Egypt University of Informatics
Computer and Information Systems
Data Analysis Course

Does Mental Health Affect your Appearance?

Submitted by: Ahmed Yasser Hassanein

31/3/2023

Project Description:

This project's purpose is to find out if Mental Health affects an individual's appearance. So, I conducted a survey to answer my research question!
The survey was designed to drop responses of individuals who did not experience an event/situation that affected their mental health. The survey's responses were transferred to a "csv" file, cleaned, analyzed, and visualized.

Research Question:

Does Mental Health Affect your Appearance?

Hypothesis:

An individual's mental health has a strong, positive effect on his/her appearance.

Population of Interest:

This project is interested in people who have faced misfortunes in their lives that affected their mental health and appearance during that period.

Calculating the population's size is near impossible because many misfortunes occur in people's lives that may affect their appearance which makes it a challenging task to produce a certain value for their population.

Sampling Method:

Due to the limited access to research resources and population of interest, Convenience Sampling is used to help address the research question because, as said previously, the population is not easily accessible, thus, using the Simple Random Sampling method would make no sense as the population is not accurately defined.

From its definition, Convenience sampling involves using respondents who are "convenient" to the research question. There is no pattern whatsoever in getting these

respondents—they may be recruited merely by asking people who are present in the street, in a public building, or in a workplace, for example.

Bias Identification:

There are potential sources of bias in the design and choice of questions in the survey, but bias cannot be eliminated for sure; it can be minimized.

Sources of bias:

1. At least 90% of the responses are within the 16-24 Age range (not accurately representative of the population)

2. At least 90% of the responses came from Egypt which makes the possible conclusions biased to Egyptians.

Steps to Minimize Sources of bias:

1. As said previously, Convenience Sampling was used, so the survey was sent to accessible people within my network who are in the same age range.

2. The survey was sent to mental health & awareness groups on Facebook, threads on Reddit, and to friends over in the United States of America; responses were minimal in comparison to the responses from Egypt.

Online Survey Link:

Survey Snapshots:

Does Mental Health Affect Your Appearance?

This form is for a Data Analysis University Project, so your response will be of much help. Data is anonymously collected for confidentiality.
The **purpose** of this form is to find out whether mental health can have an effect on your physical appearance.

Please take your time answering this form!

🚫 ahmadnis123@gmail.com (not shared) Switch account ☁

* Required

Age *

○ 16-24
○ 25-34
○ 35-44
○ 45+

Gender *

○ Male
○ Female
○ Other: _____

Which country you live in? *

Your answer _____

Have you ever faced a situation that affected your mental health? *

○ Yes
○ No

On a scale of 1-5, how deeply was your mental health affected? *
1: Had no Effect
5: Deeply Affected

○ 1
○ 2
○ 3
○ 4
○ 5

How long was your mental health affected? (in months)

○ 0-3
○ 3-6
○ 6-9
○ 9+

Have you changed your appearance during that time? *

○ Yes
○ No

How did you change your appearance? *

☐ Hair Cut
☐ Hair Dye
☐ Tattoo
☐ Piercing
☐ Weight gain
☐ Weight loss
☐ The Way You Dress
☐ Other: _____

Does Mental Health Affect Your Appearance?

Thank you for the response!

Please seek medical attention with a professional practitioner if you have been through a tough time for too long!
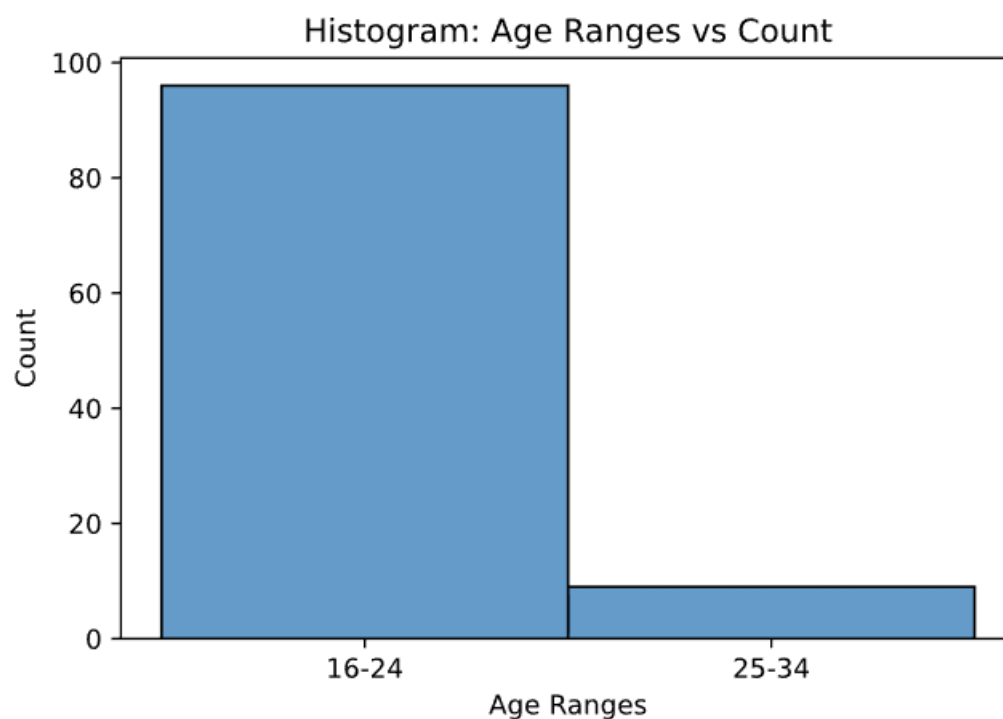
Edit your response

Number of Samples & Responses collected:
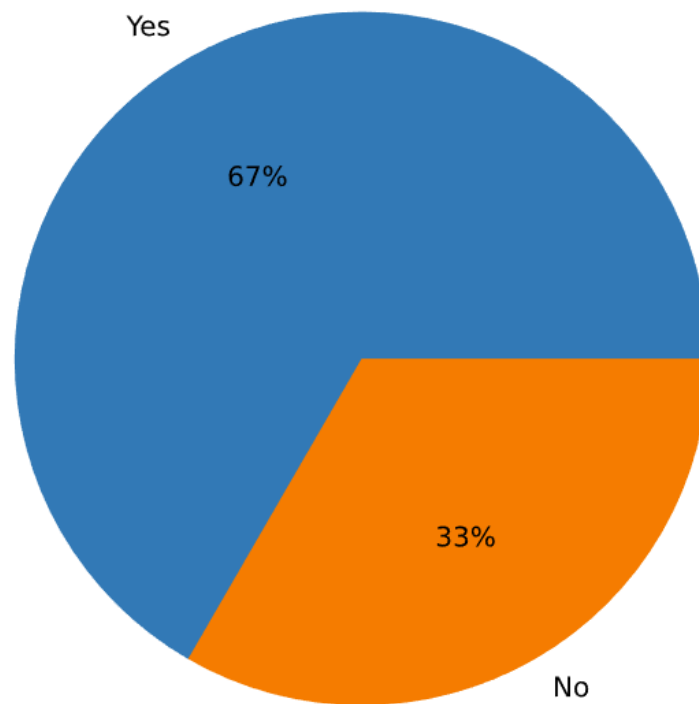
1 sample & 107 responses

Analysis:

To analyze the responses I have gathered, I will be converting them to a "csv" file to be read by the Python libraries I will be using. Data will be cleaned by dropping the null values, outliers, and renaming the columns. After that, the "Data Visualization" section will show insights on each graph which will support the "Conclusion" section.
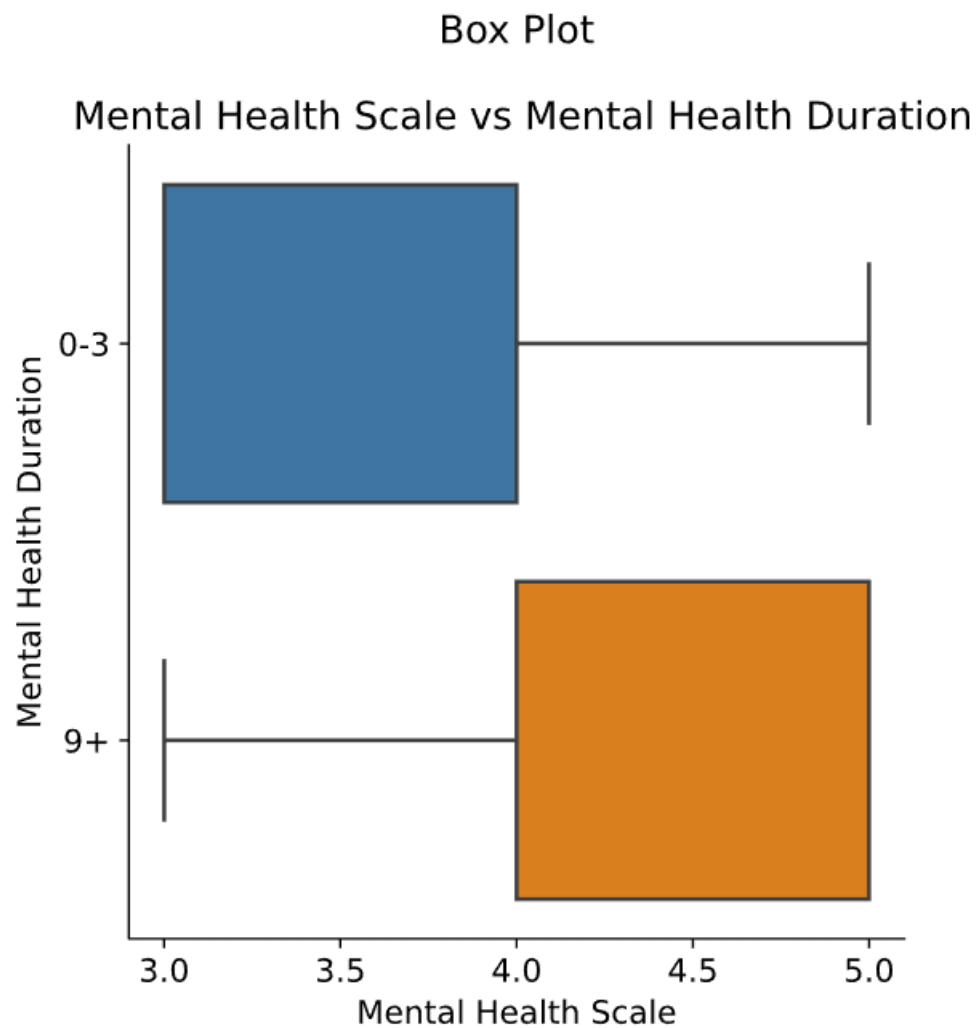
Data Visualization:

As mentioned in the Bias Identification section, the Age range in the sample is in the 16-24 range, a source of bias.

Was your appearance affected while your mental health was affected?

About 67% of the responses said that their appearance was affected while their mental health was affected. Correlation does not mean causation, but we are starting to see a substantial number of people matching/agreeing with the hypothesis.

Box Plot

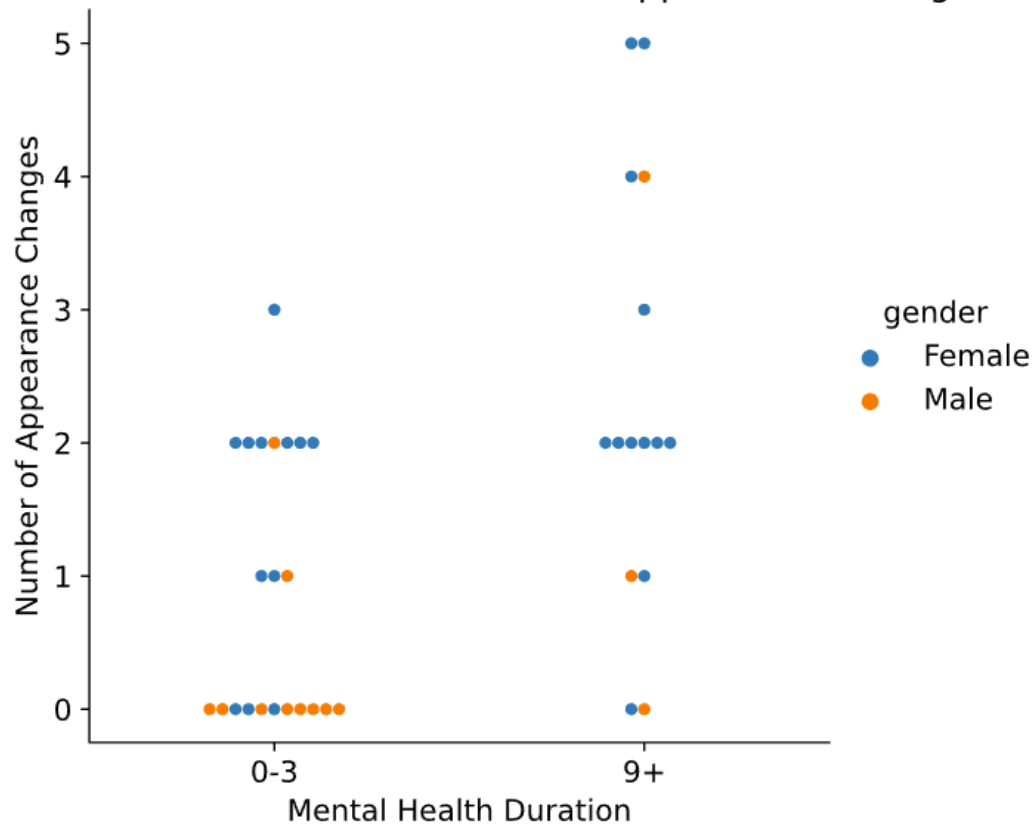### Mental Health Scale vs Mental Health Duration

As the scale increases, the more the mental health is negatively affected.

According to the earlier graph, it is shown that the individuals' rating on the 1-5 scale matched with their mental health issues' durations. As the scale goes up, duration increases.

Swarm Plot

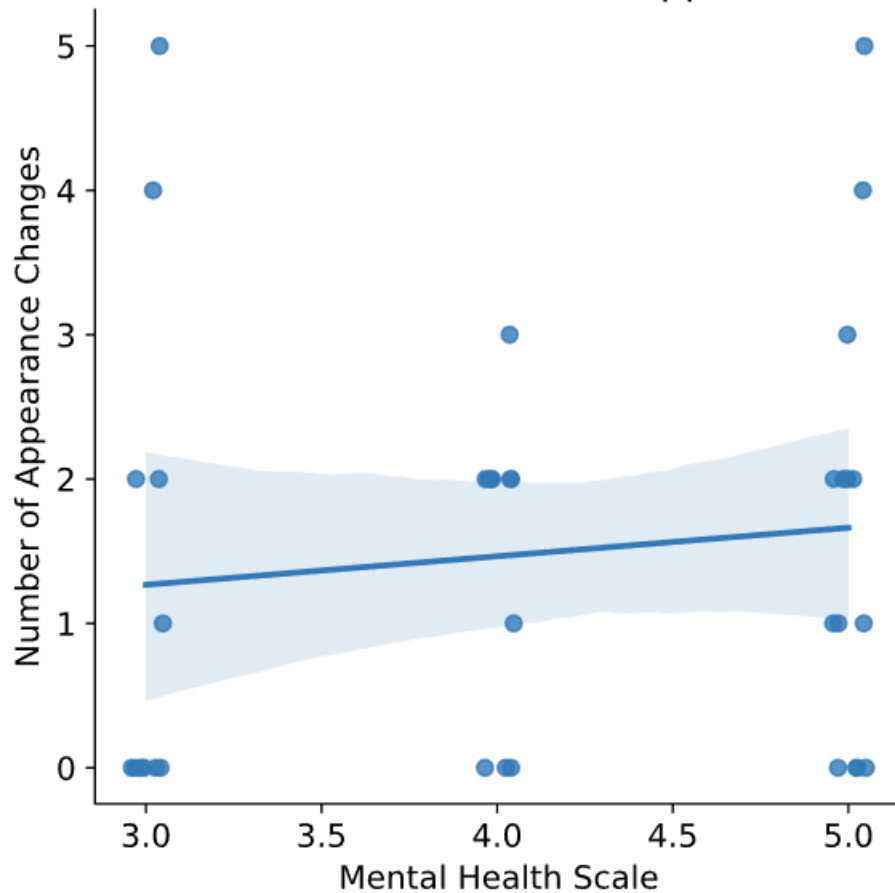Mental Health Duration vs Number of Appearance Changes

The "Mental Health Duration" is measured in months.

It can be inferred that the more time an individual's mental health is affected, his/her appearance is changed more often.

Females changed their appearance more often than men, so gender may be confounding variable.

Regression Plot

Mental Health Scale vs Number of Appearance Changes

There is a very weak positive correlation between the scale of how the mental health was affected to the number of changes in the appearance which weakly supports the hypothesis, but the very weak correlation may be a result of the small sample size.

Conclusion:

According to the earlier visualizations, it can be concluded that appearance changes throughout the period where individuals' mental health are affected by harsh moments in their lives. The responses were credible and lived up to expectations because as the scale went higher, individuals' mental health lasted a lot more than on the lower scale. Appearance changed more often for females than males and mental health duration influenced the number of appearance changes. The hypothesis said that there is a strong, positive relation between mental health and appearance, but the data shows that it is not a strong, but a weak or moderate relation.

Issues Discovered in the Data Collection Design:

Qualitative data collected was mostly discrete which limited much of the visualizations as continuous data would have given much flexibility and a more exact conclusion.