An examination of the benefits of petting dogs before exams

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Abstract

This is an example manuscript used to demonstrate a reproducible, collaborative workflow using RMarkdown, Github, and the Papaja and trackdown packages.

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An examination of the benefits of petting dogs before exams

A recent study suggested that spending time with a pet acts as a buffer against psychological stress (Ratschen et al., 2020). Imagine that we conducted an experiment to explore whether this effect generalised to stress caused by university exams. Specifically, we hypothesised that students who spent time with a university health and wellbeing dog before an exam would have fewer feelings of stress relative to students who only looked at pictures of dogs before an exam.

In order to test the hypothesis we recruited 200 students who had imminent exams and self-reported that they felt stressed, and assigned half of them to pet the university dog, and half to look through a catalogue of dog pictures. We then assessed how stressed they felt on the Stress-o-metre Scale (1-100).

# 1 Methods

## 1.1 Participants

We recruited two hundred undergraduate students. All students were screened to ensure that they planned to sit an exam within the next 5 days, and that they reported feeling stressed.

## 1.2 Material

We randomly assigned half of the participants to pet the university dog, and half to look through a catalogue of dog pictures. We then assessed how stressed they felt on the Stress-o-metre Scale (1-100).



*Figure* *1.*  This is a test

## 1.3 Procedure

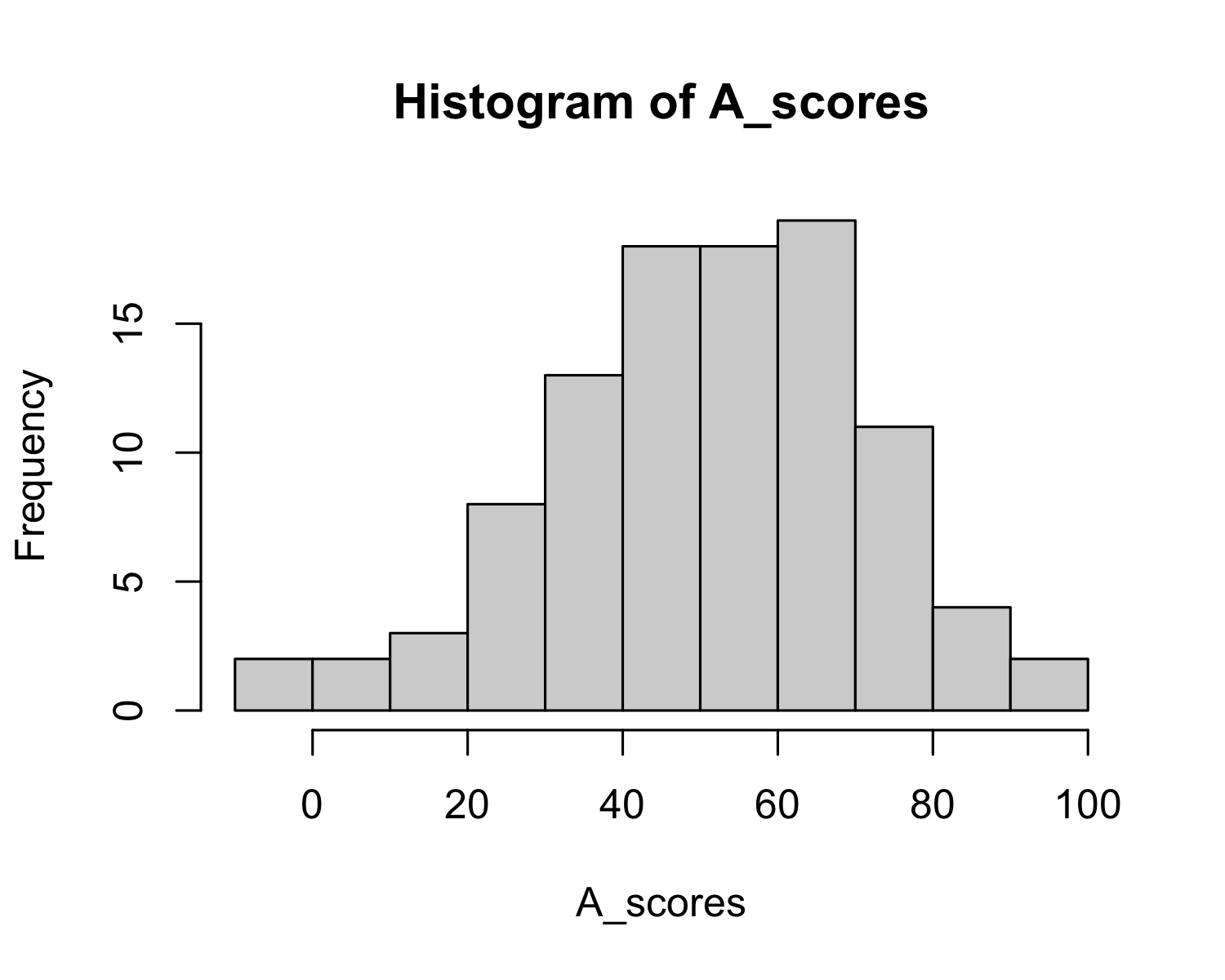
Our imaginary students were randomly assigned into the “Live Dog” condition or the “Dog Pictures” condition. Each participant sat the intervention and test individually. They spent 5 minutes either petting the dog, or looking at dog pictures. They then completed the Stress-o-Metre self-assessment in a quiet room.

## 1.4 Data analysis

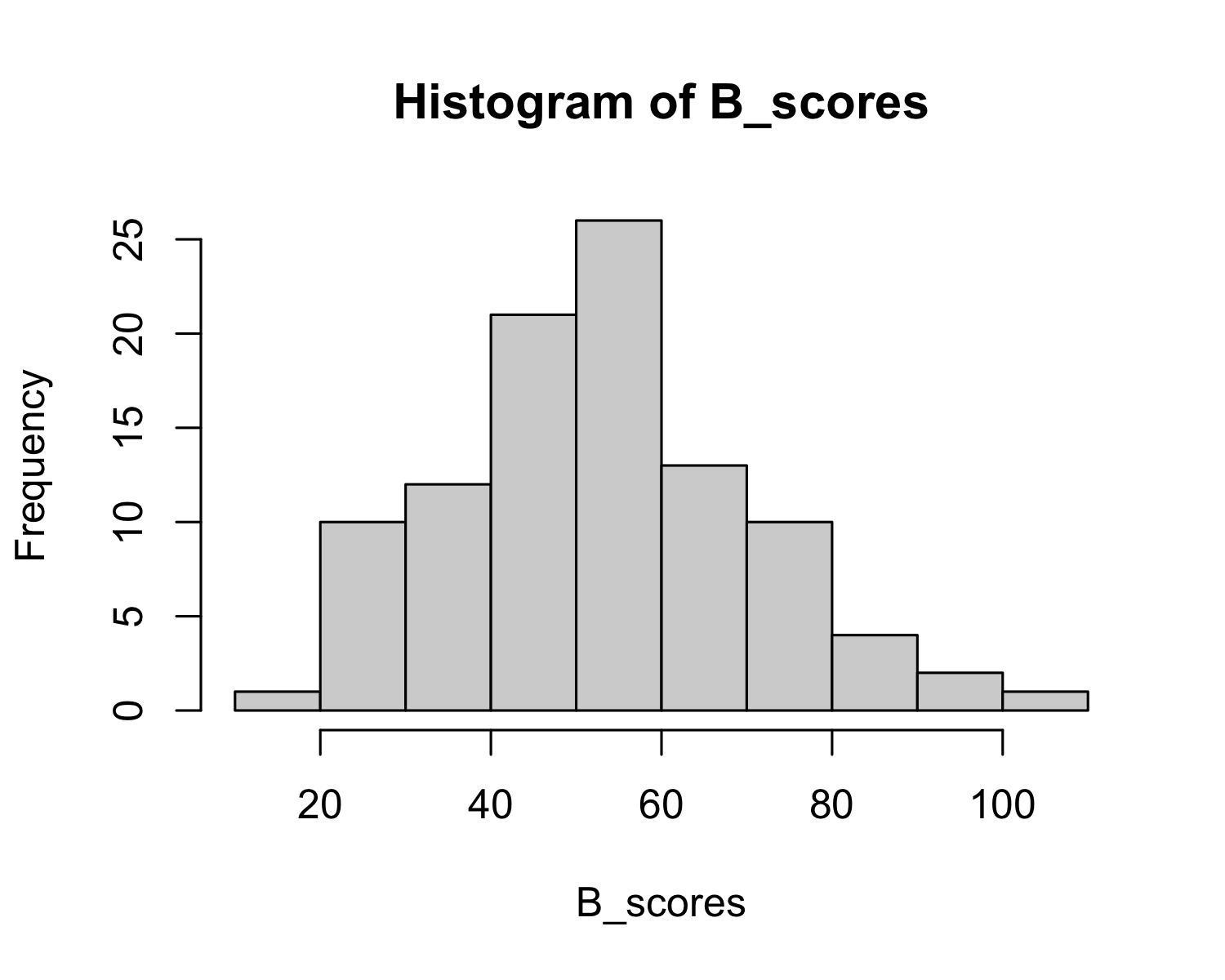
The distribution of scores of the Stress-o-Metre scale from the “Live Dog” and “Dog Pictures” groups are depicted in Figures 2 and 3 below. The reliability of the Stress-0-metre Scale has not been established.

## (For the purposes of this simulation, we have a simple between subjects design, where the independent (grouping) variable has two levels, and the dependent variable is from a normal distribution.) ##  
  
# Simulate normally distributed data for an independent samples t-test  
muA <- 50 #what's the population mean for condition A?  
muB <- 55 #what's the population mean for condition B?  
  
n1 <- 100 #how many participants group A?  
n2 <- 100 #how many participants group B?  
  
sigma1 <- 20 #population standard deviation of condition A?  
sigma2 <- 20 #population standard deviation of condition B?

# Generate the scores using the `rnorm()` function, then plot the distribution of scores for each group.  
  
A\_scores <- rnorm(n1,muA,sigma1) #simulate a vector of 100 deviates from normal distribution  
B\_scores <- rnorm(n2,muB,sigma2) #simulate a vector of 100 deviates from normal distribution



*Figure* *2.*  Distribution of scores from Live dog condition



*Figure* *3.*  Distribution of scores from Dog pictures condition

We used R [Version 4.0.2; R Core Team (2020)] and the R-packages *cowplot* [Version 1.1.1; Wilke (2020)], *ggplot2* [Version 3.3.3; Wickham (2016)], and *papaja* [Version 0.1.0.9997; Aust and Barth (2020)] for all our analyses.

# 2 Results

A Welch Two Sample t-test indicated that participants who pet dogs (*M* = 50.65, *SD* = 20.83) did [not] score significantly lower than participants who looked at pictures of dogs (*M* = 53.25, *SD* = 18.08), *t*(194.18) = -0.94, *p* = 0.35on the Stress-O-Metre Scale.

# 3 Discussion

This is a poorly designed study with multiple confounds. In future research, the materials and intervention will need to be validated, and the Stress-O-Metre’s reliability established. The design would benefit from a pre-test as well.

# 4 References

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