

Decision making about HPV vaccination

The roles of feelings and thoughts

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NATIONAL CANCER INSTITUTE

Cancer Prevention Fellowship Program

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Disclosures

- JLM, MBG, and ALM have no potential conflicts to report.
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- NTB has served on paid advisory boards or received research grants from Merck, GSK, and FDA, and now serves as chair of the CDC-funded National HPV Vaccination Roundtable.

- *The opinions expressed are the author's own and do not reflect the view of the National Institutes of Health, the Department of Health and Human Services, or the United States government.*

Cognition and affect: Potential temporal relationships

- Behavioral affective associations model (Kiviniemi et al., 2007)



- Affect as information (Clore et al., 2001)



HPV vaccination & decision making

- Parents reluctant to vaccinate
- 2014 rates:
 - Girls: 60%
 - Boys: 42%
- High fear
 - STI
 - Cancer
- Low perceived severity



Methods: HPV vaccination In Sons (HIS) survey

- Online survey of national sample of families with 11-17 year old boys
 - Parent-son dyads
 - Two waves of data collection

Analytic sample: 304 parents of unvaccinated boys from 2nd wave of data collection (November 2011)

	Mean (SD) or %
Age	44 years
Female gender	50%
Non-Hispanic white	69%
Sons' age	14 years

Methods: Affect, cognitions, and willingness experiment

Experimental design:

		# of DX (within)	
		1	2
DX type (between)	Cancer only	A.1	A.2
	Mixed	B.1	B.2

Question sets:

A.1: Anal cancer

A.2: Anal cancer and oral cancer

B.1: Genital warts

B.2: Genital warts and anal cancer

Methods: Measures

Introductory statement

Condition 1

Willingness to vaccinate

Perceived severity

Fear ($n=5$) [randomly ordered]

Condition 2

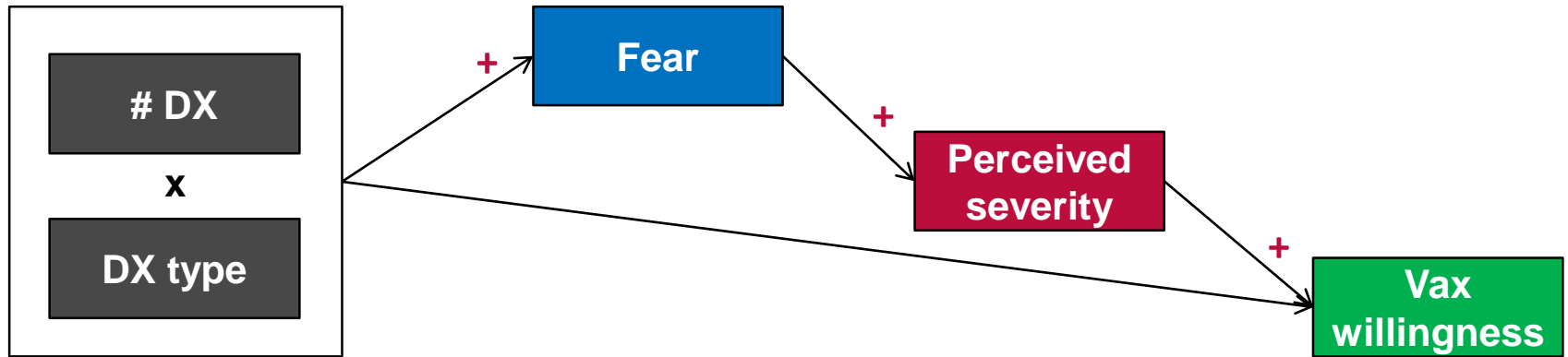
Willingness to vaccinate

Perceived severity

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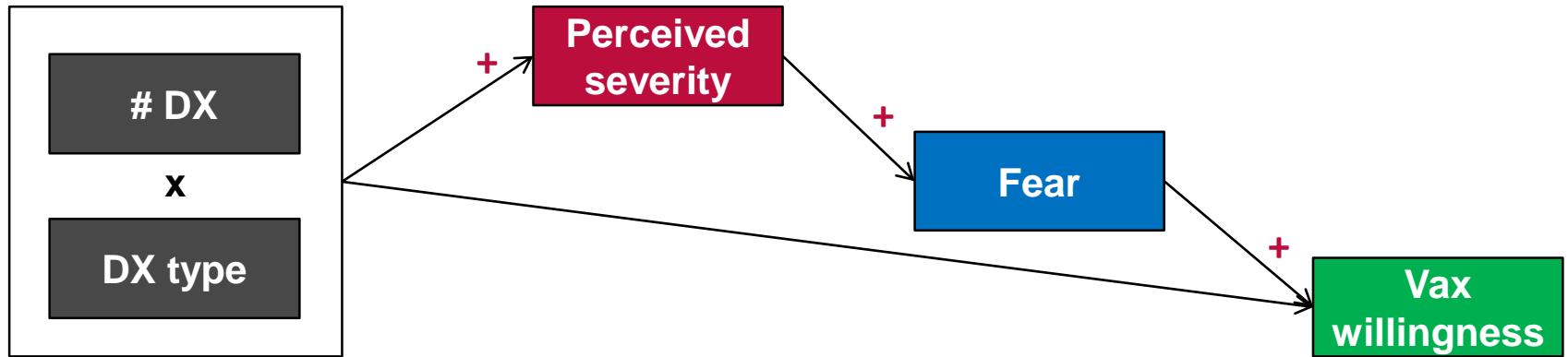
- Willingness to vaccinate [1-5]
 - *If vaccine prevented {child} from getting {disease/s}?*
- Perceived severity [1-4]
 - *How much would {disease/s} affect his life?*
- Fear [1-4] (Berman & Wandersman, 1990)
 - Disruption: *hurt his relationships?*
 - Disfigurement: *make his body/face look bad?*
 - Disability: *might limit his daily activities?*
 - Dependence: *might have to rely on other people?*
 - Death: *might die from {disease/s}?*

Methods: Hypotheses and analysis



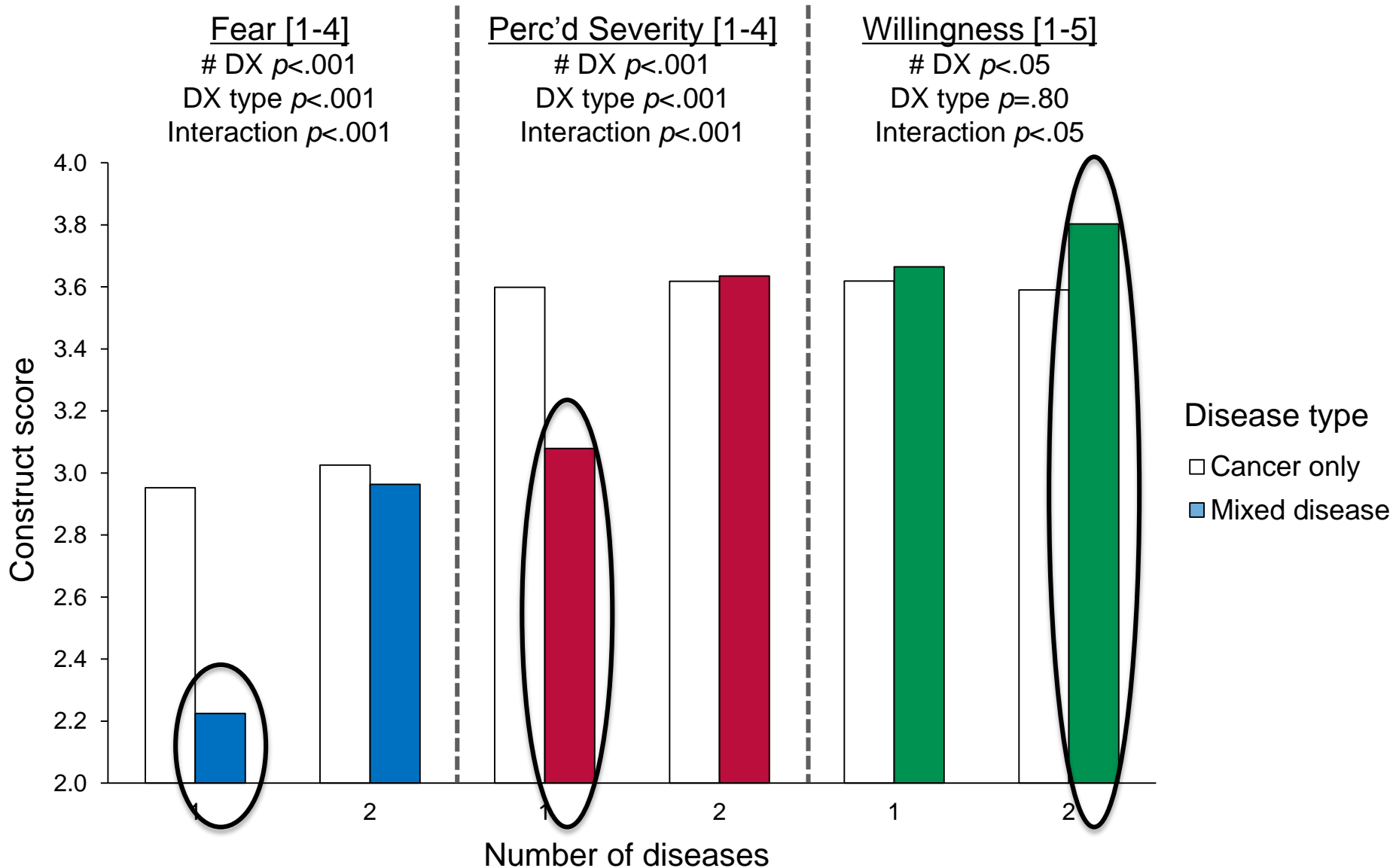
Hypothesis 1: Fear will precede perceived severity in their relationship with vaccination willingness.

Methods: Hypotheses and analysis

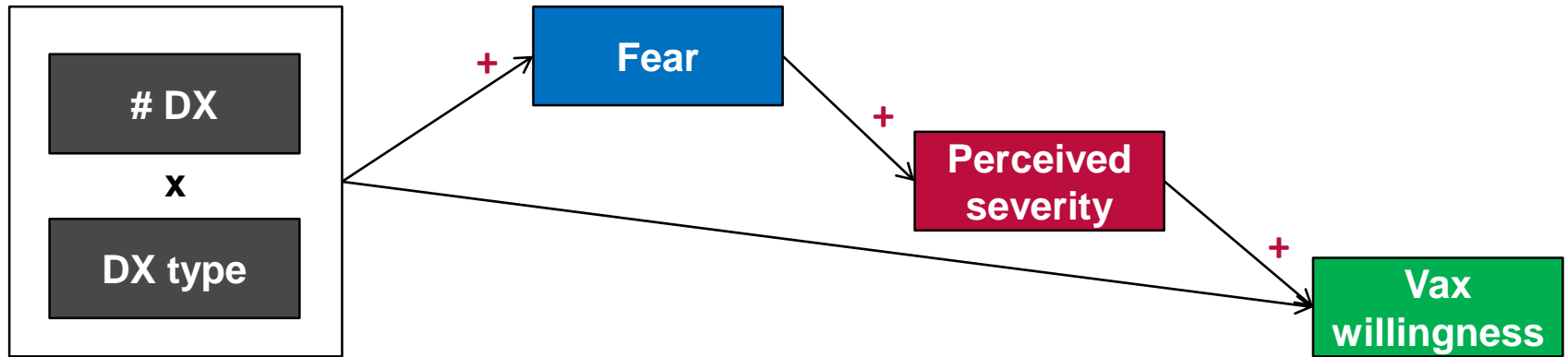


Hypothesis 2: Perceived severity will precede fear in their relationship with vaccination willingness.

Results: Main effects

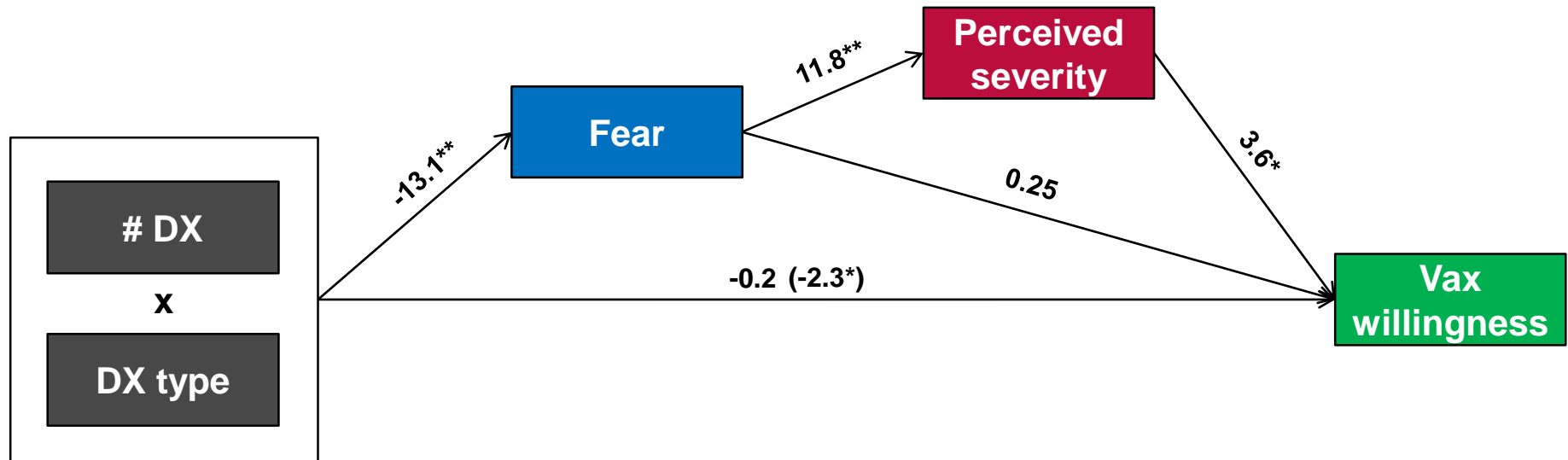


Results: Hypothesis 1



...actually →

Results: Hypothesis 1



Indirect effect = -0.05 (95% CI: -0.09, -0.02)

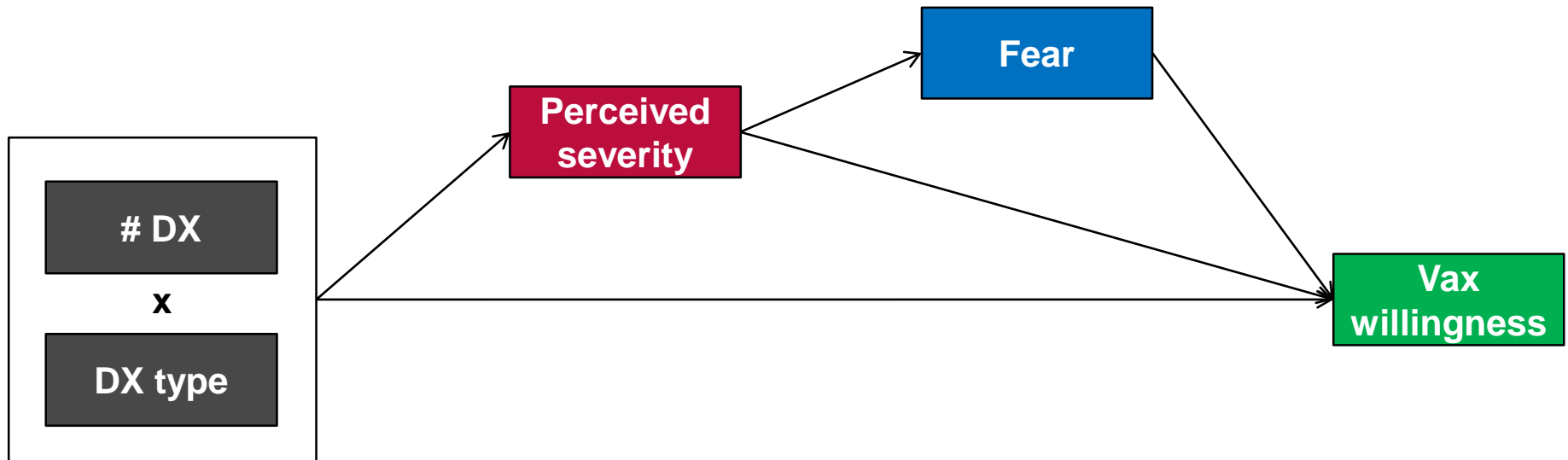
* $p < .05$; ** $p < .001$.

Path coefficients are z-scores.

Controlling for son's age, household income, and experimental main effects.

Warning: Independent variable is an interaction term; interpret coefficients with caution!

Results: Hypothesis 2



Indirect effect = -0.01 (95% CI: -0.02, 0.01)

Controlling for son's age, household income, and experimental main effects.

Discussion of findings

- Increasing the number/variety of diseases parents considered
 - ↑ fear of HPV illnesses, which then
 - ↑ perceived severity of HPV illnesses, which then
 - ↑ willingness to vaccinate their male adolescent
 - But behavior?
- Support for *affect as information* theory

Implications for public health

- Messaging around HPV vaccine:
 - Include genital warts and cancer(s)
 - 1 cancer is incomplete
 - 2 (+) cancers are redundant
 - Talk about sex?



If there were a vaccine against cancer, wouldn't you get it for your kids?

genital warts and

HPV vaccine is cancer prevention.
Talk to the doctor about
vaccinating your 11–12 year old
sons and daughters
against HPV.

www.cdc.gov/vaccines/teens

  U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

YOU ARE THE KEY TO HPV CANCER PREVENTION

Distributed by:

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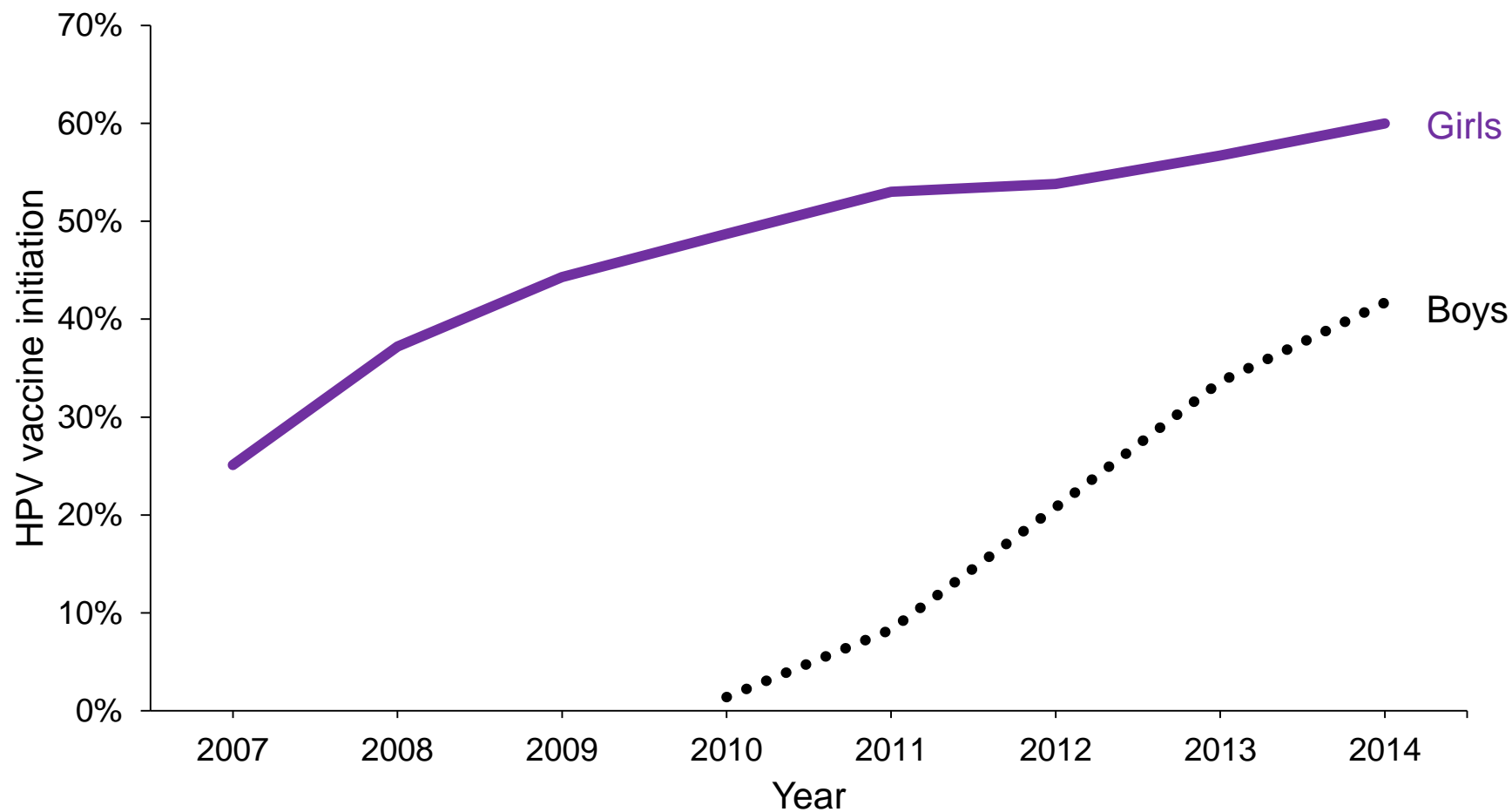
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HPV vaccination coverage



Methods: Measures

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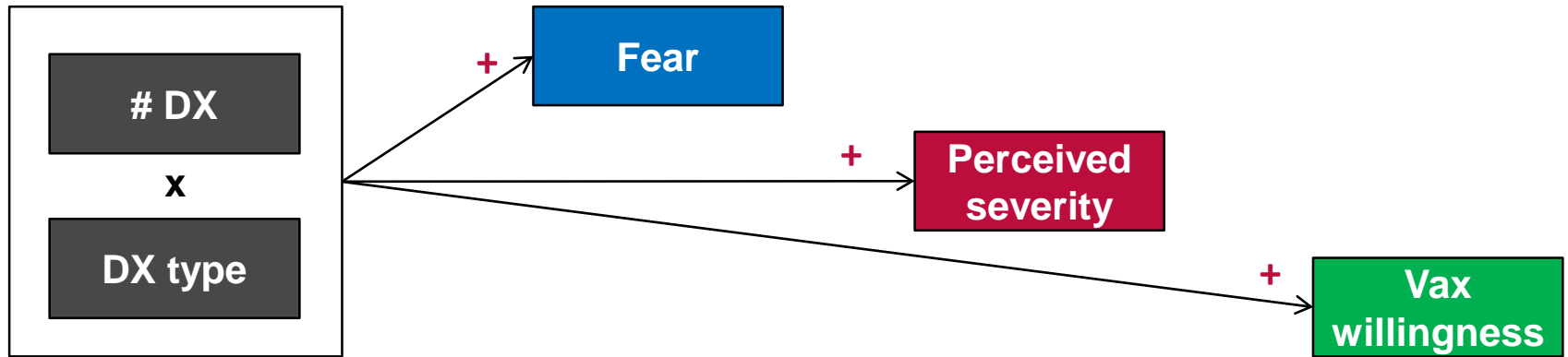
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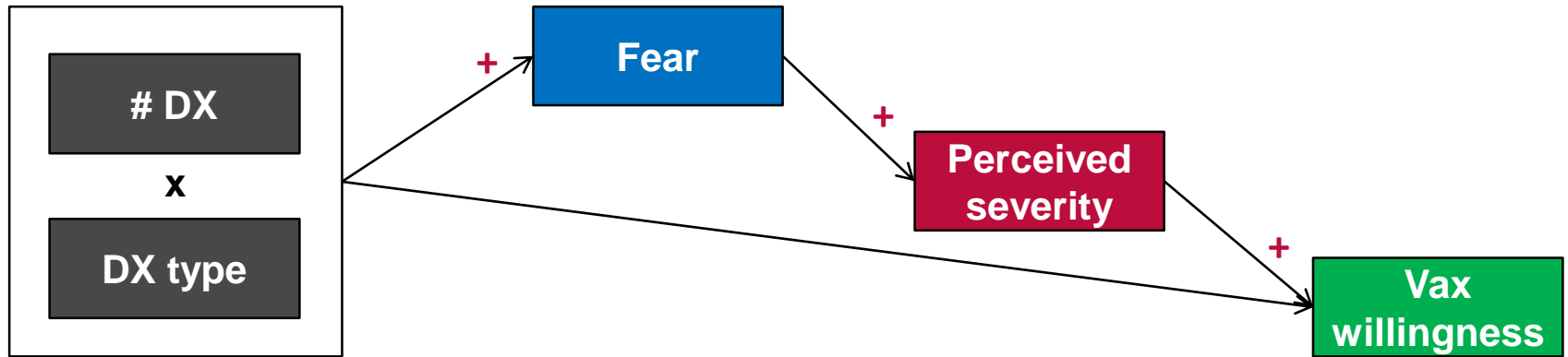
Methods: Hypotheses and analysis



Hypothesis 1: Fear, perceived severity, and vaccination willingness will be higher when...

- Parents read about 2 diseases than 1 disease
- Parents read about mixed diseases than cancer only

Methods: Hypotheses and analysis

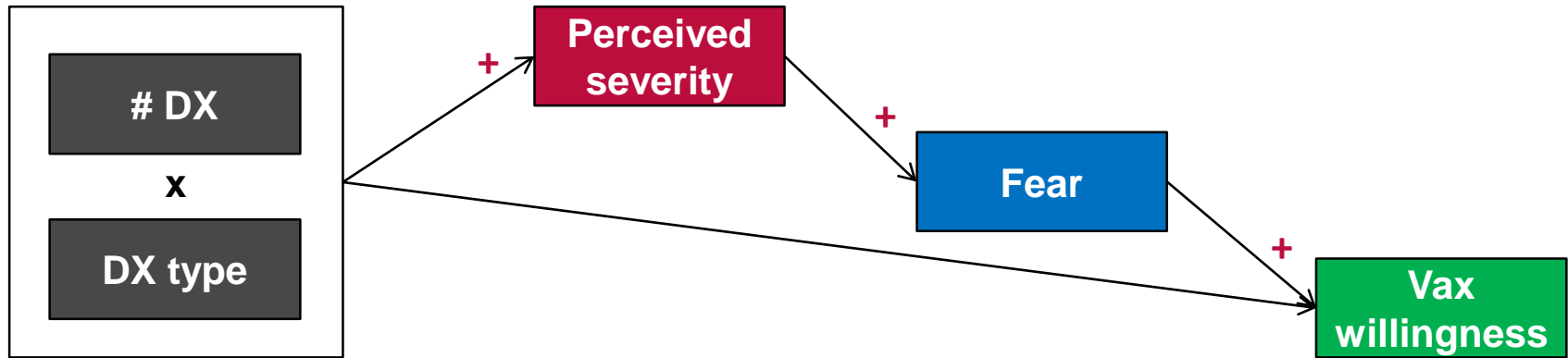


Hypothesis 1: Fear, perceived severity, and vaccination willingness will be higher when...

- Parents read about 2 diseases than 1 disease
- Parents read about mixed diseases than cancer only

Hypothesis 2: Fear will precede perceived severity in their relationship with vaccination willingness.

Methods: Hypotheses and analysis



Hypothesis 1: Fear, perceived severity, and vaccination willingness will be higher when...

- Parents read about 2 diseases than 1 disease
- Parents read about mixed diseases than cancer only

Hypothesis 2: Fear will precede perceived severity in their relationship with vaccination willingness.

- Alternative Hypothesis 2: Perceived severity will precede fear in their relationship with vaccination willingness.

Strengths and limitations

- Strengths
 - Experimental design
 - National sample
- Limitations
 - Willingness outcome (not behavior)
 - Online survey
 - Proxy decision making