental Health-Related ED Visit	91.9	709.1	443.7	*408.8*	104.3	912.9	456.5	*504.6*
Individual Conditions:								
Anxiety Disorders	44.5	278.3	225.7	*214.6*	35.9	215.0	158.2	*201.8*
Depressive Disorders	43.3	280.7	209.8	*184.5*	30.9	285.9	190.9	*211.9*
Bipolar Disorders	6.7	94.0	35.0	*55.9*	9.6	119.0	39.3	*79.8*
Schizophrenia Spectrum Disorders	7.6	98.1	22.4	*25.8*	25.3	255.9	61.5	*56.5*
PTSD and Trauma-Related Disorders	12.7	123.2	59.4	*67.0*	11.9	120.0	61.8	*74.6*
Attention Deficit Hyperactivity Disorder (ADHD)	2.8§	36.1	22.0	*32.0*	5.0§	58.5	33.8	*51.1*
Disruptive Behavioral and Impulse-Control Disorders	n < 11	20.5	7.1	*4.6*	n < 11	38.2	15.2	*13.4*
Obsessive Compulsive Disorder (OCD)	n < 11	2.1§	2.1§	*5.3*	n < 11	4.5	n<11	*5.7*
Eating Disorders	n < 11	2.5	2.4	*5.0*	n < 11	n<11	n<11	*0.8§*

† Age-adjusted rates per 10,000 residents
§ Rates are based on 20 or fewer cases and should be interpreted with caution.
NOTES: Italicized font indicates reference group; Yellow fill indicates statistically significant rate **lower** than the reference group; Purple fill indicates statistically significant rate **higher** than the reference group.
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2021: Table 11 shows when compared to White female residents, Black female residents had a 73.5% higher age-adjusted rate of emergency department visits per 10,000 residents for any mental health-related disorder (709.1 compared to 408.8), a 29.7% higher rate for anxiety disorders (278.3 compared to 214.6), a 52.1% higher rate for depressive disorders (280.7 compared to 184.5), a 68.1% higher rate for bipolar disorders (94.0 compared to 55.9), a 3.8 times higher rate for schizophrenia spectrum disorders (98.1 compared to 25.8), an 83.9% higher rate for PTSD and trauma-related disorders (123.2 compared to 67.0), and a 4.5 times higher rate for disruptive and impulse-control disorders (20.5 compared to 4.6).

Latinx female residents had an 8.6% higher rate of any mental health-related disorder (443.7), a 13.7% higher rate for depressive disorders (209.8), and a 54.8% higher rate for disruptive behavioral and impulse-control disorders (7.1) when compared to White female residents.

When compared to White male residents, Black male residents had an 80.9% higher rate of emergency department visits for any mental health-related disorder (912.9 compared to 504.6), a 34.9% higher rate for depressive disorders (285.9 compared to 211.9), a 49.1% higher rate for bipolar disorders (119.0 compared to 79.8), a 4.5 times higher rate for schizophrenia spectrum disorders (255.9 compared to 56.5), a 61.0% higher rate for PTSD and trauma-related disorders (120.0 compared to 74.6), a 14.4% higher rate for ADHD (58.5 compared to 51.1), and a 2.8 times higher rate for disruptive and impulse-control disorders (38.2 compared to 13.4).

Table 12. Mental Health Emergency Department Visits†, Excluding Substance Use-Related, by Condition, 2021

	Boston Overall	Asian	Black	Latinx	*White*	Female	*Male*
Any Mental Health-Related ED Visit	371.9	89.3	650.5	378.1	*341.0*	369.9	*372.0*
Individual Conditions:							
Anxiety Disorders	157.2	39.1	220.0	173.1	*164.0*	178.8	*132.0*
Depressive Disorders	147.5	35.2	225.0	165.6	*143.0*	160.5	*133.0*
Bipolar Disorders	41.6	5.0	78.2	28.3	*44.7*	39.9	*43.4*
Schizophrenia Spectrum Disorders	47.2	14.1	130.2	30.6	*32.9*	30.6	*65.0*
PTSD and Trauma-Related Disorders	48.8	9.4	93.4	45.4	*43.7*	52.8	*44.5*
Attention Deficit Hyperactivity Disorder (ADHD)	29.1	3.6	42.2	25.5	*29.4*	23.2	*35.2*
Disruptive Behavioral and Impulse-Control Disorders	11.4	n<11	24.6	9.4	*7.3*	8.4	*14.6*
Obsessive Compulsive Disorder (OCD)	3.0	n<11	2.9	1.4§	*4.6*	2.8	*3.2*
Eating Disorders	2.0	n<11	1.5§	1.5	*2.6*	3.3	*0.5*

† Age-adjusted rates per 10,000 residents

§ Rates are based on 20 or fewer cases and should be interpreted with caution.

NOTES: Italicized font indicates reference group; Yellow fill indicates statistically significant rate **lower** than the reference group; Purple fill indicates statistically significant rate **higher** than the reference group.

DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2021: When excluding substance-use related emergency department visits, when compared to White residents, Black residents had a 90.8% higher age-adjusted rate of emergency department visits per 10,000 residents for any mental health-related disorder (650.5 compared to 341.0), a 34.2% higher rate for anxiety disorders (220.0 compared to 164.0), a 57.4% higher rate for depressive disorders (225.0 compared to 143.0), a 74.9% higher rate for bipolar disorders (78.2 compared to 44.7), approximately a four times higher rate for schizophrenia spectrum disorders (130.2 compared to 32.9), over two times higher rate for PTSD and trauma-related disorders (93.4 compared to 43.7), a 43.8% higher rate for ADHD (42.2 compared to

29.4), and approximately a 3.4 times higher rate of disruptive and impulse-control disorders (24.6 compared to 7.3) (Table 12).

When excluding substance use-related emergency department visits, when compared to White residents, Latinx residents had a 10.9% higher rate of emergency department visits for any mental health-related disorder (378.1), a 5.5% higher rate for anxiety disorders (173.1), a 15.8% higher rate for depressive disorders (165.6), and a 29.0% higher rate for disruptive behavioral and impulse-control disorders (9.4) (Table 12).

When excluding substance use-related emergency department visits and when compared to male residents, female residents had a 35.8% higher rate of emergency department visits for anxiety disorders (178.8 compared to 132.0), a 21.1% higher rate for depressive disorders (160.5 compared to 133.0), an 18.8% higher rate for PTSD and trauma-related disorders (52.8 compared to 44.5), and a nearly seven times higher rate for eating disorders (3.3 compared to 0.5) (Table 12).

Table 13. Mental Health Emergency Department Visits†, Excluding Substance Use, by Condition, Sex and Race/Ethnicity, 2021

	Female				Male			
	Asian	Black	Latinx	*White*	Asian	Black	Latinx	*White*
Any Mental Health-Related ED Visit	87.0	632.5	406.3	*331.3*	91.8	668.5	346.1	*346.2*
Individual Conditions:								
Anxiety Disorders	42.7	255.1	211.4	*179.7*	34.5	175.9	130.0	*144.8*
Depressive Disorders	41.3	248.1	192.6	*146.6*	27.9	196.5	135.2	*138.1*
Bipolar Disorders	5.2	79.8	29.3	*39.8*	4.6§	76.2	27.7	*49.0*
Schizophrenia Spectrum Disorders	7.5	86.8	17.9	*21.6*	22.1	182.2	44.3	*43.8*
PTSD and Trauma-Related Disorders	11.9	102.7	50.8	*46.1*	6.3	83.2	39.6	*41.4*
Attention Deficit Hyperactivity Disorder (ADHD)	2.8§	32.7	20.9	*24.1*	4.4§	52.0	30.4	*34.5*
Disruptive Behavioral and Impulse-Control Disorders	n<11	19.8	7.0	*4.3*	n<11	30.2	11.9	*10.1*
Obsessive Compulsive Disorder (OCD)	n<11	1.8§	1.9§	*4.7*	n<11	4.3	n<11	*4.7*
Eating Disorders	n<11	2.4§	2.4§	*4.5*	n<11	n<11	n<11	*0.5§*

† Age-adjusted rates per 10,000 residents

§ Rates are based on 20 or fewer cases and should be interpreted with caution.

NOTES: Italicized font indicates reference group; Yellow fill indicates statistically significant rate **lower** than the reference group; Purple fill indicates statistically significant rate **higher** than the reference group.

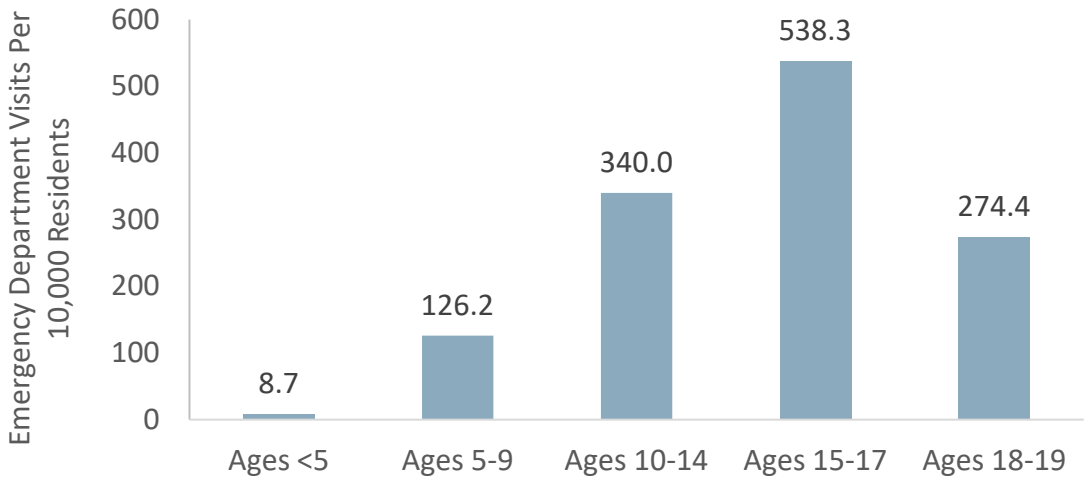
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2021: When excluding substance use-related emergency department visits, and when compared to White female residents, Black females had a 90.9% higher age-adjusted rate of emergency department visits per 10,000 residents for any mental health-related disorder (632.5 compared to 331.3), a 42.0% higher rate for anxiety disorders (255.1 compared to 179.7), a 69.2% higher rate for depressive disorders (248.1 compared to 146.6), over a two times higher rate for bipolar disorders (79.8 compared to 39.8), approximately a four times higher rate for schizophrenia spectrum disorders (86.8 compared to 21.6), about a 2.2 times higher rate for PTSD and trauma-related disorders (102.7 compared to 46.1), a 35.9% higher rate for ADHD (32.7 compared to 24.1), and about a 4.6 times higher rate for disruptive and impulse-control disorders (19.8 compared to 4.3) (Table 13).

When excluding substance use-related emergency department visits and when compared to White female residents, Latinx female residents had a 22.7% higher rate of emergency department visits for any mental health-related disorder (406.3), a 17.7% higher rate for anxiety disorders (211.4), a 31.3% higher rate for depressive disorders (192.6), and a 62.1% higher rate for disruptive behavioral and impulse-control disorders (7.0) (Table 13).

When excluding substance use-related emergency department visits and when compared to White male residents, Black males had a 93.1% higher rate of emergency department visits for any mental health-related disorder (668.5 compared to 346.2), a 21.5% higher rate for anxiety disorders (175.9 compared to 144.8), a 42.3% higher rate for depressive disorders (196.5 compared to 138.1), a 55.6% higher rate for bipolar disorders (76.2 compared to 49.0), a nearly 4.2 times higher rate for schizophrenia spectrum disorders (182.2 compared to 43.8), over two times higher rate for PTSD and trauma-related disorders (83.2 compared to 41.4), a 50.8% higher rate for ADHD (52.0 compared to 34.5), and a nearly three times higher rate for disruptive and impulse-control disorders (30.2 compared to 10.1) (Table 13).

Figure 29. Youth and Adolescent Mental Health Emergency Department Visits† by Age, 2017 to 2021 Combined

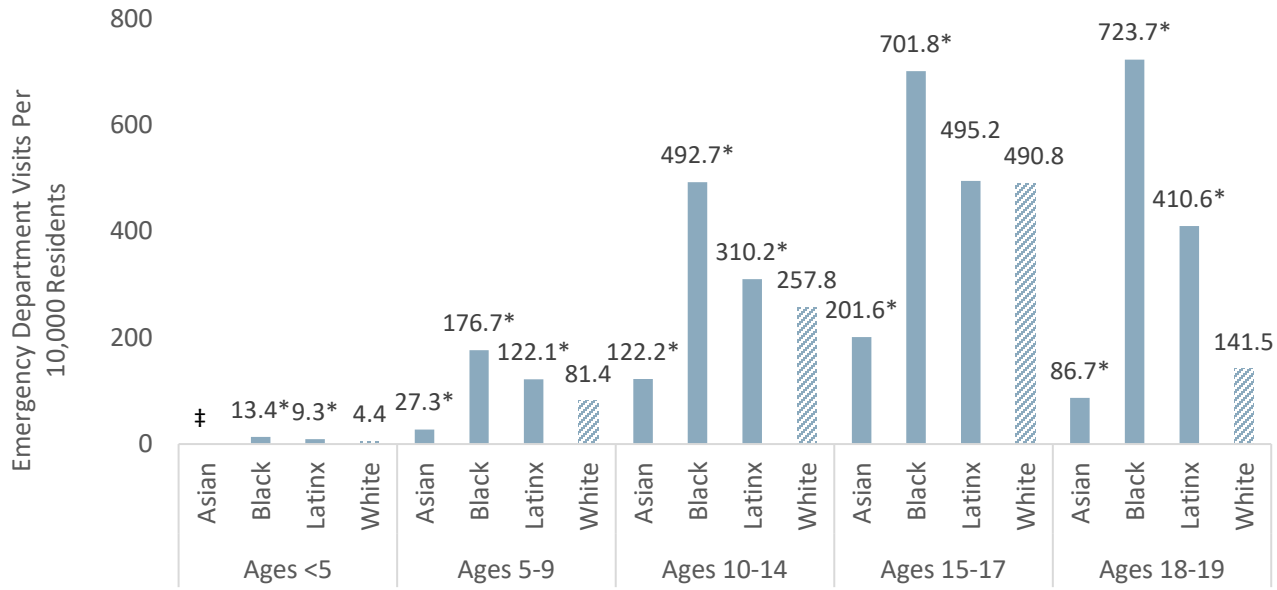


† Age-specific rates per 10,000 residents
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2017 to 2021 Combined: Among Boston youth and adolescents, those ages 15-17 had the highest rates of mental health emergency department visits (538.3 per 10,000 residents), followed by youth ages 10-14 (340.0), adolescents ages 18-19 (274.4), youth ages 5-9 (126.2), and youth under 5 years of age (8.7) (Figure 29).

Of note, Boston's age demographic profile shifts substantially with an influx of college-age persons ages 18 and older. Lower rates for ages 18-19 reflect the impact of this shift. For more information, please contact the Population Health and Research Office at populationhealth@bphc.org.

Figure 30. Youth and Adolescent Mental Health Emergency Department Visits† by Age and Race/Ethnicity, 2017 to 2021 Combined



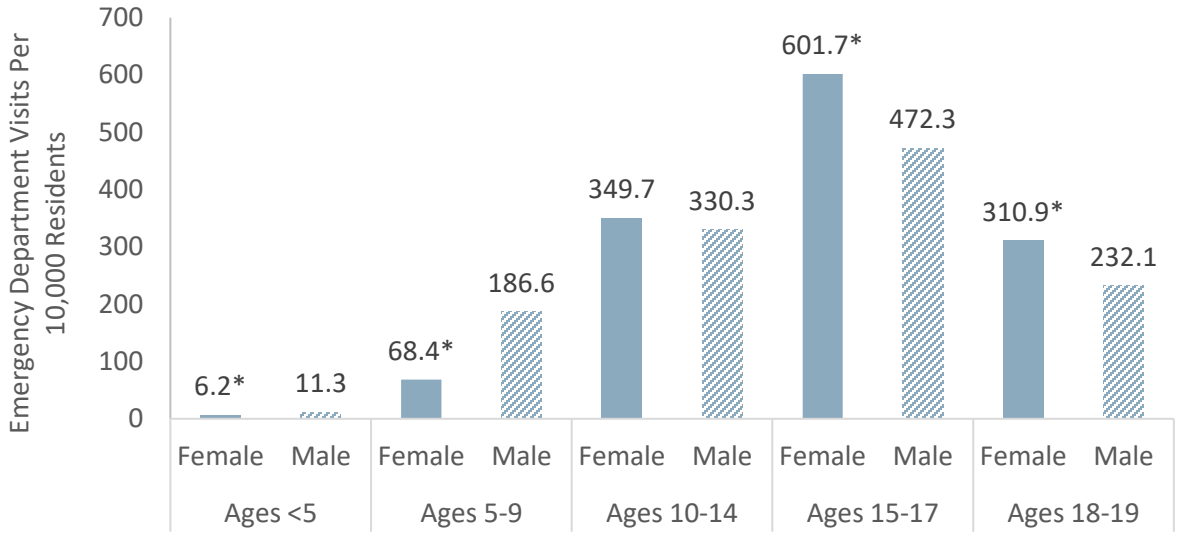
* Statistically significant difference when compared to reference group
† Age-specific rates per 10,000 residents
‡ Data suppressed due to too few emergency department visits (n < 11)
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2017 to 2021 Combined: As shown in Figure 30, across all youth and adolescent age groups, the rate of mental health emergency department visits per 10,000 residents was higher for Black residents when compared to White residents. When compared to White residents within each respective age group, the rate was 5.1 times higher for Black residents ages 18-19 (723.7 compared to 141.5), 43.0% higher for Black residents ages 15-17 (701.8 compared to 490.8), 91.2% higher for Black residents ages 10-14 (492.7 compared to 257.8), 2.2 times higher for Black residents ages 5-9 (176.6 compared to 81.4), and 3.1 times higher for Black residents ages <5 (13.4 compared to 4.4).

Among Latinx residents, there are similar patterns. When compared to White residents within each respective age group, the rate of mental health emergency department visits was 2.9 times higher for Latinx residents ages 18-19 (410.6), 20.3% higher for Latinx residents ages 10-14 (310.2), 50.0% higher for Latinx residents ages 5-9 (122.1), and 2.1 times higher for Latinx residents ages <5 (9.3) (Figure 30). There was no significant difference between Latinx and White youth ages 15-17.

Of note, Boston's racial-age demographic profile shifts substantially with a disproportionate influx of Asian and White college-age persons ages 18 and older. Lower rates for Asian and White residents ages 18 and 19 reflect the impact of this shift. For more information, please contact the Population Health and Research Office at populationhealth@bphc.org.

Figure 31. Youth and Adolescent Mental Health Emergency Department Visits† by Age and Sex, 2017 to 2021 Combined



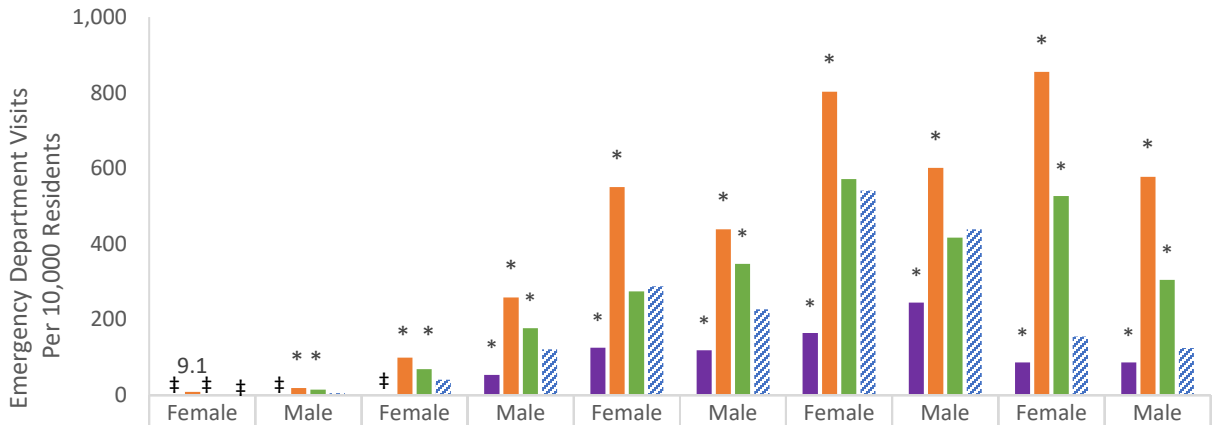
* Statistically significant difference when compared to reference group
† Age-specific rates per 10,000 residents
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2017 to 2021 Combined: The rate of mental health emergency department visits per 10,000 residents was 45.2% lower for female youth ages <5 (6.2) compared to males of the same age (11.3), and 63.4% lower for female youth ages 5-9 (68.4) compared to males of the same age (186.6) (Figure 31).

There was no significant difference in the rate of mental health emergency department visits among female and males ages 10-14.

The rate of mental health emergency department visits was 27.4% higher for female adolescents ages 15-17 (601.7) compared to males of the same age (472.3), and 34.0% higher for females ages 18-19 (310.9) compared to males of the same age (232.1) (Figure 31).

Figure 32. Youth and Adolescent Mental Health Emergency Department Visits† by Age, Sex, and Race/Ethnicity, 2017 to 2021 Combined



	Ages <5		Ages 5-9		Ages 10-14		Ages 15-17		Ages 18-19	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Asian	‡	‡	‡	53.4	125.5	118.9	164.4	245.2	86.9	86.4
Black	9.1	18.7	99.2	258.9	550.7	438.9	802.6	601.5	855.4	577.8
Latinx	‡	14.5	68.8	177.7	274.5	347.4	571.7	416.9	526.6	305.2
White	‡	5.7	41.2	121.1	288.1	227.2	541.2	438.8	155.1	124.6

* Statistically significant difference when compared to reference group
† Age-specific rates per 10,000 residents
‡ Data not presented due to too few cases (n<11)
NOTE: Bars with hatch marks indicate the reference group within each selected indicator
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2017 to 2021 Combined: Generally, up until the age of 10, males had higher rates of mental health emergency department visits per 10,000 residents compared with females. After age ten, this trend is reversed for Black and White youth and adolescents; after age 15, this trend is reversed for Latinx adolescents, and by age 18, female and male Asian adolescents experience similar rates (Figure 32).

Black female youth and adolescents within age groups 10-14, 15-17, and 18-19 consistently had the highest rates of mental health emergency department visits when compared to other sex-racial/ethnic groups presented (Figure 32).

Table 14. Mental Health Emergency Department Visits† Among Ages 0-18, by Condition, 2021

	Boston Overall	Asian	Black	Latinx	*White*	Female	*Male*
Any Mental Health Related Visit	169.4	75.3	252.2	166.9	*109.0*	180.6	*157.7*
Individual Conditions:							
Anxiety Disorders	43.3	31.5	58.3	36.3	*36.7*	57.0	*29.0*
Depressive Disorders	56.9	39.7	80.4	52.2	*44.2*	80.0	*33.0*
PTSD and Trauma-Related Disorders	34.0	n<11	63.6	29.7	*19.5*	37.1	*30.8*
Attention Deficit Hyperactivity Disorder (ADHD)	66.1	n<11	100.6	68.8	*40.6*	48.7	*84.1*
Disruptive Behavioral and Impulse-Control Disorders	30.2	n<11	58.7	25.3	*14.5*	27.1	*33.4*

† Age-specific rates per 10,000 residents
§ Rates are based on 20 or fewer cases and should be interpreted with caution.

NOTE: Italicized font indicates reference group; Yellow fill indicates statistically significant rate **lower** than the reference group; Purple fill indicates statistically significant rate **higher** than the reference group
NOTE: Any mental-health related visit includes anxiety disorders, depressive disorders, bipolar disorders, schizophrenia spectrum disorder, PTSD and trauma related disorders, Attention Deficit Hyperactivity Disorder, Disruptive Behavioral and Impulse-Control Disorders, Obsessive Compulsive Disorders and Eating Disorders
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

Certain mental health conditions (e.g., schizophrenia) have a later age of symptom onset, resulting in lower disease prevalence among youth and adolescents. This presents as low numbers of emergency department visits for such mental health disorders for this population. Therefore, some conditions have been removed from tables that present data for Boston residents under the age of 18 due to low numbers of emergency department visits.

2021: Among residents ages 18 and under, when compared to White residents, Black residents had a nearly 2.4 times higher rate of emergency department visits per 10,000 residents for any mental health-related disorder (252.2 compared to 109.0), a 58.7% higher rate for anxiety disorders (58.3 compared to 36.7), an 82.0% higher rate for depressive disorders (80.4 compared to 44.2), approximately a 3.3 times higher rate for PTSD and trauma-related

disorders (63.6 compared to 19.5), approximately a 2.5 times higher rate for ADHD (100.6 compared to 40.6), and approximately a four times higher rate for disruptive behavioral and impulse-control disorders (58.7 compared to 14.5) (Table 14).

When compared to White residents ages 18 and under, Latinx residents ages 18 and under had a 53.1% higher rate of emergency department visits for any mental health-related disorder (166.9), a 52% higher rate for PTSD and trauma-related disorders (29.7), a 69.2% higher rate for ADHD (68.8), and a 75.1% higher rate for disruptive behavioral and impulse-control disorders (25.3) (Table 14).

When compared to males ages 18 and under, females ages 18 and under had a 14.5% higher rate of emergency department visits for any mental health-related disorder (180.6 compared to 157.7), a 96.5% higher rate for anxiety disorders (57.0 compared to 29.0), and approximately a 2.4 times higher rate for depressive disorders (80.0 compared to 33.0). When compared to males ages 18 and under, female ages 18 and under had a 42.0% lower rate of emergency department visits for ADHD (48.7 compared to 84.1) (Table 14).

Table 15. Mental Health Emergency Department Visits† Among Ages 5-9, by Condition, 2017 to 2021 Combined

	Boston Overall	Asian	Black	Latinx	*White*	Female	*Male*
Any Mental Health-Related Visit	126.2	27.3	176.6	121.1	*81.4*	68.4	186.6
Individual Conditions:							
Anxiety Disorders	14.7	n<11	17.1	16.4	*11.4*	12.7	16.9
Depressive Disorders	7.2	n<11	8.8	6.6	*5.7§*	5.3	9.1
PTSD and Trauma-Related Disorders	36.7	n<11	61.4	32.0	*21.8*	19.5	54.7
Attention Deficit Hyperactivity Disorder (ADHD)	65.6	n<11	86.2	67.6	*44.9*	25.9	107.2
Disruptive Behavioral and Impulse-Control Disorders	55.3	n<11	92.4	41.8	*34.5*	28.4	83.3

† Age-specific rates per 10,000 residents
§ Rates are based on 20 or fewer cases and should be interpreted with caution.
NOTE: Italicized font indicates reference group; Yellow fill indicates statistically significant rate **lower** than the reference group; Purple fill indicates statistically significant rate **higher** than the reference group
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2017 to 2021 Combined: When compared to White youth ages 5-9, Black youth ages 5-9 had a 2.2 times higher rate of emergency department visits per 10,000 residents for any mental health-related visit (176.6 compared to 81.4), a 2.8 times higher rate for PTSD and trauma-related disorders (61.4 compared to 21.8), a 92.0% higher rate for ADHD (86.2 compared to 44.9), and a 2.7 times higher rate for disruptive behavioral and impulse-control disorders (92.4 compared to 34.5) (Table 15).

When compared to White youth ages 5-9, Latinx youth ages 5-9 had a 49.9% higher rate of emergency department visits per 10,000 residents for any mental health-related visit (121.1), a 46.7% higher rate for PTSD and trauma-related disorders (32.0), and a 50.4% higher rate for ADHD (67.6) (Table 15).

When compared to male youth ages 5-9, female youth ages 5-9 had a 63.4% lower rate of emergency department visits for any mental health-related disorder (68.4 compared to 186.6), a 41.6% lower rate for depressive disorders (5.3 compared to 9.1), a 64.3% lower rate for PTSD

and trauma-related disorders (19.5 compared to 54.7), a 75.8% lower rate for ADHD (25.9 compared to 107.2), and a 65.9% lower rate for disruptive behavioral and impulse-control disorders (28.4 compared to 83.3) (Table 15).

Table 16. Mental Health Emergency Department Visits† Among Ages 10-14, by Condition, 2017 to 2021 Combined

	Boston Overall	Asian	Black	Latinx	*White*	Female	*Male*
Any Mental Health-Related Visit	340.0	122.2	492.7	310.5	*257.8*	349.7	*330.3*
Individual Conditions:							
Anxiety Disorders	71.6	46.2	78.5	69.4	*76.3*	87.3	*55.8*
Depressive Disorders	96.6	53.4	129.0	80.9	*92.6*	133.5	*59.7*
PTSD and Trauma-Related Disorders	87.7	25.7	146.4	71.4	*62.0*	94.0	*81.3*
Attention Deficit Hyperactivity Disorder (ADHD)	141.0	13.4§	201.4	140.1	*109.6*	105.5	*176.4*
Disruptive Behavioral and Impulse-Control Disorders	107.0	23.6	188.8	83.9	*60.5*	97.2	*116.8*

† Age-specific rates per 10,000 residents
§ Rates are based on 20 or fewer cases and should be interpreted with caution.
NOTE: Italicized font indicates reference group; Yellow fill indicates statistically significant rate **lower** than the reference group; Purple fill indicates statistically significant rate **higher** than the reference group
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2017 to 2021 Combined: When compared to White youth ages 10-14, Black youth ages 10-14 had a 91.2% higher rate of emergency department visits per 10,000 residents for any mental health-related visit (492.7 compared to 257.8), a 39.3% higher rate for depressive disorders (129.0 compared to 92.6), a 2.4 times higher rate for PTSD and trauma-related disorders (146.4 compared to 62.0), an 83.8% higher rate for ADHD (201.4 compared to 109.6), and a 3.1 times higher rate for disruptive behavioral and impulse-control disorders (188.8 compared to 83.9) (Table 16).

When compared to White youth ages 10-14, Latinx youth ages 10-14 had a 20.3% higher rate of emergency department visits per 10,000 residents for any mental health-related visit (310.5), a 27.8% higher rate for ADHD (140.1), and a 38.8% higher rate for disruptive behavioral and impulse-control disorders (83.9) (Table 16).

As shown in Table 16, when compared to male youth ages 10-14, female youth ages 10-14 had a 56.5% higher rate of emergency department visits for anxiety disorders (87.3 compared to

55.8), a 2.2 times higher rate for depressive disorders (133.5 compared to 59.7), and a 15.6% higher for PTSD and trauma-related disorders (94.0 compared to 81.3). When compared to male residents ages 10-14, female residents ages 10-14 had a 40.2% lower rate for ADHD (105.5 compared to 176.4) and a 16.8% lower rate for disruptive behavioral and impulse-control disorders (97.2 compared to 116.8).

Table 17. Mental Health Emergency Department Visits† Among Ages 15-17, by Condition, 2017 to 2021 Combined

	Boston Overall	Asian	Black	Latinx	*White*	Female	*Male*
Any Mental Health-Related Visit	538.3	201.6	701.8	495.2	*490.8*	601.7	*472.3*
Individual Conditions:							
Anxiety Disorders	164.5	74.4	174.1	156.9	*188.4*	217.3	*109.5*
Depressive Disorders	246.5	141.6	295.6	222.6	*245.4*	326.2	*163.5*
PTSD and Trauma-Related Disorders	101.5	27.6	155.4	88.4	*71.9*	118.3	*83.9*
Attention Deficit Hyperactivity Disorder (ADHD)	138.2	22.8§	185.4	137.6	*136.6*	86.4	*192.1*
Disruptive Behavioral and Impulse-Control Disorders	92.6	16.8§	162.0	64.6	*60.9*	75.7	*110.2*

† Age-specific rates per 10,000 residents
§ Rates are based on 20 or fewer cases and should be interpreted with caution.
NOTE: Italicized font indicates reference group; Yellow fill indicates statistically significant rate **lower** than the reference group; Purple fill indicates statistically significant rate **higher** than the reference group
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2017 to 2021 Combined: When compared to White adolescents ages 15-17, Black adolescents ages 15-17 had a 43.0% higher rate of emergency department visits per 10,000 residents for any mental health-related visit (701.8 compared to 490.8), a 20.5% higher rate of depressive disorders (295.6 compared to 245.4), a 2.2 times higher rate for PTSD and trauma-related disorders (155.4 compared to 71.9), a 35.7% higher rate for ADHD (185.4 compared to 136.6), and a 2.7 times higher rate for disruptive behavioral and impulse-control disorders (162.0 compared to 60.9) (Table 17).

As shown in Table 17, when compared to male adolescents ages 15-17, female adolescents ages 15-17 had a 27.4% higher rate of emergency department visits for any mental health-related disorder (601.7 compared to 472.3), a 98.4% higher rate for anxiety disorders (217.3 compared to 109.5), a nearly 2 times higher rate for depressive disorders (326.2 compared to 163.5), and a 41.1% higher for PTSD and trauma-related disorders (118.3 compared to 83.9). When compared to male adolescents ages 15-17, female adolescents ages 15-17 had a 55.0%

lower rate for ADHD (86.4 compared to 192.1) and a 31.3% lower rate for disruptive behavioral and impulse-control disorders (75.5 compared to 110.2).

Table 18. Mental Health Emergency Department Visits† Among Ages 18-19 Years, by Condition, 2017 to 2021 Combined

	Boston Overall	Asian	Black	Latinx	*White*	Female	*Male*
Any Mental Health-Related Visit	274.4	86.7	723.7	410.6	*141.5*	310.9	*232.1*
Individual Conditions:							
Anxiety Disorders	116.7	36.6	259.7	174.5	*74.1*	148.8	*79.3*
Depressive Disorders	116.9	42.3	286.5	169.7	*65.2*	149.5	*79.1*
PTSD and Trauma-Related Disorders	44.6	13.4	124.4	69.2	*19.4*	54.7	*32.8*
Attention Deficit Hyperactivity Disorder (ADHD)	40.6	6.5§	109.9	66.0	*23.1*	28.8	*54.3*
Disruptive Behavioral and Impulse-Control Disorders	10.4	n<11	34.5	13.9	*4.0*	7.6	*13.6*

† Age-specific rates per 10,000 residents
§ Rates are based on 20 or fewer cases and should be interpreted with caution.
NOTE: Italicized font indicates reference group; Yellow fill indicates statistically significant rate **lower** than the reference group; Purple fill indicates statistically significant rate **higher** than the reference group
DATA SOURCE: Acute Hospital Case Mix Database, Massachusetts Center for Health Information and Analysis

2017 to 2021 Combined: When compared to White adolescents ages 18-19, Black adolescents ages 18-19 had a 5.1 times higher rate of emergency department visits per 10,000 residents for any mental health-related visit (723.7 compared to 141.5), a 3.5 times higher rate for anxiety disorders (259.7 compared to 74.1), a 4.4 times higher rate for depressive disorders (286.5 compared to 65.2), a 6.4 times higher rate for PTSD and trauma-related disorders (124.4 compared to 19.4), a 4.8 times higher rate for ADHD (109.9 compared to 23.1), and an 8.7 times higher rate for disruptive behavioral and impulse-control disorders (34.5 compared to 4.0) (Table 18).

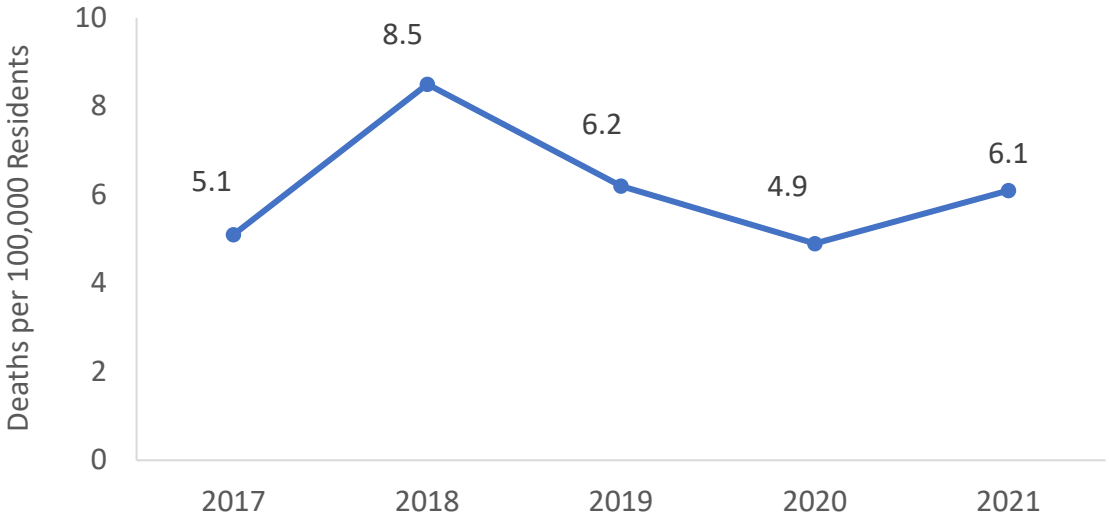
When compared to White adolescents ages 18-19, Latinx adolescents ages 18-19 had a 2.9 times higher rate of emergency department visits per 10,000 residents for any mental health-related visit (410.6), a 2.4 times higher rate for anxiety disorders (174.5), a 2.6 times higher rate for depressive disorders (169.7), a 3.6 times higher rate for PTSD and trauma-related disorders (69.2), a 2.9 times higher rate for ADHD (66.0), and a 3.5 times higher rate for disruptive behavioral and impulse-control disorders (13.9) (Table 18).

As shown in Table 18, when compared to male adolescents ages 18-19, female adolescents ages 18-19 had a 34.0% higher rate of emergency department visits for any mental health-related disorder (310.9 compared to 232.1), an 87.6% higher rate for anxiety disorders (148.8 compared to 79.3), an 89.1% higher rate for depressive disorders (149.5 compared to 79.1), and a 66.7% higher rate for PTSD and trauma-related disorders (54.7 compared to 54.7). When compared to male adolescents ages 18-19, female adolescents ages 18-19 had a 47.0% lower rate for ADHD (28.8 compared to 54.3) and a 44.0% lower rate for disruptive behavioral and impulse-control disorders (7.6 compared to 13.6) when compared to male residents ages 18-19.

SECTION 5: SUICIDE

This section presents trends and patterns in age-adjusted suicide mortality rates among Boston residents.

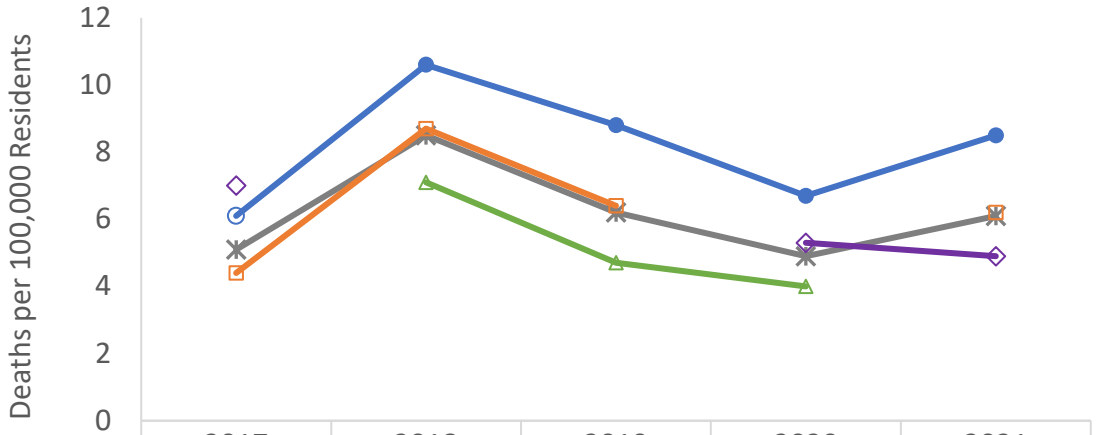
Figure 33. Suicide† by Year, 2017-2021



† Age-adjusted rates per 100,000 residents
DATA SOURCE: Boston resident deaths, Massachusetts Department of Public Health

2017-2021: There was no significant change in the age-adjusted suicide mortality rate per 100,000 residents for Boston overall. In 2021, the age-adjusted rate of suicide-related deaths in Boston overall was 6.1 per 100,000 residents (Figure 33). Nationally, the US experienced its highest rates of suicide in 2018 (75).

Figure 34. Suicide† by Race/Ethnicity and Year, 2017-2021



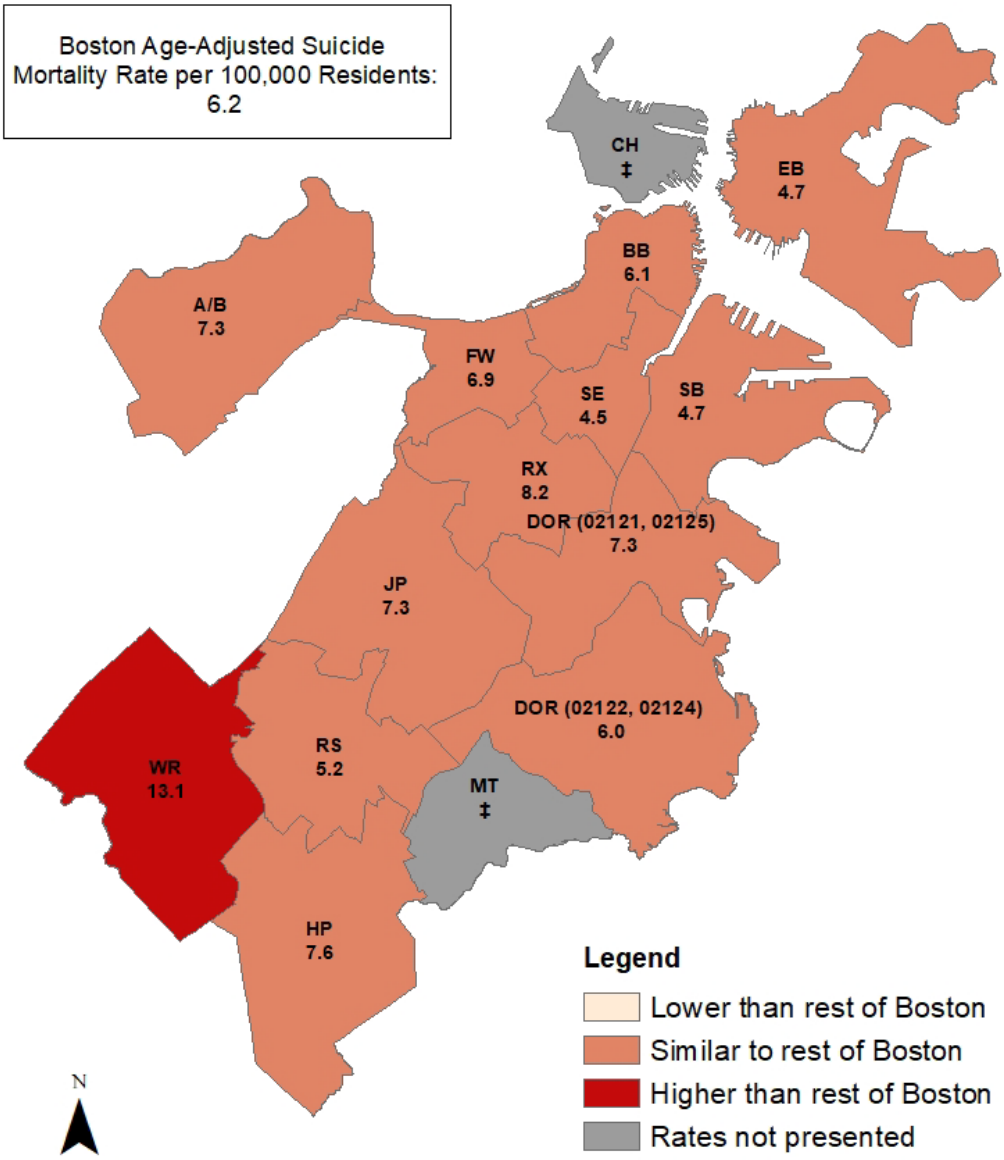
	2017	2018	2019	2020	2021
Boston	5.1	8.5	6.2	4.9	6.1
Asian	7.0 §	‡	‡	5.3 §	4.9 §
Black	4.4 §	8.7 §	6.4 §	‡	6.2 §
Latinx	‡	7.1 §	4.7 §	4.0 §	‡
White	6.1 §	10.6	8.8	6.7	8.5

† Age-adjusted rates per 100,000 residents
§ Rates based on 20 or fewer cases and should be interpreted with caution (hollowed out symbols indicate rates based on 20 or fewer cases)
‡ Rates not presented due to small number of cases (n<5)
DATA SOURCE: Boston resident deaths, Massachusetts Department of Public Health

2017-2021: There was no significant change in the age-adjusted rate of suicide deaths by race/ethnicity for Asian, Black, Latinx or White residents.

2021: The age-adjusted suicide rate per 100,000 residents was 8.5 for White residents, 6.2 for Black residents, and 4.9 for Asian residents (Figure 34). There were no significant differences in suicide rates across racial/ethnic groups in 2021.

Figure 35. Suicide† by Neighborhood, 2017 to 2021 Combined



† Age-adjusted rates per 100,000 residents
‡ Rates not presented due to small number of cases (n<5)
DATA SOURCE: Boston resident deaths, Massachusetts Department of Public Health

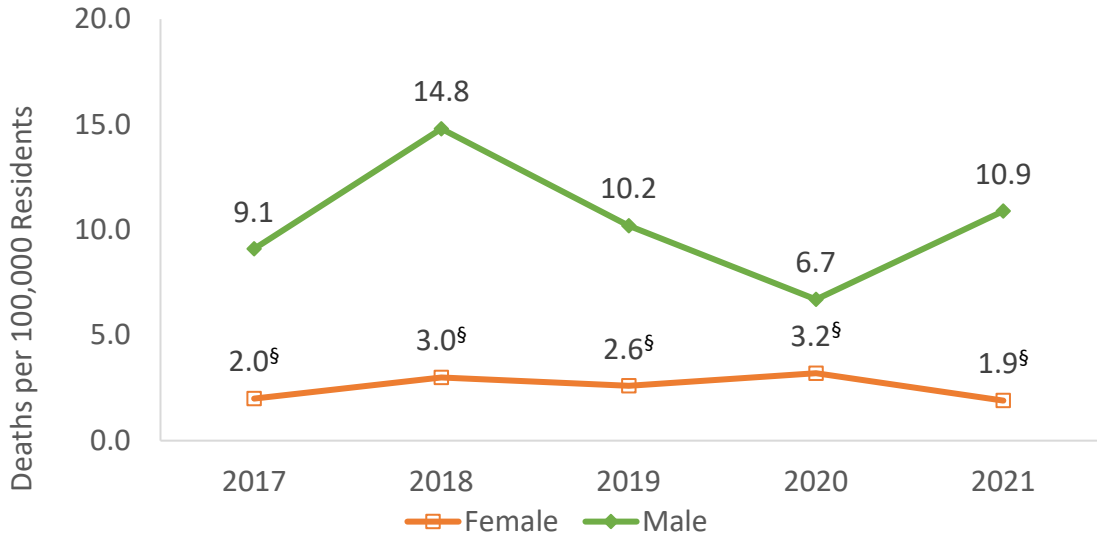
2017 to 2021 Combined: The age-adjusted suicide rate per 100,000 was 6.2 for Boston overall. The rate was higher in West Roxbury (13.1) when compared with the rest of Boston (Figure 35).

Table 19. Suicide† by Neighborhood, Ranked in Descending Order, 2017 to 2021 Combined

Neighborhood	Age-Adjusted Mortality Rate
West Roxbury (WR), 02132	13.1
Roxbury (RX), 02119, 02120	8.2
Hyde Park (HP), 02136	7.6
Allston/Brighton (AB), 02134, 02135, 02163	7.3
Jamaica Plain (JP), 02130	7.3
Dorchester (DOR), 02121, 02125	7.3
Fenway (FW), 02115, 02215	6.9
Back Bay, Downtown, Beacon Hill, North End, West End (BB), 02108-02110, 02113-02114, 02116, 02199	6.1
Dorchester (DOR) 02122, 02124	6.0
Roslindale (RS), 02131	5.2
East Boston (EB), 02128	4.7
South Boston (SB), 02127, 02210	4.7
South End (SE), 02111, 02118	4.5
Mattapan (MT), 02126	‡
Charlestown (CH), 02129	‡

† Age-adjusted rates per 100,000 residents
NOTE: Rates not presented for Charlestown or Mattapan due to small case numbers (n<5)
DATA SOURCE: Boston resident deaths, Massachusetts Department of Public Health

Figure 36. Suicide† by Sex and Year, 2017-2021



† Age-adjusted rates per 100,000 residents
§ Rates based on 20 or fewer cases and should be interpreted with caution (hollowed out symbols indicate rates based on 20 or fewer cases)
DATA SOURCE: Boston resident deaths, Massachusetts Department of Public Health

2017-2021: There was no significant change in the age-adjusted rate of suicide deaths for female or male residents.

2021: The age-adjusted suicide rate per 100,000 residents was 82.2% lower for females (1.9) compared with males (10.9). Please note, suicide rates are based on low case counts and comparison testing should be interpreted with caution.

GLOSSARY OF STATISTICAL TERMS

Age-Adjusted Rate (AAR): Age-adjustment is a statistical process applied to rates of disease and death which allows populations or groups with different age structures to be compared. The occurrence of disease and death is often associated with age, and the age distribution between populations may differ considerably. Thus, AARs are helpful when comparing rates over time and between groups or populations. An AAR is derived by: 1) calculating the age-specific rates (ASRs) across all age groups, 2) multiplying by age-specific weights that come from a proportion of the 2000 US standard population within each age group, and 3) summing the adjusted age-specific rates. In this report, AARs are used for the presentation of mental health emergency department visits and suicide mortality. All AARs are based on a standard population distribution that covers all ages.

Confidence Interval: A range of values based on a chosen probability level within which the true value of a population parameter is likely found. With a 95% confidence interval, one can assume the true value has a high probability of being contained within the interval (i.e., falling between the two values that define the endpoints of the interval).

Prevalence: The proportion of persons in a population who have a particular disease or attribute at a specified point in time or over a specified period of time. Prevalence differs from incidence in that prevalence includes all cases, both new and preexisting, in the population at the specified time, whereas incidence is limited to new cases only.

Rates: A rate is a measure of a type of event, disease, or condition occurring among a population per unit(s) of time, for instance, the number of deaths due to suicide per 100,000 population for a given year or across multiple years. Two types of rates are presented in this report: crude rates and age-adjusted rates (AARs). In this report, death rates are based on the primary cause only. The population denominators used for calculating rates is derived through interpolation or extrapolation using data from the 2020 and 2010 US Census. Linear interpolation/extrapolation involves the calculation of an average annual percent change for use in estimating population denominators. Linear interpolation is preferred to using a single year of US Census data when calculating rates for intercensal years.

Statistical Significance: An attribute of data based on statistical testing. A statistical test examines differences between rates or percentages to help determine if that observed difference reflects a true difference in the actual population experience, as opposed to one observed simply due to chance. Statistical significance means that an observed difference is most likely true; it does not mean that the difference is necessarily clinically meaningful or important.

DATA SOURCES

Boston Behavioral Risk Factor Surveillance System, (Boston BRFSS), Population Health and Research Office, Boston Public Health Commission: The Boston Behavioral Risk Factor Surveillance System (Boston BRFSS) is a system of telephone health surveys of adults living in non-institutional household settings ages 18 and over that collects information on health risk behaviors, preventive health practices, and health care access. The Boston Public Health Commission (BPHC) conducts an independent survey approximately every other year modeled after the Centers for Disease Control and Prevention (CDC) Behavioral Risk Factor Surveillance System (BRFSS) survey. Over time, the survey has been modified by BPHC to be more reflective of health determinants specific to the Boston population. However, the Boston Behavioral Risk Factor Surveillance System survey has maintained many standard core questions included in the BRFSS used by the Massachusetts Department of Public Health. Results from the survey are used by BPHC to plan and implement health initiatives; to identify health problems within populations; to identify racial/ethnic inequities in access to and utilization of health care, in risk behaviors, and selected health conditions; to establish and monitor health objectives; to support health-related legislative activities; to evaluate disease prevention activities and programs; and to assist in receiving grants and other funding. This report uses Boston BRFSS data from the following years: 2015, 2017, 2019, 2021.

Health of Boston Survey of People Experiencing Homelessness, Boston Public Health Commission: The Health of Boston Survey of People Experiencing Homelessness (HOB-SPEH) is a first of its kind comprehensive health survey of unhoused adults (i.e., adults experiencing homelessness as individuals, not as families) conducted in partnership between the Boston Public Health Commission (BPHC) and Boston University School of Public Health. The survey content was heavily based on Boston Behavioral Risk Factor Surveillance System (BBRFSS) survey items, covering a wide range of health topics and social determinants of health, and supplemented with additional items more directly related to homelessness, drug use and housing preferences. The survey was administered from June through August of 2022 among 300 adults utilizing services at BPHC's two emergency shelters (a low-threshold overnight shelter for those experiencing homelessness regardless of substance use) and the Engagement Center (a low-threshold daytime space for individuals navigating homelessness and substance use) located in the Mass and Cass area of Boston. While on a given night the demographic profile of homelessness in Boston is not entirely known, the HOB-SPEH was designed to ensure survey results reflected the *non-family* homeless population across all shelters in Boston. As a consequence, survey results describe racial, ethnic and gender-specific differences among Boston's unhoused population which subsequently informs the provision of client services and

related policy. For more information, please contact the BPHC Population Health and Research Office at populationhealth@bphc.org.

Acute Hospital Case-Mix Databases (Hospital Inpatient Discharge Database and Outpatient Emergency Department Database), Massachusetts Center for Health Information and Analysis: These emergency department data present information on Boston resident emergency department visits to acute care hospitals in Massachusetts. All rates are based on hospital patient encounter (HPE) count totals covering fiscal years running October through September (e.g., year 2021 covers HPEs from October 2020-September 2021). For a given hospitalization, the patient's primary diagnosis is used for determination of a mental disorder.

Boston Resident Deaths, Registry of Vital Records and Statistics, Office of Data Management and Outcomes Assessment, Massachusetts Department of Public Health: Death data used by the Boston Public Health Commission pertains only to Boston residents. This report used death data from 2017 to 2021. Death records are completed with the assistance of an informant, typically a family member or funeral director, which may result in errors (for example, in race/ethnicity reporting) that would not occur in self-reported data.

REFERENCES

1. Substance Abuse and Mental Health Services Administration. What is Mental Health? [7/14/2023]. Available from: https://www.samhsa.gov/mental-health

2. Substance Abuse and Mental Health Services Administration. Key substance use and mental health indicators in the United States: Results from the 2015 National Survey on Drug Use and Health. HHS Publication No. SMA 16-4984, NSDUH Series H-51. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. 2016.

3. Centers for Disease Control and Prevention. About mental health. [7/14/2023]. Available from: https://www.cdc.gov/mentalhealth/learn/index.htm

4. Kessler RC, Angermeyer M, Anthony JC, et al. Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative. World Psychiatry. 2007;6(3):168-176.

5. National Institute of Mental Health. Substance use and co-occurring mental disorders. [7/14/2023]. Available from: https://www.nimh.nih.gov/health/topics/substance-use-and-mental-health

6. Centers for Disease Control and Prevention. Mental Health Awareness. [8/14/2023]. Available from: https://www.cdc.gov/genomics/resources/diseases/mental.htm

7. Firth J, Solmi M, Wootton RE, et al. A meta-review of "lifestyle psychiatry": the role of exercise, smoking, diet and sleep in the prevention and treatment of mental disorders. World Psychiatry. 2020;19(3):360-380.

8. Substance Abuse and Mental Health Services Administration. SAMHSA's concept of trauma and guidance for a trauma-informed approach. HHS Publication No. (SMA) 14-4844. Rockville, MD: Substance Abuse and Mental Health Services Administration. 2014.

9. Ross CE, Mirowsky J. Neighborhood disadvantage, disorder, and health. Journal of Health and Social Behavior. 2001;42(3):258-276.

10. Compton MT, Shim RS. The social determinants of mental health. Psychiatry and society: Global mental health. 2015;13(4):419-425.

11. Substance Abuse and Mental Health Services Administration. Key substance use and mental health indicators in the United States: Results from the 2021 National Survey on Drug Use and Health. HHS Publication No. PEP22-07-01-005, NSDUH Series H-57. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. 2022.

12. Ward EC, Wiltshire JC, Detry MA, Brown RL. African American men and women's attitude toward mental illness, perceptions of stigma, and preferred coping behaviors. Nursing Research. 2013;62(3):185-194.

13. Wong EC, Collins RL, Cerully J, Seelam R, Roth B. Racial and ethnic differences in mental illness stigma and discrimination among Californians experiencing mental health challenges. RAND Health Quarterly. 2017;6(2):6.

14. Bailey RK, Mokonogho J, Kumar A. Racial and ethnic differences in depression: current perspectives. Neuropsychiatric Disease and Treatment. 2019;15:603-609.

15. Blue Cross Blue Shield. Racial disparities in diagnosis and treatment of major depression. Chicago, IL: Blue Cross Blue Shield. 2022.

16. Medley G, Lipari RN, Bose J, Cribb DS, Kroutil LA, McHenry G. Sexual orientation and estimates of adult substance use and mental health: Results from the 2015 National Survey on Drug Use and Health. NSDUH Data Review. 2016.

17. Centers for Disease Control and Prevention. Adolescent Behaviors and Experiences Survey (ABES) Results. [7/14/2023]. Available from: https://www.cdc.gov/healthyyouth/data/abes/tables/

18. Baker KE. Findings from the Behavioral Risk Factor Surveillance System on health-related quality of life among US transgender adults, 2014-2017. JAMA Intern Med. 2019;179(8):1141-1144.

19. Balsam KF, Molina Y, Beadnell B, Simoni J, Walters K. Measuring multiple minority stress: the LGBT People of Color Microaggressions Scale. Cultural Diversity and Ethnic Minority Psychology. 2011;17(2):163-174.

20. Terlizzi EP, Villarroel MA. Symptoms of generalized anxiety disorders among adults: United States, 2019. NCHS Data Brief, No. 378. Hyattsville, MD: National Center for Health Statistics. 2019.

21. McLean CP, Asnaani A, Litz BT, Hofmann SG. Gender differences in anxiety disorders: prevalence, course of illness, comorbidity and burden of illness. Journal of Psychiatric Research. 2011;45(8):1027-1045.

22. Mayor E. Gender roles and traits in stress and health. Frontiers in Psychology. 2015;6:779.

23. Centers for Disease Control and Prevention. Loneliness and social isolation linked to serious health conditions. [8/25/2023]. Available from: https://www.cdc.gov/aging/publications/features/lonely-older-adults.html

24. Centers for Disease Control and Prevention. Youth Risk Behavior Survey: Data Summary & Trends Report: 2011-2021. Atlanta, GA: Division of Adolescent and School Health, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. 2023.

25. Hoffmann JA, Alegria M, Alvarez K, et al. Disparities in pediatric mental and behavioral health conditions. Pediatrics. 2022;150(4):e2022058227.

26. Marrast L, Himmelstein DU, Woolhandler S. Racial and ethnic disparities in mental health care for children and young adults: A national study. International Journal of Health Services. 2016;46(4):810-824.

27. American Psychological Association. Stress in America: The impact of discrimination. Stress in America Survey. Washington, DC: American Psychological Association. 2016.

28. Gara MA, Minsky S, Silverstein SM, Miskimen T, Strakowski SM. A naturalistic study of racial disparities in diagnoses at an outpatient behavioral health clinic. Psychiatric Services. 2019;70(2):130-134.

29. Schwartz RC, Blankenship DM. Racial disparities in psychotic disorder diagnosis: A review of empirical literature. World Journal of Psychiatry. 2014;4(4):133-140.

30. American Psychiatric Association. Mental health disparities: Diverse populations. [7/14/2023]. Retrieved from: https://www.psychiatry.org/psychiatrists/diversity/education/mental-health-facts

31. Kaba F, Solimo A, Graces J, et al. Disparities in mental health referral and diagnosis in the New York City Jail Mental Health Service. American Journal of Public Health. 2015;105(9):1911-1916.

32. American Psychological Association. Anxiety. [7/14/2023]. Retrieved from: https://www.apa.org/topics/anxiety

33. American Psychiatric Association. What are anxiety disorders? [7/14/2023]. Retrieved from: https://www.psychiatry.org/patients-families/anxiety-disorders/what-are-anxiety-disorders

34. Cleveland Clinic. Anxiety disorders. [7/14/2023]. Retrieved from: https://my.clevelandclinic.org/health/diseases/9536-anxiety-disorders

35. National Institute of Mental Health. What is depression? [7/14/2023]. Retrieved from: https://www.nimh.nih.gov/health/topics/depression

36. Perez NB, D'Eramo Melkus G, Wright F, et al. Latent class analysis of depressive symptom phenotypes among black/African American mothers. Nursing Research. 2023;72(2):93-102.

37. Goodwin RD, Dierker LC, Wu M, Galea S, Hoven CW, Weinberger AH. Trends in U.S. depression prevalence from 2015 to 2020: The widening treatment gap. American Journal of Preventive Medicine. 2022;63(5):726-733.

38. Johns Hopkins Medicine. Substance Use Disorder. [7/14/2023]. Retrieved from: https://www.hopkinsmedicine.org/health/conditions-and-diseases/substance-abuse-chemical-dependency

39. Substance Abuse and Mental Health Services Administration. Co-occurring disorders and other health conditions. [7/14/2023]. Retrieved from: https://www.samhsa.gov/medications-substance-use-disorders/medications-counseling-related-conditions/co-occurring-disorders

40. National Institutes of Health. Post-Traumatic Stress Disorder (PTSD) 2023. [7/14/2023]. Retrieved from: https://hr.nih.gov/working-nih/civil/post-traumatic-stress-disorder-ptsd-2023

41. U.S. Department of Veteran Affairs. PTSD: National Center for PTSD: How common is PTSD in adults? [7/14/2023]. Retrieved from: https://www.ptsd.va.gov/understand/common/common_adults.asp

42. Mayo Clinic. Post-traumatic stress disorder (PTSD). [7/14/2023]. Retrieved from: https://www.mayoclinic.org/diseases-conditions/post-traumatic-stress-disorder/symptoms-causes/syc-20355967

43. Merrick MT, Ford DC, Ports KA, et al. Vital signs: Estimated proportion of adult health problems attributable to adverse childhood experiences and implications for prevention - 25 states, 2015-

2017. MMWR Morb Mortal Wkly Rep 2019;68:999-1005.

44. Sacks V, Murphey D. The prevalence of adverse childhood experiences, national, by state, and by race or ethnicity. Child Trends. 2018.

45. Williams MT, Printz DMB, DeLapp RCT. Assessing racial trauma with the trauma symptoms of discrimination scale. Psychology of Violence. 2018;8(6):735-747.

46. U.S. Department of Veteran Affairs. PTSD: National Center for PTSD: Racial trauma. [8/15/2023]. Retrieved from: https://www.ptsd.va.gov/understand/types/racial_trauma.asp

47. Centers for Disease Control and Prevention. Facts about suicide. [7/14/2023]. Retrieved from: https://www.cdc.gov/suicide/facts/index.html

48. Centers for Disease Control and Prevention. Vital signs: Suicide rising across the US. [7/14/2023]. Retrieved from: https://www.cdc.gov/vitalsigns/suicide/index.html

49. Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Mortality 2018-2021 on CDC WONDER Online Database, released in 2023. Data are from the Multiple Cause of Death Files, 2018-2021, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. [7/18/2023]. Retrieved from: http://wonder.cdc.gov/mcd-icd10-expanded.html

50. James SE, Herman JL, Rankin S, Keisling M, Mottet L, Anafi M. The report of the 2015 US Transgender Survey. Washington, DC: National Center for Transgender Equality. 2016.

51. Centers for Disease Control and Prevention. Suicide data and statistics. [8/15/2023]. Retrieved from: https://www.cdc.gov/suicide/suicide-data-statistics.html

52. American Psychological Association. Psychologists report large increase in demand for anxiety, depression treatment. [7/14/2023]. Retrieved from: https://www.apa.org/news/press/releases/2020/11/anxiety-depression-treatment

53. Terlizzi EP, Schiller JS. Mental health treatment among adults aged 18-44: United States, 2019-2021. NCHS Data Brief, No. 444. Hyattsville, MD: National Center for Health Statistics. 2022.

54. Thomeer MB, Moody MD, Yahirun J. Racial and ethnic disparities in mental health and mental health care during the COVID-19 pandemic. Journal of Racial and Ethnic Health Disparities. 2023;10(2):961-976.

55. Findling MG, Blendon RJ, Benson J, Howard K. COVID-19 has driven racism and violence against Asian Americans: perspectives from 12 national polls. Health Affairs Forefront. 2022.

56. Laurencin CT, Walker JM. A pandemic on a pandemic: Racism and COVID-19 in Blacks. Cell Systems. 2020;11(1):9-10.

57. Substance Abuse and Mental Health Services Administration. Double jeopardy: COVID-19 and behavioral health disparities for black and Latino communities in the U.S. [7/14/2023]. US Department of Health and Human Services.

58. Rico A, Brener ND, Thornton J, et al. Overview and methodology of the adolescent behaviors and experiences survey – United States, January-June 2021. MMWR Suppl 2022;71(Suppl-3):1-7.

59. Centers for Disease Control and Prevention. Youth Risk Behavior Survey: Data Summary & Trends Report: 2009-2019. Atlanta, GA: Division of Adolescent and School Health, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. 2020.

60. Commonwealth of Massachusetts. Massachusetts Behavioral Health Help Line. Massachusetts Behavioral Health Partnership [7/14/2023]. Retrieved from: https://www.masshelpline.com/

61. Substance Abuse and Mental Health Services Administration. Key substance use and mental health indicators in the United States: Results from the 2020 National Survey on Drug Use and Health. HHS Publication No. PEP21-07-01-003, NSDUH Series H-56. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. 2021.

62. National Alliance on Mental Illness. Mental health & access to care in rural America. [7/14/2023]. Retrieved from: https://www.nami.org/NAMI/media/NAMI-Media/Infographics/NAMI_MHinRuralAmerica.pdf

63. Modi H, Orgera K, Grover A. Barriers to mental health care. Association of American Medical Colleges. 2022.

64. Mays VM, Jones AL, Delaney-Brumsey A, Coles C, Cochran SD. Perceived discrimination in health care and mental health/substance abuse treatment among blacks, Latinos, and whites. Medical Care. 2017;55(2):173-181.

65. Meyer OL, Zane N. The influence of race and ethnicity in clients' experiences of mental health treatment. Journal of Community Psychology. 2013;41(7):884-901.

66. Centers for Disease Control and Prevention. Suicide prevention risk and protective factors. [7/14/2023]. Retrieved from: https://www.cdc.gov/suicide/factors/index.html

67. Layous K, Chancellor J, Lyubomirsky S. Positive activities as protective factors against mental health conditions. Journal of Abnormal Psychology. 2014;123(1):3-12.

68. Steiner RJ, Sheremenko G, Lesesne C, Dittus PJ, Sieving RE, Ethier KA. Adolescent connectedness and adult health outcomes. Pediatrics. 2019;144(1):e20183766.

69. Salzer MS, Brusilovskiy E, Townley G. National estimates of recovery-remission from serious mental illness. Psychiatric Services. 2018;69(5):523-528.

70. President's New Freedom Commission on Mental Health. Achieving the promise: transforming mental health care in America. 2003.

71. Massachusetts Behavioral Health Partnership. Recovery and peer support. [7/14/2023]. Retrieved from: https://www.masspartnership.com/member/PeerSupportRecovery.aspx

72. Substance Abuse and Mental Health Services Administration. SAMHSA's working definition of recovery: 10 guiding principles of recovery. Substance Abuse and Mental Health Services Administration. 2012.

73. Substance Abuse and Mental Health Services Administration. Recovery and recovery support. [7/14/2023]. Retrieved from: https://www.samhsa.gov/find-help/recovery

74. Anderson KN, Radhakrishnan L, Lane RI, et al. Changes and inequities in adult mental health-related emergency department visits during the COVID-19 pandemic in the US. JAMA Psychiatry. 2022;79(5):475-485.

75. Garnett MF, Curtin SC, Stone DM. Suicide mortality in the United States, 2000-2020. NCHS Data Brief, No. 433. Hyattsville, MD: National Center for Health Statistics. 2022.