

The Ethics and Moral Psychology of Vaccination: Evidence from a Cross-cultural Study

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Abstract

We explore the ethics and moral psychology of parents' vaccination decisions, focusing on the example of HPV. In a pre-registered, cross-cultural study with representative samples from the US, the UK, and Germany (GE) (N=1457), we identified factors that determine their intention to (not) vaccinate their child. Structural equation modeling (SEM) findings revealed that HPV-vaccination intention across all three countries was primarily predicted by HPV-vaccination attitude and subjective norms. Attitude was predicted by the perceived risks of vaccination and infection as well as the perceived effectiveness of the vaccine. The more participants view the decision about vaccination as an ethically salient one, the more they are willing to vaccinate their children. Also, stronger beliefs among parents that vaccination is a morally good decision are positively correlated with vaccination intention. Greater levels of trust in doctors, science and medical institutions correlate with increased parental willingness to have their children vaccinated. Our findings indicate avenues to increase the rate of vaccination against HPV by focussing on perceptions of risk and effectiveness of HPV-vaccination, subjective values and the role of medical professionals.

Theoretical Background

The HPV-vaccination effectively reduces the risk of developing cervical and other types of cancer (Kombe Kombe et al., 2021). Still, rates have remained below the WHO target of vaccinating 90% of 15-year old girls worldwide. In Germany, according to the Robert Koch Institut (RKI) only 51% of 18-year old girls and 1.3% of boys were vaccinated against HPV in 2018 (Rieck et al., 2022). In the US and the UK the vaccination rates for girls were 61% (Pingali et al., 2021) to 76% (Farnes et al., 2022) and for boys 56% (Pingali et al., 2021) to 65% (Farnes et al., 2022).

Possible predictors of vaccination behavior are provided by the theory of planned behavior (TPB; Ajzen, 1991), the health belief model (HBM; Rosenstock, 1974), and previous studies on vaccination intentions (e.g. Caso et al., 2019, 2021) (Fig. 1). Factors such as knowledge about the disease and the available vaccines, risk appraisal and trust in medical institutions or professionals are thought to influence intention (Eitze et al., 2021; Capasso et al., 2022), jointly with moral values (Dawson, 2011; Amin et al., 2017) and psychological variables such as anticipated emotions or perceived behavioral control (Leder et al., 2015). However, the relationships between these factors and their relative weight on attitudes and vaccination intention remains contested. Given the moralised debate about vaccines like that against the coronavirus, we also probed participants' moral views on the HPV vaccination.

Hypotheses

H1: Parents' HPV vaccination intentions can be predicted by a unified model primarily based on the TPB and HBM.

H2: Participants view the decision to get their children vaccinated as an ethically salient one, or even feel morally pressured to have their children vaccinated (or not). The more they regard it as an ethical decision, and the ethically better they judge the vaccination, the greater is their willingness to get their child vaccinated.

H3: The influence of risk perception on willingness to vaccinate is moderated by trust in science, physicians, and institutions. The higher the trust, the lower the negative influence of perceived risk on willingness to vaccinate.

Method

Sample

1457 parents of 1751 unvaccinated children of recommended vaccination age (9 (11 UK) -17).

	GE (Qualtrics)	US (Prolific)	UK (Prolific)
n			
parents	659	398	400
children	824	516	411
Age (M, SD)			
parents	38.892, 8.710	42.117, 8.092	42.790, 8.162
Gender			
parents	65.06	49.49	49.87
(% female)			
children	51.60	46.318	55.718

Measures

- Online self-report questionnaire (30 minutes) – Qualtrics
- Instruments indexed in fig. 1

Discussion

- Hypotheses were partially supported by the data.
- Attitudes predicted by risk and effectiveness perceptions play the biggest role in vaccination decisions across countries (H1).
- Perception of vaccination as morally good is related to higher willingness to vaccinate (H2).
- Trust in doctors, science and health institutions modulates the relationship between perceived risk and vaccination intention (H3).
- Future research should extend to low- and middle-income countries.
- Implementing interventions guided by these results can contribute to broader public health goals by improving HPV vaccination rates and reducing cancer-related infection rates.

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Results

Fig 1. SEM – Theory of Planned Behavior and Health Belief Model (HBM)

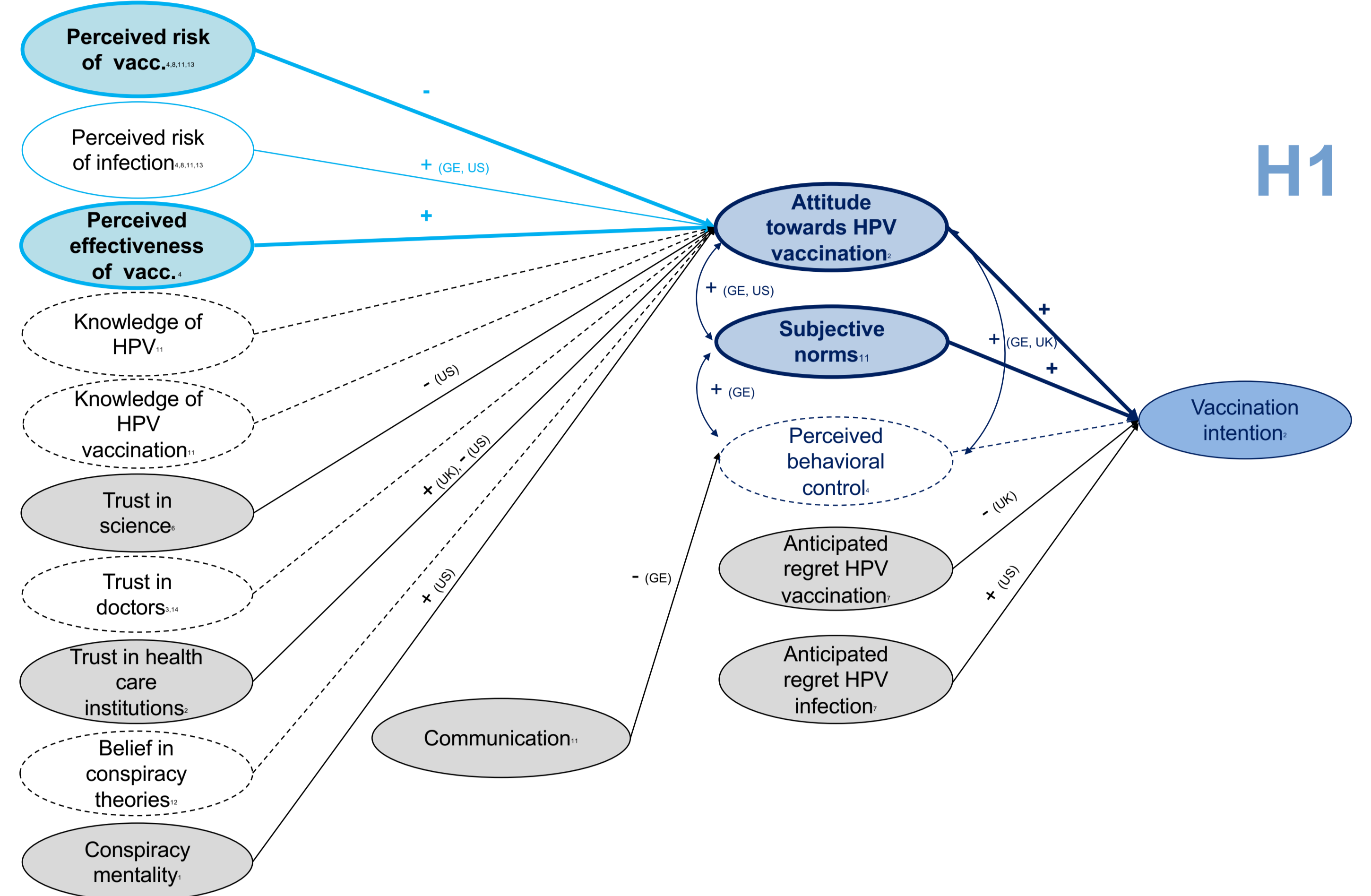


Fig 1. Predictors of vaccination intention. Variables of TPB, Variables of HBM, Variables of previous studies. Bold lines indicate significant results in ALL countries, normal lines indicate significant results in some countries and dashed lines indicate insignificant results.

Fig 2. Intention to have one's child vaccinated as a function of ethical variables

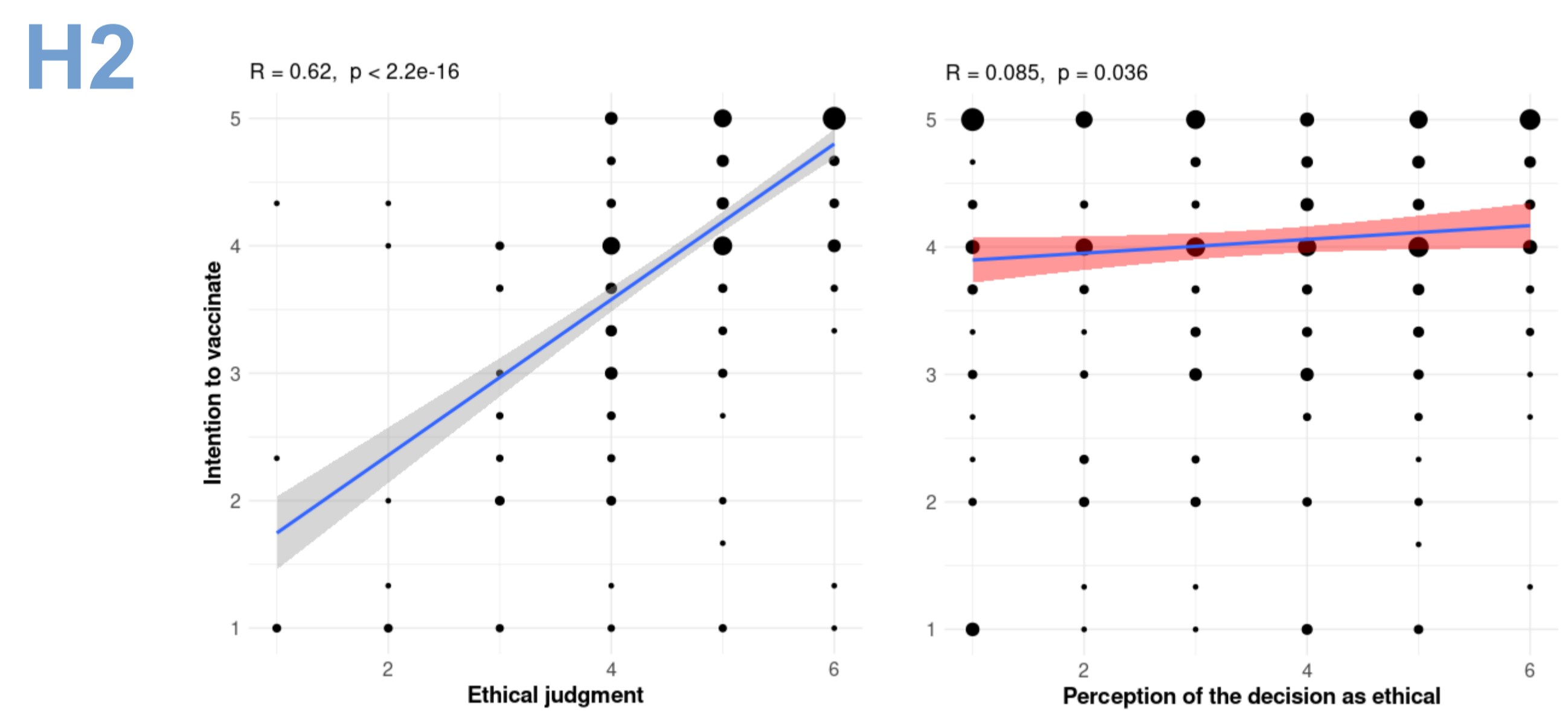


Fig 2. Correlation between ethical variables and vaccination intention. Intention to have one's child vaccinated as a function of how morally good or bad parents judge vaccination to be (left) and perception of the decision to vaccinate as a moral one (right).

Fig 3. Effect of trust in the relationship between risk and decision to vaccinate

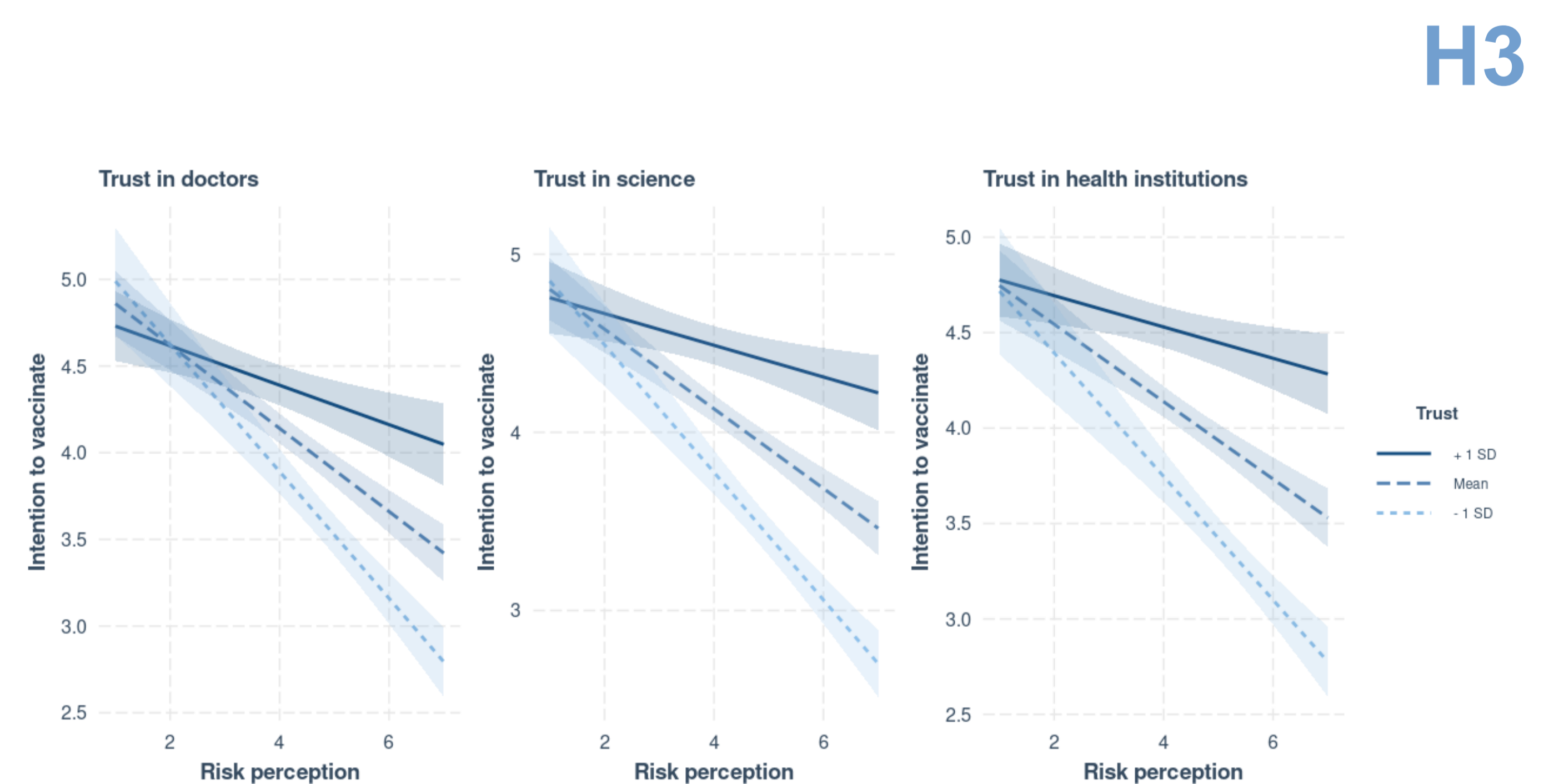


Fig 3. Effect of trust in the relationship between risk perception and intention to vaccinate. Intention to have one's child vaccinated as a function of vaccine risk perception in people with low, average or high levels of trust in doctors (left), science (middle) and health institutions (right).