Health Application Suitable For Neurodivergent Individuals

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1. Abstract

An assessment of lifestyle trackers suggests that those who are neuro-divergent are not catered for, as the available mobile apps are not suitable for those with non-standard needs.

It was established that some neuro-diverse conditions increase the likelihood of the need for a tracker. The report looked at who may be "neuro-diverse“, why this could lead to physical health issues, what digital help is available, and whether it could be improved.

A simple prototype webapp was created and tested.

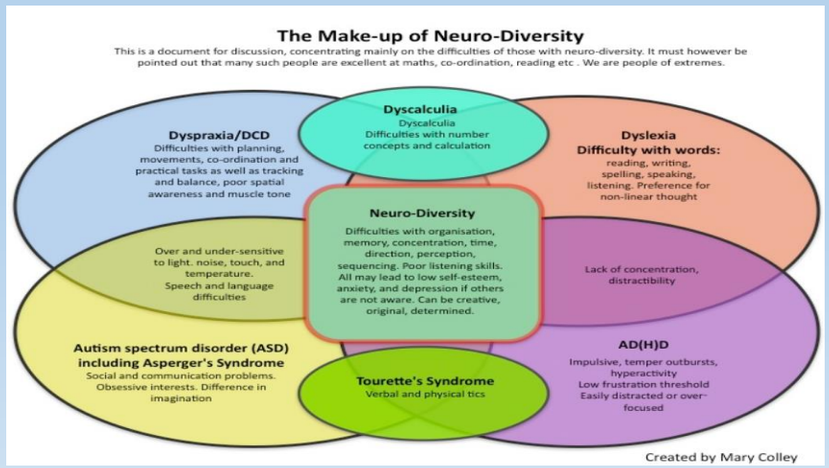
2. Objectives

Develop a simple to use app that helps people track their lifestyle and food choices, regardless of impairments that might make this difficult.

To generate data to assist in identifying why the user is having health issues, even when the user cannot effectively communicate it themselves.

3. Neurodiversity

An estimated 15-20% of people in the UK are not neuro-typical (their brain does not process information in the usual way). This can cause problems with verbal and written communication, memory, organisation and focus. They may struggle to monitor their patterns or use a standard app for reasons such as a learning disability, neurodegenerative disease, dyslexia, ADHD or autism.



4. Neurodiversity and physical health

Research on the relationship between neurodiversity and physical health is limited, but there are links. Some conditions are better studied and have definite relationships with health issue related to lifestyle:

• Autistic people are more likely to have gastrointestinal (GI) issues.

• There is a connection between GI problems and ADHD, with GI issues being a common problem in that group.

• 17.2–23.5% of those with mild Alzheimer’s are at risk of malnutrition and malnourishment.

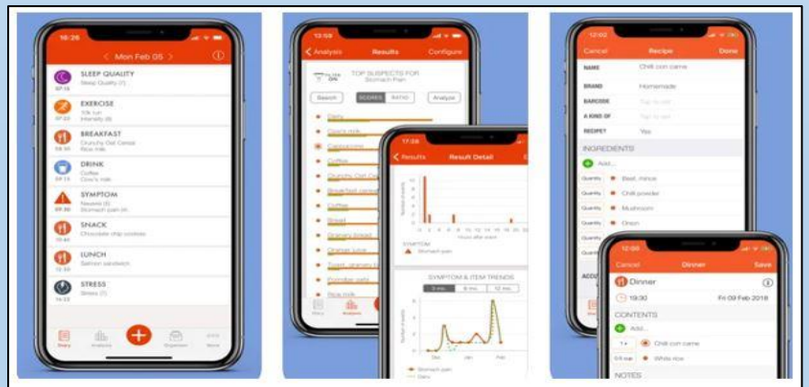
• GI issues are far more common in those with Down Syndrome than in the general population.

5. Currently Available

A typical lifestyle tracker requires a user to read, navigate menus, and input text and data.

For some people this is too much, they may be:

- Unable to read or unable to comprehend language
- Cannot navigate a complex menu
- Forgetting to input data
- Be expected to judge, score or assess a score



A food diary app – requires data input

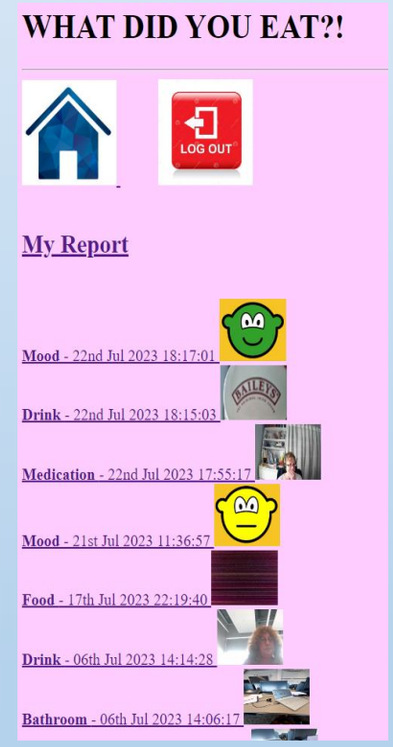
6. Implementation

A simple prototype webapp was created using MySQL for the database, PHP and HTML for the website, and Javascript for taking the photos.

7. Design

The app is simplicity, with minimal user input needed – just take a picture. Of everything you eat, drink, smoke and otherwise consume, and then take a picture of the output (yes, your bowel movements). This is organized as a photo diary so you can view the order of events, which can assist in recognizing potential problems, or diagnosing current ones.

Additionally, there is a mood selector where the user can choose whether to update their mood indicator. This could further help in seeing patterns and associations.



8. Conclusion

In the post testing survey, 85% of the testers responded that they would recommend the app if it was fully developed as a mobile app and most testers felt that the concept would suit the group it was designed for. Some healthcare professionals were interested in developing it as a platform for supporting patients remotely.