Mental Health Survey Analysis Report

EDA Report on Mental Health in Tech Workplace Survey

Author: Rohit Kumar Gupta

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1. Introduction

This EDA project aims to analyse and detect possible insights/Recommendation from mental health survey that can be used to drive important decisions which could lead to a successful policy implementation regarding mental health of an employee. Detecting possible Stigma causing treatment reluctance is important since reluctance to mental health treatment can cause an organization work force to decline.

This dataset is from a 2014 survey that measures attitudes towards mental health and frequency of mental health disorders in the tech workplace.

2. Dataset Overview

The dataset is from a 2014 survey measuring attitude towards mental health in tech workplace. The data is quite old, but people behaviour doesn't change over a few years.

- The dataset contains 1259 rows with 27 columns.
- 'Age' is the only numeric column.
- The dataset contains no duplicate rows.
- Column description

    - **Timestamp**
    - **Age**
    - **Gender**
    - **Country**
    - **state:** If you live in the United States, which state or territory do you live in?
    - **self_employed:** Are you self-employed?
    - **family_history:** Do you have a family history of mental illness?
    - **treatment:** Have you sought treatment for a mental health condition?
    - **work_interfere:** If you have a mental health condition, do you feel that it interferes with your work?
    - **no_employees:** How many employees does your company or organization have?

- **remote_work:** Do you work remotely (outside of an office) at least 50% of the time?
- **tech_company:** Is your employer primarily a tech company/organization?
- **benefits:** Does your employer provide mental health benefits?
- **care_options:** Do you know the options for mental health care your employer provides?
- **wellness_program:** Has your employer ever discussed mental health as part of an employee wellness program?
- **mental_health_interview:** Would you bring up a mental health issue with a potential employer in an interview?
- **phys_health_interview:** Would you bring up a physical health issue with a potential employer in an interview?
- **mental_vs_physical:** Do you feel that your employer takes mental health as seriously as physical health?
- **obs_consequence:** Have you heard of or observed negative consequences for coworkers with mental health conditions in your workplace?
- **comments:** Any additional notes or comments
- There are **40.91%** of missing data in **state** column, **1.43%** of missing values in **'self_employed'** column, **20.97%** missing values in **'work_interfere'** column and **86.97%** of missing values in **'comments'** column.

3. Outlier Detection

In age column there are about **0.64%** of outliers. Hence we can safely remove those data points.

4. Data Cleaning Summary

- Classified contents in **'Gender'** column into mainly three categories i.e. **'Male'**, **'Female'**, and **'Others'** to make the dataset consistent.
- Detected **1.44%** of NA's in **'self_employed'** column. Replaced these NA's with **mode** of the **'self_employed'** column.
- Detected **20.94%** of Missing Values in **'work_interfere'** column. Replaced these values with the **mode** of **'work_interfere'** column based on **'treatment'** column, since people generally seek

treatment when their mental illness interferes with there work. It's intuitive.

- Detected **41.01%** of Missing Values in **'state'** column. Replaced this column with **'Non-USA State'**, as this column contains only USA States. After replacing there were still **11** missing values in this column. Probably these were the states in USA whose name was not mentioned. Replaced these 11 missing values with **'Unknown'**.
- **'Comments'** column was dropped since it contained about **87%** of Missing Values.
- Added a column **'Age_group'** containing entries like **Senior**, **Adult**, and **Young Adults**.

5. Key Insights

Chart – 1
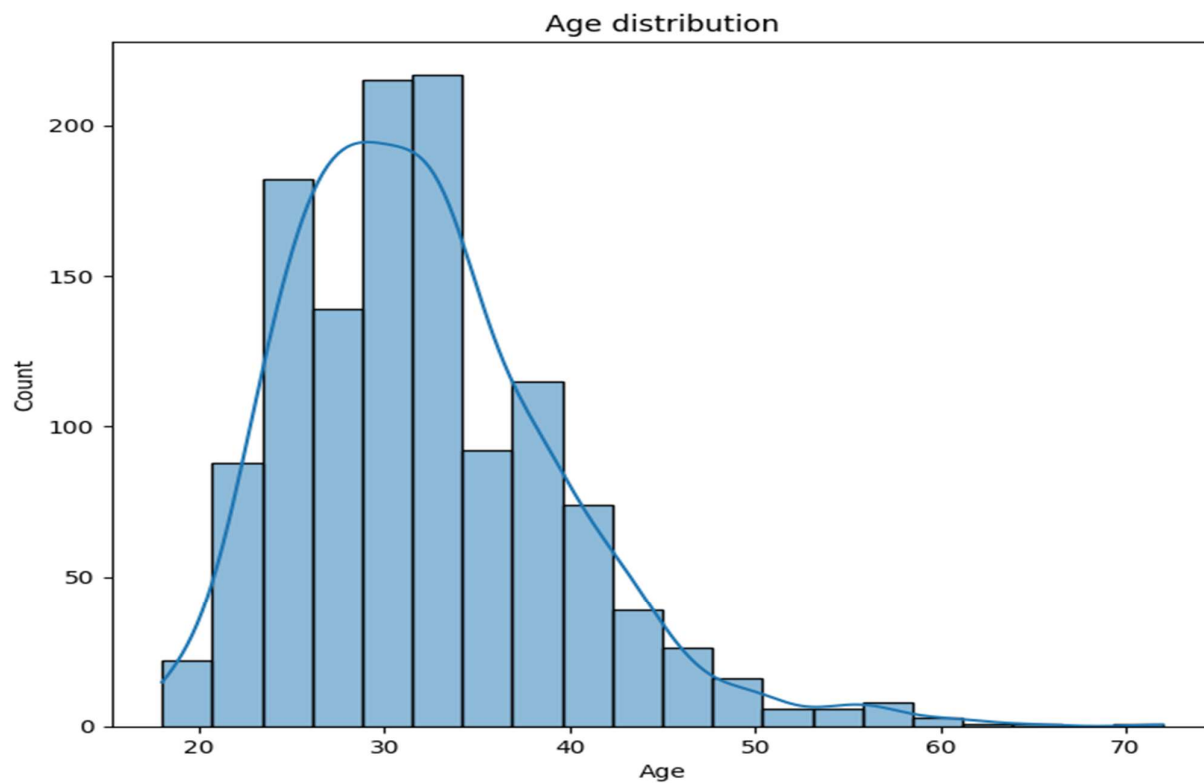
This histogram chart shows the distribution of individual's age throughout the survey.

Insights:

- Most Respondents are aged from 25-30
  - The peak of the distribution is in the early late 20s to mid 30s, with the highest frequency between 28-35.
  - This age group represents young professionals, often in early or mid-career stages.

- Distribution is Right-Skewed
  - The curve has a long tail to the right, meaning fewer people in the 40+ age range.
  - The population skews young, possibly due to the tech industry focus or online nature of the survey.
- Very few respondents are older than 50

Chart – 2
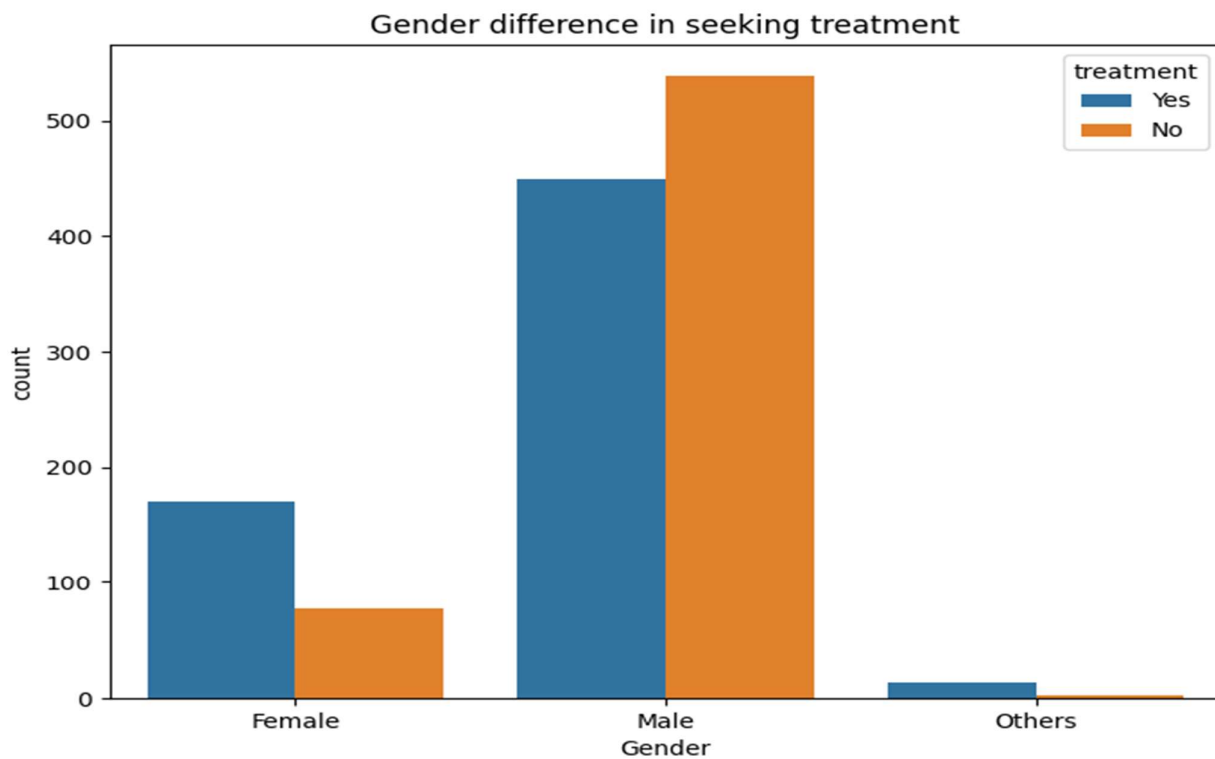
This bar chart shows the number of individuals seeking treatment or not for mental illness based on gender.

Insights:

1. Female Employees are more likely to seek treatment
   - A greater proportion of females sought mental health treatment compared to those who didn't.
   - Indicates higher mental health awareness or comfort in seeking help among women.
2. Male Employees are Less likely to Seek Treatment
   - Though more men are in the dataset, a larger number of males said 'No' to treatment.
   - Suggest possible stigma, reluctance, or lower awareness among men.
3. Very few Non-Binary/Other Respondents
   - Very small sample size under "Others" but they also show higher treatment- seeking proportionality.

Chart – 3

Age group differences in seeking treatment
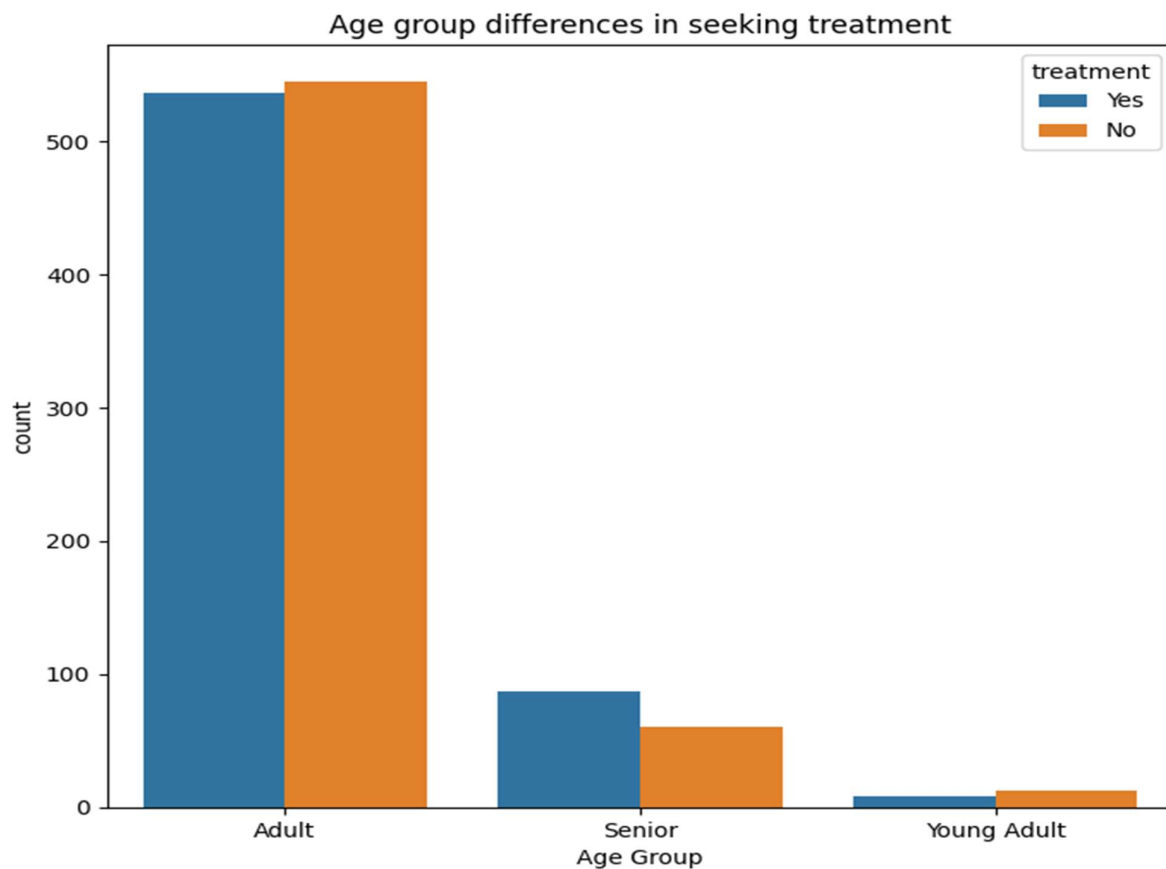
This chart shows the number of individuals seeking treatment or not, based on their age group.

Insights:

1. Adults Are the Largest Group

   - The Adult age group has the highest overall count, both in those who have and haven't sought treatment.

   - This reflects the workforce's core age range (likely 26–40), consistent with earlier age distribution findings.

2. Seniors Are More Likely to Seek Treatment

- In the Senior category, the "Yes" bar is taller than the "No" bar, suggesting a higher treatment rate.

- This group may be more experienced or open to acknowledging mental health issues, or may face more stress due to senior responsibilities or long work hours.

3. Young Adults Show the Lowest Participation Overall

- Very few Young Adults (likely ages 18–20) are in the dataset.

- Those who are present show slightly more "No" responses than "Yes", suggesting underreporting or under-utilization of treatment.

Chart – 4

Individuals seeking treatment or not based on top 10 country
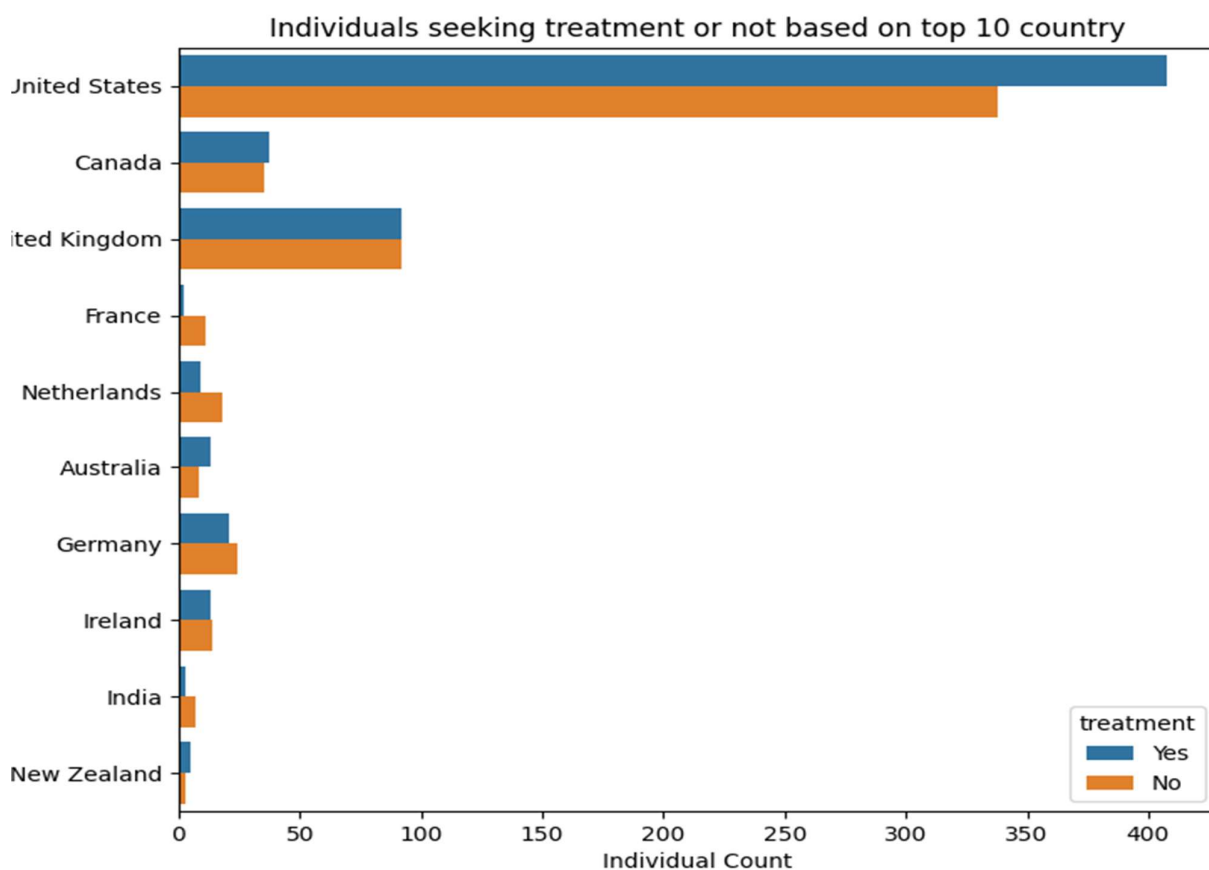
This chart shows the number of individuals seeking treatment in top 10 countries in the survey listings.

Insights:

1. The United States Dominates in Both Seeking and Not Seeking Treatment

   - The U.S. has by far the highest number of respondents, for both treatment Yes and No.

   - Indicates that the dataset is heavily skewed toward the U.S., which could reflect:

     - Higher participation

     - Larger tech workforce

     - Greater openness or access to surveys

2. United Kingdom Shows a Healthy Treatment-Seeking Behavior

   - The UK has a notable number of "Yes" responses compared to "No".

   - Suggests greater mental health awareness and service accessibility in the UK.

3. In Some Countries, "No" Outweighs "Yes"

   - For countries like Germany, Netherlands, and France, more people do not seek treatment.

   - This may point to:

     - Stigma

     - Lack of access

     - Workplace culture not supportive of mental health

4. Low Representation in India and New Zealand

   - Very few participants from India, but those who responded mostly did not seek treatment.

- Indicates low awareness or high stigma in these regions, or simply low participation in such surveys.

Chart – 5
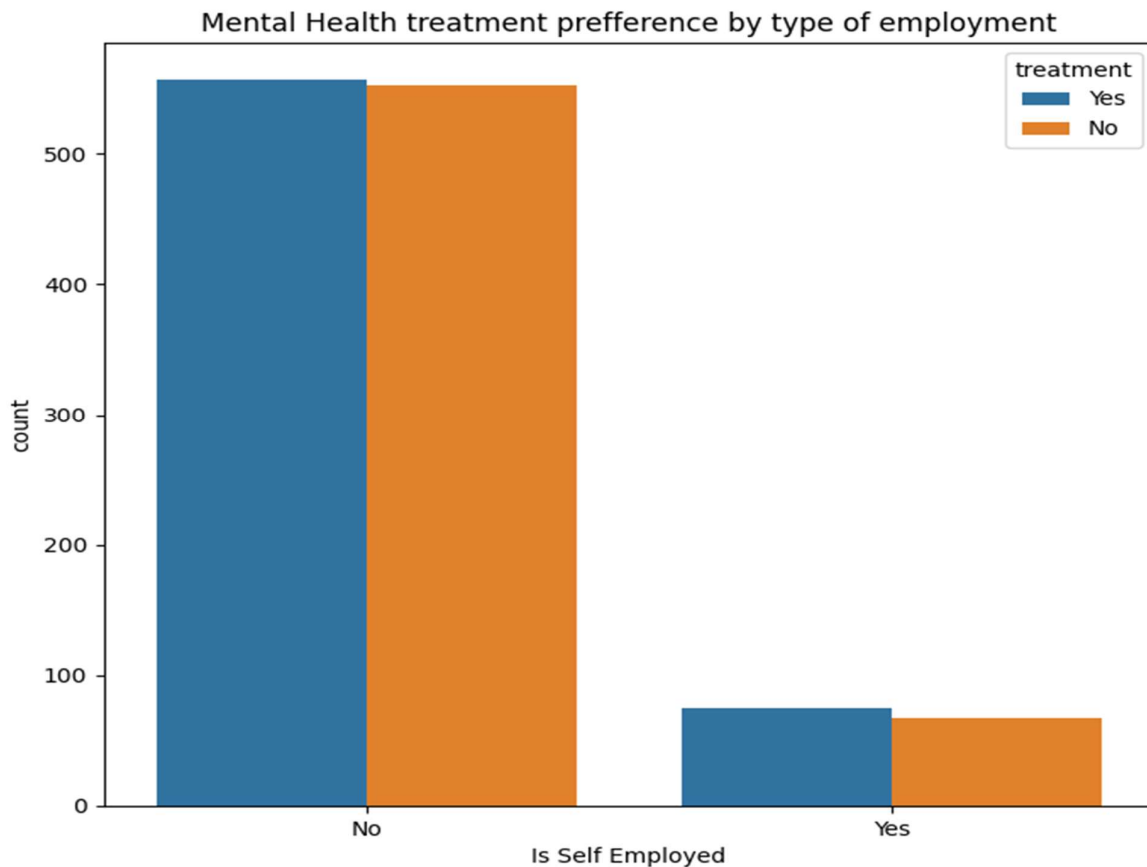
This bar chart compares how self-employed and non-self-employed individuals respond to whether they have sought mental health treatment.

Insights:

1. Majority of Respondents Are Not Self-Employed

   - Most responses come from non-self-employed individuals (i.e., those working in organizations).

   - The sheer volume of this group suggests more structured workplaces are better represented in the data.

2. Treatment Rates Are Fairly Balanced Within Both Groups

- Both self-employed and non-self-employed groups show similar proportions of people seeking vs not seeking treatment.
- This suggests that employment type may not strongly affect treatment decision, at least in this sample.

3. Self-Employed Show Slightly Higher Willingness to Seek Treatment
- Though smaller in count, a slightly higher share of self-employed individuals are seeking treatment compared to not seeking it.
- This may indicate more autonomy in prioritizing mental health, or possibly higher stress due to isolation or workload.

Chart – 6

This bar chart shows the likelihood of an individual to seek mental health treatment based on family history.

Likelihood of seeking treatment of individuals with family history of mental illness
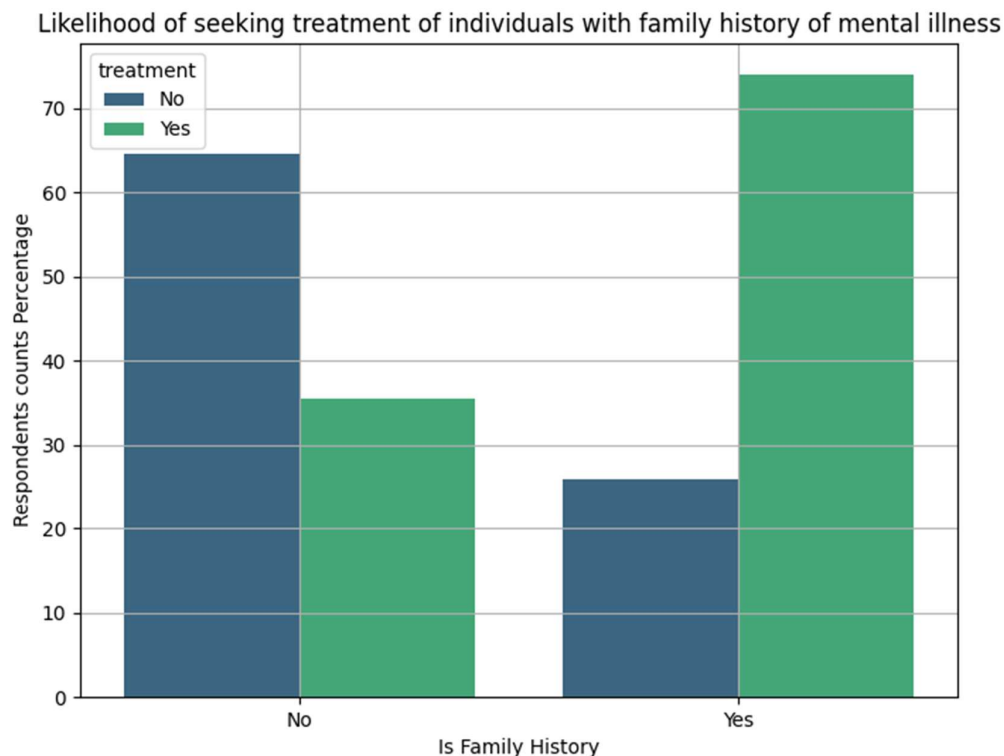
Insights:

1. Individuals with a Family History of Mental illness are more likely to seek treatment.

- People with family history of mental illness more tends to seek treatment.
- This suggest greater awareness among these people, motivating them to take action.

2. Those without family history are less likely to seek help
   - People without family history of mental illness are less likely to seek help.
   - This could be due to:
     - Lower Awareness
     - Underestimating symptoms
     - Greater Stigma or Denial

3. Overall, Family History of Mental illness strongly correlates with treatment seeking behaviour.

Chart – 7

Liklihood of seeking treatment of individuals with work interference due to mental health
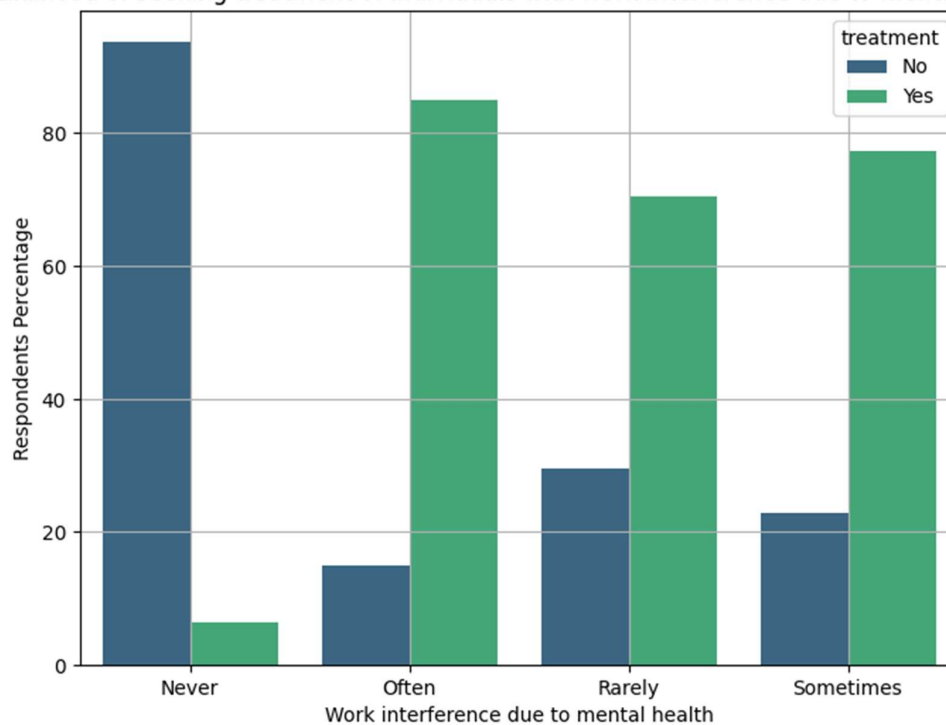
This bar chart shows the clear correlation between how mental health affects work performance and the likelihood of seeking treatment.

Insights:

1. Severe Work interference Strongly Correlates with Seeking Treatment

   - Among those who report mental health "Often" interfering with work, over 85% seek treatment.

   - Indicates that functional disruption is a powerful motivator for action.

2. Occasional Interference Also Prompts Treatment

   - People reporting interference "Sometimes" or "Rarely" also show a majority seeking treatment.

   - Even mild disruptions are prompting people to seek help. This is a positive sign of mental health awareness.

3. "Never" Group has Extremely Low Treatment Rates

   - Over 90% of individuals who report no interference with work do not seek treatment.

   - Suggest that lack of visisble impact leads to underestimation of mental health issues.

Chart – 8

Mental health benefits based on company size
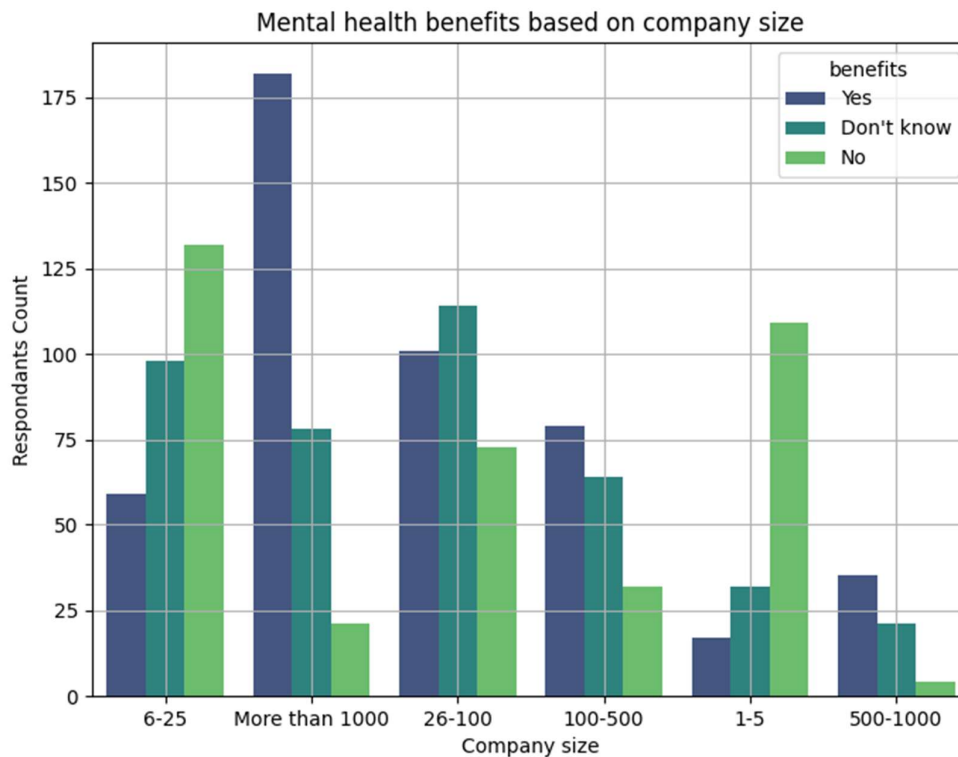
This bar chart reveals valuable insights into how different company sizes handle mental health benefits and where strategic improvements can be made.

Insights:

1. Larger Companies Lead in Providing Benefits

   - Companies with more than 1000 employees show the highest count of 'Yes' for mental health benefits

2. Smallest Companies Almost never over benefits

   - For firms with 1-5 employees, the dominant response is "No"

   - These are likely startups, freelancers, or informal teams

3. "Don't know" Responses Are High in Mid-Sized Companies

   - Especially among those with 26-100 employees

   - Indicates a communication gap. benefits exists but are not clearly conveyed or accessible.

Chart – 9

Liklihood of seeking treatment when working remotely
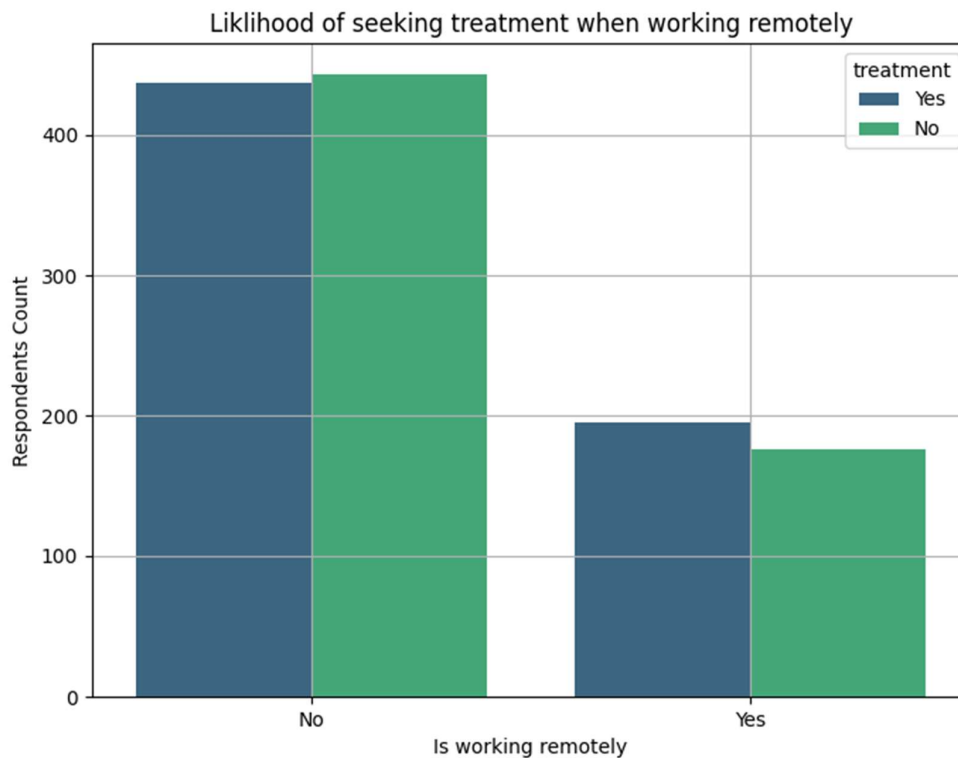
this chart offers usefull insights into how remote work correlates with mental health treatment-seeking behaviour.

Insights:

1. Remote Workers Are Slightly More Likely to Seek Treatment

   - While both groups (remote and non-remote workers) show substantial treatment-seeking, the proportion of remote workers seeking treatment is slightly higher than those who don't.

   - This may indicate:

     ▪ Increased self-awareness when working in isolation

     ▪ Easier access to teletherapy/virtual counseling

   ▪ More flexible schedules that allow time for treatment

2. Non-Remote Workers Have Higher Overall Numbers

- The majority of respondents are non-remote workers.
- Their treatment-to-non-treatment ratio is roughly balanced, but the absolute number is higher, suggesting:
    - In-person workplace environments still dominate
    - Mental health struggles are not exclusive to remote environments

3. Remote Work May Reduce Stigma

- Remote employees may feel more comfortable seeking help privately, avoiding workplace stigma or judgment.

Chart – 10

Liklihood of knowing about benefits in tech companies/non tech-companies
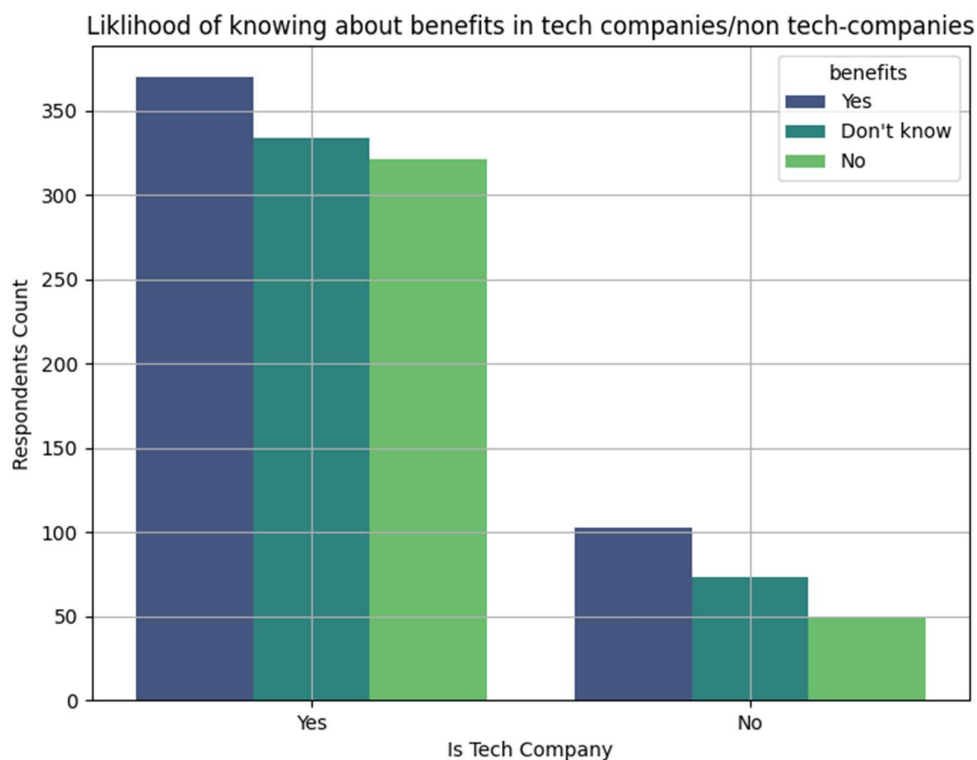
This bar chart shows the number of individuals that knows about the mental health benefit plan of their organization, weather its tech company or non tech company.

Insights:

1. Higher Awareness in Tech Companies:

- A significantly larger number of respondents associated with tech comapnies know about benefits compared to those in non-tech comapnies.

2. "Don't Know" and "No" are Significant in Tech:

   - While "Yes" is the highest bar for tech comapnies, a substantial number of repondents still dont know about benefits.

   - This indicates that even within tech, there's a considerable gap in benefit awareness.

3. Lower Overall Awareness in Non-Tech Comapnies:

   - The knowing about mental health benefits is much lower than in tech companies.

Chart – 11

Employer taking mental health seriously as physical health in tech/non tech org.
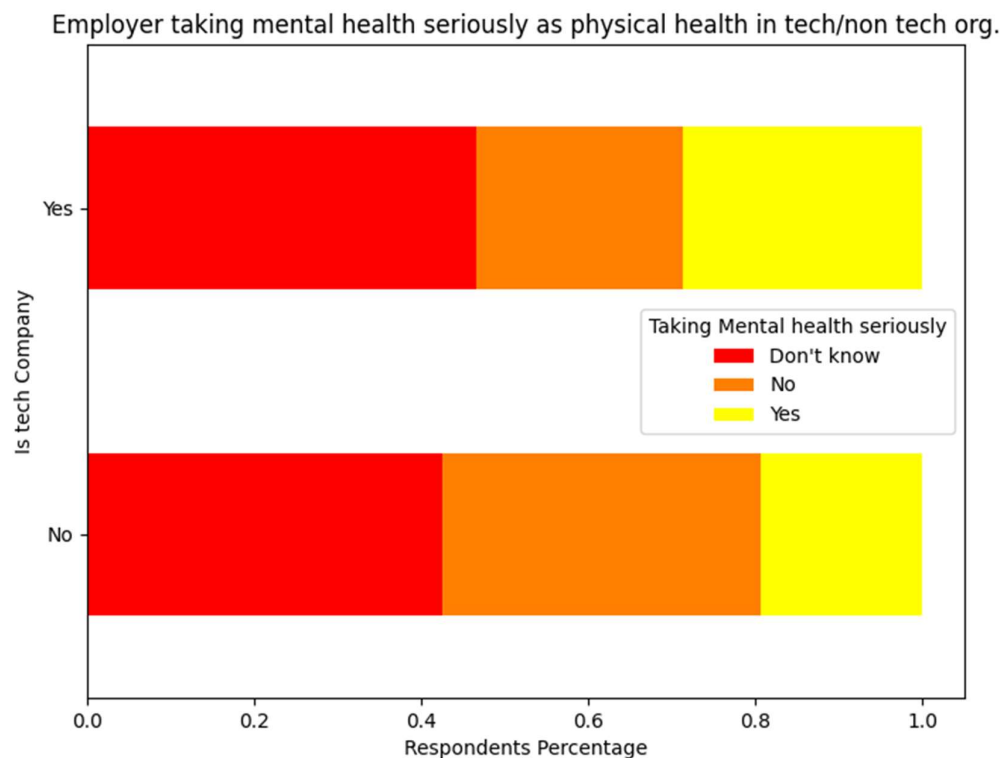
This graph shows the distribution of responses of the employees where they belive that whether or not their company tech/non-tech takes mental health seriously or not.

Insights:

1. **Significant "Don't Know" Across Both Sectors:** A large portion of respondents in both non-tech (around 43%) and tech (around 47%) organizations "Don't know" if their employer takes mental health as seriously as physical health. This is a critical insight, indicating a lack of clear communication or perceived commitment from employers.

2. **Perceived Neglect in Non-Tech Companies:** In non-tech companies, a higher percentage of respondents (around 38%) feel that their employer does not take mental health as seriously as physical health ("No"), compared to tech companies (around 24%).

3. **Slightly Better Perception in Tech Companies:** While still not ideal, tech companies show a slightly better perception, with a higher percentage of "Yes" (around 29%) compared to non-tech companies (around 19%). This suggests tech companies might be doing a bit more, or communicating better, regarding mental health initiatives.

4. **Overall Room for Improvement:** In both sectors, the "Yes" category is the smallest, meaning a minority of employees believe their employer genuinely treats mental and physical health with equal seriousness.

Chart – 12

Correlation of knowing care options with claiming mental health treatment
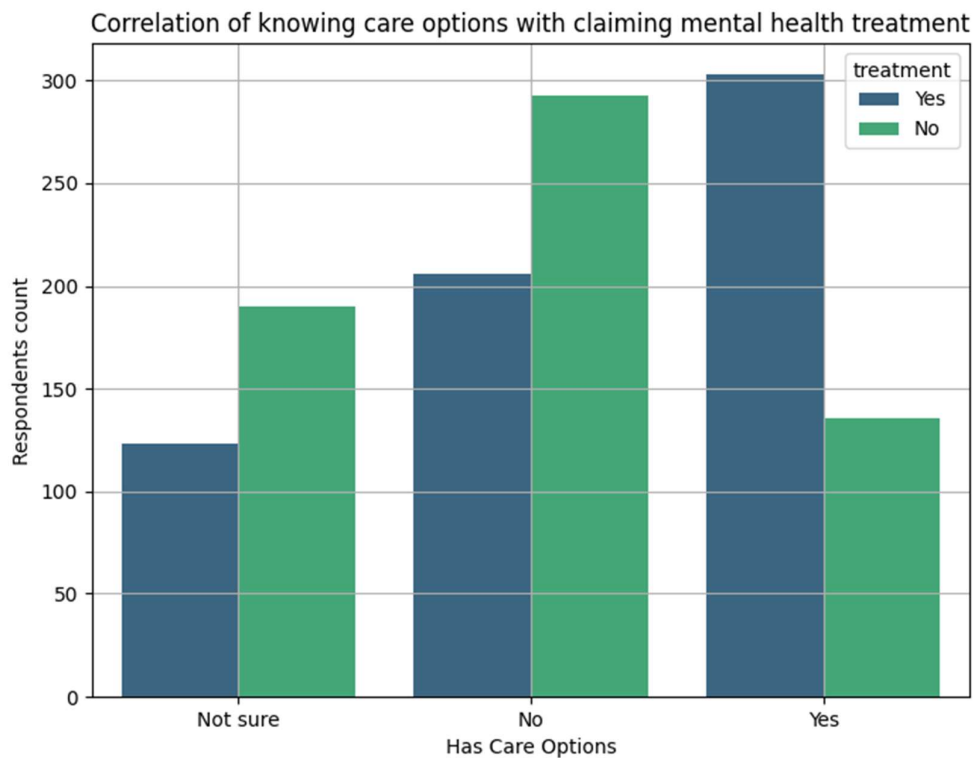
This bar chart shows the correlation of knowing about care options with seeking mental health treatment of the respondents.
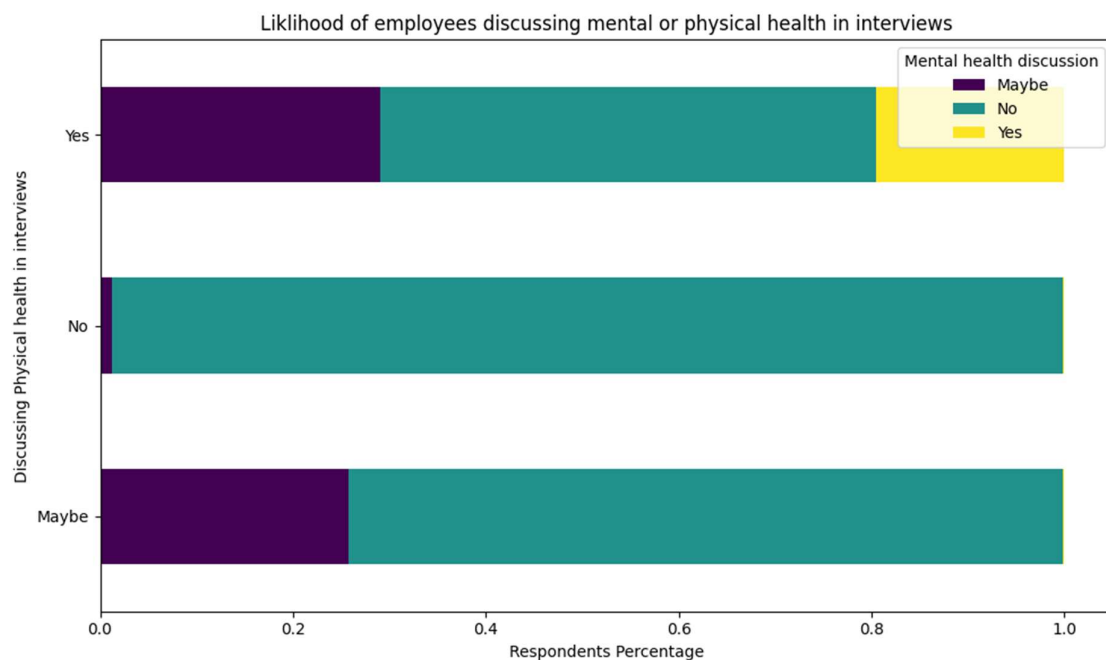
Insights:

1. Knowing Care Options Strongly Correlates with Seeking Treatment: The most striking insight is that individuals who know about care options are significantly more likely to claim mental health treatment than those who don't.

2. Lack of Awareness Leads to Untreated Needs:

   - For those who "Don't know" about care options, a notable number do not seek treatment, while fewer do. This suggests that even if there are underlying issues, a lack of awareness of options is a barrier.

   - For those who believe they "Don't have" care options, a very high number do not seek treatment, while a smaller number do. This

clearly indicates that perceived lack of options is a major deterrent.

3. Knowing Doesn't Mean 100% Treatment: While knowing about care options drastically increases the likelihood of seeking treatment, it's not 100%. A significant number of people who know about options still do not claim treatment. This could be due to stigma, cost, lack of perceived need, or other barriers.

Chart – 13

Liklihood of employees discussing mental or physical health in interviews

This stacked bar chart shows the percentage of respondents behaviour regarding mental health discussion and physical health discussion in interviews.
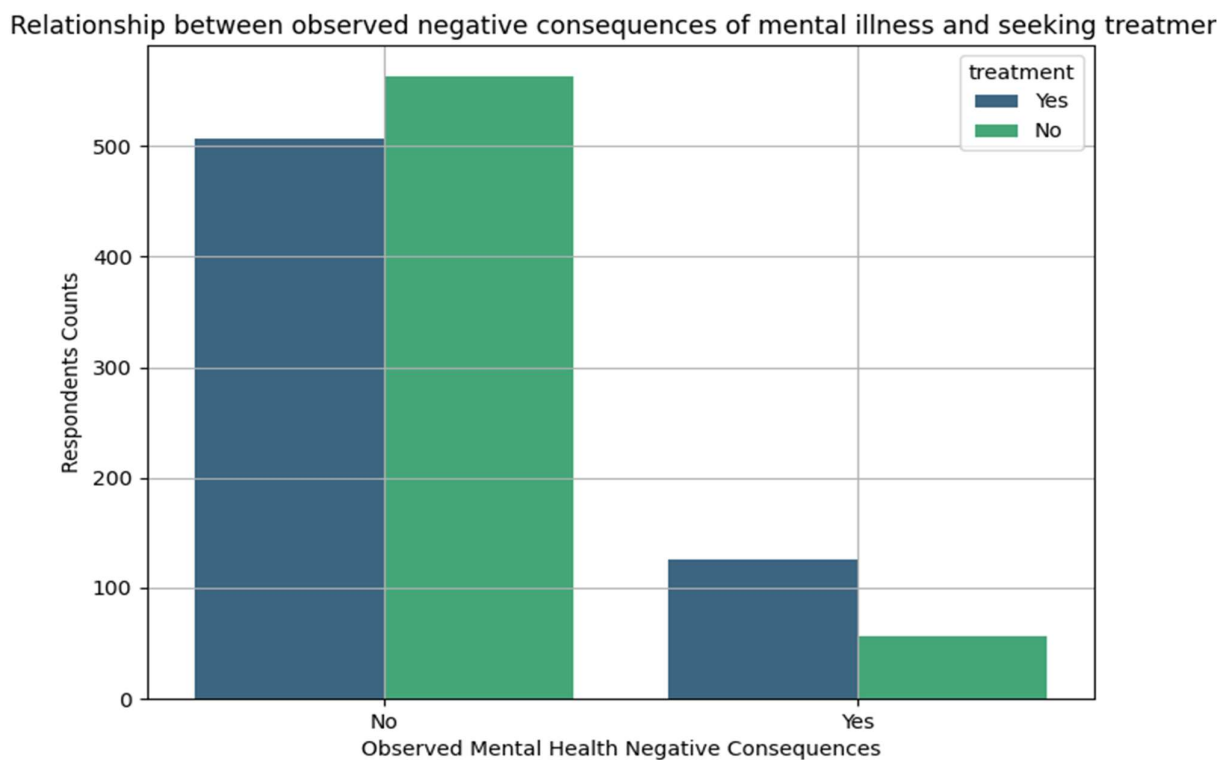
Insights:

1. Stigma Around Discussing Mental Health In Interviews:
   - Even when candidate are open to discussing physical health, a significant portion either say "No" or "Maybe" to discussing mental health. This indicates a strong reluctance or percieved risk in bringing up mental health during an interview.

- When candidates are hesitant ("Maybe") or unwilling to discuss physical health, their reluctance to discuss mental health is even more pronounced.

2. Physical health discussion is more Accepted/Common: The chart suggests that discussing physical health is more common or perceived less risky than discussing mental health. This is evident in the much larger "No" and "Maybe" segemnts for mental health discussions across all physical health categories.

3. Potential for Bias/Discrimination Concern: The reluctance to discuss mental health likely stems from fear of judgement, stigma, or potential discrimination in the hiring process.

Chart – 14

Relationship between observed negative consequences of mental illness and seeking treatmer

This bar chart shows the behaviour trend of respondents to seeking treatment when there is observed negative consequences of mental illness.

Insights:

1. Direct Observation Drives Treatment Seeking: A clear and strong correlation exists: when individuals have observed negative consequences of mental illness ("Yes" on 'Observed Mental Health Negative Consequences'), they are significantly more likely to seek treatment.

   • "Yes" Observed Consequences: For those who have observed negative consequences, a substantial majority seek treatment, while a much smaller number do not. This indicates that witnessing the impact of untreated mental illness is a powerful motivator.

2. Lack of Observed Consequences Leads to Untreated Needs: Conversely, when individuals have not observed negative consequences ("No" on 'Observed Mental Health Negative Consequences'), a larger number do not seek treatment compared to those who do. This is a critical segment for intervention.

   • This group might include individuals who are suffering silently, are unaware of their own symptoms, or whose conditions haven't yet manifested in overt ways that they or others recognize as "negative consequences."

3. The Silent Majority: The "No Observed Consequences" group represents the largest segment of respondents overall, and within this group, the majority are not seeking treatment. This highlights a significant portion of the population that might have unmet mental health needs but are not driven to seek help because the negative impacts are not yet visible or acknowledged.

6. Recommendation:

1. **Age distribution & its relationship to mental health**

• Tailor Mental health programs to young adults (aged 20-30).

- Expand reach to older employees by private counselling, flexible scheduling etc.
- Target career milestones.

2. **Gender difference in seeking treatment**

- Normalize mental health seeking among men by campaigns targeting stigma among men by using testimonies, workshops and anonymity during counselling.
- Create gender tailored wellness program.
- Address Common barriers for men.

3. **Country wise comparison**

- Localizing Mental health campaigns based on number of respondents seeking treatment.
- Provide country specific mental health resources.
- Encourage anonymous screening tools in countries with low treatment-seeking rates, like in Germany, India etc.

4. **Are self-employed individuals more or less likely to seek mental health treatment**

- From the analysis, it appears that self-employed individuals seek less mental health treatment.
- possible solution is to offer tailored mental health support based on employment type
- *For employees*
  - Use company infrastructure to rollout different plans and care options.
  - Educate them about mental health.
- *For self employed*
  - Build partnership with freelancers platforms.
  - Provide mental health services

- Normalize mental health discussions in all work models

5. **Influence of family history of mental illness on likelihood of seeking treatment**

- Individuals with family history of mental illness are more likely to seek treatment.

- Leverage family history as predictive factor.

- Awareness Campaigns for those without family history.

6. **Do those who report work interference due to mental health actually seek treatment?**

- Severe Work interference Strongly Correlates with Seeking Treatment

- Normalize Preventive Mental health support

- Occasional Interference Also Prompts Treatment

- Awareness campaigns can address the hidden symptoms

7. **Are employees in larger companies more likely to recieve mental health benefits?**

- Larger Companies Lead in Providing Benefits

- For large enterprises, Double down on marketing their mental health programs, Share data on benefit usage outcomes and Introduce advanced services like therapy reimbursement, mindfullness apps etc.

- For Small Comapnies, Provide affordable external partnerships, Offer group pricing on mental health apps, Partner with local clinics for discounts, and Provide mental health stipends

- For Mid-Sized Companies, Focus on communication and visibility of existing benefits, Regularly email employees about what's available and Train managers to mention benefits in reviews.

8. **Impact of working remotely on seeking treatment**

- Remote Workers Are Slightly More Likely to Seek Treatment

- Strengthen Virtual Mental Health Support for Remote Workers

- Keep Physical Office Employees Equally Supported

9. **Are tech companies more likely to offer benefits or wellness programs**

- A significantly larger number of respondents associated with tech companies know about benefits compared to those in non-tech companies.

- For Companies (Both Tech and Non-Tech) - Improve Internal Communication.

- For Non-Tech Companies - Enhance and Promote Benefits to Compete.

- For Tech Companies - Maximising the value of existing benefits

10. **Do employees perceive that mental health is treated equally to physical health**

- Significant "Don't Know" Across Both Sectors with perceived neglect in non-tech companies.

- Enhance Communication and Transparency

- Develop and Promote Robust Mental Health Programs

- Non-tech companies, which appear to lag in perception, need to make a more concerted effort to catch up with and potentially surpass tech companies in mental health support.

11. **Does knowing care options correlate with actually seeking treatment**

- Knowing Care Options Strongly Correlates with Seeking Treatment

- The primary strategy should be to drastically increase awareness of available mental health care options, especially for those who are "Not sure" or believe they "Don't have" options.

- Target the groups that are "Not sure" or believe they "Don't have" care options with specific outreach.

- For the group that knows about options but still doesn't claim treatment, identify and address other potential barriers.

12. **Are employees comfortable in discussing mental or physical health in interviews?**

- Even when candidate are open to discussing physical health, a significant portion either say "No" or "Maybe" to discussing mental health.

- Proactively signal that the company is a safe and supportive environment for discussing all aspects of well-being, including mental health, right from the recruitment phase.

- Shift the focus from a "disclosure" of mental health issues to a discussion about "support" and "accommodations" that are available to all employees.

- Provide detailed information about mental health benefits and resources after a job offer has been extended but before employment begins.

13.   Are observed consequences for mental illness in workplace discouraging treatment?

- A clear and strong correlation exists: when individuals have observed negative consequences of mental illness ("Yes" on 'Observed Mental Health Negative Consequences'), they are significantly more likely to seek treatment.

- Target the large "No Observed Consequences" group by raising awareness not just of severe negative outcomes, but also of the early, subtle, or internal signs of mental health challenges that might not be immediately "observed" by others or even the individual.

- Create an environment where mental health discussions are normalized, making it easier for individuals to acknowledge their struggles even if no "observable negative consequences" are present.

- Reduce barriers to accessing mental health care, especially for those who might not feel an urgent need due to a lack of observed consequences.

14.   Is there a stigma in workplace that affects treatment?

- There are some stigma related to society and judgements passed by them particularly among men.

- Normalizing the mental health by campaigns, TED talks and Webinars may help.

- Maintaining the anonymity of the employees during treatment will encourage them to claim the treatment benefits.

- Providing testimonials on success stories of previous employees, who struggled with their mental issues might encourage the employees.

7. Conclusion:

The analysis strongly suggests that **information, awareness, and the perception of consequences** (both personal and observed in others) are critical drivers for individuals to seek mental health treatment. There's a **widespread awareness gap** regarding available **care options** and the **potential negative impacts of untreated mental illness**, especially for those who haven't directly observed severe consequences. Furthermore, **stigma remains a significant barrier**, particularly evident in the reluctance to discuss mental health during job interviews. While tech companies appear to be slightly more advanced in some aspects of mental health support and communication, both tech and non-tech organizations have **substantial room for improvement in fostering psychologically safe environments** and ensuring their employees are well-informed about, and have easy access to, mental health resources.

Key takeaway for businesses: Invest strategically in proactive, comprehensive communication and education about mental health, focusing on early signs, available support, and the benefits of timely intervention, rather than waiting for severe consequences to drive action. Simultaneously, actively work to destigmatize mental health discussions throughout the employee lifecycle, from recruitment to daily operations.