

DATA SCIENCE APPLICATION PROJECT

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DATA SCIENCE APPLICATION PROJECT

Introduction

The Project Data Science Application We analyse the dataset obtained from mobile health care services and collaborated with elderly care centres in Hong Kong.

Abstract

The project will explore the significant factors affecting the health and well-being of community-dwelling elderly people in order to make useful assumptions about their mental and physical health and social-economic characteristics. We analyze variables such as age, sex, education level, financial support, and nutritional status, to understand their effect on outcomes such as depression levels and cognitive function,

This project addresses an understanding of a key problem Faced by Hong Kong elderly individuals: factors influencing their overall health outcomes. It is significant to highlight the aspects that influence their overall health outcome, in an ageing population and increasing demands for healthcare services. In the analysis of the provided dataset, we aim to identify the relationships between variables and health-related outcomes, thereby enabling the development of targeted interventions and policies to improve the well-being of the elderly population.

The primary goal of this project report is to conduct a comprehensive analysis of the dataset obtained from mobile healthcare services. specifically analysing variables related to age, sex, education level, financial support and nutritional status; along with their impact on depression levels and cognitive function outcomes. This analysis seeks to further information of evidence-based interventions and strategies to enhance the overall quality of life for the elderly population in the region.

Literature Review

Dataset Description:

The dataset consists of 2,299 entries and includes 13 total columns representing various factors related to their health, demographics, and socio-economic status.

The Variables are age, sex, body height, body weight, education level, financial support, geriatric depression scale score, out-of-pocket financial source (being independent or depending on the

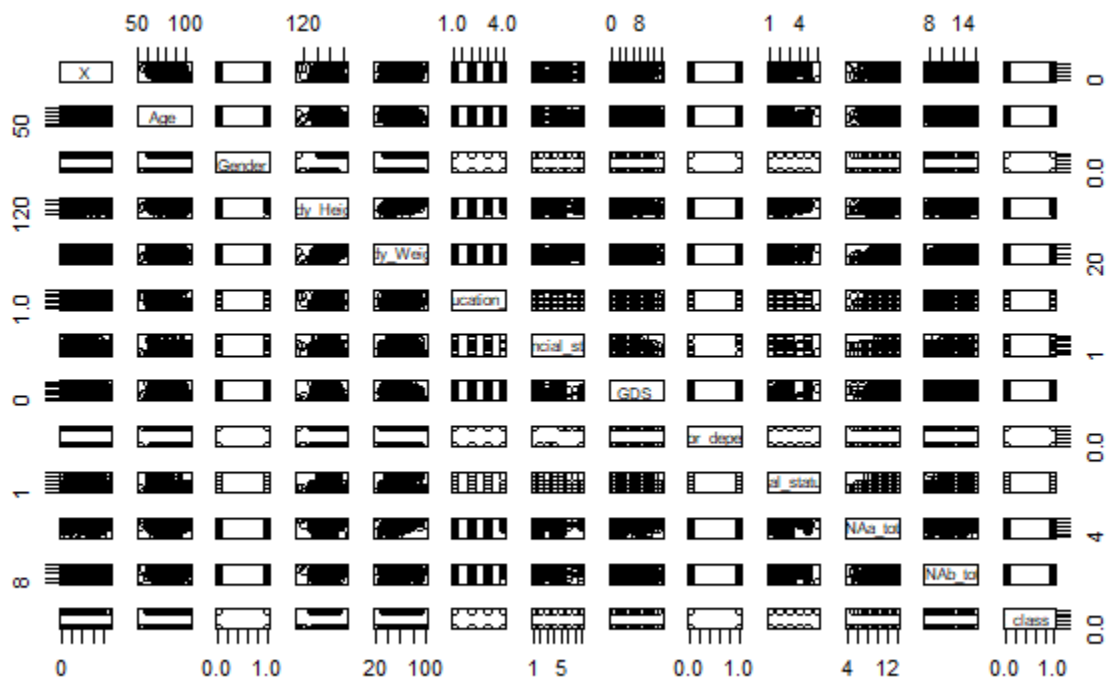
family), marital status, Mini Nutritional Assessment part A score, Mini Nutritional Assessment part B score and the mini-mental state exam categories are the outcome labels.

Dataset Preprocessing:

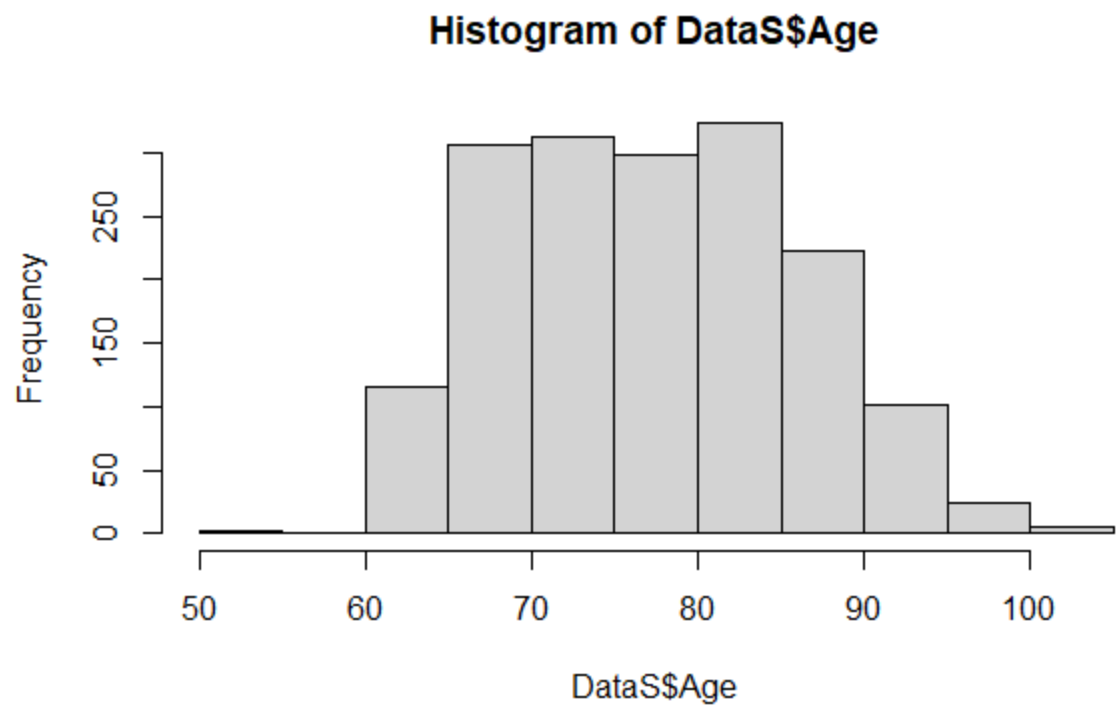
The Data set contains Null values or missing Data. Missing values are due to incomplete responses or maybe due to Human Error. Before starting the Analysis, we are going to remove Null values and Do Data transformation and Encoding if Needed.

Exploratory Data Analysis:

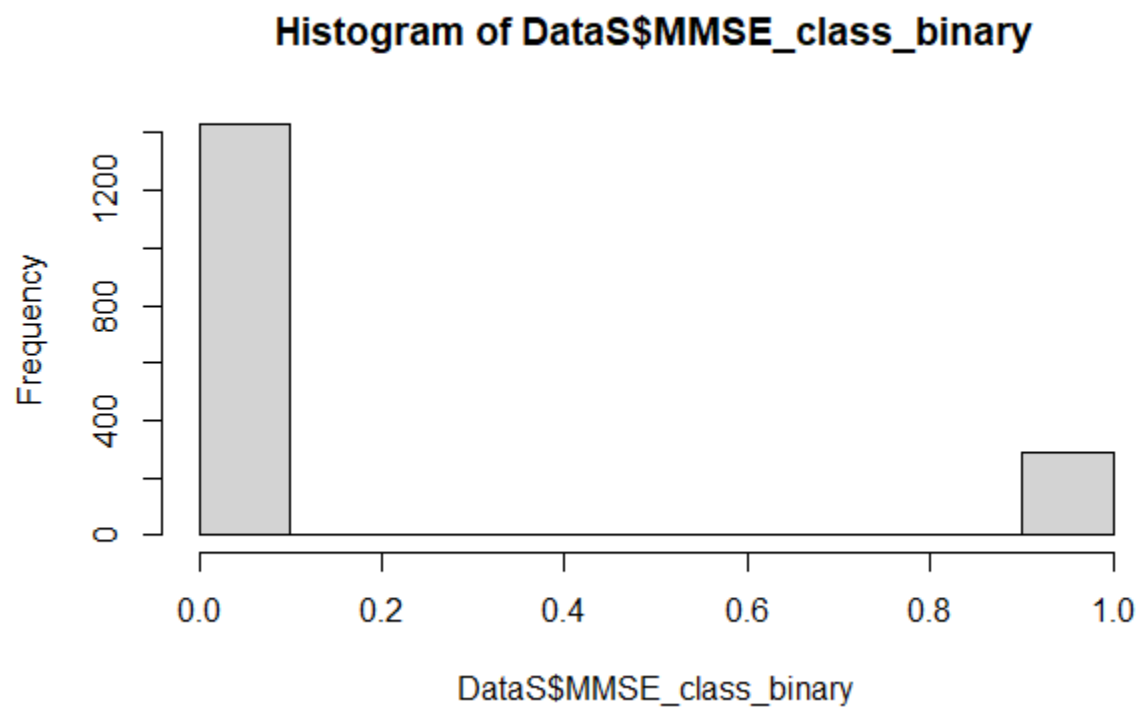
The purpose is to explore the relationship between Age, marital status and Body weight with the mental health of the community of Dwelling elderly individuals at the Hong Kong Medical Center. The average age of elderly individuals is 77 years old, which indicates the average life span of a dwelling community is 77 years old.



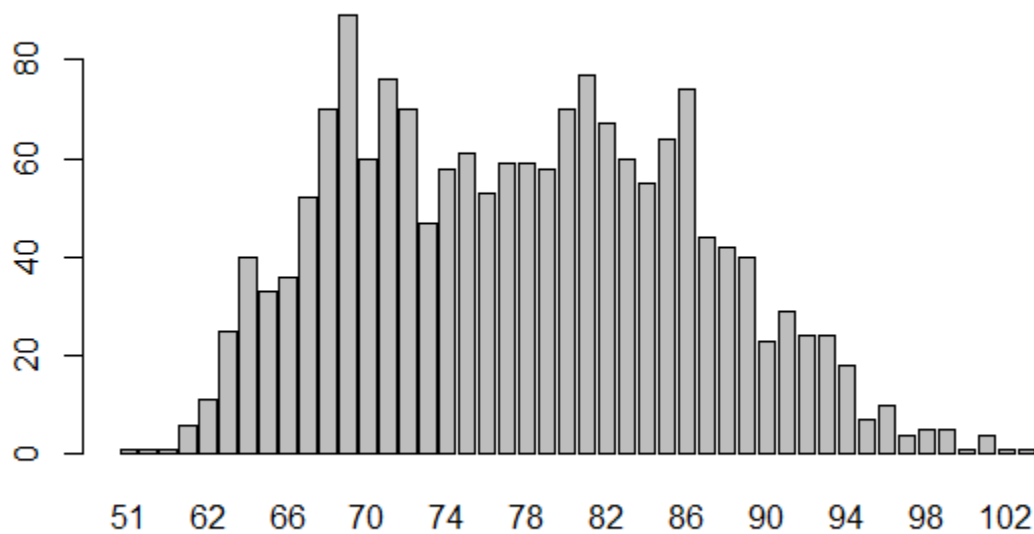
The correlation matrix Shows the relationship among variables. Age and mental condition have a positive correlation, Individuals with more age have a high chance of having mental Issues. Whereas body weight and Body height have a negative correlation with Mental health, the Height and weight of elderly individuals haven't any impact on their mental Health.



The ages of the Community-dwelling elderly Individuals lie between 60 years to 100 years.



Elderly Individuals with their separate lives are not suffering from unhealthy mental Conditions. Only 15% of Elderly individuals are suffering from Mental Health issues.



The elderly dwelling community has Financially Stable conditions. The barplot above shows that the earning of elderly individuals lie between fifty thousand to roundabout q lac, which shows that they are financially independent and play a great role in a well-growing community.

Prediction Models

We take the two variables Age and the mini-mental state, there is a positive correlation among them which indicates with the increase of age, the mental condition of the elderly individuals started affecting.

Discussion

The mean age of the dwelling community elderly individuals is 77 years old, an increase in the body weight and height doesn't impact mental health. Whereas people with high wages are mentally stable, however, marriage status and mental condition have a negative correlation: failure in the marriage cause a mental disturbance.

Conclusion

Especially participation in cognitive and social activities may lead to better mental conditions in the elderly. However, the failure of marriage status and the increasing age may have an impact on mental health. Further studies indicate that variables like body weight and height don't have any impact on the mental health of elderly individuals.

Reference

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