

## > Predicting Mental Health Treatment in Tech Industry

### Exploratory Data Analysis

#### Harsh | Data Science Project

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## ✓ Problem Understanding

### Background

The **technology industry** is known for its **fast-paced environment**, **long working hours**, and **high-performance expectations**. While **innovation** and **growth** are key strengths of this sector, these conditions may also contribute to increased **stress**, **burnout**, and **mental health challenges** among employees.

### Objective

The objective of this project is to explore **mental health trends** among **technology professionals** and identify **workplace** and **demographic factors** associated with mental health conditions and **treatment-seeking behavior**.

This analysis aims to uncover patterns related to:

- **Remote work**
- **Company support**
- **Age**
- **Gender**
- **Organizational policies**

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### Key Analytical Questions

1. What proportion of tech employees report experiencing **mental health issues**?
2. Does **remote work** influence the likelihood of reporting mental health challenges?
3. How does **company size** and availability of **mental health benefits** impact treatment-seeking behavior?

### Business / Organizational Impact

The insights from this analysis can help:

- Organizations design better **mental health policies**
- HR teams create more **supportive work environments**
- Leadership understand key **risk factors**
- Develop **predictive systems** to proactively identify employees who may need support

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### Dataset Overview

The dataset consists of **1,259 technology professionals** and includes **27 features** covering demographic details, workplace environment, and mental health indicators.

### Key Variables

- **Age** – Respondent's age
- **Gender** – Gender identity
- **Country** – Location of employment
- **family\_history** – Family history of mental illness
- **work\_interfere** – Impact of mental health on work performance
- **benefits** – Availability of mental health benefits
- **leave** – Ease of taking mental health leave
- **treatment (Target Variable)** – Whether the employee has sought mental health treatment (Yes/No)

The dataset provides both personal and organizational factors, making it suitable for behavioral and predictive analysis.

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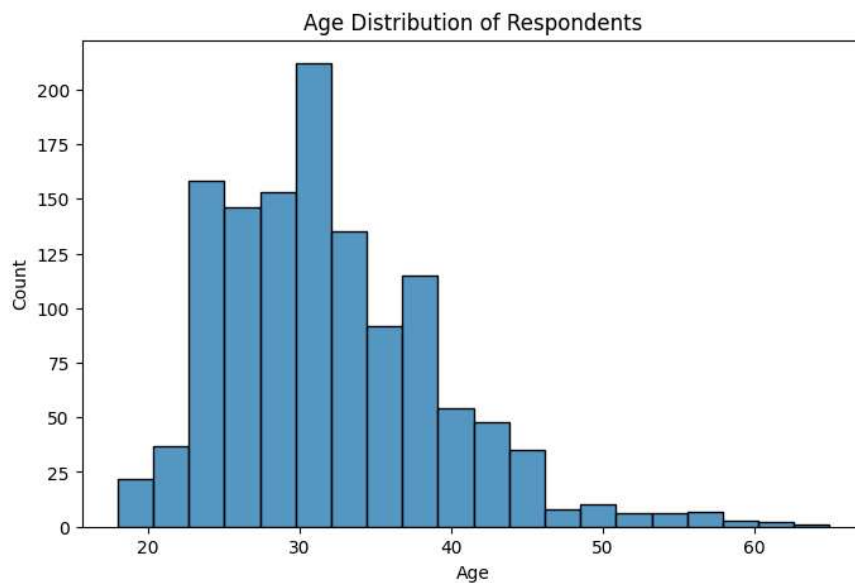
## EDA Summary

- **Mental health treatment is common in tech**  
→ Indicates mental wellness is a widespread workforce issue.
  - **Family history is the strongest predictor**  
→ Personal risk factors significantly influence treatment behavior.
  - **Work interference increases likelihood of treatment**  
→ Mental health directly impacts productivity and job performance.
  - **Company benefits strongly influence help-seeking**  
→ Organizational support reduces barriers to accessing care.
  - **Leave flexibility encourages treatment**  
→ Supportive policies improve psychological safety and retention.
  - **Small companies may lack structured mental health support**  
→ Startups may need to proactively build wellness frameworks.
  - **Organizational culture matters more than location**  
→ Workplace environment plays a greater role than geography in mental health outcomes.
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### ✖ Exploratory Data Analysis

### ✖ Univariate Analysis

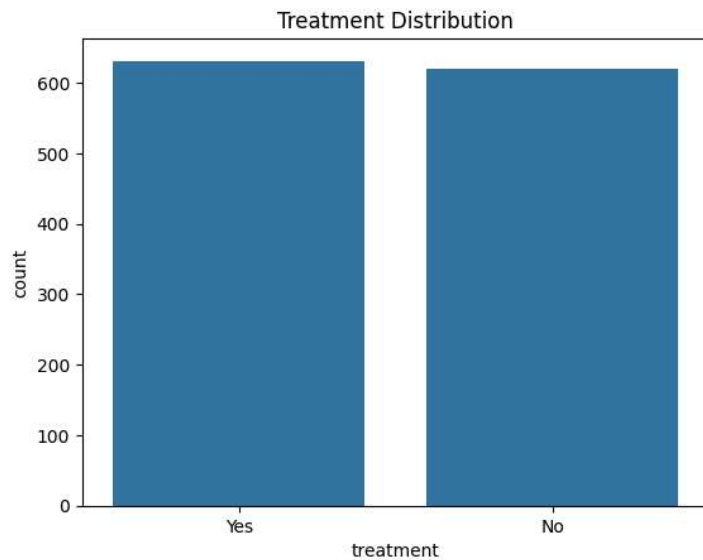
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### ✖ Why it matters

- Majority of employees are between 25–35 years.
- Tech industry is dominated by young professionals.
- Mental health strategies should target early-career employees.

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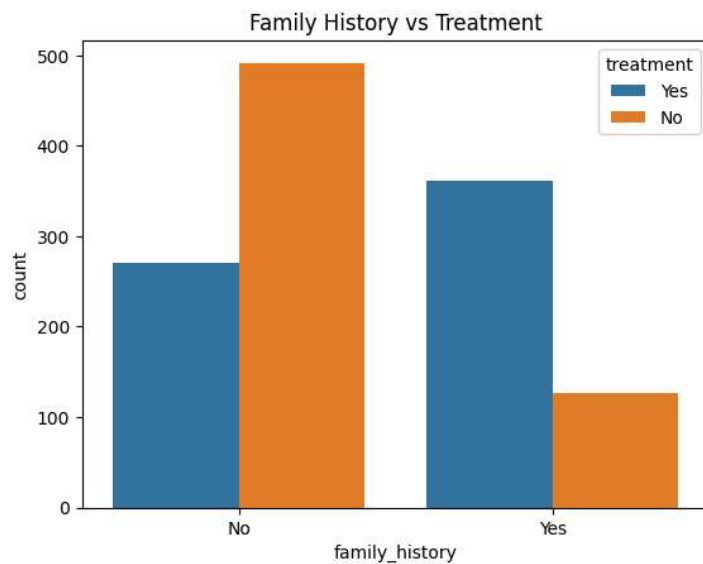
```
treatment
Yes    50.48
No     49.52
Name: proportion, dtype: float64
```

## Key Insights

- Nearly 50% of employees have sought treatment.
- Mental health issues are common in the tech industry.
- The dataset is balanced, which is good for classification modeling.

## ▼ Bivariate Analysis

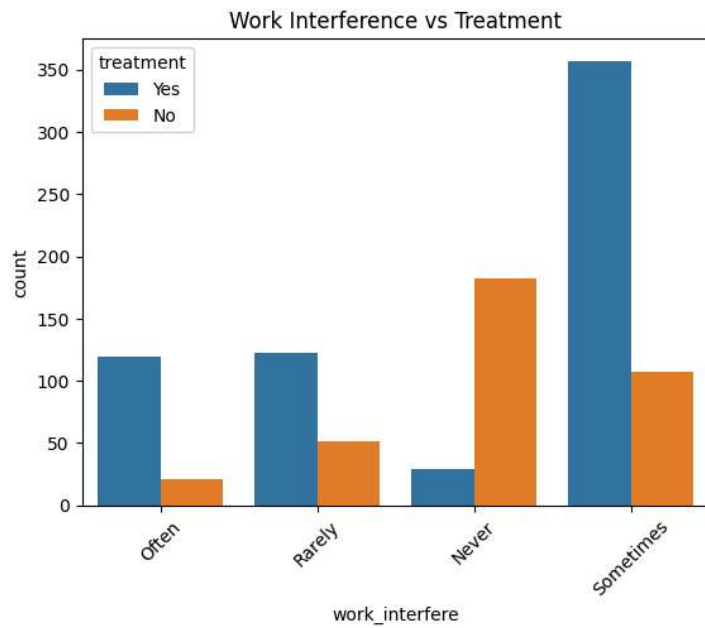
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## ▼ Why it matters

- Employees with family history of mental illness are much more likely to seek treatment.
- Family background is one of the strongest predictors.
- Indicates genetic and environmental influence.

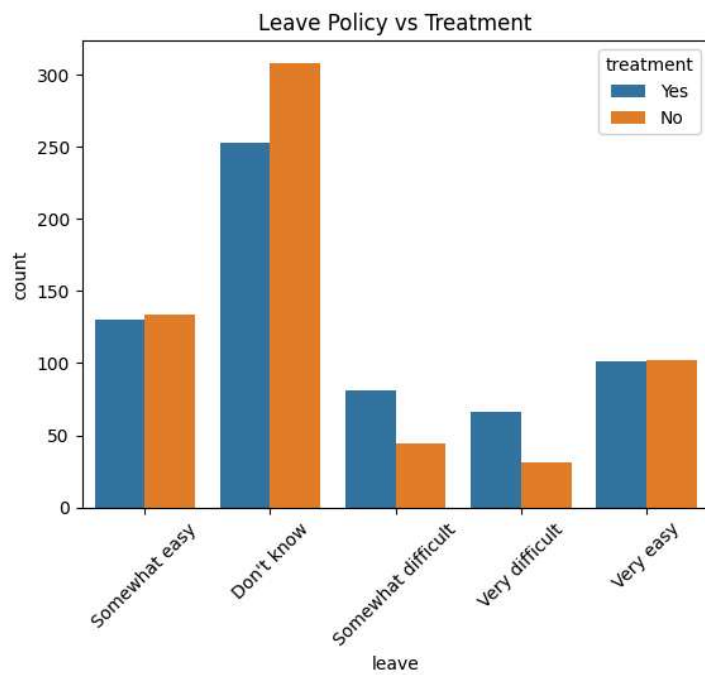
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#### Key Insights

- Employees whose mental health often interferes with work show the highest treatment rates.
- Clear positive relationship.
- Work performance impact pushes individuals to seek help.

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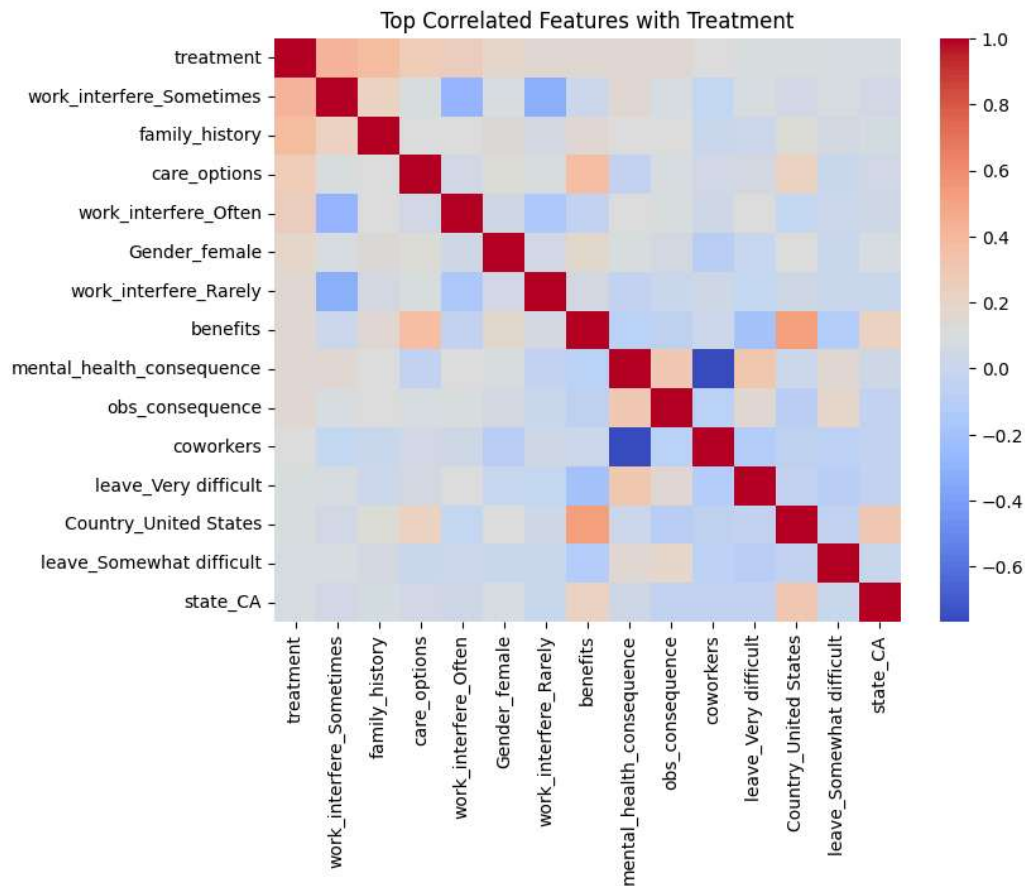
#### Key Insights

- Employees who find it easy to take mental health leave are more likely to seek treatment.
- Supportive policies increase psychological safety.
- Strict leave policies may discourage treatment.

#### Multivariate Analysis

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## Why it matters

- Strong positive correlation:

```
family_history ↔ treatment  
work_interfere ↔ treatment  
benefits ↔ seek_help
```

- Mental health treatment depends on both personal + workplace factors.

## Business Conclusion

Mental health in tech is not just a personal issue — it is a **business performance driver**.

Organizations that invest in mental health support systems, flexible policies, and stigma-free culture are more likely to see:

- Higher productivity
- Lower attrition
- Stronger employer branding
- Improved long-term workforce sustainability