Anxiety and the Effectiveness of Misinformation Fact-Checks

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Abstract

As levels of misinformation rise in the United States, so does the threat to efficient and effective policy-making. Most Americans are subject to misinformation, causing them to actively think/behave against the recommendations and empirical findings of experts. That said, in the absence of misinformation fact-checks and the presence of individual defiance toward corrective information, a variety of problems have been fostered within our borders (e.g., events like *Pizzagate and* conspiracies about Covid-19). Anxiety may be a factor contributing to this phenomenon, but it has been largely overlooked in previous research. Building off existing scholarship surrounding these variables, I conducted an online survey experiment to test the relationship between anxiety and fact-checks on individual perceptions. After analyzing my results, I found increased levels of anxiety and the presence of fact-checks do not have a significant effect on an individual's perception about the Covid-19 vaccine. However, anxiety itself has a negative and significant impact on an individual's perception about the effectiveness of the Covid-19 vaccine.

Overview

Background:
- What factors contribute to an individual's belief in misperceptions?
- Previous research shows...
  - Misinformation in the U.S. has created adverse complications for a range of different salient issues in politics, science, and medicine (Flynn et al., 2017).
  - In general, human emotions can have a significant impact on our actions and beliefs (Albertson & Gadarian, 2015).
- *Hypothesis: I hypothesize an increase in the level of anxiety individuals have will lead to a decrease in the effectiveness of a misinformation fact-check.*

Research Design:
- Nationally representative online survey experiment
- Original Survey Data: June 2023
- 607 respondents
- 2x2 between-subjects experiment
  - Independent Variables:
    - Anxiety Treatment (i.e., Artificial Intelligence article)
    - Anxiety Control (i.e., Virgin-Birth in Crocodile article)
    - Misinformation Treatment (i.e., Facebook post about the Covid-19 vaccine being harmful)
    - Misinformation Control (i.e., fact-check from PolitiFact about the Covid-19 vaccine being helpful)
  - Dependent Variables:
    - 5 opinion questions measured with a Likert scale

Results

- Interaction Analysis (Figure 1)
  - Anxiety Dummy: respondents induced with anxiety
  - Fact-Check Dummy: respondents presented with fact-check
  - Interaction: respondents from both groups above
- Figure 1 shows...
  - There is a negative but significant correlation between anxiety and individual perceptions. Substantively, a 1-point increase in a respondent's level of anxiety leads to a .35-point decrease in that respondent's average perception about the effectiveness of the Covid-19 vaccine.
  - Neither the presence of a fact-check nor the combination of both anxiety and a fact-check have a significant effect on an individual's perceptions about the Covid-19 vaccine.
  - A respondent only having a high school diploma, or being a republican, has a negative and significant impact on individual perceptions about the Covid-19 vaccine.
  - A respondent being white has a positive and significant impact on individual perceptions about the Covid-19 vaccine.

Negative Impact →
Positive Effect →
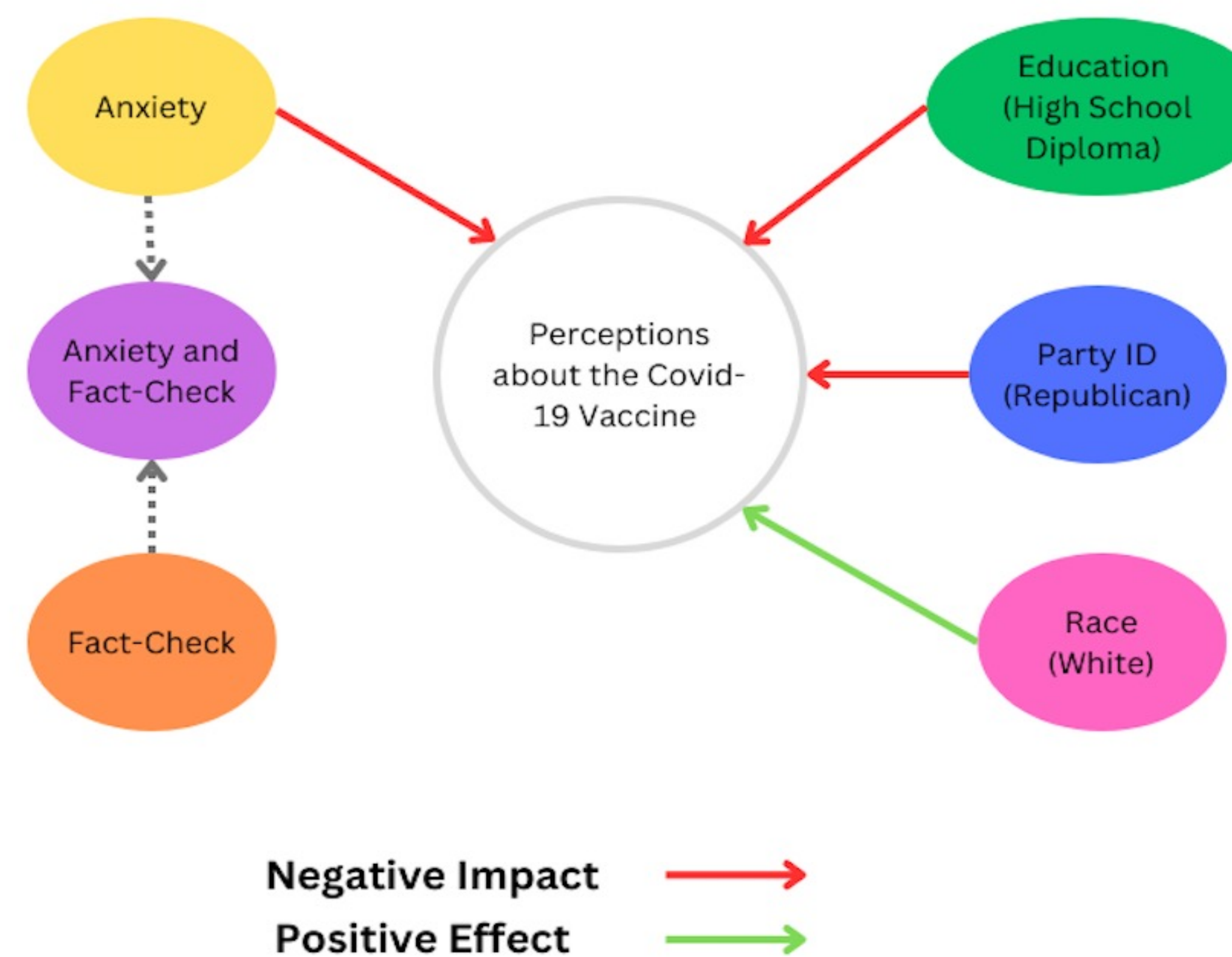
Conclusions and Future Directions

- Does the presence of anxiety and misinformation fact-checks influence an individual's perceptions?
  - My research suggests no (kind of).
- This could likely be due to the topic (i.e., Covid-19 vaccines) I chose.
- In future research, one should explore the effects of other emotions that may lead an individual to hold misperceptions. Furthermore, one could examine other topics where common misperceptions are held.
  - For example, what effect does trait aggression have on an individual's misperceptions. Or what factors cause people to hold misperceptions about election fraud in the US?

Figure 1

	Dependent variable:
	Individual Perceptions
Anxiety Dummy	-0.35***
	(0.11)
Fact-Check Dummy	-0.09
	(0.11)
Interaction	0.08
	(0.15)
Age	0.004
	(0.002)
Gender (Male)	0.09
	(0.08)
Education (High School Diploma)	-0.40***
	(0.10)
Party ID (Republican)	-1.08***
	(0.10)
Race (White)	0.64***
	(0.11)
Average Income ($80,000 - $84,999)	0.09
	(0.29)
Region (West)	-0.06
	(0.10)
Constant	3.04***
	(0.16)
Observations	607
R^2	0.25
Adjusted R^2	0.24
Residual Std. Error	0.93 (df = 596)
F Statistic	19.77*** (df = 10; 596)
Note:	*p **p ***p <0.01

References

Flynn, D. J., Nyhan, B., & Reifler, J. (2017). The nature and origins of misperceptions: Understanding false and unsupported beliefs about politics. *Political Psychology*, *38*, 127-150.

Albertson, B., & Gadarian, S. K. (2015). *Anxious politics: Democratic citizenship in a threatening world*. Cambridge University Press.