COVID-19 - AstraZeneca BOX - part 2 (#66119)

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1) Have any data been collected for this study already?
No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?
Hypothesis 1: Compared to the control condition (no infographic), the perceived probability of blood clots due to the AstraZeneca vaccine decreases in conditions presenting evidence-based information about the comparative risk of severe COVID-19 vs. AstraZeneca's risk of specific blood clots.

Hypothesis 2: Compared to the illustration of a low incidence, the perceived probability of becoming infected with the coronavirus increases in the condition with an infographic illustrating a high incidence.

Hypothesis 3: Compared to presenting risk/benefit information numerically, the perceived probability of blood clots due to the AstraZeneca vaccine is lower in conditions with icons illustrating the respective frequencies.

Hypothesis 4: When the risk of an ICU admission is depicted with icons (instead of numbers in a table), the difference in the perceived probability of becoming infected with the coronavirus will be more pronounced when comparing low and high incidence.

Hypothesis 5:
A) The greater the perceived probability of becoming infected the higher …
B) The greater the perceived severity of becoming infected the higher …
C) The lower the perceived probability of blood clots the higher …
D) The lower the perceived severity of blood clots the higher …
... the intention to get vaccinated with AstraZeneca.

3) Describe the key dependent variable(s) specifying how they will be measured.
Perceived probability of blood clots due to the AstraZeneca vaccine:
How likely do you think you are to have blood clots after vaccination with AstraZeneca vaccine?
on a seven-point scale (1 = extremely unlikely; 7 = extremely likely)

Perceived severity of blood clots due to the AstraZeneca vaccine:
How do you think it would affect your health if you had a blood clot after being vaccinated with the AstraZeneca vaccine?
on a seven-point scale (1 = completely harmless; 7 = extremely dangerous)

Perceived probability of becoming infected:
How likely do you think you are to become infected with coronavirus?
on a seven-point scale (1 = extremely unlikely; 7 = extremely likely)

Perceived severity of becoming infected:
How do you think about an infection with the coronavirus for yourself?
on a seven-point scale (1 = completely harmless; 7 = extremely dangerous)

Intention to get vaccinated:
How would you decide if you had the opportunity next week to be vaccinated against the coronavirus with AstraZeneca's vaccine?
on a seven-point scale (1 = no way vaccinate; 7 = vaccinate in any case)

4) How many and which conditions will participants be assigned to?
Participants will be randomly assigned to a 3 (infographic) x 2 (infection risk) +1 (control) between-subjects design:

Infographic:
(1) Infographic with numbers only
(2) Infographic with circles as icons
(3) Infographic with Manikin figure as icons

Infection risk:
(1) Low
(2) High

Control: no infographic

The conditions will be balanced regarding the respective age groups for which risk information is presented (20-29, 30-39, 40-49, 50-59, 60-69 yrs) and gender.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
Hypotheses 1: t-test for independent samples with infographic (control vs. any infographic) as independent variable and perceived risk of getting vaccinated with AstraZeneca as dependent variable

Hypotheses 2 – 4: 3 x 2 ANOVA with a-priori contrasts
Y1: Perceived probability of blood clots due to the AstraZeneca vaccine
Y2: Perceived probability of becoming infected

X1: Infographic
X2: Infection risk

The hypotheses are confirmed at an alpha level of 0.05 when …
H1 (Y1): control > any infographic
H2 (Y2): contrast infection risk (low < high)
H3 (Y1): contrast infographic (table > any icons)
H4 (Y2): interaction infographic*infection risk (difference high – low is bigger in any icons compared to table)

Hypothesis 5:
Regression analyses with
DV: Intention to get vaccinated
Predictors:
Perceived probability of becoming infected, perceived severity of becoming infected, perceived probability of blood clots due to the AstraZeneca vaccine, perceived severity of blood clots due to the AstraZeneca vaccine

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
We will exclude participants aged below 20 and above 69, as well as participants who are already vaccinated

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.
Statistical a priori power analysis of a 3 x 2 ANOVA was conducted using the G*Power under the following assumptions:

ANOVA: Fixed effects, special, main effects and interactions

G*Power input parameters: Effect size f=0.15 | alpha error prob=0.05 | Power=0.95 | Numerator df = 2 | Number of groups = 6

G*Power output parameters: Noncentrality parameter lambda=15.525 | Critical F=3.0088912 | Denominator df=684 | Total sample = 690 | Actual power=0.9501770

To account for the control group, additional 115 participants (690 / 6 groups = 115) are necessary, resulting in a total sample size of 805 participants. Since this experiment is part of a larger study requiring more participants, the final sample size is n=1,054 before applying the exclusion criteria age.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)
Variables collected for exploratory purposes: Infection with the novel coronavirus, Confidence in the AstraZeneca vaccine, Calculation regarding getting the AstraZeneca vaccine, Preference for alternative vaccines, Perceived risk of side effects of the AstraZeneca vaccine, Short Graph Literacy (SGL) scale (Okan et al., 2019), Subjective Numeracy Scale (McNaughton et al., 2015)