Initial Plan – CM3203

DESIGNING AN INTERACTIVE APPLICATION TO PROMOTE HEALTHY AGEING AMONG OLDER ADULTS AT HOME

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Project Title

Designing an Interactive Application to Promote Healthy Ageing among Older Adults at Home

"Being active is not just about adding years to your life,
It's about adding life to your years!" *Ralph Paffenbarger Jr*

Project Description

Context:

Regular exercise for seniors is important for both mental and physical health which means it will increase both longevity and quality of life. Amongst older people, exercise has been shown to prevent disease, improve physical and mental health and well-being, reduce the risk of falling, build social connections and boost cognitive function (The GreenFields, 2022). However, in the UK over a third (34%) of adults over the age of 55 are classified as inactive, meaning they do less than 30 minutes of physical activity a week (Giles, 2021). And according to the NHS, many adults in the over 65 age group spend at least 10 hours a day sitting or lying down which makes them the most sedentary age group (NHS, 2018). The recommendation by the UK Chief Medical Officer is that everyone does at least 150 minutes of moderate intensity or 75 minutes of vigorous intensity physical activity per week.

Some people have become motivated towards more physical activity during the Covid19 pandemic as they have had more time on their hands, however, overall the proportion of adults aged 55 to 74 achieving the recommended levels of physical activity has fallen by 1.3% between November 2019 and November 2020, and by 2.9% for those aged 75 and over (Giles, 2021). This represents a huge potential health problem for these senior age groups as they get older if they remain physically unfit, resulting in a negative impact on both their physical and mental health and wellbeing.

Aim:

I am going to research current technology-based exercise offerings aimed at the over 55 age group and use the information learned to design and develop an application to help combat this trend which will encourage more seniors into physical activity and motivate them to build healthy habits into their lifestyle which will promote healthy aging. By developing regular exercise routines in middle age, the focus for the app is on the prevention of physical and mental health issues that are likely to develop in inactive adults as they get older.

One positive outcome from the pandemic and associated 'lockdowns' is that the older generation has been forced to learn new technologies such as Zoom and FaceTime for communication with friends and families. Smartphone penetration rate in the UK for the over 55s age group has risen from 42% in 2016 to over 83% in 2021 (O'dea, 2021). Research carried out by mobiles.co.uk found that 98% of people aged 50 and over in Britain have

purchased a smartphone in the last five years, with almost two-thirds (62%) reporting that they feel very confident using theirs regularly for all kinds of tasks (Axonn Media, 2017). Consequently, the over 55 years age group have developed a greater familiarity with their smartphones and should be more receptive to using an app to improve their health and fitness.

Before designing my app, I will undertake a review of current apps in the marketplace and examine their strengths and weaknesses to inform my own app design. I will also carry out research amongst the 55 years plus age group to discover their attitudes to physical exercise in general, to using an app to facilitate regular exercise habits and the features they would like to see in an app. For example, from my top-level initial research, I have noted that existing applications appear to be very sterile and my feeling is that users would prefer an app which had more personality and encouraged a sense of community and belonging. I will test this theory in my survey.

Project Aims and Objectives

The key aim of the project is to carry out research into existing applications promoting active exercise in the over 55 year old demographic and use the findings to design and develop a user-friendly and motivational app which this demographic will enjoy using to increase their activity and fitness levels and consequently improve their overall health and reduce the risk of future mental and physical health issues.

There are many necessary requirements in order to create my healthy living application to a high standard:

1. Research into existing technologies:
    a. Carry out research into current apps and technologies which promote healthy living among the older population, mainly focusing on apps which encourage physical exercise in the 55+ age group.
    b. Examine their strengths and weaknesses to determine what is currently working well and not so well, in addition to where there are any gaps in the existing market. Look at user reviews.
    c. Use the information to come up with design features for inclusion in my application.

2. Conduct primary research amongst my target market:
    a. Design a survey which can be completed on-line and supplement with in-person interviews where necessary.
    b. Attempt to have a sample size of at least 20 participants with a spread across different age brackets (eg. 55-59, 60-64 and 65-69 years). I will also try to survey adults with a mix of current fitness levels and technical abilities.
    c. This research will allow me to uncover the needs and wants of my target market and to test the design features identified in my research into existing applications.

3. Examine papers and research into exercise amongst the 55+ years old age group to determine:
    a. What mix of exercise types eg. aerobic, strength, balance and what exercise length (eg. 10 mins, 30 mins) should be incorporated into the application
    b. What associated health benefits should be expected

4. Design and Develop the Application:
    a. Decide on an application development platform
    b. Design the prototype
    c. Develop the application

5. Testing and Evaluation of the application:
    a. Conduct testing with a selection of potential users of the app
    b. Survey the users for their feedback
    c. Incorporate the feedback to integrate improvements into the application.
6. Complete a Final Report documenting the processes followed, evaluating the final product and looking towards any future enhancements.

Ethics

For the completion of my project, I will be required to complete Ethics Research Training. This is necessary because I plan to create and release a survey to collect information from my target age group about their exercise habits. This information will then be used to help advise me in the features which my app will include. Later in the project I will also conduct user testing where users may have to include some of their personal information such as email and age. I will create a participant information sheet which will inform participants with all the information about where and why their data will be used.

Work Plan

The following table is a timeline plan of my project. Key milestones and deliverables are clearly stated and I will use this plan to track my progress and ensure I am on target to deliver and submit my Final Report by Week 12. Throughout the whole 12 weeks I will be continuously documenting the steps I have taken along with adjustments and evaluations I have made. These will then be included into my final report to ensure the progress and development is apparent and initial aims and objectives have been met.

I have agreed weekly meetings on a Wednesday with my supervisor and the plan below sets out three more detailed Review Meeting with my supervisor to be scheduled for the end of weeks 4, 8 and 11.

Week	Tasks	Milestones/Deliverables
1 31Jan – 7 Feb	Meeting with supervisor to discuss initial plan and organise weekly meetings. Top-line research into technology apps that promote healthy aging through exercise and into exercise benefits in the over 55 age group. Write initial plan.	
2 7-14 Feb	More in-depth research into current technology offerings and exercise types and their associated benefits. Start designing the research survey to be completed by adults aged 55+. Write down some initial app design features to discuss with supervisor.	Submission of Initial Project Plan
3 14-21 Feb	Continue with survey design and have final version ready to discuss with supervisor at Wed meeting. Make any amendments and distribute the survey to over 55s for completion. Objective is to receive 20 responses across a range of age bands. Examine papers and research into exercise amongst the 55+ years old age group to determine what mix of exercise types eg. aerobic, strength, balance and what exercise length in minutes should be incorporated into the application Understand what the associated health benefits should be.	Survey design completed by Wed 16th Feb. Survey distributed to over 55s for completion.
4 21-28 Feb	Analyse survey responses, carry out any necessary supplementary interviews on results which are unclear or deemed necessary of further clarification or investigation. Use the results to make decisions on which features and functions need to be included within the app. Create prototype wireframes of the app – to see how the app will look and function. Get a design and transitions. I will most likely use Adobe XD or Axure as I am familiar with them both from a 2nd year module. Research into which app development platform I am going to use to create my app – I am not well experienced in coding apps and therefore want to	Analysis of survey responses. Create prototype wireframes for the UI.

	find the most suitable method for me to produce the best outcome possible.	
End of Week 4	**Conduct a Formal Review Meeting with my Supervisor to review the app design and prototype to date.**	**Have an agreed app design to move forward to coding.**
5 28 Feb – 7 Mar	Make any necessary adjustments to the prototype after meeting with my supervisor. Start the initial coding of the application whilst learning to use the app development platform. Ensure I am continuously documenting my processes for inclusion in the final report.	Begin app development
6 7-14 Mar	Code for the creation of user accounts including collecting user age.	
7 14-21 Mar	Start working on a progress tracker for each user, where they can input their targets and goals as well as any exercise they have completed externally from the app (dog walk, tennis etc).	
8 21-28 Mar	Coding the workouts with choices of cardio, strength training, aerobics, or balance. Show number of views per workout each week to encourage motivation.	
End of Week 8	**Conduct a Formal Review Meeting with my Supervisor to review the app prototype and structure for final report.**	**Agree and complete any suggested amendments.**
9 28 Mar – 1 Apr	Carry out user testing of the app and get feedback on what could be improved. Use the feedback to modify and improve the app.	User testing
Easter recess 2-24 Apr	Continue with app developments based off user testing feedback to ensure the functionalities and features of the app are appropriate. Begin to gather and organise all my documentation into a final report format.	
10 25 Apr – 1 May	Make any final amendments to the app from evaluating user testing. Evaluate my project and ensure the final result clearly links back to the original stated aims and objectives.	Completion of application
11 1-7 May	Complete initial draft of Final Report to discuss with supervisor.	First draft of Final Report.
End of Week 11	**Conduct a Formal Review Meeting with my Supervisor to review the draft of final report.**	
12 7-14 May	Finalise my report and receive any last pieces of feedback from my supervisor. Complete all preparations for submission.	Complete final draft. Submission of Initial Plan.

References:

Axonn Media, 2017. *Over-50s 'increasingly smartphone-savvy'*. [online] Wearejust.co.uk. Available at: <https://www.wearejust.co.uk/news/over-50s-increasingly-smartphone-savvy> [Accessed 6 February 2022].

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