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Carole Bonner, MSAS, MSET, Lead Researcher  
Sera-Leigh Ghouralal, PhD, Researcher



# THE ECONOMIC IMPACT OF POOR MENTAL HEALTH

## PART 1 IN A 3 PART MENTAL HEALTH SERIES

*IBI's Mental Health Series leverages high-quality data to estimate costs related to healthcare, absenteeism, and disability across various industries, demographics, and geographic locations.*



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# EXECUTIVE SUMMARY

Integrated Benefits Institute's (IBI) *The Economic Impact of Poor Mental Health* examines the prevalence, productivity loss, and organizational costs associated with poor mental health, specifically anxiety and depression, across various industries in the United States workforce.

## Key Findings

### Prevalence

- Approximately 34% of employed adults need mental health treatment for anxiety and depression.
- Anxiety is more prevalent than depression across all industries.
- The retail trade industry has the highest rates of anxiety and depression.

### Comorbidity

- Employees with anxiety or depression have higher rates of other chronic health conditions.
- Top comorbidities include musculoskeletal conditions (45.9%), obesity (39.4%), and acute COVID-19 (31.5%).

### Absenteeism

- Employees with clinically relevant anxiety/depression average 4.6 more sick days annually than individuals without those conditions.

### Costs to Employers

- The average annual cost per employee due to mental health issues is about \$1,488, including lost time (\$445), job turnover (\$533), and healthcare (\$510).
- Costs vary significantly by industry, ranging from \$612 per employee in agriculture to about \$1,915 in finance, insurance & real estate.

### Short-Term Disability (STD)

- There are an average of 3.4 new short-term disability (STD) claims per 1,000 covered lives for anxiety or depression.
- The average duration of an STD claim for anxiety or depression is 80 lost calendar days.

### Long-Term Disability (LTD)

- The percentage of closed STD claims that convert to long-term disability (LTD) is 5.2% with public administration having the highest percentage at 11.3%.
- The average LTD cost per closed claim is \$20,811.

### Total Disability Costs

- The average per-claimant short-term and long-term disability cost across industries is \$7,332.
- Public administration has the highest disability-related costs, at \$76,214 for a company with 1,000 covered lives.

## Guidance for Employers

To help employers and benefits providers reduce mental health issues in the workforce and improve overall employee well-being, IBI collected insights from industry experts and trade publications to develop targeted interventions, programs, and practices. The significant findings and targeted recommendations are as follows;

**Retail Trade** has the highest prevalence of anxiety (34%) and depression (26%).

- Implement mental health screening, flexible scheduling, and provide manager training.

**Manufacturing** has a high STD cost per closed claim of \$7,324.

- Integrate mental health awareness, ergonomic improvements, and offer on-site counseling.

**Finance, Insurance & Real Estate** has a high per-employee cost due to poor mental health at \$7,436 annually.

- Develop early intervention programs, stress management training, and peer support networks.

**Public Administration** has the highest percentage of closed STD claims converted to LTD (11%) and highest per-claimant disability cost (\$11,908).

- Develop long-term support systems, promote work-life balance, and provide specialized mental health support for high-stress roles.

**Transportation & Utilities** have high claim rates (6.2 new claims per 1,000 covered lives) and high per-employee disability costs (\$7,698).

- Establish return-to-work programs, provide resources for shift workers, and implement fatigue management programs.

**Services** has a high prevalence of anxiety (31%) and depression (24%).

- Implement mental health first aid training, develop peer support programs, and offer flexible time-off policies.

# ABOUT THE IBI MENTAL HEALTH SERIES

## **Mental Health in the Workplace: A Data-Driven Approach**

Supporting employees' health and well-being is a proven strategy for reducing healthcare and disability expenses for employers. The Mental Health series by IBI leverages high-quality data to estimate costs related to healthcare, absenteeism, and disability across various populations. This three-part series considers industry costs, social determinants of health and regional differences, providing a scalable cost and impact standard. The series includes:



### ***The Economic Impact of Poor Mental Health***

*Estimates costs across industries Focuses on healthcare,  
absenteeism, and disability*



### ***Social Determinants of Mental Health***

*Population health perspective  
Assess the factors that contribute to poor mental health in  
the US workforce population*



### ***The Geography of Mental Health***

*Identifies high prevalence and high-claims locations  
Analyzes factors that contribute to poor mental health in those locations*

*Ideal for employers and benefit vendors looking to evaluate  
potential cost savings and improve employee health outcomes.*

# BACKGROUND

The economic impact of poor mental health on employers, specifically anxiety and depression, is substantial, leading to decreased productivity, increased absenteeism, and rising healthcare expenses. In addition, anxiety and depression greatly affect disability claims, further straining employers financially. This highlights the need for robust support systems and resources to address mental health issues effectively. According to the National Safety Council, the annual cost per employee for mental health issues varies significantly across industries [1]. Tailored, industry-specific strategies are essential to managing mental health concerns in the workplace.

IBI's *The Economic Impact of Poor Mental Health* study analyzes nationally representative data to identify the prevalence, lost productivity, and compounded effects of comorbidities in the US workforce. Additionally, the study analyzes disability costs and durations using claims from IBI's Benchmarking data to provide a more complete picture of the financial burden on employers.

Investing in mental health is both a compassionate and strategic choice, leading to reduced absenteeism, lower turnover rates, and increased employee engagement [2]. Research shows organizations can achieve a \$4 return for every dollar invested in mental health initiatives [3]. Employers must prioritize mental health with the same commitment as physical health and safety. This research considers industry costs to provide a scalable cost standard for industry leaders.

## **Methods**

This study used data from the Household Pulse Survey, National Health Interview Survey, and Integrated Benefits Institute Benchmarking Portal to analyze anxiety and depression symptoms. The surveys collected socio-demographic and health data from the US population. Anxiety was measured using the Generalized Anxiety Disorder 2-item scale, while depression was assessed using the Patient Health Questionnaire-2. The analysis was conducted using Stata 18.0 with jackknife replication weights. Details about methods can be found in Appendix A.



# RESULTS

## The Sample Population

The sample population consists of 449,421 individuals working in various industries. The largest category is services, making up 55.3% (weighted) of the sample. Services include various sectors such as professional, scientific, and management; administrative, support and waste management services; educational services; health care and social assistance; arts, entertainment, and recreation; accommodation and food services; and other services (except public administration). Following closely behind, finance, insurance, & real estate and manufacturing comprise 12.9% and 8.1% (weighted) respectively. Agriculture, mining, and wholesale trade are the smallest sectors, each below 2% in the weighted sample (Table 1).

Table 1: Industry specific sample characteristics (N = 449,421).

| INDUSTRY                         | WEIGHTED N (%)  | UNWEIGHTED N (%) |
|----------------------------------|-----------------|------------------|
| Agriculture                      | 4,331 (1.2%)    | 4,646 (1.3%)     |
| Construction                     | 15,980 (4.5%)   | 11,417 (3.2%)    |
| Finance, Insurance & Real Estate | 45,314 (12.9%)  | 52,874 (14.8%)   |
| Manufacturing                    | 28,311 (8.1%)   | 23,521 (6.6%)    |
| Mining                           | 2,570 (0.7%)    | 2,611 (0.7%)     |
| Public Administration            | 5,632 (1.6%)    | 7,795 (2.2%)     |
| Retail Trade                     | 25,596 (7.3%)   | 19,464 (5.4%)    |
| Services                         | 194,296 (55.3%) | 212,893 (59.6%)  |
| Transportation & Utilities       | 26,212 (7.5%)   | 19,007 (5.3%)    |
| Wholesale Trade                  | 3,421 (1.0%)    | 2,915 (0.8%)     |

## Prevalence

### HOW MANY EMPLOYEES HAVE CLINICALLY RELEVANT ANXIETY OR DEPRESSION?

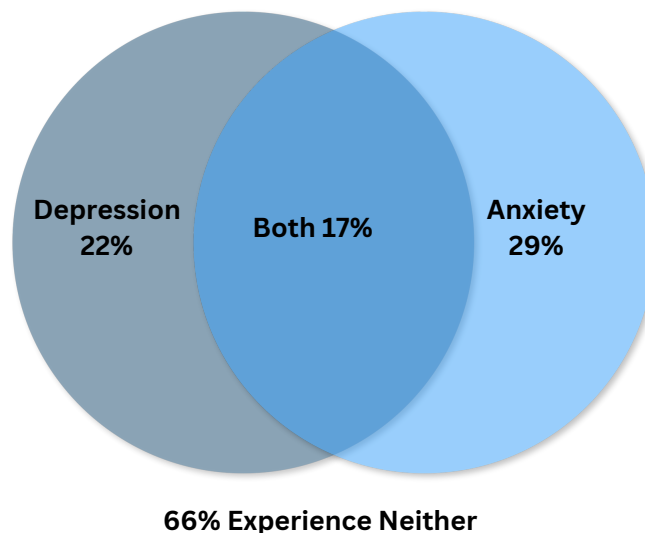
Figure 1: Approximately 34% of employed adults report the need for mental health treatment for anxiety and depression across the US workforce.



Data Source: US Census Bureau's Household Pulse Survey 2023

Approximately 34% of employed adults in the US workforce experience clinically relevant anxiety and depression. Specifically, 22% are affected by depression, and 29% by anxiety, with a significant overlap of individuals experiencing both conditions. Approximately 17% of the workforce likely experiences both anxiety and depression simultaneously. For this 17%, the mental health challenges are compounded, potentially leading to more severe impacts on their work and personal lives. Individuals experiencing both conditions may require more complex treatment approaches, potentially involving multiple strategies or medications.

Figure 2: US workforce overlap of depression and anxiety.



There are other distinct groups based on this analysis. A small portion, 5% of employees, experience depression without clinically relevant anxiety. A larger group, 12% of the workforce, reports experiencing anxiety without depression. Notably, The majority of the workforce, 66%, does not report clinically relevant levels of either anxiety or depression



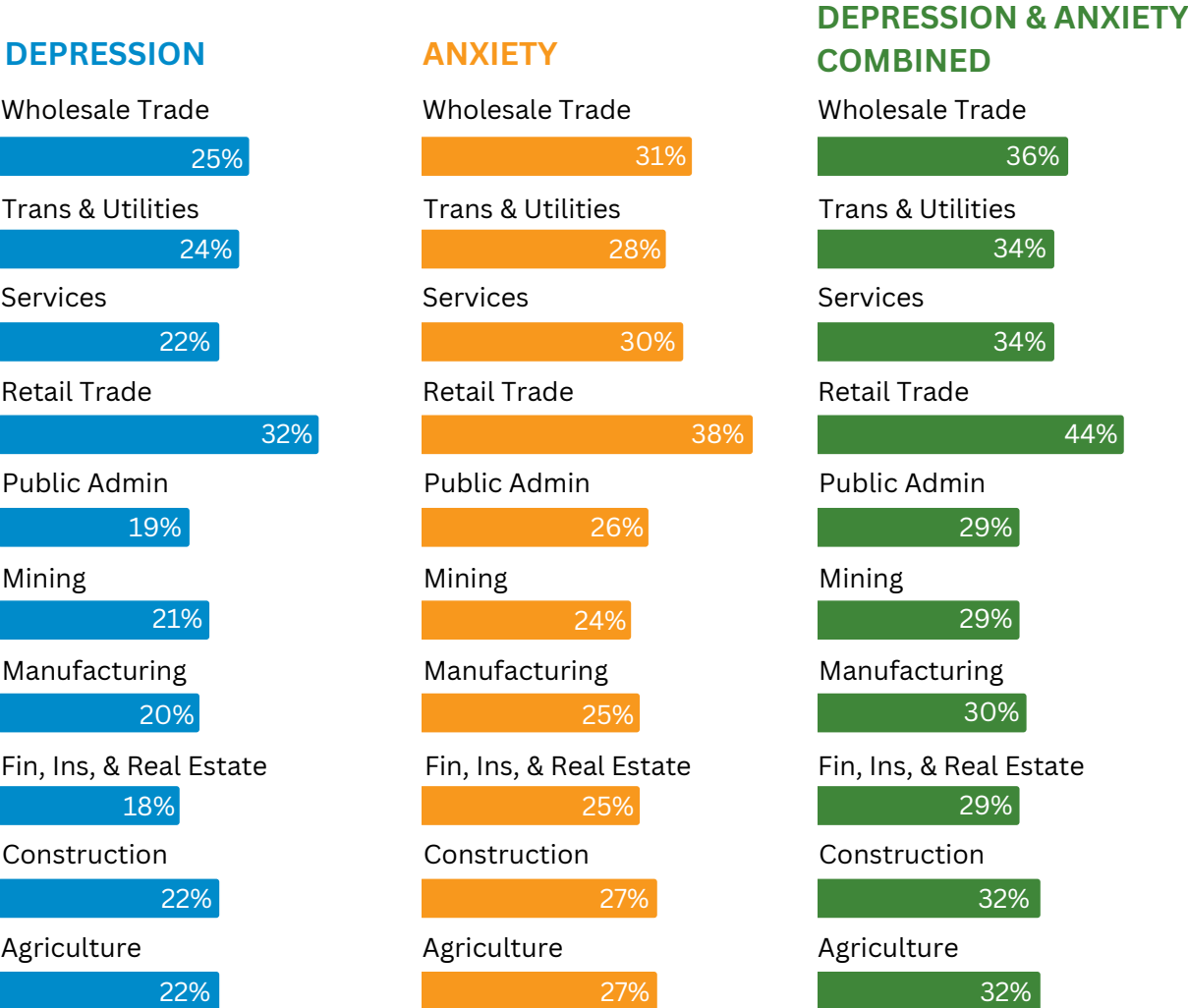
# HOW DO THESE MENTAL HEALTH CONDITIONS COMPARE ACROSS INDUSTRIES?

## General Trends

Also illustrated in Figure 3, anxiety is more common than depression across all industries, indicating that anxiety may be a more widespread concern among workers overall. Furthermore, some industries, such as services and public administration, exhibit significant variations between anxiety and depression rates, emphasizing areas where anxiety is notably more prevalent.

Retail trade stands out as having the highest prevalence rates of both anxiety and depression. Wholesale trade and services also show trends of higher mental health issues but to a lesser extent than retail trade. Sectors such as public administration, finance, insurance, & real estate, agriculture, construction, manufacturing, and mining generally show a trend of lower prevalence rates.

Figure 3: Prevalence of depression and anxiety across industries.

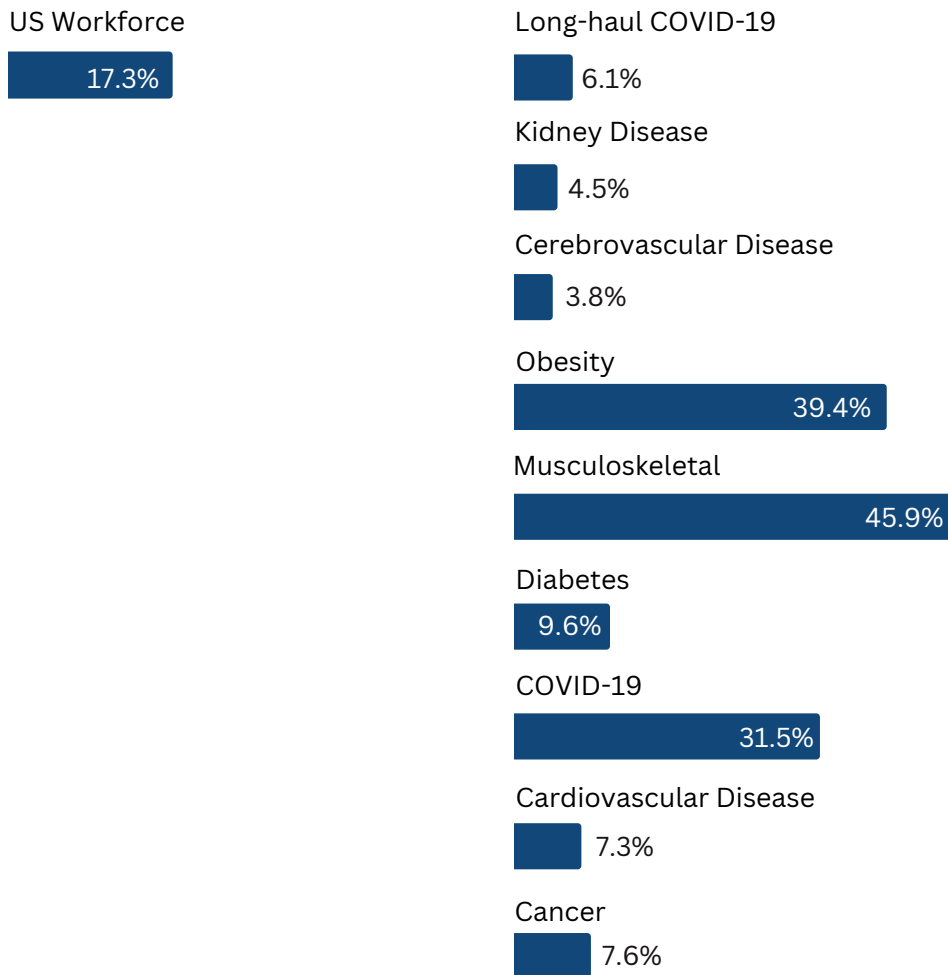


Data Source: US Census Bureau’s Household Pulse Survey 2023

## WHAT OTHER CONDITIONS AFFLICT THOSE WITH SIGNIFICANT ANXIETY OR DEPRESSION?

Figure 4: An average of 17.3% of the general workforce with anxiety or depression has a comorbid chronic condition.

### COMORBIDITY



Data Source: US Census Bureau's Household Pulse Survey 2023

Figure 4 shows that musculoskeletal issues, obesity, and COVID-19 have significantly higher comorbidity rates. There is a clear physical-mental health connection which points to the importance of holistic wellness. Focusing on musculoskeletal health, weight management, and COVID-19 support could potentially yield the greatest impact on overall workforce mental health.

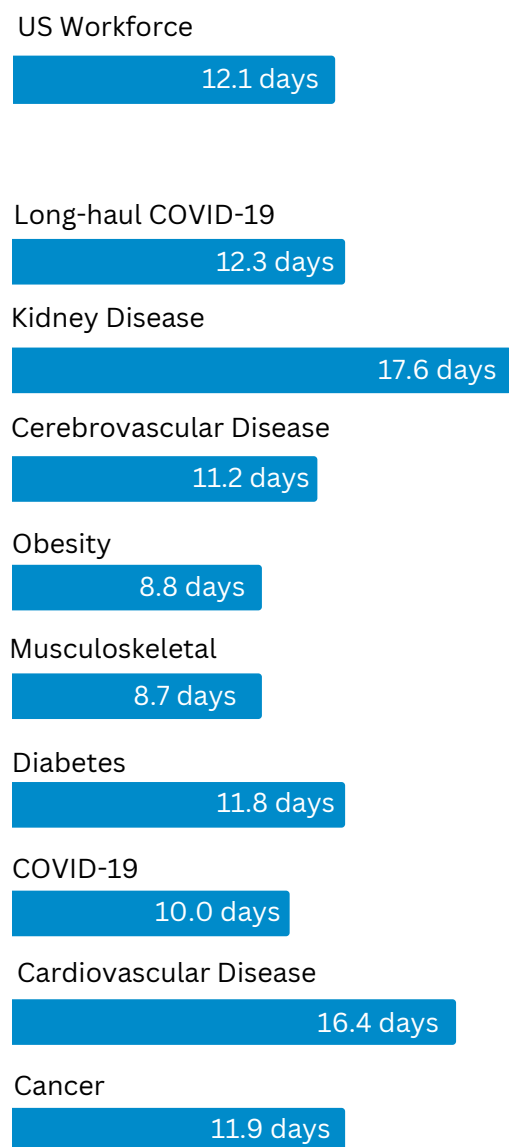
The lower rates for conditions often associated with older age (e.g., cardiovascular, cerebrovascular, and kidney disease) might reflect the age distribution of the workforce or indicate that older workers with these conditions may be less likely to report anxiety or depression which is examined further in Social Determinants of Mental Health.

## Absences Due to Illness

### HOW OFTEN ARE EMPLOYEES WITH COMORBID CLINICALLY RELEVANT ANXIETY OR DEPRESSION ABSENT FROM WORK DUE TO ILLNESS?

Figure 5: Employed adults who report the need for mental health treatment for anxiety and depression had an average of 4.6 excess sick days.

#### WITH ANXIETY OR DEPRESSION



#### WITHOUT ANXIETY OR DEPRESSION



Data Source: [National Health Interview Survey 2022](#) | CDC's NCHS

There is a significant disparity in absence rates for those with mental health needs. Employees with anxiety or depression take an average of 12.1 days off due to illness, compared to 7.5 days for those without these conditions. This trend is consistent across all health issues, with higher absence rates reported by those with anxiety or depression regardless of additional health conditions.

Notably, conditions like kidney disease and cardiovascular disease show particularly large differences. Employees with both chronic kidney disease and anxiety or depression miss an average of 17.6 days off due to illness, compared to 10.3 days without. Similarly, those with cardiovascular disease and anxiety or depression miss 16.4 days off due to illness, versus 10.1 days without these mental health conditions.



## WHAT DOES THIS POTENTIALLY COST EMPLOYERS IN PRODUCTIVITY LOSS, JOB TURNOVER, AND TREATMENT?

According to the National Safety Council (NSC)[4], the annual statistics for employees experiencing mental distress show that employers incur costs related to lost productivity, turnover, and medical treatment.

Table 2: Estimates of economic impact of anxiety and depression across various industries.

| INDUSTRY                         | HEALTH CARE  | LOST TIME    | JOB TURNOVER & RE-TRAINING | PER-EMPLOYEE COST |
|----------------------------------|--------------|--------------|----------------------------|-------------------|
| Agriculture                      | \$414        | \$90         | \$108                      | \$612             |
| Construction                     | \$428        | \$334        | \$401                      | \$1,163           |
| Finance, Insurance & Real Estate | \$497        | \$645        | \$773                      | \$1,915           |
| Manufacturing                    | \$458        | \$363        | \$462                      | \$1,283           |
| Mining                           | \$349        | \$165        | \$197                      | \$711             |
| Public Administration            | \$428        | \$411        | \$493                      | \$1,332           |
| Retail Trade                     | \$583        | \$316        | \$378                      | \$1,277           |
| Services                         | \$518        | \$466        | \$559                      | \$1,543           |
| Transportation & Utilities       | \$448        | \$471        | \$565                      | \$1,485           |
| Wholesale Trade                  | \$406        | \$273        | \$328                      | \$1,007           |
| <b>US Workforce</b>              | <b>\$510</b> | <b>\$445</b> | <b>\$533</b>               | <b>\$1,488</b>    |

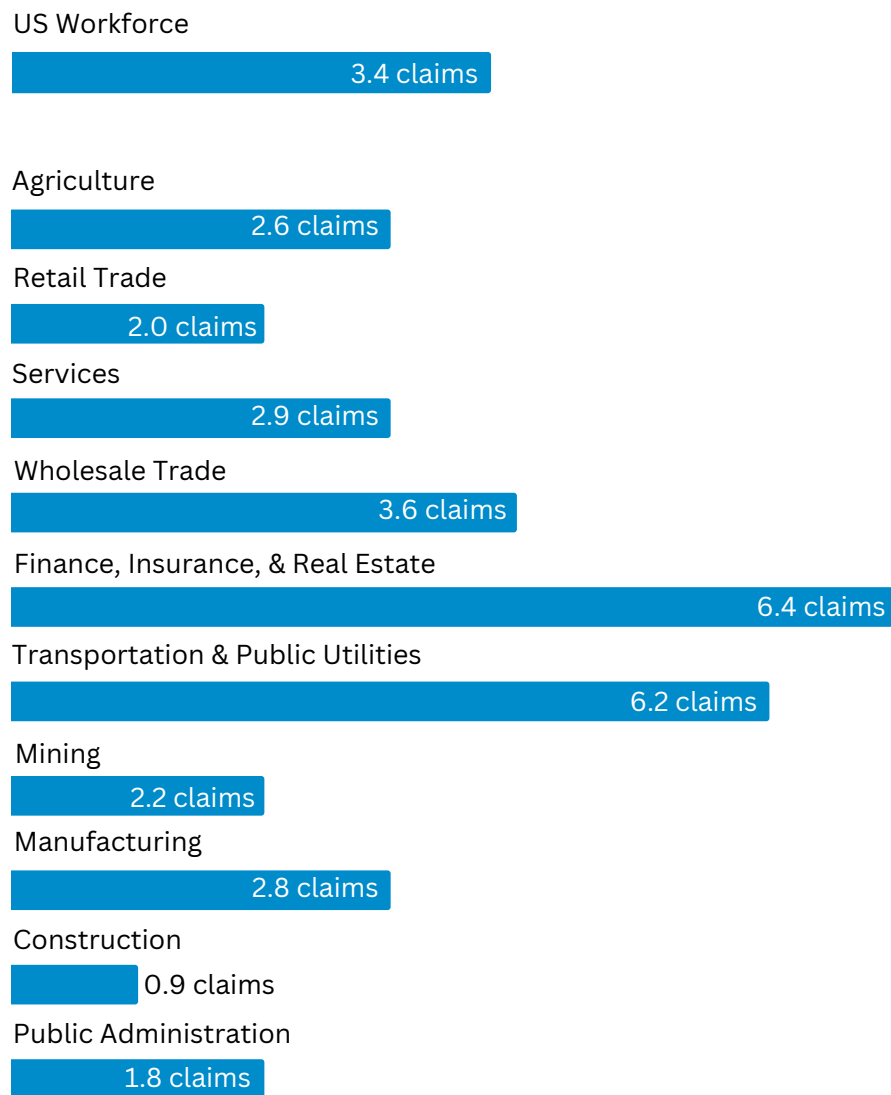
Data Source: [The Mental Health Cost Calculator](#) and [Household Pulse Survey](#). Calculations utilize estimates from the Mental Health Cost Calculator from the National Safety Council and NORC at the University of Chicago, which integrates employment cost research with NSDUH data. Assumptions are based on US averages and a company size of 1000 employees. Also integrated in the calculations is the prevalence, as calculated in Figure 1 using HPS data.

Finance, insurance, & real estate stand out with the highest costs across most categories. Agriculture and mining consistently show lower costs compared to the national average. Services and transportation & utilities also show higher costs in several categories, but not as consistently as finance, insurance, & real estate.

## Disability Claims Outcomes

### WHAT OTHER CONDITIONS AFFLICT THOSE WITH SIGNIFICANT ANXIETY OR DEPRESSION?

Figure 6: The average employers' STD policies experience an average of 3.4 new claims per 1,000 covered lives for anxiety or depression.



Data Source: Integrated Benefits Institute, Health and Productivity Benchmarking database, 2022

The observed trends in new claims per 1,000 covered lives across various industries compared to the national average of 3.4 reveal interesting insights. Industries with above-average new claims include finance, insurance, & real estate, with a rate of 6.4, which is significantly higher than the national average. Transportation & public utilities also show substantially higher new claim rates at 6.2. On the other hand, industries with the lowest new claims include public administration at 1.8, and construction at 0.9, both significantly lower than the national average.

## HOW LONG IS THE AVERAGE ANXIETY OR DEPRESSION STD CLAIMANT AWAY FROM WORK?

Figure 7: The average duration for an STD claim for anxiety or depression is 80 lost calendar days per closed STD claim which converts to 57 lost work days.

| INDUSTRY                         | LOST CALENDAR DAYS PER CLOSED CLAIM | LOST WORK DAYS PER CLOSED CLAIM |
|----------------------------------|-------------------------------------|---------------------------------|
| Agriculture                      | 84.7                                | 60.3                            |
| Construction                     | 67.5                                | 48.1                            |
| Finance, Insurance & Real Estate | 90.4                                | 64.4                            |
| Manufacturing                    | 78.4                                | 55.8                            |
| Mining                           | 73.6                                | 52.4                            |
| Public Admin                     | 100.5                               | 71.6                            |
| Retail Trade                     | 71.7                                | 51.1                            |
| Services                         | 75.5                                | 53.8                            |
| Trans & Utilities                | 80.5                                | 57.3                            |
| Wholesale Trade                  | 78.7                                | 56.1                            |
| <b>US Workforce</b>              | <b>80.2</b>                         | <b>57.3</b>                     |

Data Source: Integrated Benefits Institute, Health and Productivity Benchmarking database, 2022. Lost calendar days include the elimination period that precedes the claim. Analysis based on Diagnosis Sub Chapters F30-F39 Mood [affective] disorders and F40-F48 Anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders.

**Longer Lost Time:** Public administration and finance, insurance, & real estate have the highest lost days per closed claim, indicating longer durations for claim resolution.

**Shorter Lost Time:** Construction, retail trade, and mining have the lowest lost days, suggesting quicker claim closures and recovery times.

## Total Cost Estimates for Claims

### WHAT ARE THE TOTAL SCALABLE COSTS OF STD AND LTD CLAIMS ACROSS INDUSTRIES?

Table 3: Summary of claims calculations for the US Workforce and across industries for a company with 1,000 covered lives.

| INDUSTRY                        | STD COST PER CC** | %CC** CONVERTED TO LTD | LTD COST PER CC** | PER CLAIMANT DISABILITY COST | NEW CLAIMS PER 1K CL* | AVERAGE STD/LTD COST PER CLAIMANT |
|---------------------------------|-------------------|------------------------|-------------------|------------------------------|-----------------------|-----------------------------------|
| Agriculture                     | \$3,543           | 0.5%                   | \$4,070           | \$3,565                      | 2.6%                  | \$9,355                           |
| Construction                    | \$6,869           | 5.9%                   | \$26,855          | \$8,465                      | 0.9%                  | \$7,799                           |
| Finance, Insurance, Real Estate | \$6,254           | 7.4%                   | \$15,992          | \$7,436                      | 6.4%                  | \$47,591                          |
| Manufacturing                   | \$7,324           | 3.5%                   | \$23,396          | \$8,145                      | 2.8%                  | \$22,660                          |
| Mining                          | \$3,058           | 5.8%                   | \$80,158          | \$7,699                      | 2.2%                  | \$17,145                          |
| Public Admin                    | \$6,964           | 11.3%                  | \$43,641          | \$11,908                     | 1.8%                  | \$21,646                          |
| Retail Trade                    | \$4,368           | 3.3%                   | \$11,704          | \$4,754                      | 2.0%                  | \$9,716                           |
| Services                        | \$5,981           | 4.6%                   | \$21,234          | \$6,964                      | 2.9%                  | \$20,044                          |
| Trans & Utilities               | \$6,641           | 5.3%                   | \$20,031          | \$7,698                      | 6.2%                  | \$47,524                          |
| Wholesale Trade                 | \$5,838           | 5.2%                   | \$25,727          | \$7,165                      | 3.6%                  | \$26,140                          |
| <b>US Workforce</b>             | <b>\$6,260</b>    | <b>5.2%</b>            | <b>\$20,811</b>   | <b>\$7,332</b>               | <b>3.4%</b>           | <b>\$22,962</b>                   |

\*Covered Lives (CL), \*\*Closed Claim (CC)

Data Source: Integrated Benefits Institute, Health and Productivity Benchmarking database, 2022



Methods for the calculations can be found in Appendix A. The average per claimant disability cost across the US workforce is \$7,332. The average new claims per 1,000 covered lives is 3.4, while the average total disability cost per 1,000 covered lives is \$22,962.

In the finance, insurance, and real estate industry, there is a high claim rate of 6.4 per 1,000 covered lives workers and a very high average cost per claimant of \$47,591. This may suggest a high-stress environment with costly claims.

The transportation and utilities industry shows similar trends to finance, with a high claim rate (6.2 per 1,000 covered lives) and high costs (\$47,524). Similarly, this could potentially be because of physically demanding or high-stress roles.

The public administration industry has the highest per-claimant disability cost at \$11,908 but a lower claim rate (1.8 per 1,000 covered lives), pointing to fewer but more severe or long-lasting claims.

Construction has the lowest claim rate (0.9 per 1,000 covered lives) but a relatively high per-claimant cost (\$8,465), indicating infrequent but potentially serious claims. While service industries (retail trade, services) have lower to moderate claim rates and costs, suggesting less physically demanding roles but still a significant impact.

The manufacturing industry reflects a mix of claim types and severities. In agriculture there are shorter-term or less severe disabilities. In the mining industry, there is a lower claim rate (2.2 per 1,000 covered lives) than expected and moderate costs (\$17,145).

These trends highlight how industry-specific factors like work environment, job demands, and safety practices significantly influence both the frequency and cost of disability claims.



## Discussion

The study presents an overview of the mental health trends across different industries, revealing several key observations. Service-oriented industries such as retail trade, wholesale trade, and services tend to exhibit a high prevalence of mental health issues, alongside variable costs and claim patterns. In contrast, the finance, insurance & real estate industry demonstrates a lower prevalence of mental health issues but has the highest per-employee cost and high disability rates. Public administration stands out with the highest total disability cost despite lower prevalence and claim rates, suggesting longer and more costly claims. Primary industries, including agriculture, mining, and construction, generally show lower prevalence and costs, with some variations in claim rates. Manufacturing and transportation & utilities tend to align closely with national averages, with transportation showing higher claim rates. Furthermore, all industries consistently show similar patterns in comorbidities and absence rates related to mental health conditions.

This study highlights the widespread impact of anxiety and depression across industries, emphasizing the need for comprehensive mental health support in all workplace settings. Considering the significant variations across industries, the study advocates for the development of targeted mental health strategies for high-risk sectors such as retail trade and services. Additionally, the strong correlation between mental health issues and other health conditions suggests the need for integrated health management programs addressing both physical and mental health. The substantial increase in missed days for employees with mental health needs underscores the importance of early intervention and support to minimize productivity losses.

Moreover, the high costs associated with mental health issues provide a strong economic incentive for employers to invest in mental health support and prevention programs. The study also emphasizes opportunities for knowledge sharing and best practice adoption to improve disability management across industries, particularly from sectors with lower claim rates and shorter durations. Lastly, it underscores the need for targeted interventions and policy reviews in the public administration sector due to its high costs and long claim durations. Given the economic impact of mental health issues, the study also advocates for investing in preventive measures and early intervention programs to reduce the incidence and severity of anxiety and depression in the workplace.

In conclusion, this study emphasizes the pervasive nature of mental health conditions in the US workforce and their substantial impact on employee well-being and organizational costs. It recommends the implementation of comprehensive, industry-specific mental health strategies encompassing prevention, early intervention, and ongoing support, as a proactive approach to improve employee health outcomes, reduce costs, and foster a more productive and resilient workforce.



## EMPLOYER GUIDANCE

IBI gathered industry specific insights from industry experts from leading employers, healthcare organizations, benefits providers, and absence management firms and trade publications. The goal is to assist employers and benefits providers in developing targeted interventions, programs, and practices to reduce mental health issues in the workforce and improve overall employee well-being. A summary of their insights and recommendations follows.

### **RETAIL TRADE: IMPLEMENT MENTAL HEALTH SCREENING, FLEXIBLE SCHEDULING, AND PROVIDE MANAGER TRAINING.**

Workers in retail report high rates of anxiety and depression, likely due to customer-facing roles, job instability, and irregular working hours. These stressors increase mental health risks [13]. To address the high prevalence of anxiety (33.6%) and depression (25.5%) in retail trade, it is essential to establish comprehensive mental health screening protocols that can identify employees at risk early. Flexible scheduling can reduce stress and accommodate personal needs, leading to improved mental well-being. Training managers in mental health awareness will empower them to recognize signs of distress and provide necessary support or refer employees to professional resources.

### **MANUFACTURING: INTEGRATE MENTAL HEALTH AWARENESS, ERGONOMIC IMPROVEMENTS, AND OFFER ON-SITE COUNSELING.**

In the manufacturing sector, where physical strain and stress are common, combining mental health awareness programs with ergonomic interventions can create a healthier work environment. On-site counseling ensures employees have immediate access to support, which can help manage the mental health challenges associated with high-demand, labor-intensive work environments. Integrating these services as part of overall wellness programs can reduce the average short-term disability cost of \$7,324 per closed claim.

### **FINANCE, INSURANCE & REAL ESTATE: DEVELOP EARLY INTERVENTION PROGRAMS, STRESS MANAGEMENT TRAINING, AND PEER SUPPORT NETWORKS.**

High-stakes environments lead to burnout, anxiety and stress, exacerbated by long hours and high-performance demands. This industry has the highest cost per employee related to mental health claims [14] (\$1,915 annually) and high disability claim rates [15]. Early intervention programs are crucial to preventing the escalation of mental health problems, such as anxiety and burnout, before they require more extensive and costly interventions. Stress management training for employees, combined with structured peer support networks, can provide ongoing emotional and practical support, fostering a more resilient workforce.

### **PUBLIC ADMINISTRATION: DEVELOP LONG-TERM SUPPORT SYSTEMS, PROMOTE WORK-LIFE BALANCE, AND PROVIDE SPECIALIZED MENTAL HEALTH SUPPORT FOR HIGH-STRESS ROLES.**

High-stress environments in government roles lead to mental health issues such as anxiety, burnout, and stress-related absenteeism [16]. Public administration employees have a significant percentage of closed STD claims converting to long-term disability (11.3%). Implementing long-term support systems, such as continued mental health counseling and work accommodations, can reduce the likelihood of prolonged absences. Encouraging work-life balance through flexible scheduling and wellness programs can mitigate stress levels. For high-stress roles, targeted interventions such as trauma counseling and stress resilience training should be offered to reduce burnout and improve mental health outcomes.

### **TRANSPORTATION & UTILITIES: ESTABLISH RETURN-TO-WORK PROGRAMS, PROVIDE RESOURCES FOR SHIFT WORKERS, AND IMPLEMENT FATIGUE MANAGEMENT PROGRAMS.**

In transportation, workers face severe mental health stressors due to long hours, shift work, time pressures, and job isolation. Sleep deprivation, heavy workloads, and unbalanced job designs are key contributors to stress, anxiety, and depression in this sector [17,18]. Utilities workers often face high-pressure environments, job isolation, and stigma around mental health. Workers often deal with intense workloads, hazardous conditions, and long hours, increasing the risk of anxiety, stress, and other mental health issues [19]. In addition, logistics workers report illnesses linked to stress, depression, or anxiety. Long hours, heavy demands, and inadequate support systems are the primary contributors to these mental health challenges [20].

High disability claim rates in transportation and utilities (6.2 new claims per 1,000 covered lives) can be addressed through robust return-to-work programs that facilitate a smooth transition for employees recovering from mental health issues. Shift workers, who often face irregular schedules and fatigue, can benefit from specialized resources such as health monitoring, mental health services, and fatigue management programs, designed to improve sleep quality and overall well-being.

**SERVICES: IMPLEMENT MENTAL HEALTH FIRST AID TRAINING, DEVELOP PEER SUPPORT PROGRAMS, AND OFFER FLEXIBLE TIME-OFF POLICIES.**

The professional, scientific, and management sector experiences high stress from long hours and performance demands. Administrative, support, and waste management services face heavy workloads and time pressure. Educational services endure long hours and emotional labor, while healthcare and social assistance workers face extreme physical and emotional demands. The arts, entertainment, and recreation sector struggles with job insecurity and irregular income, while accommodation and food services contend with long hours and customer service pressure. Finally, other services face time pressures, customer demands, and job insecurity [21,22].

With the second-highest prevalence of anxiety (31.1%) and depression (23.6%), the services sector can benefit from mental health first aid training, which equips employees to provide immediate support to colleagues in distress. Peer support programs foster a supportive community and provide a safe space for employees to share their experiences and seek help. Flexible time-off policies can help employees take the time they need to recharge and address their mental health needs, reducing the risk of burnout and prolonged absenteeism.



# APPENDIX A: METHOD AND OVERVIEW OF CALCULATIONS

## Data Sources

This study utilized three primary data sources: the Household Pulse Survey by the National Center for Health Statistics, The National Health Interview Survey carried out by the US Census Bureau, and the Integrated Benefits Institute Benchmarking Portal.

### Household Pulse Survey [5]

The US Census Bureau's Household Pulse Survey (HPS) is a cross-sectional survey of the civilian non-institutionalized US population aged 18 and older. It collects near real-time data via email and internet on various topics, including socioeconomic factors (SES), demographics, and physical and mental health. The survey employs a systematic sample design and relies on self-reported information [6]. This study analyzed HPS data on anxiety and depression symptoms, and socio-demographic information from January to December 2023. The study sample included 449,421 respondents across 12 consecutive independent samples, using sampling weights to ensure national representativeness.

### National Health Interview Survey [7]

The National Health Interview Survey (NHIS) is an annual health questionnaire conducted by the US Census Bureau in partnership with the National Center for Health Statistics, a division of the CDC. It is the main source of health information for the non-institutionalized US population. The survey collects cross-sectional data and uses sampling weights to ensure national representativeness. The Adult Socio-Demographics section includes data on chronic health conditions, injuries, psychological distress, industry, and socio-demographic data of currently employed adults from January to December 2022. The study sample included 18,816 respondents.

### Integrated Benefits Institute Benchmarking Portal [8]

The Integrated Benefits Institute (IBI) Disability and Leave Benchmarking database is the largest collection of claims data in the nation related to employer-sponsored short-term disability, long-term disability, federal family and medical leave, and Workers' Compensation benefits. It comprises data from 13 of the largest carriers and third-party administrators, totaling 9.3 million claims from January to December 2022. This extensive database includes information from over 125,000 employer groups and spans more than 1,000 Standard Industrial Classification (SIC) codes.

## Statistical Analysis

### Measures

Both HPS and NHIS assess anxiety and depression with the same questions. The presence of anxiety symptoms was assessed using the Generalized Anxiety Disorder 2-item scale (GAD-2). A score of 3 points or higher is the recommended threshold for identifying potential cases that may require further evaluation for generalized anxiety disorder.<sup>5</sup> When the cut-off score is set at 3, the GAD-2 has a sensitivity of 86% and a specificity of 83% for diagnosing generalized anxiety disorder.<sup>[i]</sup> In addition, depressive symptoms were evaluated using the Patient Health Questionnaire-2 (PHQ-2). A PHQ-2 score greater than 3 demonstrated a sensitivity of 83% and a specificity of 92% for major depression. <sup>[ii]</sup> Both assessment tools utilize a Likert-like scale to measure symptoms over the past 14 days, with responses graded as follows: "Not at all" = 0, "a few days" = 1, "more than half the days" = 2, and "nearly every day" = 3. Any adults with missing responses for one or both questions were excluded from the analysis.

Statistical analysis was conducted using 95% confidence intervals. All analyses were conducted using Stata 18.0 with jackknife replication weights to ensure nationally representative estimates.

### Industries

Both Standard Industrial Classification (SIC) and North American Industrial Classification System (NAICS) codes identify a firm's primary business activity. The IBI's Benchmarking data uses SIC codes to record the industry of an employee's employer. In contrast, HPS and NHIS use NAICS codes. To align with SIC codes, NAICS sectors are combined to form major industries, as detailed in the following table.

| SIC Sectors                              | NAICS Sectors  |
|--|--|
| Agriculture, Forestry, Fishing<br>Mining | Agriculture, Forestry, Fishing, and Hunting, and Mining<br>Mining, Quarrying, and Oil and Gas Extraction   |
| Transportation & Public Utilities        | Utilities<br>Transportation & Warehousing, and Utilities   |
| Construction                             | Construction   |
| Manufacturing                            | Manufacturing  |
| Wholesale Trade                          | Wholesale trade  |
| Retail Trade                             | Retail Trade   |
| Finance, Insurance, Real Estate          | Information<br>Finance and Insurance<br>Real Estate and Rental and Leasing   |
| Services                                 | Professional, Scientific, and Management<br>Administrative, Support and Waste Management Services<br>Educational Services, Health Care and Social Assistance<br>Health Care and Social Assistance<br>Arts, Entertainment, and Recreation<br>Accommodation and Food Services<br>Other Services (except public administration) |
| Public Administration                    | Public Administration  |

## Mental Health Claims

IBI's database uses the Tenth Revision of the International Classification of Diseases (ICD-10) to categorize various chapters and subchapters into unique groupings based on health conditions and diseases. For this study, we focused on ICD-10-CM sub-chapters F30-F39 for mood [affective] disorders and F40-F48 for anxiety, dissociative, stress-related, somatoform, and other nonpsychotic mental disorders. We calculated claim rates per 1,000 covered lives, lost calendar days per 1,000 covered lives, and average payments per closed claim across industries.

## The Mental Health Cost Calculator [1]

The Mental Health Cost Calculator, developed by the National Safety Council and NORC at the University of Chicago, estimates the financial impact of mental health issues on employers by combining employment cost research with data from the National Survey on Drug Use and Health. The calculator categorizes periods of intense nervousness, hopelessness, restlessness, depression, and other related feelings as mental distress.

### Key Components of the Calculator

- **Lost Time:** Costs associated with decreased productivity and absenteeism due to mental distress.
- **Job Turnover:** Expenses related to employee turnover, including hiring and training new employees.
- **Health Care:** Medical expenses incurred from mental health treatment and related health issues.



## Total Disability Cost [11]

The Total Disability Cost function calculates the total disability cost by first determining the cost of short-term disability (STD) claims specific to the industry. It then estimates the additional cost of long-term disability (LTD) claims by considering the industry-specific conversion rate from short-term to long-term claims and the average cost of these long-term claims in that industry.[12]

These industry-specific costs are then scaled based on the number of employees in the company. As the number of employees increases, the total disability cost increases proportionally, assuming that the rates of claims and average costs remain constant within that industry.

### Total Disability Cost Function $f(x)$ :

$$f(x_i) = NC_i \times [ASTD_i + (CCR_i \times ALTD_i) \times x]$$

where:

*f(x<sub>i</sub>) = Total Disability Cost for x employees in a particular industry*

*x = Number of employees*

*i = Industry*

*NC<sub>i</sub> = New Claims per 1,000 Covered Lives (Excluding Pregnancy)*

*ASTD<sub>i</sub> = Average Short-Term Disability Cost per employee*

*CCR<sub>i</sub> = Percentage of Closed Claims Converted to Long-Term Disability (expressed as a decimal)*

*ALTD<sub>i</sub> = Average Long-Term Disability Cost per employee*

## References

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