Analysis of Mental Health in tech (2014) survey Data
PROJECT REPORT

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Objective

- Mental Health is a hot topic which is gaining its momentum day by day in various sectors especially among the working communities and in different organizations. The main aim of this project is to find interesting insights and movements taken in tech industries for Mental Health Issues.

- This would be crucial to derive useful interpretations and to assist in developing strategies to tackle mental health issues and to take care of employee well-being in the work place.

About Dataset

❖ This dataset is originally put together from a survey that was conducted by an organization called Open Sourcing Mental Illness (OSMI), LTD in the year 2014.

❖ According to OSMI, this survey was "the largest survey done on mental health in the tech industry" in the year 2014

❖ This dataset measures attitudes towards mental health and frequency of mental health disorders in the tech workplace.

❖ It consists of 1259 rows and 27 columns

Attributes of the dataset

Attribute Names	Information
'Timestamp'	Time at when the survey was done by the individual
'Age'	Age of the person
'Gender'	Gender of the respective individual
'Country'	Country the respective person is residing in
[The following attributes gives the answers given by each individual for the respective question]	
'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?

Attribute Names	Information
'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?
'seek_help'	Does your employer provide resources to learn more about mental health issues and how to seek help?
'anonymity'	Is your anonymity protected if you choose to take advantage of mental health or substance abuse treatment resources?
'leave'	How easy is it for you to take medical leave for a mental health condition?
'mental_health_consequence'	Do you think that discussing a mental health issue with your employer would have negative consequences?
'phys_health_consequence'	Do you think that discussing a physical health issue with your employer would have negative consequences?

Attribute Names	Information
'coworkers'	Would you be willing to discuss a mental health issue with your coworkers?
'supervisor'	Would you be willing to discuss a mental health issue with your direct supervisor(s)?
'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 work1place?
'comments'	Any additional notes or comments

Software Tools Used:

Data Viz Tool:

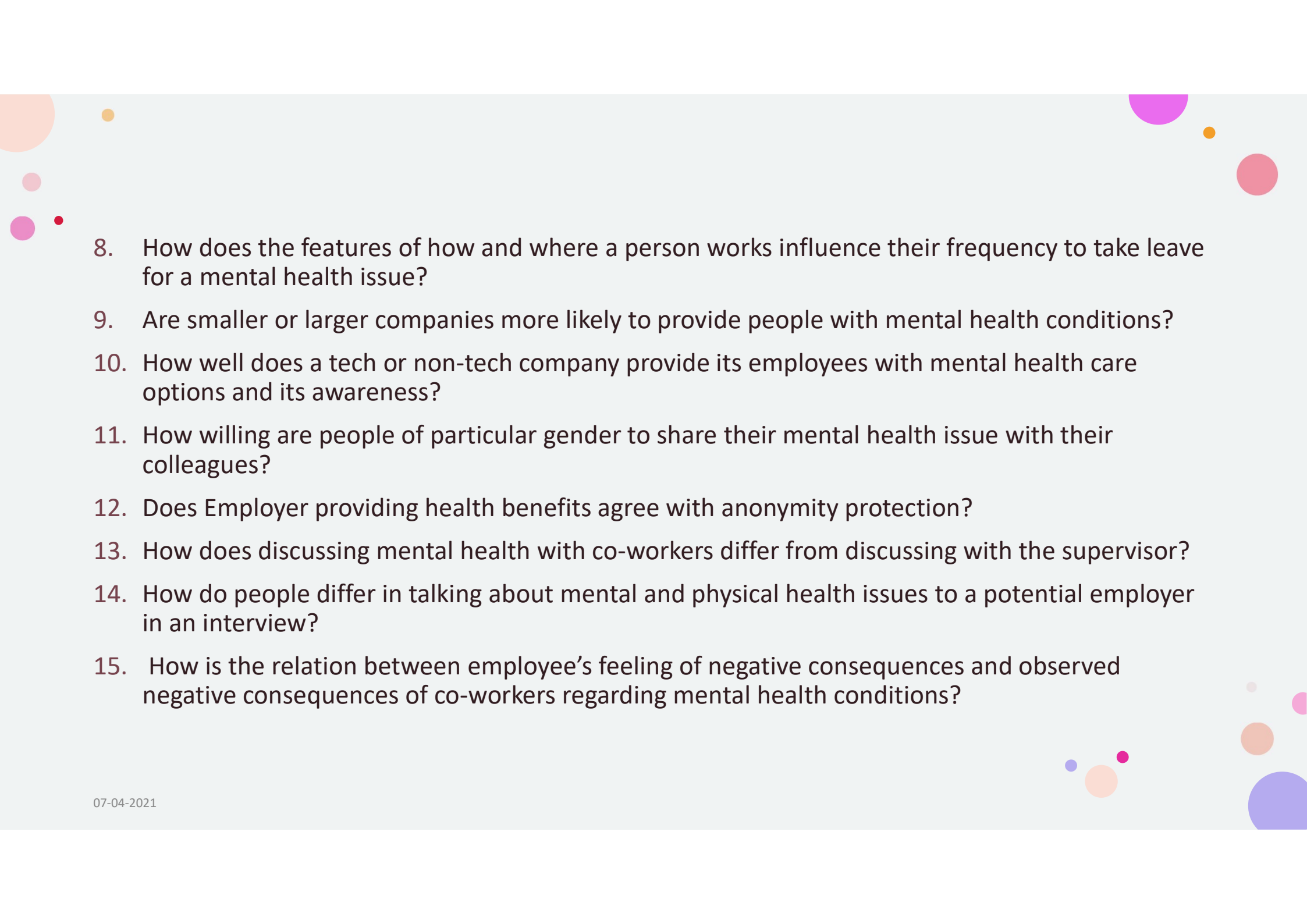**Coding Language:**

IDE :

Libraries Used:

Visualization Techniques Used

- Choropleth maps
- Cartograms – Symbol Maps
- Stacked Bar Graphs
- Parallel Plots
- Pie Charts
- Histograms
- Heat Maps
- Mosaic Plots
- Side-by-Side bar Graph
- Tree Maps
- Packed Bubbles

Analytical Questions Visualized:

1. What is the participation of people from countries in doing the survey?

2. How is the distribution of people in doing the survey in the states of US?

3. How do people who have sought treatment for medical health condition feel about it interfering with their work?

4. How does Family History of Mental Illness known through Different Ages of People?

5. How does working remotely almost half of the time disturbs an employee's work who is diagnosed with a mental health issue?

6. Visualize the number of people at each age group who have sought for medical treatment for a mental health issue.

7. Is there a correlation between the company's support for helping those with mental health conditions and workers' willingness to reach out for help?

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8. How does the features of how and where a person works influence their frequency to take leave for a mental health issue?

9. Are smaller or larger companies more likely to provide people with mental health conditions?

10. How well does a tech or non-tech company provide its employees with mental health care options and its awareness?

11. How willing are people of particular gender to share their mental health issue with their colleagues?

12. Does Employer providing health benefits agree with anonymity protection?

13. How does discussing mental health with co-workers differ from discussing with the supervisor?

14. How do people differ in talking about mental and physical health issues to a potential employer in an interview?

15. How is the relation between employee's feeling of negative consequences and observed negative consequences of co-workers regarding mental health conditions?

Visualizations and Inferences

1. What is the participation of people from countries in doing the survey?

Participation of People in the Survey from Different Countries

Done Using Tableau

Participation of People in Survey from different Countries


Count of people

Done Using Plotly library

1. Inferences

- More People from USA have participated in the Survey. Totally people more than 700 have done the survey.

- The total people participating in the survey is much greater than all the other people participating from different countries.

- The second country having more people participation is United Kingdom with more than 100 but less than 200 people.

- We can see that there is great gap between the people participation in USA and United Kingdom

- Most of the countries have total people participation less than 10.

- This shows that the distribution of people participation from various countries is not even and is skewed greatly towards USA.
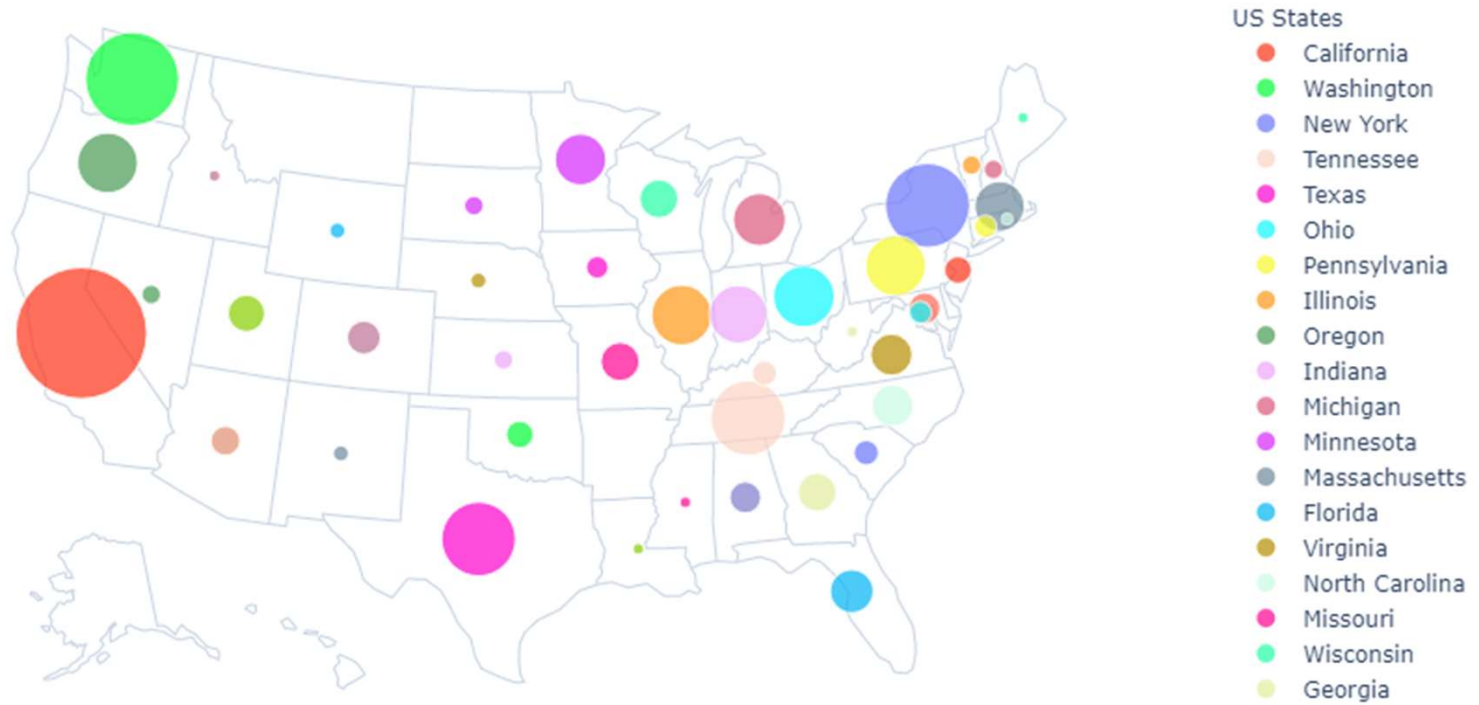
2. How is the distribution of people in doing the survey in the states of US?

The Distribution of People in doing Survey from the US states

Done Using Tableau

07-04-2021
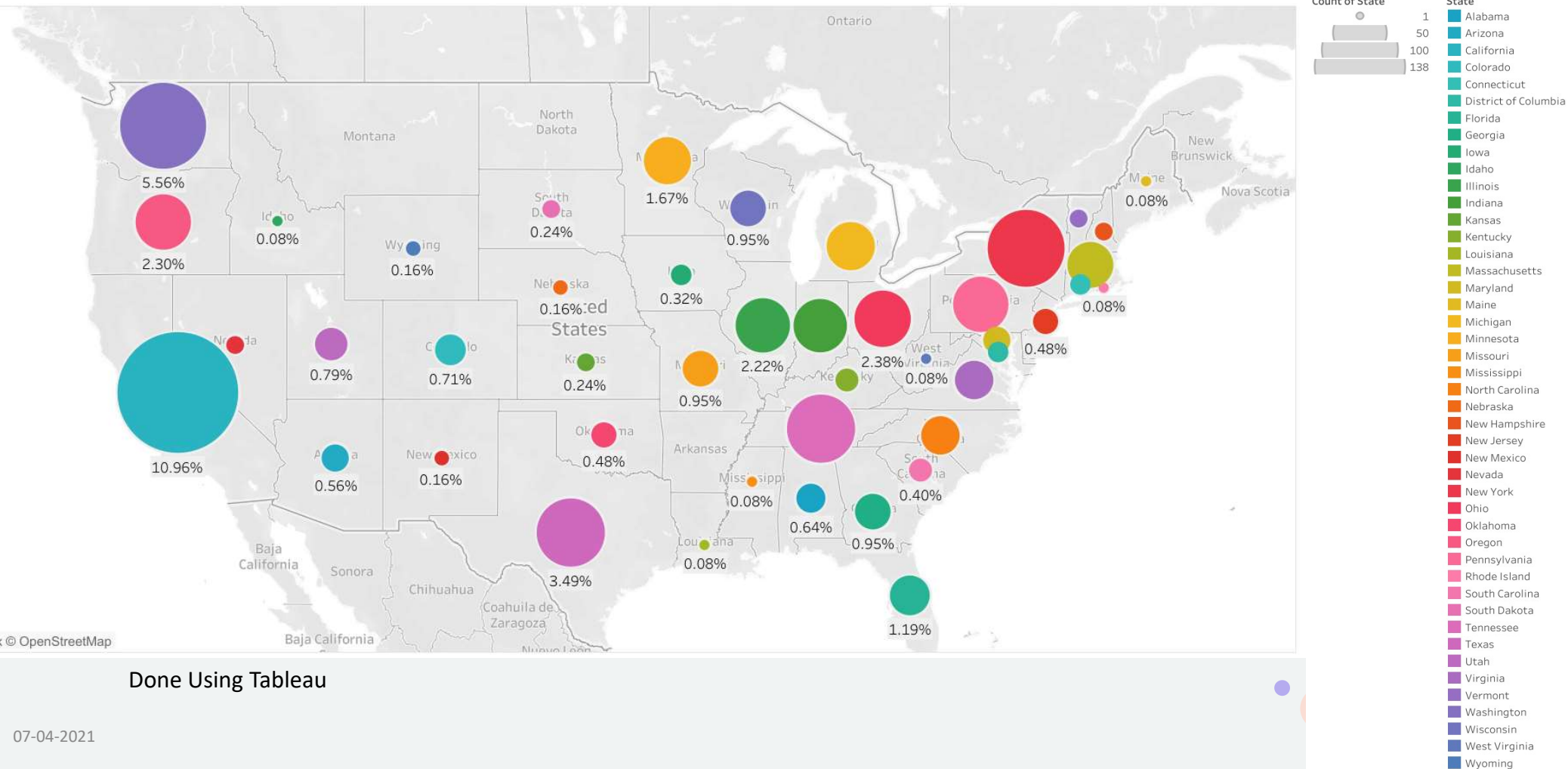
The Distribution of People in doing Survey from the states of US

Done Using Plotly library

2. Inferences

- We can see that California (CA) has the most number of people participating in the survey with more than 10% of the people participating in US

- After California, Washington(WA) comes second by contributing more than 5% people participation

- New York (NY), Tennessee (TN) and Texas(TX) have all have more than 3% people participation but less than 5%

- Oregon (OR), Illinois(IN), Pennsylvania (PA), Indiana (IN) and Ohio (OH) all have people participation between 2-3%

- The rest of the states marked contribute less than 2% from the whole people participation in US.

- Some states don't even contribute anything to the survey!

- From this we can infer that the survey is mostly done in places where there are large important cities and popular places. So not so popular states don't have their people doing the survey!

3. How does Family History of Mental Illness known through Different Ages of People?

Family History of Mental Illness known through Different Ages of People
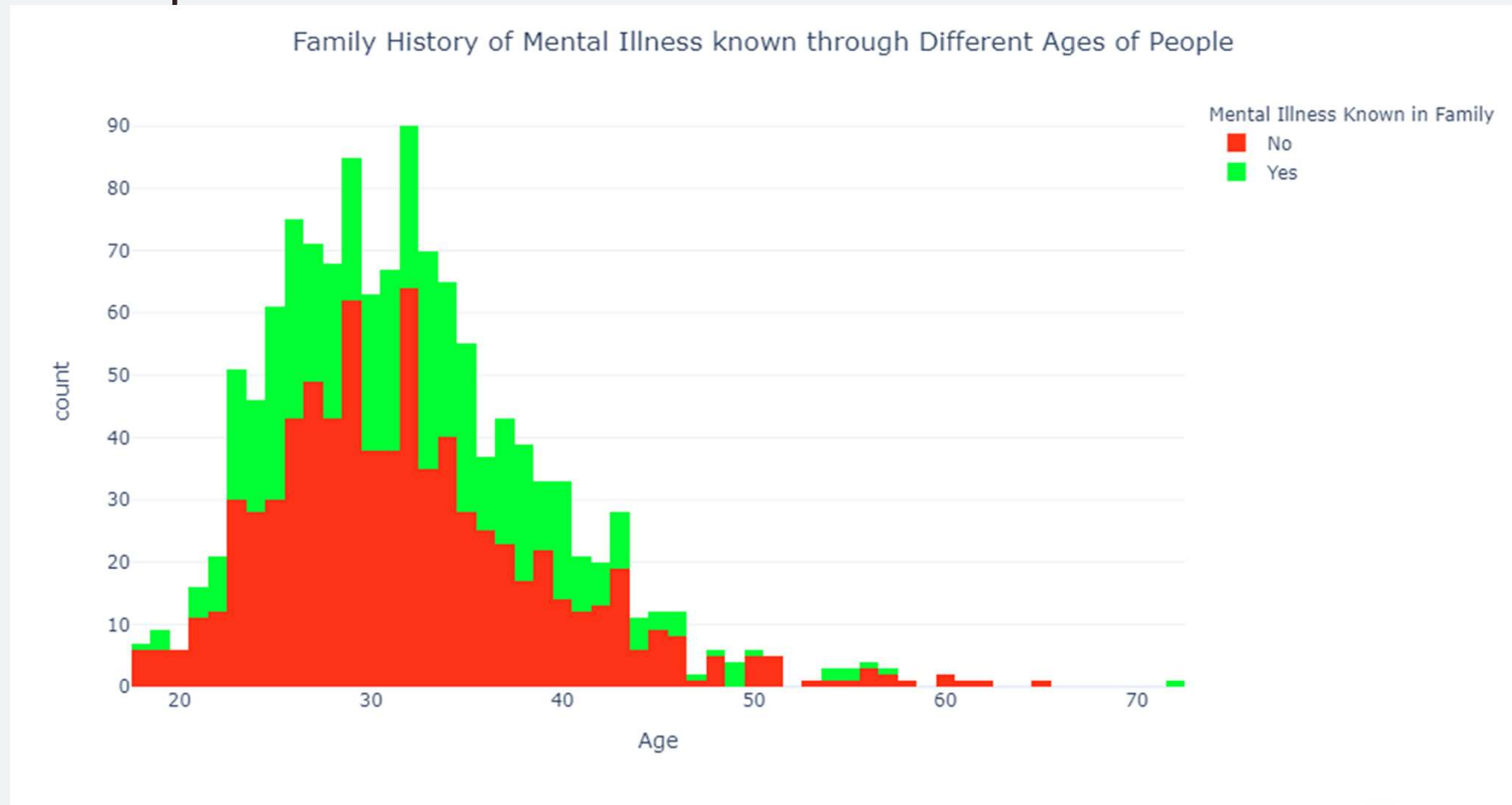
3. Inferences

- Here, we can see that most people who have done the survey are from ages 25 to 35 where the highest peak is around 32-33 .

- As we go away from the highest peak, we can see that the values further away are rarer. So people from ages below 20 and people from ages above 50 have less number of people participating in the survey.

- Additionally, we can also see how people have know about their family history. There is a great deal of overlapping of values for both people who have family history of mental health issues and those who don't. So all ages have aware of Mental Health issues faced by their members of families

- The distribution of people who have family history of mental health issues has higher and wider distribution than people who have no family history of mental health issues.

4. How do people who have sought treatment for medical health condition feel about it interfering with their work?

Opinions of People on Work Interference after Seeking Treatment
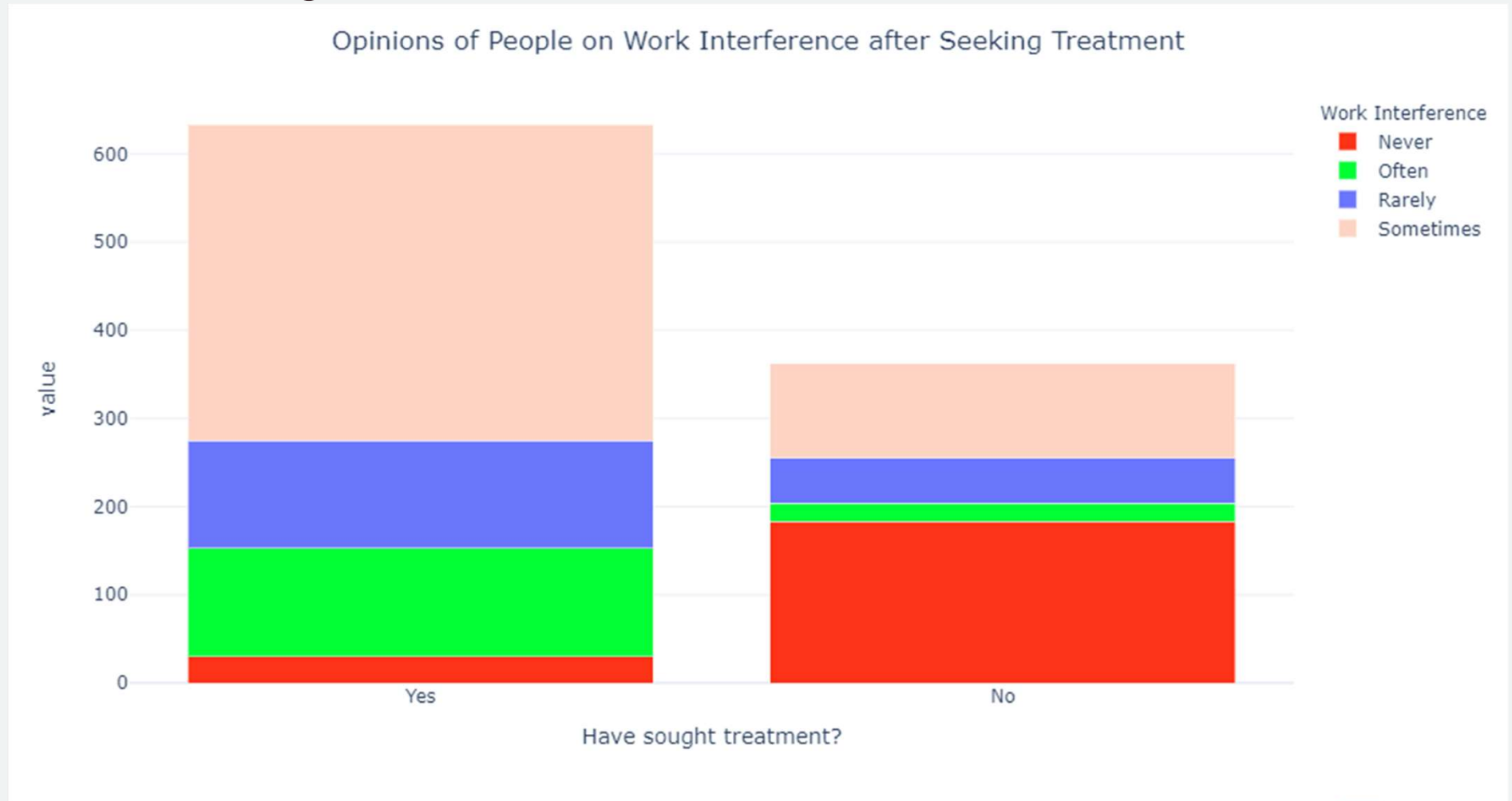
4. Inferences

- We can see that majority of the people have undergone treatment for some Mental Health Issue.

- The people who have taken treatment show that their mental health issue really interferes them in their work.

- By the ratio of the sizes of stacks for people who have sought treatment , we can see that total count of people facing no interference ('Never') was the least effective while people who feel their work is disturbed sometimes ('sometimes') are the most effective of them all.

- On the contrary, if we see the sizes of stacks of people who haven't sought treatment, we can see that most people support the fact of no interference with work('never') than the fact that it may interfere often, sometimes, or rarely.

- Significantly we can say that people who have taken treatment have sometimes felt their mental health issue interfering with their work. So it rules every other possibility since its stack size is bigger than any others.

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5. Does working remotely almost half of the time disturbs an employee's work who is diagnosed with a mental health issue?
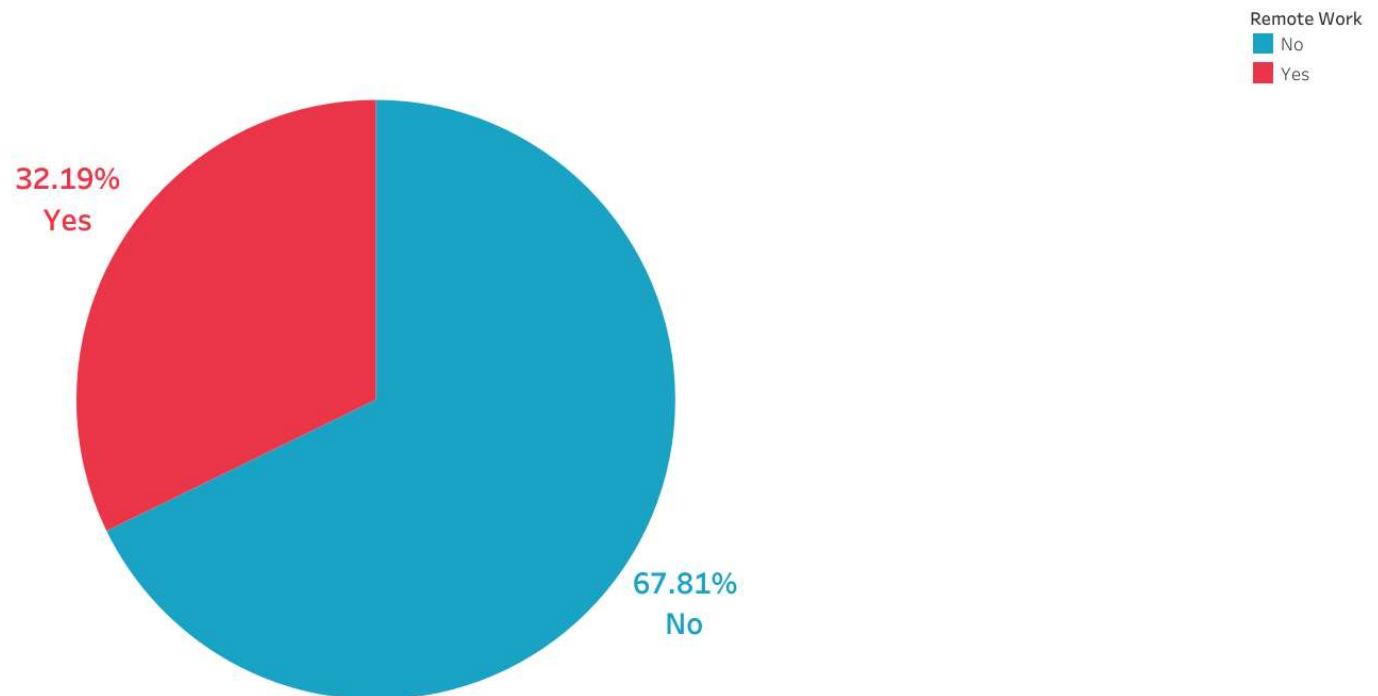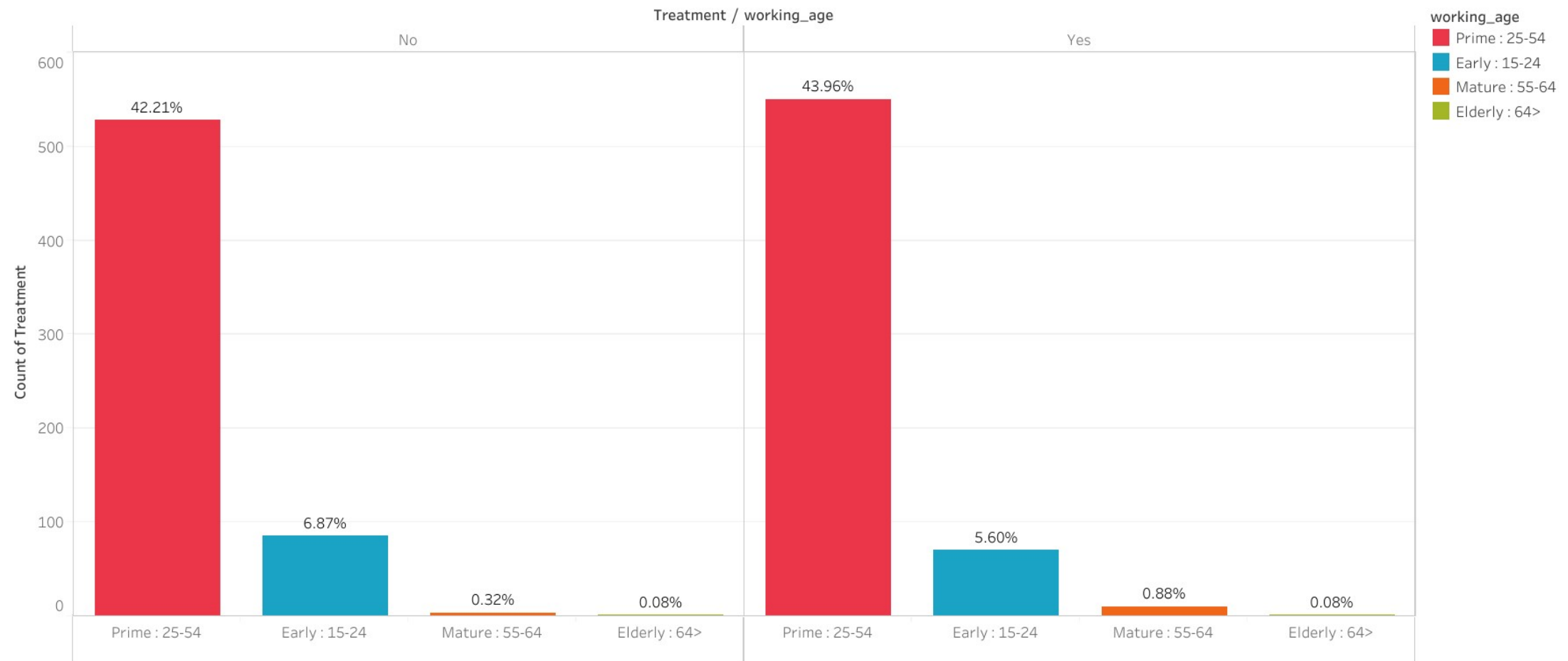
5. Inferences

- From the pie chart we can understand that an employee who is working remotely for 50% of the time, doesn't face issues with his/her mental health issues in his/her work for most of the time (more than 60%).

- Only less than 34% of people feel that it may disturb in their work.

- So People who have mental health issues could most probably have their work done remotely so as to avoid disturbances in their work.

6. Visualize the number of people at each age group who have sought for medical treatment for a mental health issue.

People at each Age Group who have/haven't sought Treatment

6. Inferences

- The total people are divided into different working age groups: children, early, prime, mature and elderly.

- We can see that prime working age group contributes more in the survey.

- From this graph, we can understand that people who are in their prime working age are the ones who mostly undergo treatment for a mental health issue and they are also the one who haven't undergone treatment.

- The heights of bins decreases with increases in age group. We can conclude that this is because of people not working in a tech industry as they get older.

- Elderly age group don't contribute more in the survey. So they are the least in considering taking treatment since they majority of them won't be working at that age.

7. Is there a correlation between the company's support for helping those with mental health conditions and workers' willingness to reach out for help?

Correlation between Employer providing Help & Employee reaching out to Supervisor

7. Inferences

- From this heat map, we can see that employees who are provided with help do prefer to seek help from their supervisor most of the time (100 -140) and least prefer to not ask when provided with help (=<60).

- But while the employer doesn't provide help, most people still seek help from their supervisor (>240) and also most don't (200-220)

- An average amount of people are not aware if their employer is providing help or not for Mental Health Issue. (No awareness)

8. How does the features of how and where a person works influence their frequency to take leave for a mental health issue?

Different Features Influencing The frequency to Take Leave
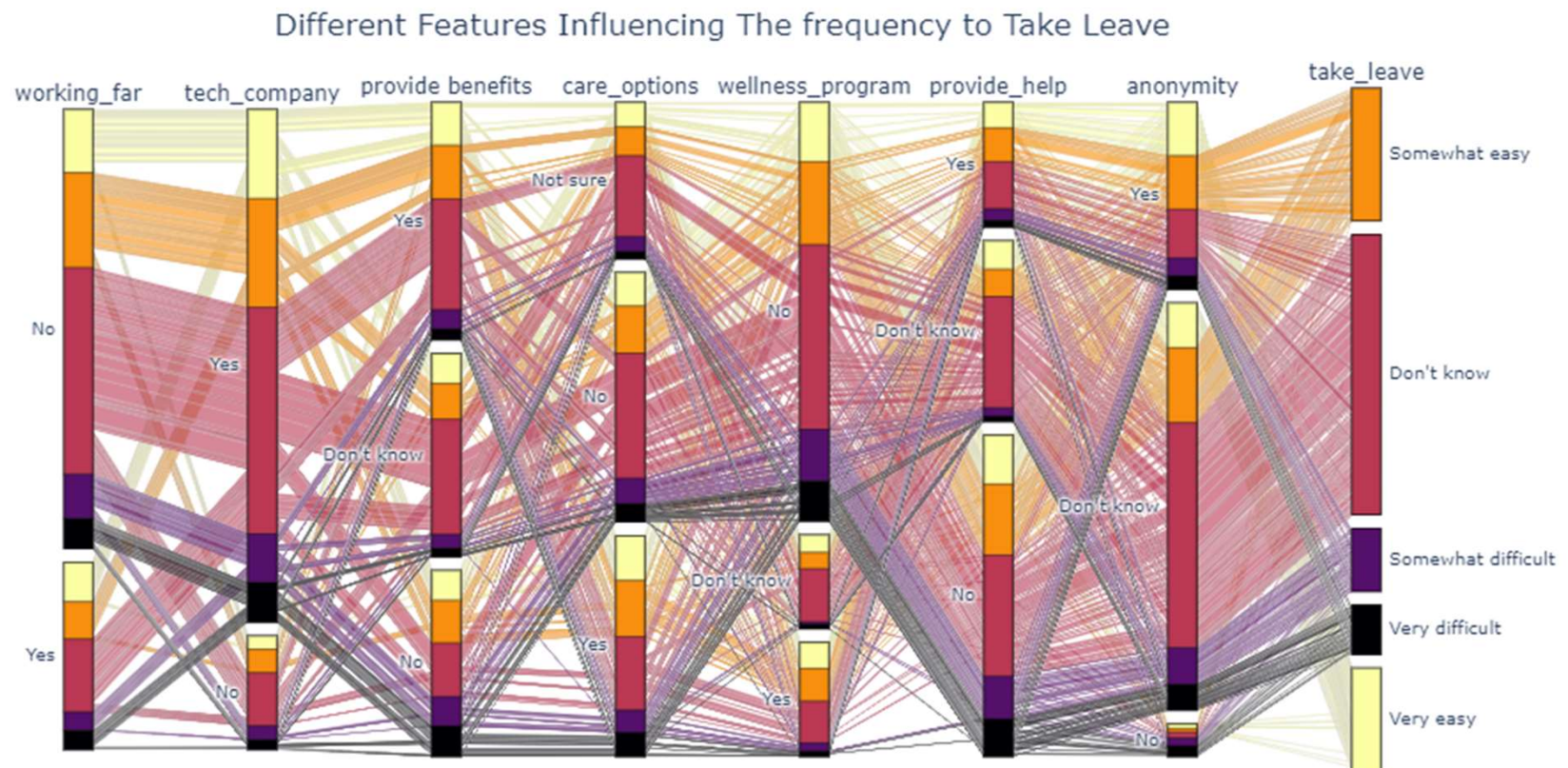
8. Inferences

- More Employees find it somewhat easy to take leave for mental health issue when they are provided with help and resources, protection of anonymity, benefits and if they don't work far from a tech company.

- Most of the employees who work at a tech company but don't get provided with help, benefits of any sort and also there is no protection with anonymity, aren't aware of taking leave for a mental health issue.(no sufficient awareness, help, and benefits provided by company for the employers)

- But overall only some people find it difficult to take leave mostly because they are not provided help, benefits, resources nor wellness programs by the company.

9. Are smaller or larger companies more likely to provide people with mental health conditions?

Size of companies compared to them providing Health Care benefits
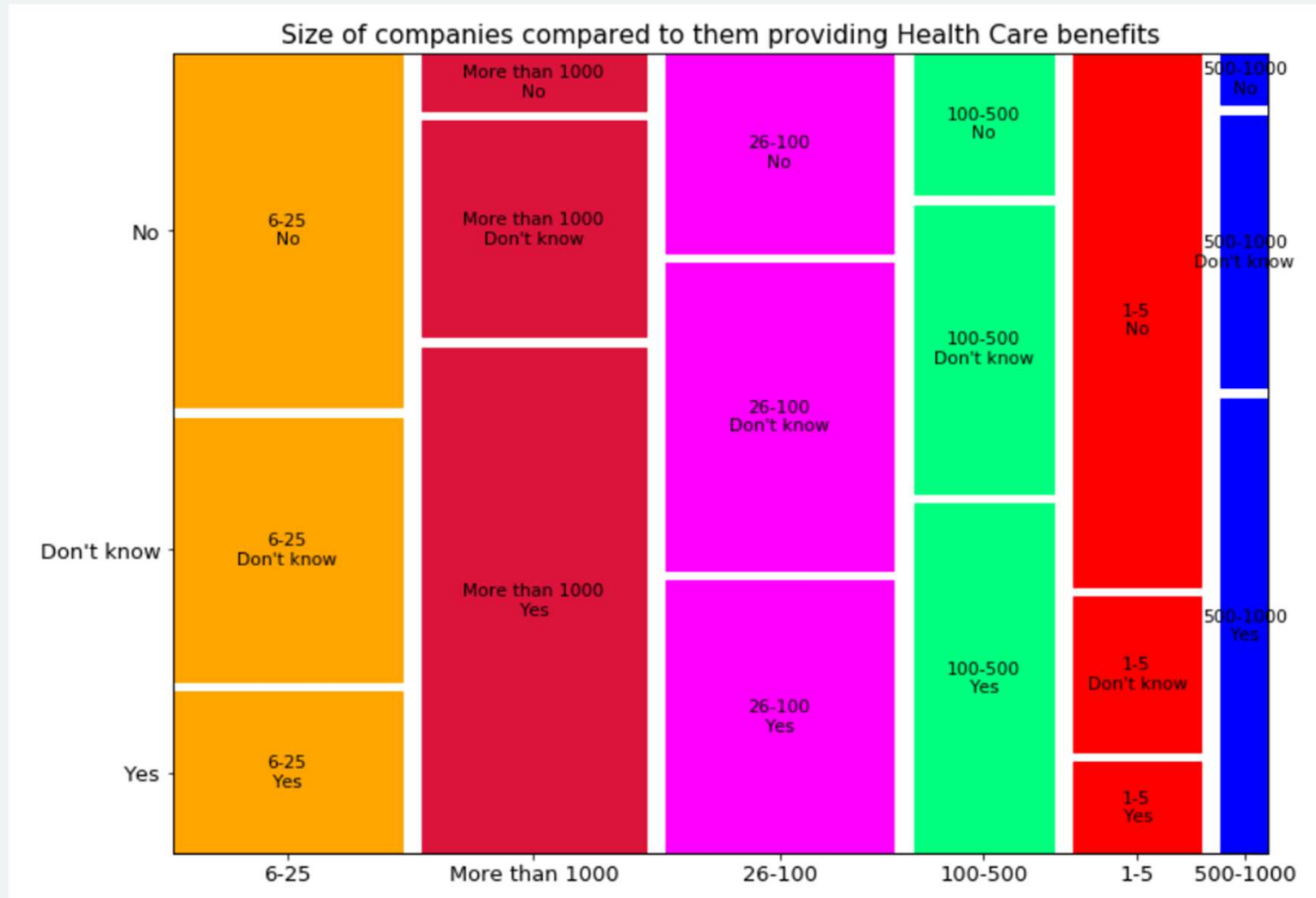
9. Inferences

- We can see that companies with a lot of people (more than 100, 500-1000, more than 1000) mostly provide health care benefits to their employers

- Companies with lower amount of people (1-25 people) mostly don't provide their employers with mental health care benefits to their employers

10. How well does a tech or non-tech company provide its employees with mental health care options and its awareness?

Tech/Non-Tech Company providing Care options and Wellness Programs
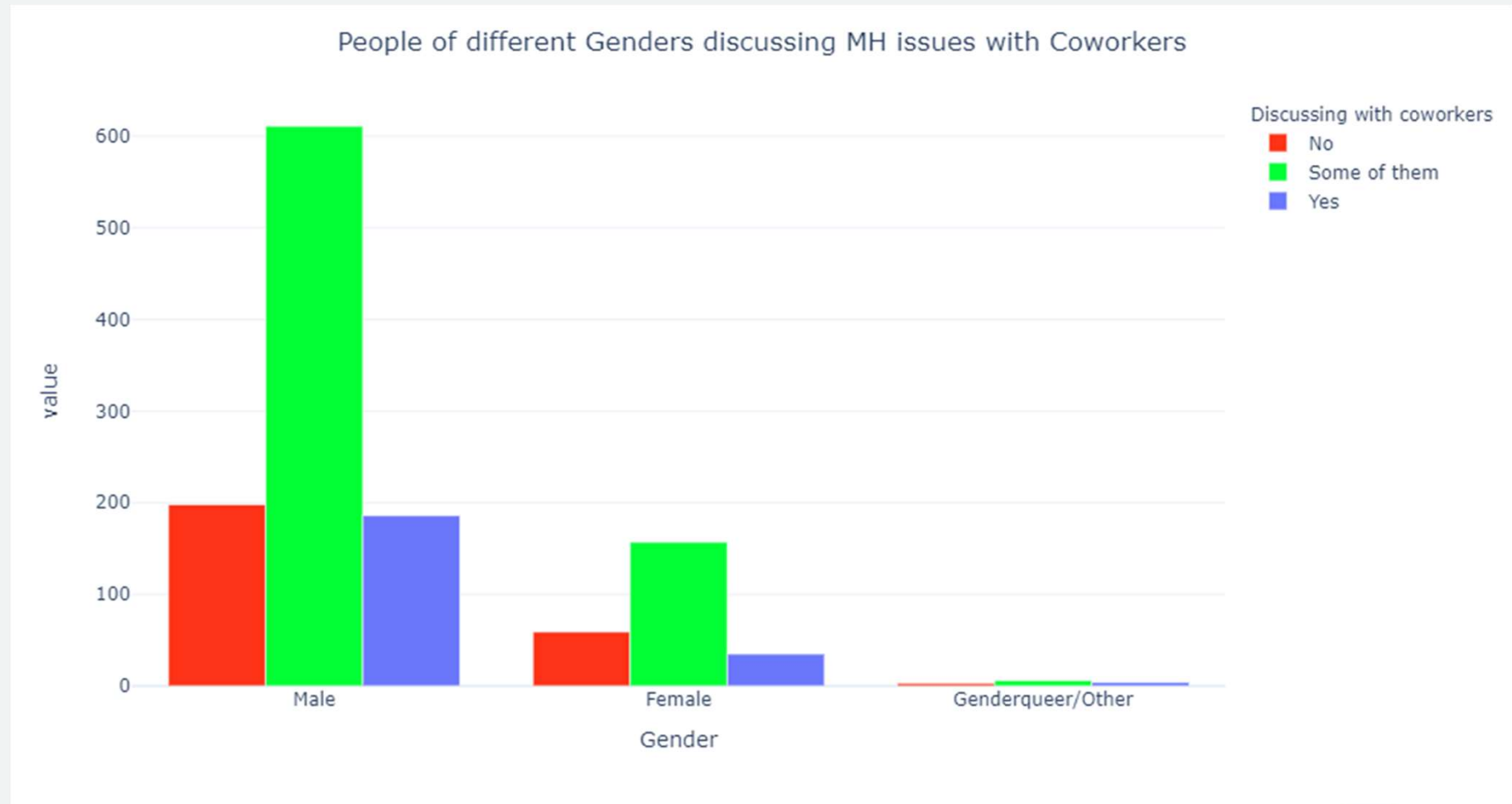
10. Inferences

- We can see that employees mostly working in a tech company don't get provided with wellness program and also don't get that provided with care options.

- But the employees who get wellness programs in the tech company mostly receive care options too.

- The same exact scenario can be seen in non-tech companies.

- There are more people working in tech companies rather than non-tech companies

11. How willing are people of particular gender to share their mental health issue with their colleagues?

People of different Genders discussing MH issues with Coworkers
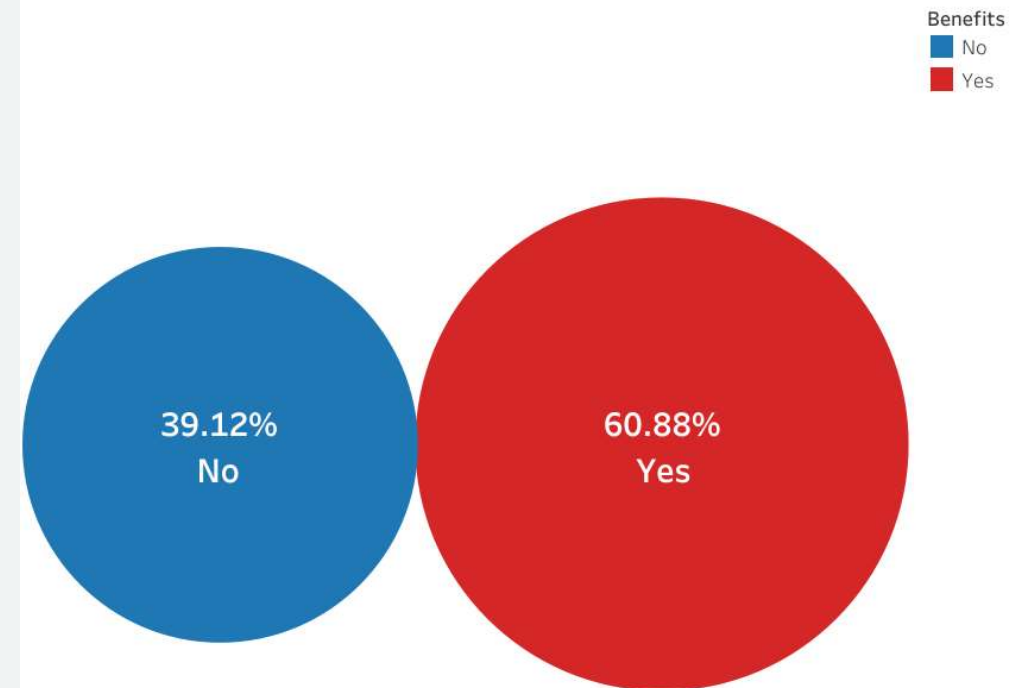
11. Inferences

- Male group dominates the whole group of people who have done the survey.

- A great number of people belonging to male gender prefer to only talk to some of their coworkers about their mental health issues while very few of them prefer to not share about it and little are open about talking it out with their coworkers.

- Female group contributes very less to the survey but we can see that the same pattern of the male group follows

12. Does Employer providing health benefits agree with anonymity protection?

12. Inferences:

From this graph, we can instantly understand that most companies who provide health benefits are more than 60% positive about providing anonymity when the employee is taking treatment for a mental health issue.

Does Employer providing health benefits agree with anonymity protection?
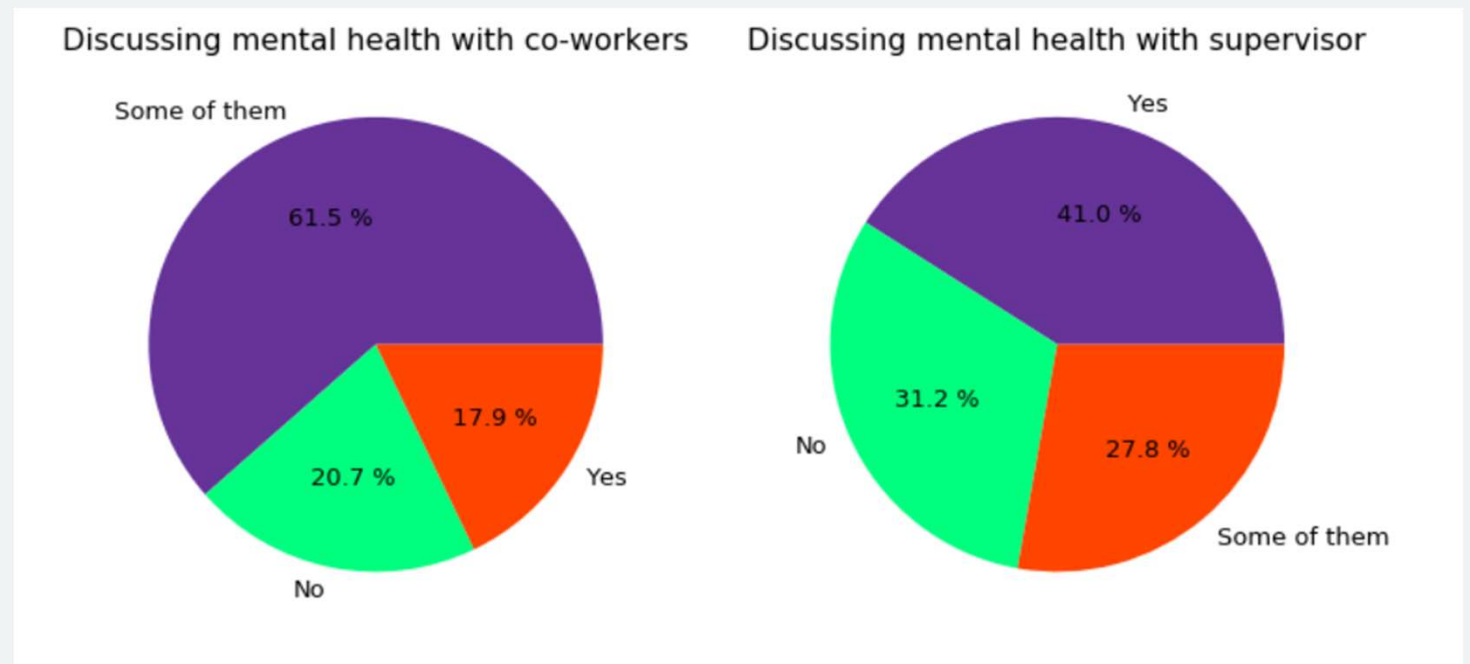
Benefits
- No
- Yes

39.12%
No

60.88%
Yes

# 13. How does discussing mental health with co-workers differ from discussing with the supervisor?

13. Inferences:

Employees mostly are comfortable with sharing their mental health issues only with some of their coworkers and all their supervisors.

While 30% don't prefer to share with their supervisors and 20% don't prefer to share with their coworkers.

Discussing mental health with co-workers
- Some of them: 61.5 %
- Yes: 17.9 %
- No: 20.7 %

Discussing mental health with supervisor
- Yes: 41.0 %
- Some of them: 27.8 %
- No: 31.2 %

14. How do people differ in talking about mental and physical health issues to a potential employer in an interview?
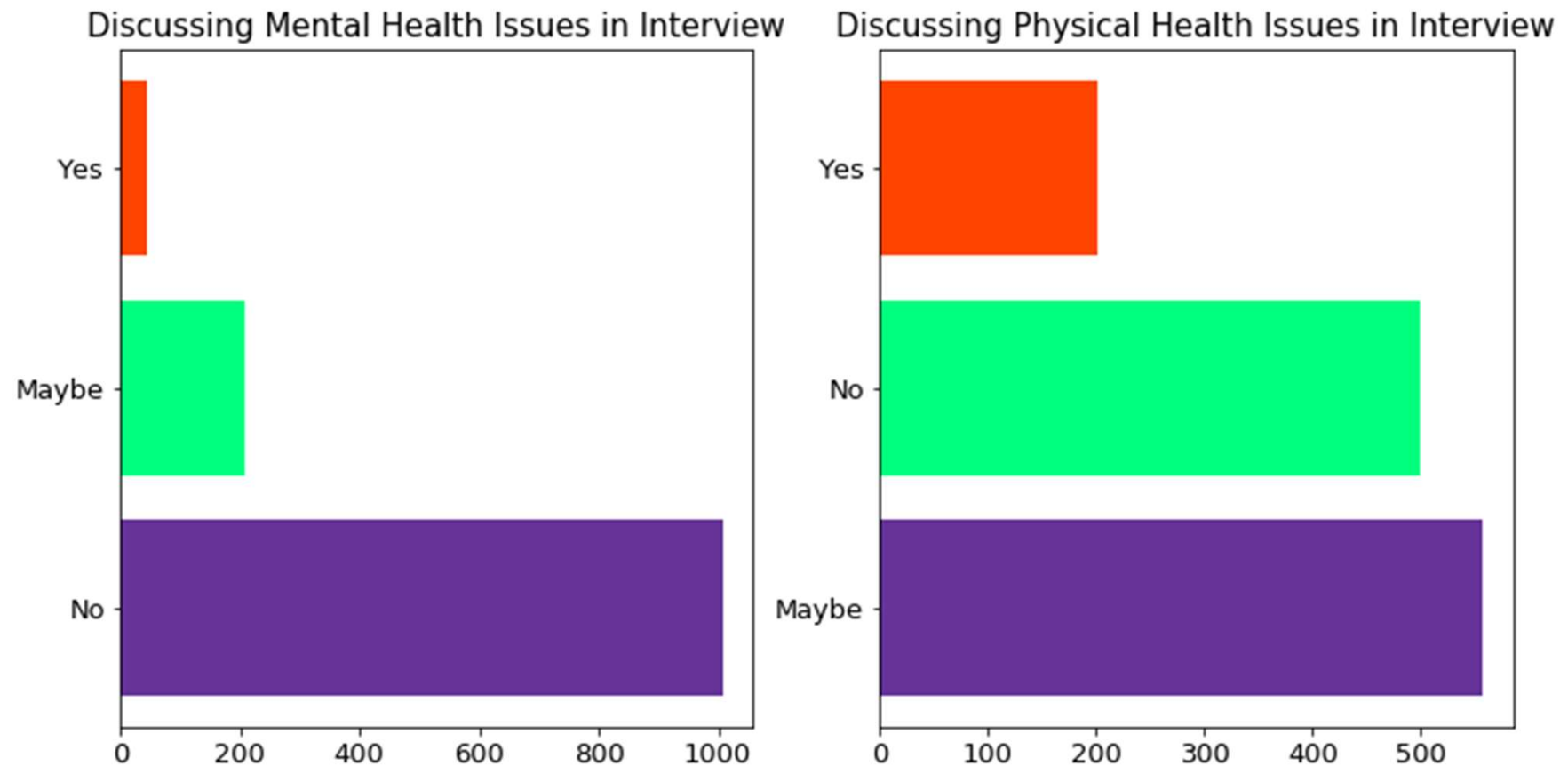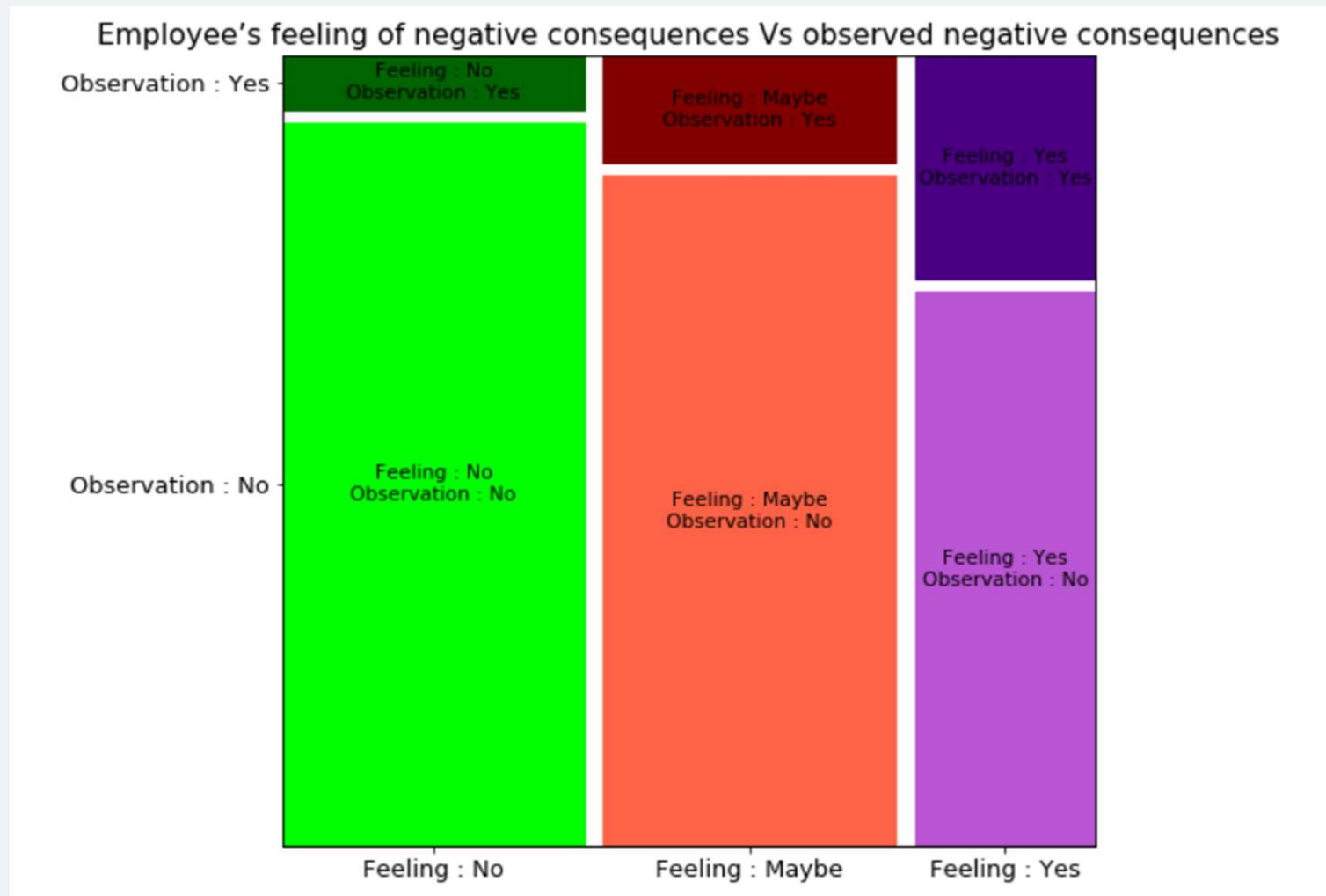
14. Inferences

- Mostly people do not prefer to mention about their mental health issue in their interview but people consider that maybe they would be able to mention about their physical health issue in their interview.

- Less number of people consider it a option to share their mental health issue in a interview and very very few totally agree to discussing it.

- When considering the possibility of people discussing their health issue, most people agree for a physical than discussing for a mental health issue.

15. How is the relation between employee's feeling of negative consequences and observed negative consequences of co-workers regarding mental health conditions?

Employee's feeling of negative consequences Vs observed negative consequences

15. Inferences

- Employees have greatly observed no negative consequences in work place

- Employee's notion of thinking that mental health doesn't have negative consequences is largely proved right by their observation of no negative consequences in their work place.(Observation:No, Feeling:No)

- Also employees who have feeling that it would great a negative consequences have also mostly observed a negative consequence in their work place. (Observation:Yes, Feeling:Yes)

Conclusion

- Mental Health is the determining factor to how one individual handles stress, relates to others, and makes choices.

- In this ever-growing tech industry, Mental Health is one of the factors that needs to be prioritized.

- Awareness of Mental Health needs to be done mainly among the working people communities.

- Tech Company must compulsorily provide benefits, care options, wellness programs and anonymity of people while dealing with mental health issues.

- Companies should make their employees feel safe and comfortable in their working places despite having some mental health issues.

- This would ensure safety, healthiness and more productivity among employees in the tech industries

Thank You!