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Background:

While many studies have used the Health Belief Model (HBM) to understand vaccination intention, few have explored the relationships between the HBM constructs. The aim of this study is to develop a serial mediation model dealing with latent variables to assess direct and indirect effects of the six HBM constructs (perceived susceptibility, severity, benefits, barriers, self-efficacy and cue to action) on COVID-19 vaccine intention.

Methods:

From April to June 2021, a questionnaire on vaccine intention against COVID-19 was administered to staff and students at the University of Liège (Belgium). To evaluate direct and indirect effects of the HBM constructs on vaccine intention (score 0-100), serial mediation models for each latent variable permutation were assessed with Partial Least Squares Path Modeling (PLS-PM). Bayesian information criterion (BIC) was used to compare models. Internal consistency reliability and discriminant validity were evaluated. Sociodemographic variables, health literacy, psychological profile, body mass index, chronic disease and previous COVID-19 infection were included in the models as covariates.

Results:

The sample consisted of 1256 participants. After running all permutation chains, the final causal chain, with the lowest BIC value, was barriers (-0.09 (-0.15 - -0.03))* - severity (-0.13 (-0.20 - -0.07))* - low self-efficacy (0.20 (0.15 - 0.25))* - low susceptibility (-0.55 (-0.60 - -0.51))* - vaccine intention (outcome). This highlighted a significant indirect and direct effect (-0.20 (-0.25 - -0.15))* between barriers and vaccine intention. Constructs benefits and cue to action were removed due to no significant path and weak reliability. Non-significant confounding factors were also removed. *estimate

Conclusions:

The results showed that perceived barriers are a key determinant of COVID-19 vaccine resistance. Public health actors should communicate messages to remove barriers that reduce vaccine intention primarily.

Key messages:

- Serial mediations allow a better understanding of how a vaccination intention works.
- Public health communications should primarily focus on messages to remove barriers to get vaccinated.