

1 Reproducing the analysis of Pfattheicher et al., (2020)

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Abstract

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11 A reproduction of the analysis for Study 4 from Pfattheicher et al., (2020).

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Reproducing the analysis of Pfattheicher et al., (2020)

Pfattheicher, Nockur, Böhm, Sassenrath, and Petersen (n.d.) wanted to know if physical distancing and the wearing of face masks are due to empathy for people most vulnerable to the virus. In study 4, state empathy was assessed after each participant was assigned to either an empathy condition, an information-only condition, or a control condition. This was to prove empirically that higher levels of state empathy are directly related to the motivation to adhere to COVID-19 measures.

Methods

Participants

This study had a total of 1,526 participants; 47.2% female; age: $M = 34.71$ years, $SD = 12.09$) and was run in Germany between June 23 and June 26, 2020. Each participant was randomly assigned to one of three conditions: the information-only condition ($n = 492$), the empathy condition ($n = 500$), or the control condition ($n = 534$).

Procedure

Participants in the information-only condition read an informative text from the Robert Koch Institute detailing facts about the coronavirus, how it is transmitted, and that face masks can prevent the spread of the disease. Participants in the empathy condition read a text of approximately similar length, in which a woman with a rare immune disease reported having had a coronavirus infection, detailed how seriously affected she was, and stated that she did not like it when people met others without wearing a face mask. In the control condition, no text and information were given, resembling a situation of no intervention. After the condition manipulations, participants responded to three items assessing state empathy. The central dependent variable was motivation to wear a face mask, which was measured with one item: “During the coming days, I will wear a face mask as often as possible when I meet other people.”

Results

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39 ## NULL

40 ##

41 ## Two Sample t-test

42 ##

43 ## data: empathy and info

44 ## t = 31.216, df = 990, p-value < 2.2e-16

45 ## alternative hypothesis: true difference in means is not equal to 0

46 ## 95 percent confidence interval:

47 ## 1.767129 2.004213

48 ## sample estimates:

49 ## mean of x mean of y

50 ## 4.029980 2.144309

51 ##

52 ## Two Sample t-test

53 ##

54 ## data: empathy and control

55 ## t = 32.411, df = 1032, p-value < 2.2e-16

56 ## alternative hypothesis: true difference in means is not equal to 0

57 ## 95 percent confidence interval:

58 ## 1.816266 2.050361

59 ## sample estimates:

60 ## mean of x mean of y

61 ## 4.029980 2.096667

62 ##

```

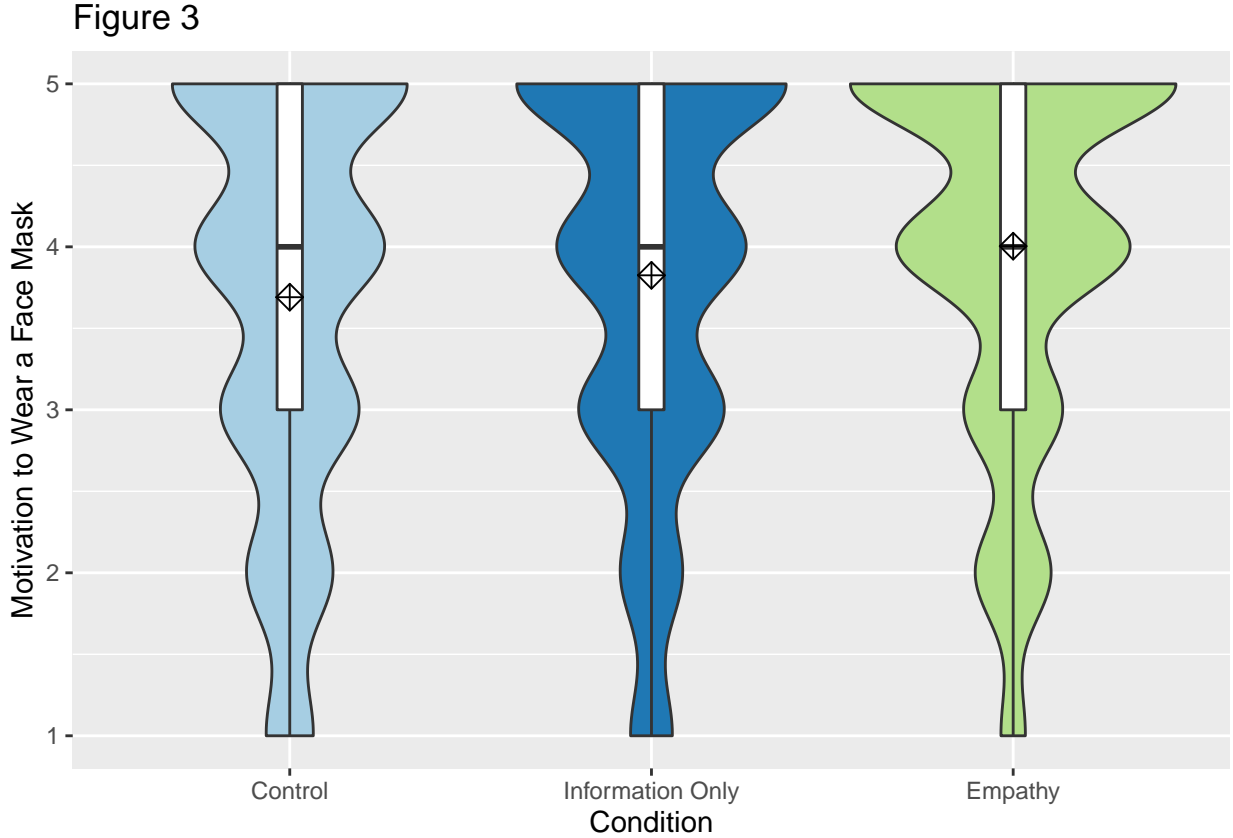
63 ## Two Sample t-test
64 ##
65 ## data: control and info
66 ## t = -0.75821, df = 1024, p-value = 0.4485
67 ## alternative hypothesis: true difference in means is not equal to 0
68 ## 95 percent confidence interval:
69 ## -0.17094276 0.07565821
70 ## sample estimates:
71 ## mean of x mean of y
72 ## 2.096667 2.144309

```

```

73 ##              Df Sum Sq Mean Sq F value    Pr(>F)
74 ## bed           2    25.4   12.697    8.973 0.000134 ***
75 ## Residuals   1523  2155.0    1.415
76 ## ---
77 ## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```



I found that participants in the empathy condition reported significantly higher state-empathy levels compared with the information-only condition, $\Delta M = 1.89$, 95% CI [1.77, 2.00], $t(990) = 31.22$, $p < .001$, and compared with the control condition $\Delta M = 1.93$, 95% CI [1.82, 2.05], $t(1,032) = 32.41$, $p < .001$. The information-only and the control conditions did not differ significantly, $\Delta M = -0.05$, 95% CI [-0.17, 0.08], $t(1,024) = -0.76$, $p = .448$. A one-way ANOVA showed that the motivation to wear a mask also differed between conditions, $F(2, 1,523) = 8.97$, $MSE = 1.41$, $p < .001$, $\hat{\eta}_G^2 = .012$

Discussion

The re-analysis successfully reproduced the analysis reported by Pfattheicher et al., (2020). In the following section, I show an example of completing a simulation based power analysis for this design.

⁹⁰ **Simulation-based power analysis**

References

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92 Pfattheicher, S., Nockur, L., Böhm, R., Sassenrath, C., & Petersen, M. B. (n.d.). The
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