SSY115 HEALTH INFORMATICS

SP4, 2021

PROJECT PLAN
GROUP 3 - Parkinson's Disease

OUR TEAM

CHIARA ROSANNA FICHERA
JOHANNA MATERO
KANNIGA LAKSHMI JAGADEESAN
SHIVANI RAVICHANDRAN

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1.1 PROJECT PLAN

1.1.1 Background

In the U.S., Parkinson's disease is estimated to be the second most common neurodegenerative disorder among Americans [1]. First discovered in the beginning of the 19th century, today 60,000 new cases are detected every year in the U.S.. In Europe, around 3.0% of the population has been diagnosed with PD [2] and the percentage is quite similar for industrialized countries. The trend is expected to increase dramatically over the years. Worldwide, from 7 up to 10 million people are estimated to be affected by PD today [1].

By the definition, PD entails the loss or degeneration of the dopaminergic neurons in the *substantia nigra* and the development of Lewy Bodies, namely an abnormal intracellular aggregate containing various proteins among the dopaminergic neurons. The main concern about pathology is that when it is diagnosed already about 60%-70% of dopaminergic neurons are irreversibly damaged [1].

Some factors such as age and stress, family history along with environmental toxins, with particular focus to pesticides, drug abuses and toxins are deemed to be responsible to promote the disease [1],[2],[3]. Further, several studies have shown that it is more common for males than females to be diagnosed with PD.

There are several symptoms related with PD, but the most prominent are motor related, cognitive and behavioural changes and autonomic system failures. For the former, the T-R-A-P acronym is used to follow the progression of motor symptoms, respectively T for tremors, R for rigidity, and A for akinesia and P for posture, as for the latter are leading the patient to sensory, sleep and mood disturbances [1].

Currently no treatment is available to reverse the progression of the PD [2]. Both pharmacological and non-pharmacological approaches such as exercise, education, nutrition and support group speech therapy are taken. Uncommon and only for specific cases also surgical therapies are taken into consideration. These include Deep Brain Stimulation (DBS) leading to a decrease of the ability of dopaminergic neurons to absorb dopamine [2].

1.1.2 Aims

- Give an introduction/background to the disease.

- Identify possible solutions using eHealth.
    - Prevention
    - Treatment
- Identify pros/cons of the above solutions.
- Identify what is missing regarding eHealth solutions for PD.
- Formulate a new solution based on the above information.

1.1.3 Tentative title

Literature study of eHealth for treatment and prevention of Parkinson's disease

1.1.4 Intended Approach

A. Preparation Phase
1) Hit the books.
2) Read a lot of research papers, medical journals etc.,
3) Sketch ideas, roll out in the common communication channel*.
4) Meet and share/present ideas.
5) Follow up with weekly meetings**.
6) Collaborate on the collected information.
7) Share it in a common repository.

B. Report Preparation
1) Preparation of draft report.
2) Divide the writing equally among team members.
3) Revise and receive feedback from supervisor and team members.
4) Restructure the report with all the information provided.
5) Preparation of Final report (check for typo errors, format , all   relevant info included, receive feedback and restructure appropriately).

C. Project Presentation
1) Decide the split-up equally among team members section wise
2) Note down the time limit during rehearsal.
3) Receive feedback and restructure appropriately.
4) Questions during presentation - decided who should answer relevant to the section.

*   - Communication tools used are Zoom and Slack.
** - The team has decided to meet every Monday and Wednesday to collaborate for the project work.
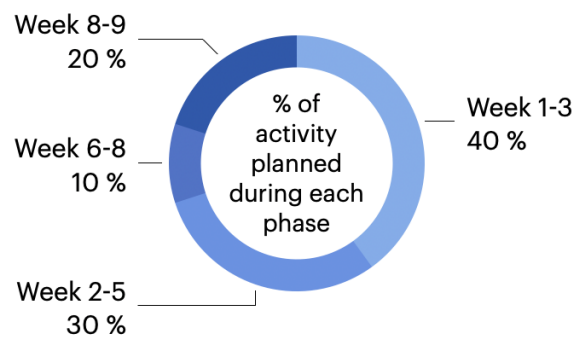
Preparation and draft report phase will be an iterative process where the team has decided to

- Write about two solutions (two persons/solution where one write about background and one about discussion)
- Future work: brainstorming session to come up with own solution

1.1.5 Project Schedule

The total project work is scheduled for a period of 9 weeks with start date as 30th March 2021 as week 1. The project schedule is as follows.

Group3_Parkinson's Disease			WEEK 1 - 3					WEEK 2 - 5					WEEK 6 - 8					WEEK 8 - 9				
Mar - May 2021 (sp4)			M	T	W	Th	F	M	T	W	Th	F	M	T	W	Th	F	M	T	W	Th	F
Activity	Start date	End date																				
Preparation	30/3	16/4																				
Collect info																						
Meetups																						
Feed it in draft report																						
Draft Report	12/4	30/4																				
Meetups																						
Final Report	3/5	21/5																				
Meetups																						
Presentation	19/5	26/5																				
Meetups																						

Week 8-9 20 %

Week 6-8 10 %

% of activity planned during each phase

Week 1-3 40 %

Week 2-5 30 %

Milestones
- Draft report - May 3
- Final report   - May 24
- Presentation - May 27

1.2 RISK ANALYSIS

Rated on a scale of 1-5, with 1 being the highest chance of occurrence and 5 the lowest chance of occurrence.

Type Of Risk	Likelihood	Alleviation Plan
Absence/discontinuation of a team member	5	Equally share the workload among other group members.
Lack of knowledge	4	- Identify reasons and discuss what information is missing. - Discuss with supervisor.
Difference of opinion among group members (e.g. which solutions to present)	3	Try to find a common ground and discuss with supervisor.
Missing deadlines	3	Try to follow as much as possible and catch up next week.

REFERENCES

[1]. Radhakrishnan, Divya M. Goyal, Vinay, *Parkinson's disease: A review, Neurology India, 2018,* 66,7, S26-S35.

[2]. Balestrino, R. Schapira, A. H.V., *Parkinson disease,* European Journal of Neurology, *2020, 27, 27-42.*

[3]*.* A. Ascherio, Michael A. Schwarzschild*, The epidemiology of Parkinson's disease: risk factors and prevention,* The Lancet Neurology, *2016,15, 1257-1272.*