Introduction

Mental health issues are a prevalent problem in our society today. Those with depression, anxiety, and other mood disorders may struggle day to day with their lives, jobs, and relationships. With the rise in awareness of people’s mental health struggles, there has also been an increase in the amount of research that has been done to investigate treating the mentally ill which has also led to many different types of treatment. Many people with mental health treatment may try to seek psychological help through a doctor or therapist but may struggle to figure out what the best type of treatment would be for them.

One type of psychological research investigates how a person’s personality (also called their temperament) affects their thoughts, emotions, and behaviors. There has been some research to show how a person’s temperament may show how well they are responding to their treatment though there has been little evidence-based research about it.

The goal of our project is to build upon that investigation of how a person’s temperament reflects their treatment and use surveys to show that correlation. Our main survey is the Person in Context Assessment (PICA) which get’s a general idea of what a person’s current temperament is and then sends a PDF with the results of their assessment. The other survey is a daily application where the person enters the different events/contexts they were in as well as any thoughts, feelings, or behaviors that they did when in the context. Our goal is to optimize these surveys to collect real user’s data and be able to allow a doctor to better understand and tailor a patient’s treatment based upon how their temperament and daily behaviors.

Functional Requirements

1. PICA Assessment
   1. Results PDF

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| --- | --- |
| Description | The PICA Qualtrics survey needs to be able to create a PDF of the resulting charts and graphs that is easy to understand for the user as well as adding more in-depth details and a radar chart. |
| Source | Required from Client. Adding on to already implemented functionality. |
| Priority | Priority Level 0: Essential and required functionality |

* 1. Automatic PDF Sending

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| --- | --- |
| Description | The PICA Qualtrics survey results will be automatically sent to the email that the user provided in the survey and will be sent after the survey is completed. |
| Source | Required from Client. Client needs to be able to send results to patient. |
| Priority | Priority Level 0: Essential and required functionality |

* 1. Data Collection

|  |  |
| --- | --- |
| Description | The PICA survey data from all surveys taken must be sent to the MongoDB database to be stored. |
| Source | Internal requirement from team. Building upon functionality added by previous team. |
| Priority | Priority Level 0: Essential and required functionality |

1. Phone Application
   1. PICA Assessment Results

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| --- | --- |
| Description | The PICA data for the patient must be able to be inputted into the phone app which allows the user to see their results in the phone app. |
| Source | Requirement from Client. Client needs to be able to integrate the PICA data with the phone app. |
| Priority | Priority Level 0: Essential and required functionality. |

* 1. PICA Based Questions

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| --- | --- |
| Description | The phone app will ask specific questions based upon the patient’s temperament that was entered into the survey. |
| Source | Requirement from Client. Client needs to be able to ask questions based upon the entered temperament. |
| Priority | Priority Level 0: Essential and required functionality. |

* 1. Clustering Algorithm

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| --- | --- |
| Description | The algorithm that is used to group events that are “functionally equivalent” based on shared thoughts, feelings, or behaviors will be grouped together either through a mathematically complex algorithm or AI and will be then approved to be clustered by the user or the doctor. |
| Source | Internal requirement from team. Building upon already implemented functionality. |
| Priority | Priority Level 2: Extra features or stretch goals |

* 1. Data Collection

|  |  |
| --- | --- |
| Description | The phone app data from all surveys will be stored in a MongoDB database and be able to be collected from the database. |
| Source | Internal requirement from team. Building upon functionality added by previous team. |
| Priority | Priority Level 0: Essential and required functionality |

Use Cases

User Story US1: Generate and Send Personalized PDF Report

As a User, I want my PICA results PDF to be automatically sent to my email so I can have a personal copy of my results.

Feature: Automatic PDF generation and sending

Scenario: User gets report

Given that the user has finished the PICA fully

When they click the submit survey button

Then the PDF of the results should be automatically sent to the email they inputted into the survey

User Story US2: Log Emotional Event

As a User, I want to be able to log an emotional event in the phone app so I can keep track of emotionally similar events.

Feature: Log Emotional Events

Scenario: User logs an event

Given the user is in the phone app

When they fill out the form to log a new emotional event

Then the daily results will be logged in the MongoDB database with the timestamp of the submission

User Story US3: View Functionally Equivalent Situations

As a User, I want to be able to see functionally equivalent situations so I can know what events have been grouped together and were emotionally similar.

Feature: View Functionally Equivalent Situations

Scenario: User views their situations

Given the user is in the phone app

When they select to view their emotional situations

Then a list of their situations is shown and are grouped based upon the clustering algorithm.

User Story US4: Optimize PDF Report Content

As an Admin, I want the PDF results of the PICA to be optimized so that the Users are easily able to understand their results

Feature: Optimized PDF Report Content

Scenario: User reads their PDF results

Given the user has taken the PICA

When they receive their report

Then they will be able to clearly understand the results and understand what their temperament means.

User Story US5: Import Qualtrics Assessment Results

As an Admin, I want to be able to import a User’s PICA results into the phone app so that the User’s temperament can be factored into the phone app’s questions.

Feature: PICA Phone App Integration

Scenario: Admin enters PICA results

Given I am an Admin, and a user has taken the PICA

When I enter the User’s results into the phone app

Then the questions in the daily survey will be more tailored to the person based upon their temperament.

User Story US6: Collect User Experience Data

As an Admin, I want to be able to keep user’s data in a database so that I have a record of the user’s PICA and phone app responses.

Feature: User Data Collection

Scenario: User completes PICA

Given I am an Admin and at least one person has completed the PICA

When I access the MongoDB database

Then I am able to see the user’s results to the assessment and can query the database.