Uptake of the Human Papillomavirus vaccine in Kenya: testing the Health Belief Model through structural equation modeling on cohort data

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Background: HPV vaccine acceptance studies

Use health behavior theories:

• Constructs ~ acceptance/intention

Limitations:

• Cross-sectional
• Personal level: HBM – TRA/TPB
• Outcome: acceptance (vs. uptake)
HPV vaccination program in Kenya

Test the health belief model

- Severity
- Susceptibility
- Benefits
- Barriers
- Self-efficacy
- Cues to action
Research questions

• Predictive value of the HBM ~ HPV vaccination in Kenya?
• Importance of external triggers?
• What is the validity of adding willingness to vaccinate to the HBM as mediator of uptake?
Methodology: longitudinal study

Baseline:
- Women with eligible daughter
- Willingness + HBM

Vaccination:
- School-based promotion
- Hospital-based vaccination

Follow-up:
- Same women
- uptake + information
  - Well-informed? (subjective)
  - Individual & school level
Results: structural equation modeling (n=255)

- Severity
- Susceptibility
- Benefit: health
- Barrier: lack of info
- Barrier: doubt efficacy
- Barrier: time constraints
- Barrier: safety concerns
- Barrier: father’s refusal
- Self-efficacy

UPTAKE
$R^2 = 8\%$

.31*
Results: structural equation modeling (n=255)

- Severity
- Susceptibility
- Benefit: health
- Barrier: lack of info
- Barrier: doubt efficacy
- Barrier: time constraints
- Barrier: safety concerns
- Barrier: father’s refusal
- Self-efficacy

Ad. promotion: ind.

Ad. promotion: school

UPTAKE
$R^2=49\%$

.33*

.45*
Results: structural equation modeling (n=255)

Severity

Susceptibility

+ health

- lack of info

- doubt efficacy

- time

- Side effects

- father’s refusal

Self-efficacy

WILLINGNESS

R²=41%

Ad. promotion: ind.

Ad. promotion: school

UPTAKE

R²=47%
Limitations

- Skewed data
- Adequate promotion was measured at follow-up
Conclusions

- HBM did not predict HPV vaccine uptake
- Willingness to vaccinate was not related with vaccine uptake
- Feeling well-informed strongly correlated uptake
Hypothesis

Adoption of new health behaviors might be more determined by how environmental cues are perceived than by personal beliefs.
Thank you

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Methodology

Structural equation modeling
- Test and refine theoretical models
- Path analysis - Multiple effects