

COVID-19 Booster Vaccine Acceptance in Ethnic Minority Individuals in the United Kingdom: A mixed-methods study using Protection Motivation Theory

[Judith Eberhardt](#)¹, John Kabuye², Alyssa Agaimwonyi¹, and Jonathan Ling³

¹Teesside University, School of Social Sciences, Humanities and Law, United Kingdom. Email: j.Eberhardt@tees.ac.uk

²Ubuntu Multicultural Centre, Middlesbrough, United Kingdom

³University of Sunderland, Faculty of Health Sciences and Wellbeing, United Kingdom

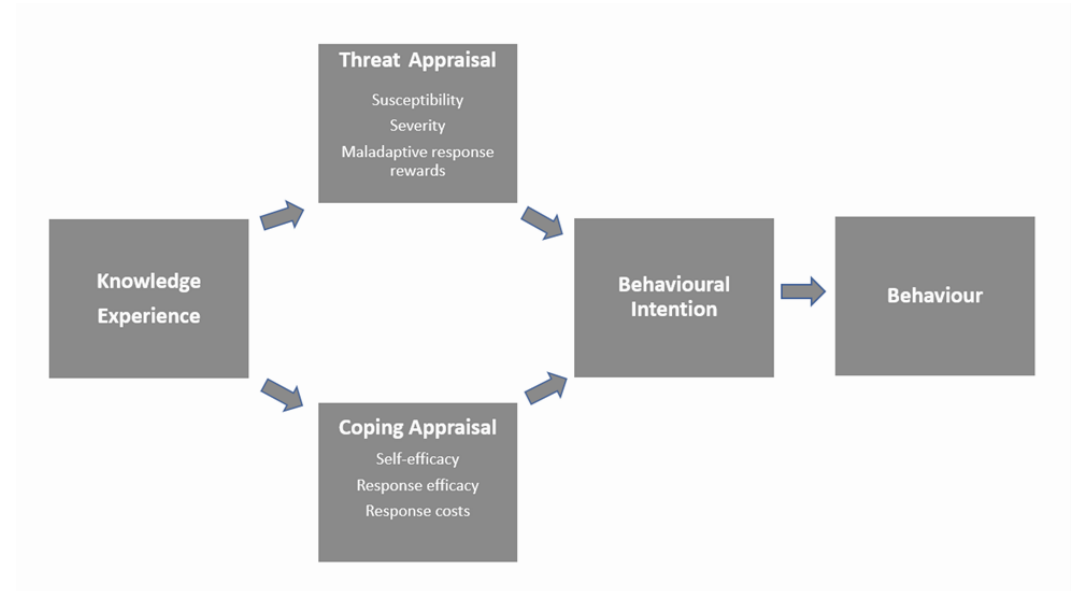
Many thanks to Middlesbrough Council for funding this work.

Introduction

- Dr Judith Eberhardt, Associate Professor of Psychology, Teesside University, United Kingdom
- Global COVID-19 vaccination efforts are ongoing
- Vaccine hesitancy and scepticism are still common, particularly among minority ethnic individuals
- Mistrust of government/medical mistrust prevalent
- Mixed messages and limited research contribute to confusion

Protection Motivation Theory and Vaccine Acceptance

- Protection Motivation Theory (PMT) explains motivation to respond to health threats
- PMT considers perceived susceptibility, severity, maladaptive response rewards, self-efficacy, response efficacy, and response costs
- Applied to COVID-19 vaccination intention



Conspiracy Beliefs, Social Media Use, and Demographic Factors

- Conspiracy beliefs linked to lower adherence to guidelines
- Understanding conspiracy beliefs' impact on COVID-19 vaccine intention is vital
- Social media perpetuates misinformation and affects vaccine hesitancy
- Age, gender, education, and religiosity influence vaccine acceptance
- Limited knowledge about psychological and demographic factors in COVID-19 vaccination intention in ethnic minorities

Aims

- Investigate COVID-19 booster vaccination intention among ethnic minorities in Middlesbrough
- Examine PMT, COVID-19 conspiracy beliefs, social media use, and demographic factors in relation to vaccination intention
- Provide recommendations to inform interventions and campaigns, based on findings

Method

- Mixed-methods approach: online surveys and semi-structured interviews.
- - 64 survey participants (33 females, 31 males); $m_{\text{age}} = 31.06$ ($SD = 8.36$)
- - 16 semi-structured interviews (11 females, 5 males) conducted in North East England
- Quantitative measures: PMT constructs, conspiracy beliefs, social media use, demographics
- Qualitative measures: in-depth semi-structured interviews

		Overall (%)
N		64
- Vaccinated		59 (92.2)
- Unvaccinated		5 (7.8)
- Received booster vaccine		25 (42.2%)
- NOT received booster vaccine		34 (57.6%)
Age in years M (SD)		31.06 (8.36)
Age category		N (%)
	18 - 29	33 (51.6)
	30 - 39	21 (32.8)
	40 - 49	6 (9.4)
	50 - 59	2 (3.1)
	60 - 69	1 (1.6)
	Unstated	1 (1.6)
- Mean age of respondents who had received booster dose (SD)		33.24 (8.21)
- Mean age of respondents who had NOT received booster vaccine (SD)		29.61 (7.53)
Ethnicity (%)	Indian	27 (42.2)
	Black African	22 (34.4)
	Pakistani	6 (9.4)
	Mixed - White and Black African/Caribbean	4 (6.2)
	Any other Black, African, Caribbean, Mixed or Multiple Ethnic background	3 (4.7)
	Any other ethnic group	2 (3.1)
Education (%)	No qualifications	1 (1.6)
	Secondary Education qualifications	2 (3.1)
	Advanced level qualifications	7 (10.9)
	Higher education (e.g., BA, BSc, or equivalent)	17 (26.6)
	Postgraduate qualifications (e.g., MA, MSc, PhD, DPhil)	37 (57.8)
Employment status (%)	Employed, working part-time	38 (59.4)
	Employed, working full-time	10 (15.6)
	Not employed, looking for work	10 (15.6)
	Not employed, not looking for work	6 (9.4)
Religiosity M (SD)	Single item: 'How important is religion in your life?' (Five-point Likert scale; 1 = not important at all, 5 = extremely important)	3.69 (1.27)

Participant number	Age	Gender	Level of education	Ethnicity	Received COVID-19 booster vaccine?
1	27	Female	A-levels	Black African	No
2	49	Female	Bachelor's degree	Black African	No
3	37	Female	Master's degree	Black African	No
4	33	Male	Postgraduate degree	Indian	No
5	37	Female	GCSEs	Black African	Yes
6	30	Female	Doctorate	Indian	Yes
7	39	Female	Not provided	Black British	No
8	40	Female	GCSEs	White East European	No
9	27	Female	A-levels	Black African	No
10	57	Female	GCSEs	Black African	Yes
11	51	Male	Bachelor's degree	Black African	No
12	41	Male	Master's degree	Black African	Yes
13	32	Female	Master's degree	Black African	No
14	36	Male	Diploma	Black African	No
15	49	Male	A-levels	Black African	No
16	48	Female	Master's degree	Black African	Yes

Analysis

- Multiple linear regression to identify predictors of COVID-19 booster vaccination intention
- Inductive thematic analysis (Braun & Clarke, 2006) to elicit in-depth information on barriers to COVID-19 booster vaccination among minority ethnic individuals

Key Descriptive Statistics

- **ETHNICITY BREAKDOWN HERE**
- 92.2% had received at least one dose of COVID-19 vaccine
- Only 42.2% had received the booster vaccine
- 31.6% had previously received flu vaccination, 55.3% likely to get it next time it was offered
- 86.7% had received their childhood immunisations
- Most trusted sources for information on COVID-19: GPs (63.6%), scientists (20%)

Multiple Regression Results

- Self-efficacy and conspiracy beliefs contributed significantly to the regression model, with 48% of the variance in COVID-19 booster vaccination intention being accounted for
- Thus, the more that participants believed that they could get vaccinated and that this was within their own control, the higher their intention to get the booster vaccination
- Conversely, the higher their conspiracy beliefs, the lower their intention to get the booster vaccination

Qualitative Findings

Theme	Subthemes
1. Perceived vulnerability to COVID-19 and side-effects of the vaccine	
1. Negative experiences with the COVID-19 vaccine	
1. Negative views related to COVID-19 vaccination	<ul style="list-style-type: none"> a. The COVID-19 booster vaccine as inconvenient or unnecessary a. Lack of confidence in the COVID-19 vaccine due to its 'hasty' development a. Lack of trust due to historic events involving medical experimentation on ethnic minorities
1. The influence of social media on COVID-19 vaccination intention	
1. Strategies to increase confidence in the COVID-19 vaccine	<ul style="list-style-type: none"> a. Enlisting community leaders a. Education

Influence of Social Media on Vaccination Intention

- Mixed views on social media's usefulness when it comes to vaccination intention
- Participants sceptical about vaccine information on social media
- Suggestions to trust official social media accounts, e.g. NHS

Strengths, Limitations, and Future Directions

- Small sample size (hence underpowered) and uneven distribution of ethnic groups
- Study focused on booster acceptance specifically – previously underexplored
- Participatory approach – individual whom we co-designed the study with and who conducted the interviews was ethnic minority member of the community. This facilitated access to the population and ensured relevance
- Future research needs more representative samples and should use a co-production approach

Recommendations

- 1. Engage community leaders to address concerns and debunk COVID-19 vaccination myths
- 2. Ensure convenient access to vaccination and remove practical barriers
- 3. Provide practical support for coping with vaccine side effects (e.g. single parents, individuals living alone)
- 4. Build trust by presenting research supporting safety and effectiveness of the vaccine, with the involvement of ethnic minority individuals

Conclusion

- Perceived susceptibility to COVID-19 and conspiracy beliefs contribute to COVID-19 booster vaccine hesitancy in ethnic minority individuals in the UK
- Barriers to vaccination include time constraints, lack of support, and mistrust due to historical events
- Involving community leaders in addressing people's concerns, misassumptions, and lack of confidence in COVID-19 vaccination may help increase vaccine uptake

Key References

- Eberhardt, J., Kabuye, J., & Ling, J. (2023). A qualitative study exploring attitudes and perceptions of the COVID-19 booster vaccine in minority ethnic individuals in North East England. *Journal of Public Health*. <https://doi.org/10.1007/s10389-023-01858-9>
- Eberhardt, J., Ling, J., Horsley, L., Cunnett, J., Fryer-Smith, E., Lant, J., Edwards, S., & Ross, E. (2022). Exploring COVID-19 vaccine confidence with people from Black and Asian backgrounds in England. *Journal of racial and ethnic health disparities*. <https://doi.org/10.1007/s40615-022-01372-w>
- Eberhardt, J., & Ling, J. (2022). A Qualitative Exploration of Perceptions of the COVID-19 Vaccine in the United Kingdom During the Later Stages of the Vaccine Rollout. *International Journal of Translational Medical Research and Public Health*, 6(1), 1-10. <https://doi.org/10.21106/ijtmrph.407>
- Eberhardt, J., & Ling, J. (2022). Explaining COVID-19 Vaccination Intention in Younger Adults using Protection Motivation Theory. *Health Psychology*. <https://doi.org/10.1037/hea0001231>
- Eberhardt, J., & Ling, J. (2021). Predicting COVID-19 Vaccination Intention Using Protection Motivation Theory and Conspiracy Beliefs. *Vaccine*. <https://doi.org/10.1016/j.vaccine.2021.09.010>

Thank you for watching

Any questions?

j.eberhardt@tees.ac.uk