A close-up photograph of a young girl with dark hair, smiling broadly. She is wearing a striped shirt with yellow, white, and grey horizontal stripes. Her right hand is resting against her chest, with her fingers partially hidden in her shirt. The background is a soft, out-of-focus purple.

Executive Summary

Hazel Health

Clinical Outcomes Report

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Project Overview

While not a new phenomenon, in recent years, the Covid-19 global pandemic, economic challenges, political division, armed conflicts, drug addiction and civil unrest has resulted in the entire country experiencing more stress, anxiety, depression, and other mental/behavioral health challenges. The challenges are no more clear than with the PK-12 population. While new data is being collected and analyzed, the Centers for Disease Control (2018) found that 1 out of 6 students displayed enough behavior and/or emotional impairment to be diagnosed as having a mental illness. According to the CDC National Center for Health Statistics National Health Interview Survey (2020) 5.8% of children ages 5-17 reported daily feelings of worry, nervousness, or anxiety. Additionally, the National Center for Wellbeing reported that 52% of behavioral health organizations saw an increase in demand for services since the onset of the pandemic. The reality is however, that access to care for such students varies greatly across the country depending on school district, county, and state resources and the challenge to address needs already existed prior to the pandemic.

Hazel Health, Inc. has developed a treatment model, the Hazel HEART protocol, whereby Hazel partners with schools to provide access to mental and physical health services through a telehealth platform. Services are provided during school hours, and families may also utilize the platform at home. The physical

health platform mirrors an 'immediate care' model, triaging acute medical issues, diagnosing, and providing a treatment plan that can include providing common prescriptions, such as antibiotics or pain relief. The mental health platform is meant to be a short term solutions based therapeutic option; referrals are provided by school staff, parents, or by the individual student. Once the referral is received, an initial call with families takes place in order to obtain consent. Following consent, the student has an initial intake screening to assess the extent/scope of mental health concerns. Following intake screening, the child is connected to a provider who will then determine the appropriate treatment length for the student based on the initial intake screening. Subsequently, the provider uses a host of evidence based therapeutic techniques as a part of the treatment plan. In addition, family resource managers work with families to assist in accessing services, such as linkage to a primary care provider or a community therapist for longer term therapy if needed.

Specifically, the Clemson Center for Behavior Analysis conducted a limited evaluation of the Hazel HEART protocol in 2024, focusing on the extent to which the telehealth mental health care component is effective in reducing reported symptoms of depression and anxiety across the K-12 population.

Methodology

A total sample of 3449 Hazel Health students from across eleven states (California, Colorado, Florida, Georgia, Hawaii, Maryland, Missouri, Nevada, Texas, Virginia, and Washington) was taken. De-identified data was provided by Hazel Health including number of mental health visits, age at intake, grade at intake, and pre/post assessment scores from either the Patient Health Questionnaire (PHQ-9) depression assessment or the Generalized Anxiety Disorder (GAD-7) anxiety assessment for students receiving/having received care in accordance with the Hazel HEART telehealth protocol.

Data Summary

Table 1 represents the number of students in the sample from each state. The data is reflective of certain states having longer existing programs and therefore are more established and serving a larger student population.

Table 1 No. of Students by State

| State | Total (% of total sample) |
|------------------|---------------------------|
| California | 511 (15%) |
| Colorado | 456 (13%) |
| Florida | 600 (17%) |
| Georgia | 14 (0.4%) |
| Hawaii | 235 (7%) |
| Maryland | 81 (2%) |
| Missouri | 193 (6%) |
| Nevada | 487 (14%) |
| Texas | 234 (7%) |
| Virginia | 114 (3%) |
| Washington State | 524 (15%) |

Table 2 represents the total number of students served by grade level, spanning pre-K to grade 12.

Table 2 No. of Students by Grade Level

| Grade Level | No. of Students (% of total sample) |
|-------------|-------------------------------------|
| PK | 0 (0%) |
| K | 0 (0%) |
| 1 | 3 (0.09%) |
| 2 | 5 (0.14%) |
| 3 | 9 (0.26%) |
| 4 | 13 (0.38%) |
| 5 | 48 (1.39%) |
| 6 | 238 (6.9%) |
| 7 | 409 (11.86%) |
| 8 | 568 (16.47%) |
| 9 | 578 (16.76%) |
| 10 | 547 (15.86%) |
| 11 | 507 (14.7%) |
| 12 | 524 (15.19%) |

Figure 1 represents the percent of sampled students identified by race/ethnicity.

Figure 1 Race & Ethnicity

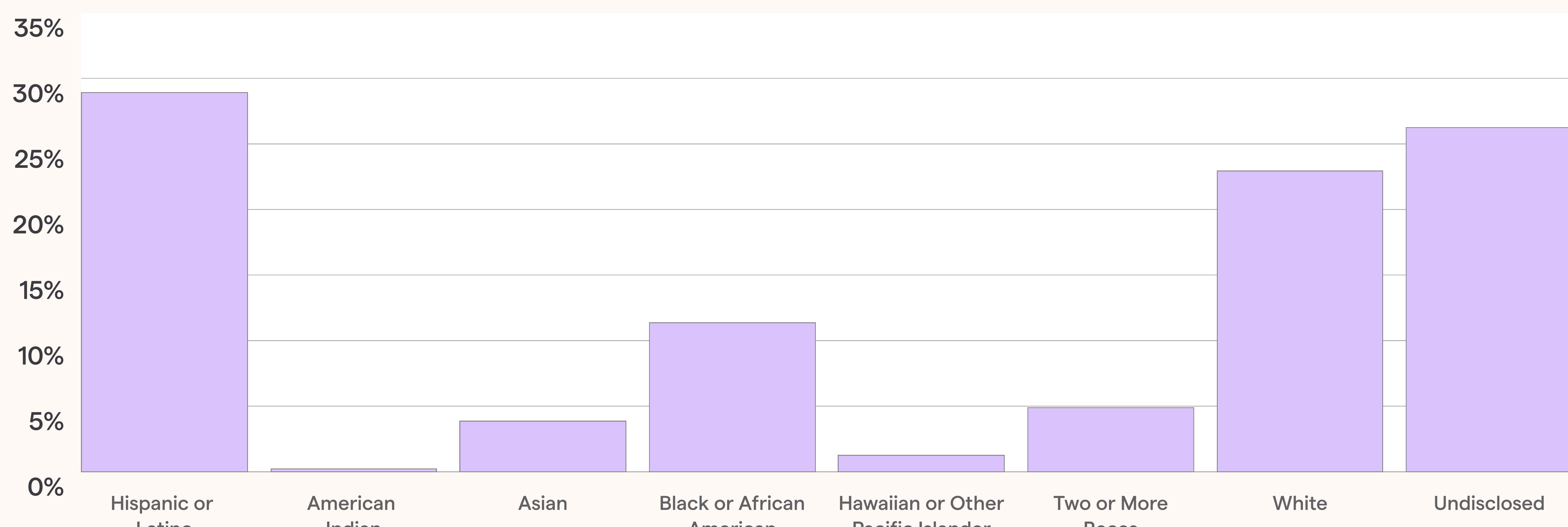
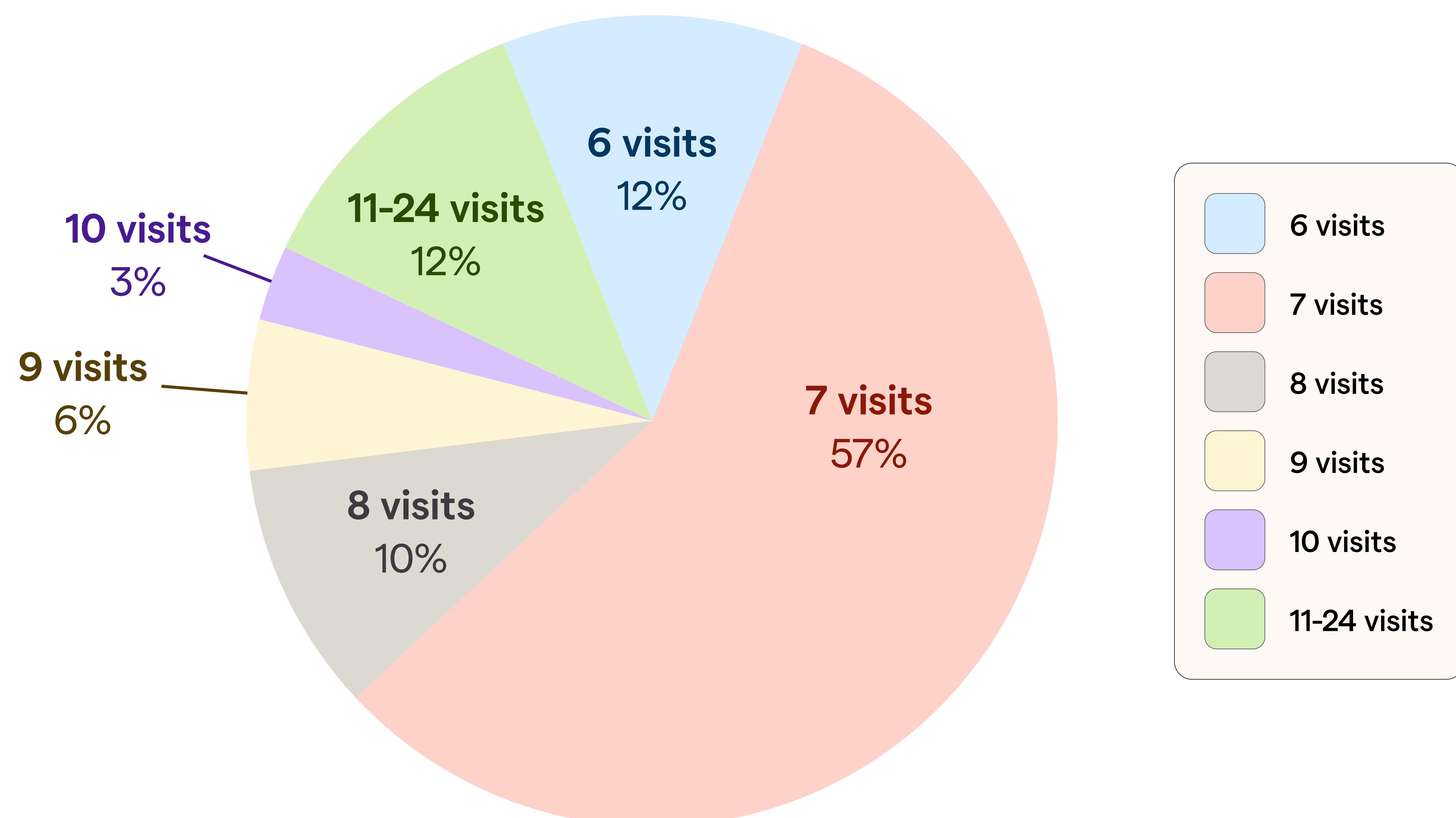


Figure 2 represents the treatment duration in number/percent of mental health visits completed.

Figure 2 Treatment Duration



Figures 3 and 4 represent the total student sample aggregated pre-treatment and post-treatment severity level data from the PHQ and GAD assessments by severity level.

Figure 3 Overall PHQ Severity Levels

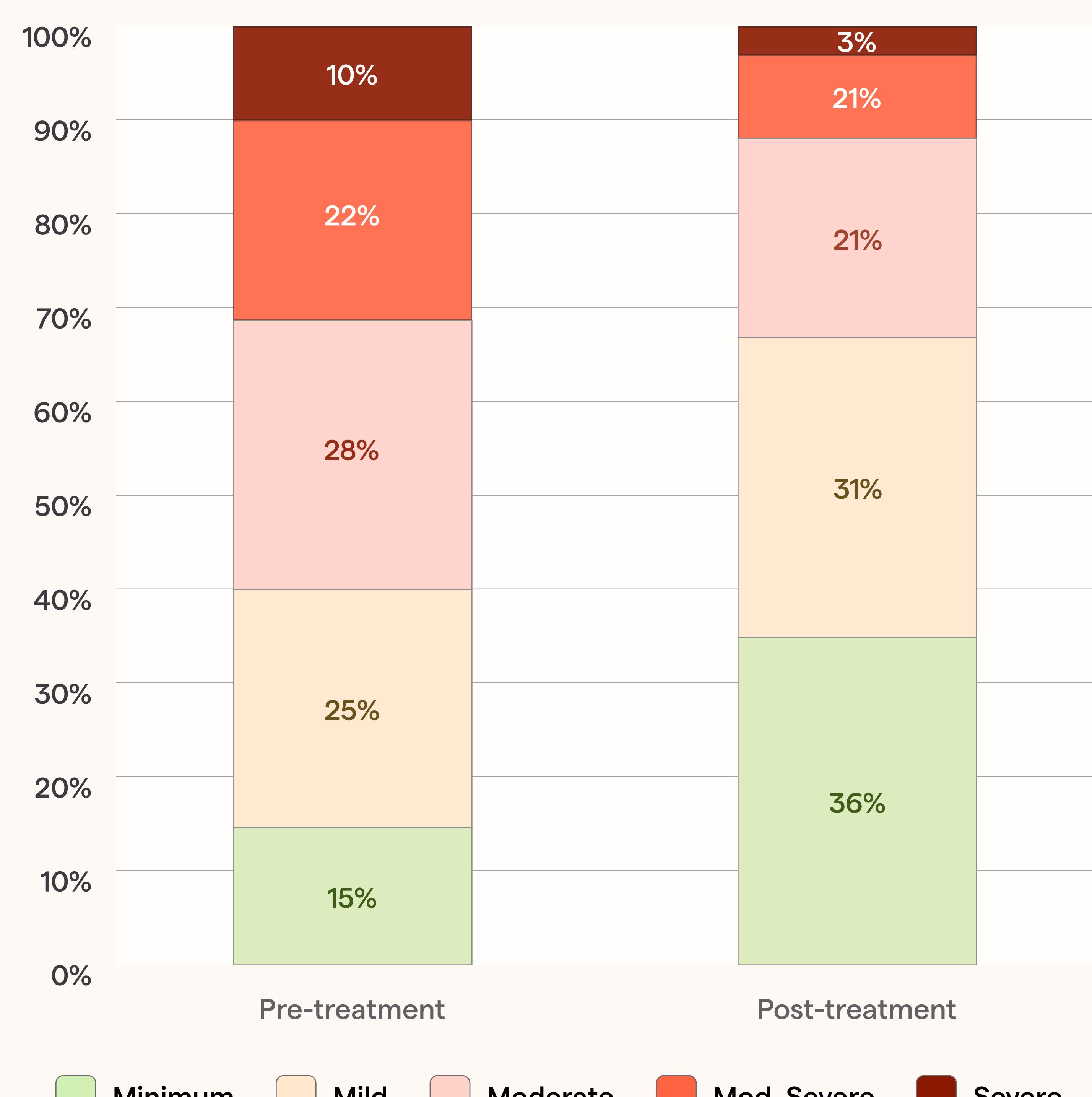
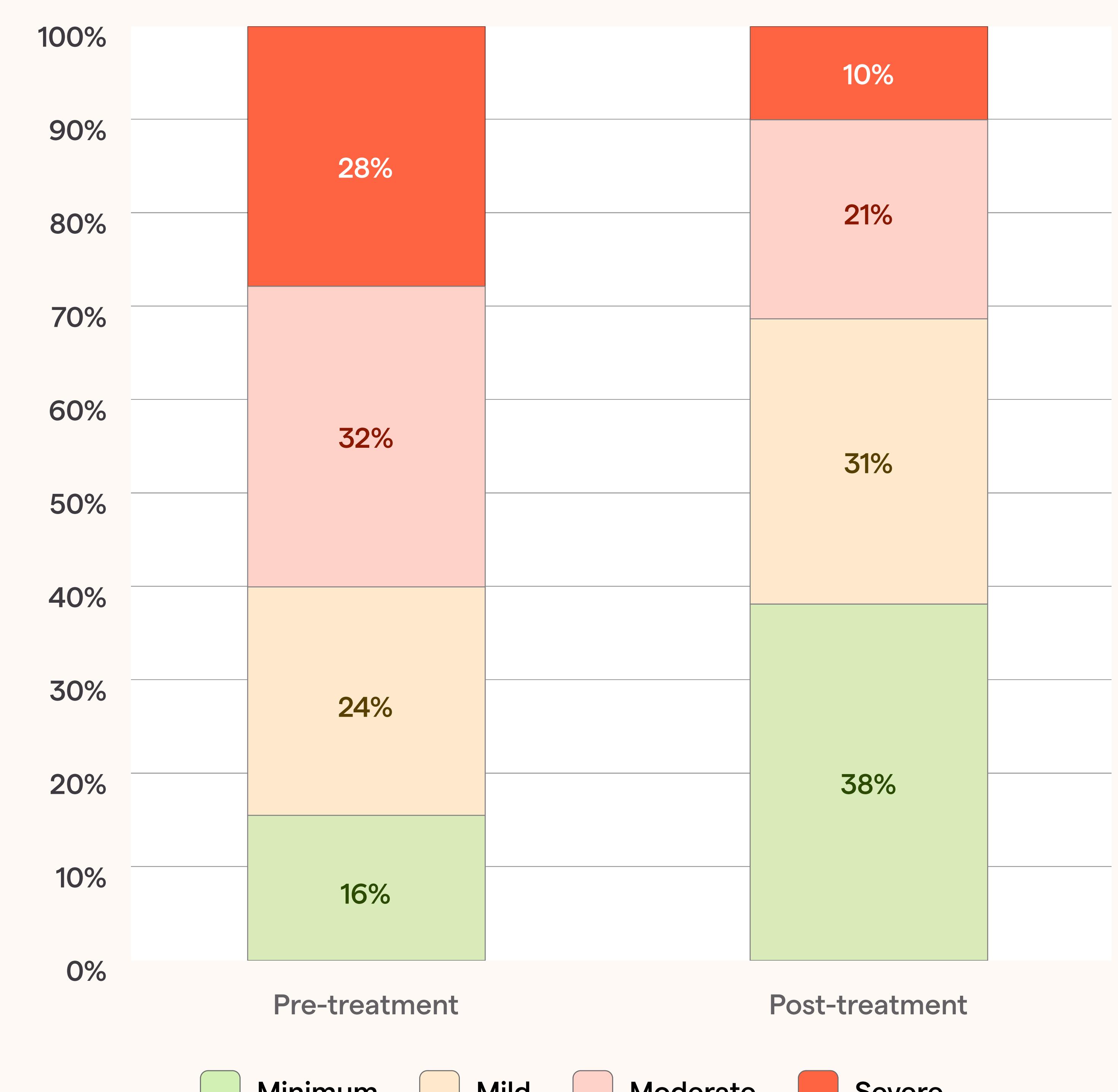


Figure 4 Overall GAD Severity Levels



Figures 5 and 6 represent the overall change in PHQ and GAD Severity Levels following treatment.

Figure 5 Percent Change in PHQ Severity Levels N = 1799

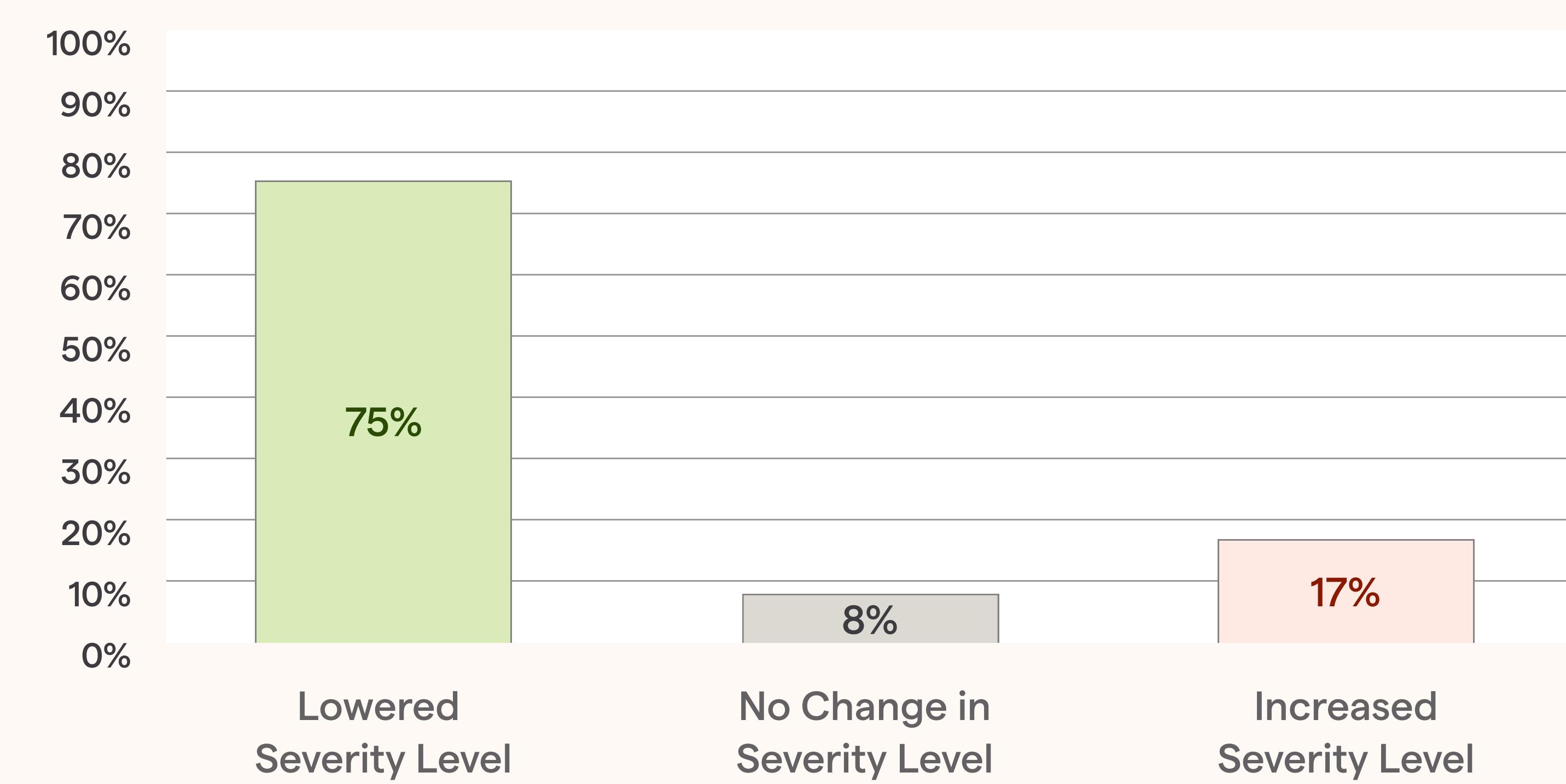
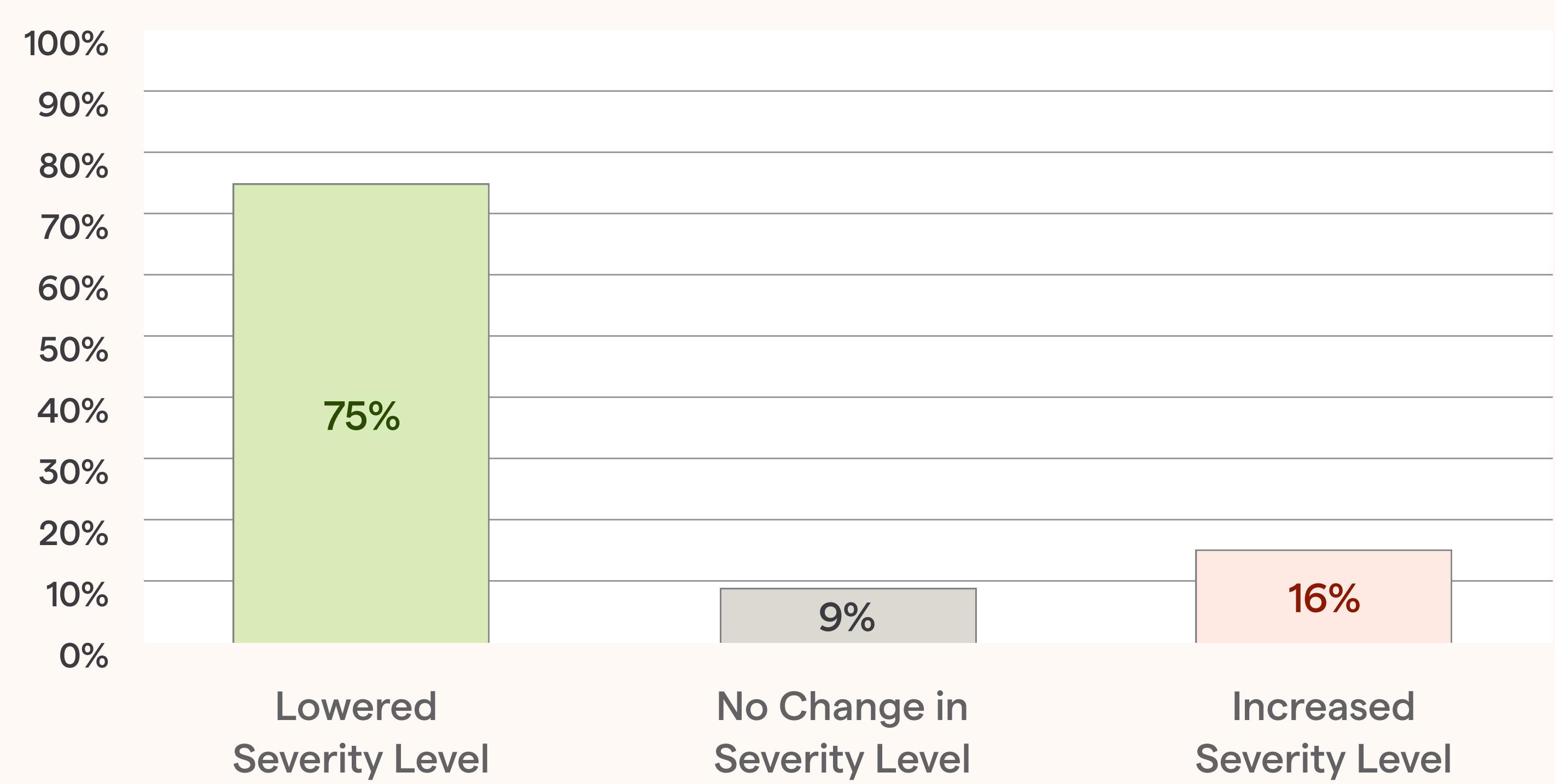


Figure 6 Percent Change in GAD Severity Levels N = 1525



Figures 7 and 8 represent the severity level outcomes for PHQ and GAD assessments based on pre-treatment assessed severity levels. The x-axis represents the pre-treatment severity levels and the y-axis represents how those same cohorts changed following treatment.

Figure 7 PHQ Severity Level Outcomes by Cohort

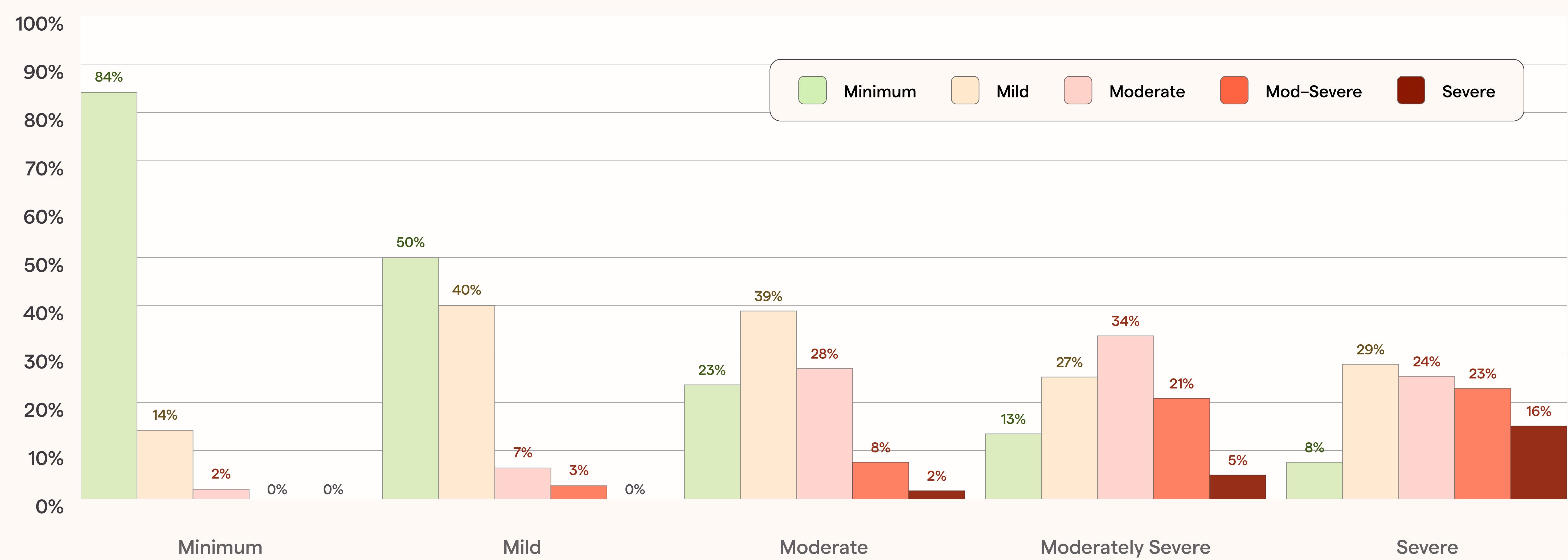
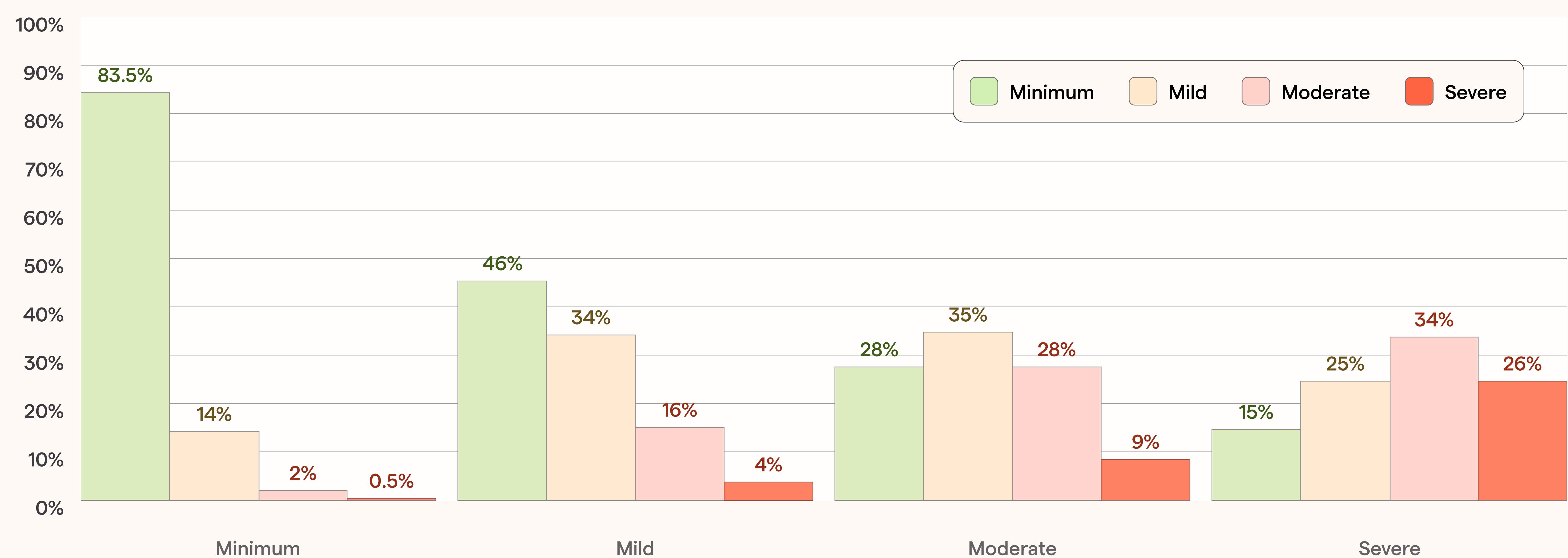


Figure 8 GAD Severity Level Outcomes by Cohort



Key Findings

96% of sampled students completed treatment, primarily from CA, CO, FL, NV, and WA.

The majority of the students having received / receiving services come from California, Colorado, Florida, Nevada, and Washington State and approximately 96% of those sampled had been discharged from services at the time data was collected.

Hispanic/Latino and Non-Hispanic White students made up the majority of participants.

The majority of participants indicated being Hispanic/Latino or Non-Hispanic (White). The extent to which this finding could be representative of the district/community demographics or perhaps related to other variables such as accessibility, cultural differences, perceptions of mental health services, etc. is beyond the scope of this evaluation.

57% of students received 7 mental health sessions, with 6 being the average.

57% of the students in the sample received 7 mental health sessions. The average number of mental health sessions was 6 across the entire sample with only 12% of the sample receiving 11 or more sessions.

Number of mental health sessions had no statistically significant impact on outcomes.

Separate one-way ANOVA's were performed to evaluate the relationship between the number of mental health visits and the change in either PHQ or GAD assessment scores. The ANOVA for PHQ was not significant at the .05 level, $F(16, 1864) = 1.58, p = .064$. The ANOVA for GAD was also not significant at the .05 level, $F(16, 1549) = 1.23, p = .237$. These results indicate that there is not a significant relationship between the number of mental health visits and changes in either PHQ or GAD scores.

Moderate-to-severe depression dropped from 60% to 33% after treatment.

Just under 60% of the overall student sample indicated moderate, moderately severe, or severe symptoms of depression on the PHQ assessment prior to treatment. That percentage decreased to just over 33% following mental health treatment.

70% of students reported minimal-to-mild anxiety after treatment, up from less than half.

More than half the total number of assessed students indicated moderate to severe symptoms of anxiety prior to receiving treatment, whereas almost 70% reported minimum to mild symptoms on the GAD assessment following treatment.

Students with moderate-to-severe depression saw the greatest reduction in depression symptoms.

The most significant reduction in depression symptoms was experienced by those in the moderate, moderately severe, and severe severity level ranges on the PHQ assessment prior to treatment.

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The most significant reduction in depression symptoms was experienced by those in the moderate, moderately severe, and severe severity level ranges on the PHQ assessment prior to treatment.

Students with moderate-to-severe anxiety saw the greatest reduction in anxiety symptoms.

The most significant reduction in anxiety symptoms was experienced by those in the moderate and severe severity level ranges on the GAD assessment prior to treatment.

75% of students improved with treatment, with consistent results across PHQ and GAD assessments.

The Hazel Health Protocol telehealth model resulted in reducing symptoms of anxiety and depression as demonstrated by the change in severity levels observed for both the PHQ and GAD assessments. Not only did the overwhelming majority of participants report a reduction in depression and anxiety symptoms, but there were similar consistent results between the PHQ outcomes and GAD outcomes. On both assessments, 75% of the participants fell into a lower level of severity following treatment indicating that 75% of the student participants improved as a result of treatment.

The HEART protocol statistically significant improvements for middle and high school students.

The HEART protocol appears to be a viable solution toward producing statistically significant improvements in the reduction of depression and/or anxiety symptoms for middle and high school students based on the PHQ and GAD assessments, particularly for those with indicated moderate to severe levels of severity prior to treatment.

Future research should measure clinical outcomes beyond assessment scores.

Further research is warranted to examine how well the care model results in participants meeting clinically established objectives in addition to having clinical assessments conducted. This would provide better opportunity to examine both statistically and clinically significant changes and improvements for individual participants.

