Mental Health in Tech Survey - EDA Report

Objective of the Project

The goal of this project is to explore and analyze the mental health conditions and perceptions in the tech industry using real survey data. It aims to answer key questions related to mental health awareness, treatment, and employer support. The focus is to uncover trends that can help improve workplace policies and attitudes regarding mental wellness.

About the Dataset

- Source: 2014 Mental Health in Tech Survey by Open Sourcing Mental Illness.
- Total Rows: 1259 (before cleaning)
- Main Columns:
  - Demographics: Age, Gender, Country, State
  - Work Info: self_employed, no_employees, remote_work, tech_company
  - Mental Health: treatment, family_history, work_interfere, mental_health_consequence, phys_health_consequence
  - Employer Support: benefits, wellness_program, seek_help, anonymity, leave

2. Data Cleaning Summary

Performed:

- Removed ages below 18 and above 65
- Normalized gender entries using keyword mapping (e.g., "cis male", "man" → "Male")
- Removed irrelevant columns like Timestamp and comments
- Converted text data to consistent lowercase where necessary

This ensured valid analysis by reducing noise from inconsistent entries.

Chart 1: Age Distribution

Why: To understand age spread in the survey

Insight: Most participants were between 25 and 35, indicating younger professionals are more engaged.

Chart 2: Gender Distribution

Why: To assess gender diversity

Insight: Males dominated the survey, but a significant portion of females and gender-diverse individuals responded too.

Chart 3: Treatment Distribution

Why: To see how many sought mental health treatment

Insight: A large number of participants reported having received treatment, indicating growing openness or mental health need.

Chart 4: Gender vs Treatment

Why: To check if treatment varies by gender

Insight: Females and transgender individuals sought treatment more often than males.

Chart 5: Age vs Treatment (Boxplot)

Why: To understand if age affects treatment-seeking

Insight: Younger individuals are slightly more likely to seek treatment.

Chart 6: Family History vs Treatment

Why: Family history may influence treatment

Insight: Strong correlation between having a family history and receiving treatment.

Chart 7: Company Size vs Treatment

Why: Assess support across different company sizes

Insight: Large companies showed slightly better treatment engagement.

Chart 8: Stacked Bar - Treatment by Country (Top 10)

Why: Compare treatment rates across top countries

Insight: Treatment ratios vary, with US showing higher openness compared to others.

Chart 9: Work Interfere vs Treatment

Why: Understand if those more affected are more likely to seek help

Insight: Those who said work is affected often are more likely to seek treatment.

Chart 10: Company Size vs Treatment

Why: Assess support across different company sizes

Insight: Large companies showed slightly better treatment engagement.

Chart 11: Remote Work vs Treatment

Why: To see if working from home influences mental health

Insight: No strong difference, but those working remotely seemed more open to treatment.

Questions to Explore

Question	Method Used / Outcome
1. How does mental health illness frequency vary by location?	Grouped treatment ratio by Country. Found high variance among countries like US, UK, Canada.
2. What are the strongest predictors of mental health treatment?	Bivariate analysis with family_history, Gender, and no_employees. Family history is a strong predictor.
3. Does company size affect support and treatment?	Yes. Small companies often lack mental health support; large companies do better.
4. Do age or gender influence seeking help?	Yes. Younger people (< 30) and non-male genders seek help more often.
5. Does awareness (benefits, wellness programs, etc.) influence seeking help?	Can be inferred by linking benefits, seek_help, and treatment. Strong correlation seen in large firms.

Key Findings

- Age Distribution: Most respondents were in the 25–35 range.
- Gender Gap: Females and transgender individuals reported and sought treatment more than males.
- Remote Work: Didn't show strong correlation with mental health condition reporting.
- Company Size: Medium-to-large companies provided better support. Small companies had fewer resources.
- Mental vs Physical Health Perception: Many employees feel physical health is treated more seriously.
- Family History: Respondents with family history of mental illness more likely to seek treatment.

Recommendations

- Employers should normalize mental health conversations.
- Introduce anonymous support systems to help employees without stigma.
- Incorporate mental wellness into employee programs like workshops and leave policies.
- More efforts to educate employees about available mental health resources.

Tools Used

Python (Pandas, Seaborn, Matplotlib)
Jupyter Notebook for EDA and Visualization

Deliverables

- Cleaned and analyzed dataset (cleaned_survey.csv)
- Full Python EDA notebook (mental_health_eda.ipynb)
- Optional: Presentation video or PPT based on this report

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