THE ADA PROJECT

TEAM DELTA - DATA TRACK

REPORT

ON

SQL ANALYSIS

OF

MENTAL HEALTH SURVEY

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1.0 Introduction

This project is basically centered on Mental Health Analysis. A dataset was provided for Structural Query Language Analysis to provide and ascertain four mental health insights with respect to annual survey questions asked and answers provided.

2.0 Objective of This Project

The primary purpose of this project is to use our general knowledge and understanding of the Structured Query Language (SQL) to analyze database files and communicate insights from such analysis. The project features the use of SQLite and a data set called "Mental Health Analysis Survey" Git Hub, ClickUp, and Google drive.

2.1 Source Data

The data used is from Open Source Mental Illness (OSMI) using survey data from years 2014, 2016, 2017, 2018 and 2019. Each survey measures the attitudes towards mental health. The file can be accessed via this link: https://www.kaggle.com/datasets/anth73

10/mental-health-in-the-tech-industry

3.0 Insights From The Dataset
To gain an insight into the database, several queries were run using the Structured Query Language (SQL). The queries are stated and the outputs are displayed in tables.

3.1 Distribution of The participants

First, we start by finding out the total number of distinct participants in the survey over the years , their geographical location, average age, gender and job.

3.1.1 .Total number of participants
query 1:

SELECT COUNT (DISTINCT UserID) FROM Answer

Output: 4218

3.1.2 Locations of People Who Participated in The Survey

Query2:
SELECT AnswerText, COUNT (UserID) FROM answer WHERE questionid=3
GROUP BY AnswerText
ORDER BY COUNT (UserID) DESC ;

Output:

United States of America	1853
United States	751
United Kingdom	482
Canada	199
Germany	136
Netherlands	98
Australia	73
Ireland	51
France	51
India	50
Brazil	37
Sweden	29
Switzerland	28
Spain	26
New Zealand	24
Portugal	23
Poland	21
Italy	19
Belgium	17

South Africa	16
Russia	16
Finland	13
Bulgaria	13
Norway	12
Mexico	12
Austria	10
Romania	9
Japan	9
Israel	9
Denmark	9
Pakistan	7
Greece	7
Czech Republic	6
Colombia	6
Turkey	5
Singapore	5
Estonia	5
Serbia	4
Hungary	4
Croatia	4
Argentina	4
Ukraine	3

Indonesia	3
Chile	3
Bosnia and Herzegovina	3
Bangladesh	3
Afghanistan	3
Uruguay	2
Slovakia	2
Other	2
Nigeria	2
Lithuania	2
Latvia	2
Iceland	2
Hong Kong	2
Georgia	2
Costa Rica	2
China	2
Algeria	2
-1	2
Zimbabwe	1
Vietnam	1
Venezuela	1
Thailand	1
Taiwan	1

Slovenia	1
Saudi Arabia	1
Philippines	1
Moldova	1
Mauritius	1
Macedonia	1
Kenya	1
Jordan	1
Iran	1
Guatemala	1
Ghana	1
Ethiopia	1
Ecuador	1
Brunei	1
Belarus	1
Bahamas, The	1

3.1.3 Average Age of Participants
query 3:

SELECT AVG(AnswerText) from answer WHERE questionid=1

Output:

33.9153627311522

3.1.4 Gender of people who participated in the survey

Query 4:

SELECT AnswerText, COUNT (UserID) FROM answer WHERE questionid=2
GROUP BY AnswerText
ORDER BY COUNT (UserID) DESC ;
output:

Male	2830
Female	914
male	212
female	110
-1	24
Nonbinary	8
non-binary	6
Genderqueer	4
Agender	4
None	3
Non-binary	3
Genderfluid	3
agender	2
Trans woman	2
Trans man	2
Other	2
Non binary	2
Male-ish	2
Female (trans)	2

Enby	2
uhhhhhhhhh fem genderqueer?	1
transgender	1
trans woman	1
sometimes	1
something kinda male?	1
rr	1
queer/she/they	1
queer	1
p	1
ostensibly male, unsure what that really means	1
none of your business	1
none	1
nonbinary	1
non binary	1
nb masculine	1
mtf	1
masculino	1
male/androgynous	1
male leaning androgynous	1
male 9:1 female, roughly	1
human	1
genderqueer woman	1

genderqueer	1
genderfluid	1
gender non-conforming woman	1
fm	1
fluid	1
femmina	1
female-bodied; no feelings about gender	1
\-	1
Woman-identified	1
Unicorn	1
Transitioned, M2F	1
Transgender woman	1
Transfeminine	1
Trans-female	1
Trans non-binary/genderfluid	1
Trans female	1
She/her/they/them	1
SWM	1
Questioning	1
Queer	1
Other/Transfeminine	1
Ostensibly Male	1
Nonbinary/femme	1

Non-binary and gender fluid	1
Neuter	1
Nah	1
NB	1
Masculine	1
Male/genderqueer	1
Male (trans, FtM)	1
Male (or female, or both)	1
MALE	1
I have a penis	1
I am a Wookie	1
Human	1
Guy (-ish) ^_^	1
God King of the Valajar	1
Genderqueer/non-binary	1
Genderqueer demigirl	1
Genderflux demi-girl	1
Genderfluid (born female)	1
Fluid	1
Female/gender non-binary.	1
Female-ish	1
Female-identified	1
Female or Multi-Gender Femme	1

Female assigned at birth	1
Demiguy	1
Contextual	1
Cishet male	1
Bigender	1
Androgynous	1
Androgyne	1
All	1
Agender/genderfluid	1
Agender trans woman	1
AFAB	1
A little about you	1
43	1

3.1.5 Job Categorization of The Survey Participants

Responses to Questionid 13(Is your primary role within your company related to tech/IT?) were queried to find out the level number of people in iT/Tech related roles

query 5:

SELECT AnswerText, COUNT (UserID) FROM answer WHERE questionid=13
GROUP BY AnswerText
ORDER BY COUNT (UserID) DESC ;

Output:

1	1471
-1	1387
0	100

3.2. General Thoughts of People About their Mental Health Status
Queries were made to understand what people think about their mental health status. This is aimed at understanding their level of mental health awareness and consciousness.
Responses to QuestionId= 33 (Do you currently have a mental
health disorder?) were obtained through the following query.

Query 6:

SELECT AnswerText, COUNT (UserID) from answer WHERE questionid=33
GROUP by AnswerText ;

Output:

Don't Know	124
Maybe	327
No	969
Possibly	301
Yes	1237

To dig further into what mental conditions people think they may
have, query was run on QuestionID=116(
If "maybe", what condition(s) do you believe you have?) using the
following syntax:

Query 7;

SELECT AnswerText, COUNT (UserID) from answer
WHERE Answertext="maybe" or "possibly" AND questionid=116
GROUP by AnswerText
ORDER BY COUNT (UserID) DESC ;

Output:

-1	1111
Mood Disorder (Depression, Bipolar Disorder, etc)	219
Anxiety Disorder (Generalized, Social, Phobia, etc)	192
Attention Deficit Hyperactivity Disorder	58
Personality Disorder (Borderline, Antisocial, Paranoid, etc)	42
Stress Response Syndromes	40
Obsessive-Compulsive Disorder	30
Post-traumatic Stress Disorder	26
Addictive Disorder	24
Substance Use Disorder	16
Eating Disorder (Anorexia, Bulimia, etc)	10
Psychotic Disorder (Schizophrenia, Schizoaffective, etc)	8
Dissociative Disorder	6
post-partum / anxiety	1
depersonalization disorder	1
We're all hurt, right?!	1
Tinnitus	1
Suicidal Ideation	1
Gender Identity Disorder	1
Depersonalisation	1
Burnout	1

Autism	1
Asperger's	1
Asperger Syndrome	1

Inference 2:

1237 affirmed to have a mental disorder, 969 gave a firm negative response while 758 were unsure. We can infer that most people are mentally aware. In addition, Mood Disorder (Depression, Bipolar Disorder, etc) and Anxiety Disorder (Generalized, Social, Phobia, etc,) are the most common mental conditions people believe they may have.

3.3 Rate of Diagnosis And Common Mental Health Disorder

First, we want to know how many people have been diagnosed ,then what the most common mental disorders are.

3.3.1.Query of distribution of *AnswerText* according to *Questionid= 34*(
Do you currently have a mental health disorder?) was done with
the following syntax:

Query 8:

SELECT AnswerText, COUNT (UserID) from answer WHERE questionid=34
GROUP by AnswerText ;

Output:

-1	863
No	732
Yes	1363

To have an understanding of what types of disorder is most common, other queries were run with *Questionid 115:*

If yes, what condition(s) have you been diagnosed with?

Query 9:

SELECT AnswerText,
 COUNT (UserID) from answer WHERE questionid=115
GROUP by AnswerText
 ORDER by COUNT (UserID) DESC ;

Output:

-1	865
Mood Disorder (Depression, Bipolar Disorder, etc)	412
Anxiety Disorder (Generalized, Social, Phobia, etc)	345
Attention Deficit Hyperactivity Disorder	121
Post-traumatic Stress Disorder	69
Obsessive-Compulsive Disorder	45
Substance Use Disorder	39
Stress Response Syndromes	38
Personality Disorder (Borderline, Antisocial, Paranoid, etc)	35
Addictive Disorder	35
Eating Disorder (Anorexia, Bulimia, etc)	28
Dissociative Disorder	11
Psychotic Disorder (Schizophrenia, Schizoaffective, etc)	6
Autism	3
Traumatic Brain Injury	1
Transgender	1
Sleeping Disorder	1
Sexual addiction	1

Seasonal Affective Disorder	1
Schizotypal Personality Disorder	1
Pervasive Developmental Disorder (Not Otherwise Specified)	1
PTSD (undiagnosed)	1
PDD-NOS	1
Intimate Disorder	1
I haven't been formally diagnosed, so I felt uncomfortable answering, but Social Anxiety and Depression.	1
Gender Dysphoria	1
Depression	1
Combination of physical impairment (strongly near-sighted) with a possibly mental one (MCD / "ADHD", though its actually a stimulus filtering impairment)	1
Burn out	1
Autism spectrum disorder	1
Autism Spectrum Disorder	1
Autism (Asperger's)	1
Asperges	1
ADD (w/o Hyperactivity)	1

Inference 3:
There were more participants in the survey who have been diagnosed with mental health disorder than those who have not and those who are negative. In total more people know their status than those who do not. Moreover, Mood disorder, Anxiety Disorder (Generalized, Social, Phobia, etc) , and   Attention Deficit Hyperactivity Disorder are the three most common mental disorders experienced by a number of people who have been diagnosed with mental illness.

3.4 Workplace Attitude Toward Mental Health and People with Mental Health Conditions

What is the attitude of employers towards mental health?

To understand employers attitude toward mental health queries were made wit

QuestionId 91:

Do you feel that your employer takes mental health as seriously as physical health?

Query 10:

SELECT AnswerText, COUNT(DISTINCT UserID) FROM Answer WHERE questionid = 91 group by AnswerText ORDER by COUNT(DISTINCT AnswerText) desc;

output:

Yes	*693*
No	*644*
I don't know	*493*
Don't know	*576*
-1	*287*

Using responses to questionId= 95(Has your employer ever discussed mental health as part of an employee wellness program?)

Query 11:

SELECT AnswerText, COUNT(DISTINCT UserID) FROM Answer WHERE questionid = 95 group by AnswerText ORDER by COUNT(DISTINCT AnswerText) desc;

Output:

Yes	229
No	843
Don't know	188

Coworkers perception of persons with mental Illness
we use questionId =114 in the syntax below to have an understanding for :

Do you think that team members/co-workers would view you more negatively if they knew you suffered from a mental health issue?

Query 12:

SELECT AnswerText, COUNT (DISTINCT UserID) from answer
WHERE questionid=114
GROUP by AnswerText
ORDER BY COUNT (UserID) DESC ;
Output:

Maybe	591
Yes, I think they would	403
No, I don't think they would	348
No, they do not	49
Yes, they do	42

Inference #4:
Of the total 2693 respondents to this question only 693 feel their employers take mental health as seriously as physical health, 1069 do not know while 931 feel they do not.
It is also found that most employers do not discuss mental health as part of the employee wellness program, as only 229 do out of a total 1260 responses , while 843 do not. Furthermore, most responders believe their work colleagues would have a negative perception of them if they know of their mental condition. We can infer that the attitude toward mental health and persons with mental health disorder in the workplace is poor.

3.5 Does Family Health History Put One at Risk of Mental Health Challenges?
According to research and the analysis, this survey report shows that mental health can be genetic.
The chance of an individual having a specific mental disorder is higher if other family members have that same mental disorder. Even though a mental disorder may run in a family, there may be considerable differences in the severity of symptoms among family members. This means

that one person in the family may have a mild case, while someone else has a more severe case of the mental disorder. Mental disorders, however, do not follow typical patterns of inheritance.

Genetic factors contributing to the development of mental disorders include:

- **Epigenetic regulation:** Epigenetics affect how a person reacts to environmental factors and may affect whether that person develops a mental disorder as a result. Epigenetics is not constant over time. This means a gene is not always "on" or "off." There must be the right combination of environmental factors and epigenetic regulation for a mental disorder to develop.
- **Genetic polymorphisms:** These changes in our DNA make us unique as individuals. A polymorphism alone will not lead to the development of a mental disorder. However, the combination of one or more specific polymorphisms and certain environmental factors may lead to the development of a mental disorder.
- **Single gene changes:** Rare.

query 13:

SELECT * *FROM Question WHERE questiontext = "Do you have a family history of mental illness?" AND questionid = 6;*

*SELECT * FROM Answer WHERE AnswerText = "Yes" AND questionid = 6;*

*SELECT * FROM Answer WHERE AnswerText = "No" AND questionid = 6;*

*SELECT * FROM Answer WHERE AnswerText != "Yes" AND AnswerText != "No" AND questionid = 6;*
Output*:*

Yes	1868
No	1701
I don't know	649

Inference #5:
It can be seen that persons with a family history of mental illness are at higher risk of mental illness as most people with mental health challenges seem to also have persons with similar illness in their family history

4.0 Conclusion:

While data shows a general high rate of awareness of individuals toward their mental health, and a high rate of mental health diagnosis, attitude toward people with mental health disorder is poor. *Also, people with mental disorder in their family History have higher chance of mental health disorder*

5.0 References:

i.https://www.healthychildren.org/English/health-issues/conditions/emotional-problems/Pages/Inheriting-Mental-Disorders.aspx

https://www.kaggle.com/datasets/anth73