ST334: Report 3 2023-2024

Background

The third report is intended to give you practice in presenting results of regression models to statistical and non-statistical readers. It uses a subset of data from a randomised controlled trial which compared four mechanical supports for acute, severe ankle sprain CAST: Collaborative Ankle Support Trial. Patients were sent questionnaires at 1, 3 and 9 months after their ankle injuries.

The main outcome variable was a Foot and Ankle Outcome Score (FAOS). FAOS consists of five subscales; Pain, other Symptoms, Function in daily living, Function in sport and recreation, and foot and ankle-related Quality of Life. The questionnaire is available on the Moodle 'FAOSEng.pdf'.

Data set provided: CAST-2023ST344.csv

The subset of the data for this project, 'CAST-2023ST344.csv', includes 560 people with standard baseline information: sex, age, height and weight. Age is in years, height is in centimetres, and weight is in kilogrammes. The other variables are the baseline function in daily living score ('bfaosFDL'), with zero being worst, and 100 best, and whether the response for Sports was missing at 9 month follow-up ('miss9sport').

Questions

Explore the data using R markdown. You should consider these questions:

How does weight vary with age, sex and height?
Does function in daily living at baseline vary with age, sex, weight or height?
What is an appropriate model for whether sports scores are missing at nine months?

Report

For the third report, produce a PDF document that gives your Student ID as author, and submit the PDF file to Moodle by Thursday Week 6, 9 November, 13:00 (Note: You do not need to submit the Rmarkdown file. The Moodle Portal setting will only accept one PDF file.) You will only be able to submit your report after you have completed the activity of submitting word count, number of tables and figures, so be prepared and have these figures ready (no delay from 13:00 will be allowed).

The report should have headings: introduction, data, methods, results, conclusions.

You should give a brief statement of the source of the data, summarise the data, explain the approach you took to answer the questions, present the results and finally conclude by answering the questions and a note of any limitations that you might want to mention.

Your findings should be explained clearly and succinctly. Include enough detail to allow a non-expert but scientific reader to understand the models you fitted. Use graphs or tables to illustrate your results so that non-scientists can understand the evidence and your conclusions.

The upper limits for this report are 900 words, two figures and two tables. An interesting report might not reach these limits.