

ABSTRACT

Risk perceptions are key constructs in theories of health behavior. Adult participants were recruited from New York State. Confirmatory Factor Analyses were conducted in Mplus to validate the TRIRISK model in our sample for cancer and respiratory illness. Items loaded on the respective constructs as expected. The TRIRISK model framework fit well across differing subgroups. The TRIRISK model can be used to communicate risk to encourage positive health behaviors.

OBJECTIVES

- Replicate the factor structure of the TRIRISK measure for cancer and extend to respiratory illness
- Test whether the overall model is robust to tobacco use status

TRIRISK MODEL

Deliberative

- Systematic, logical, and rule-based

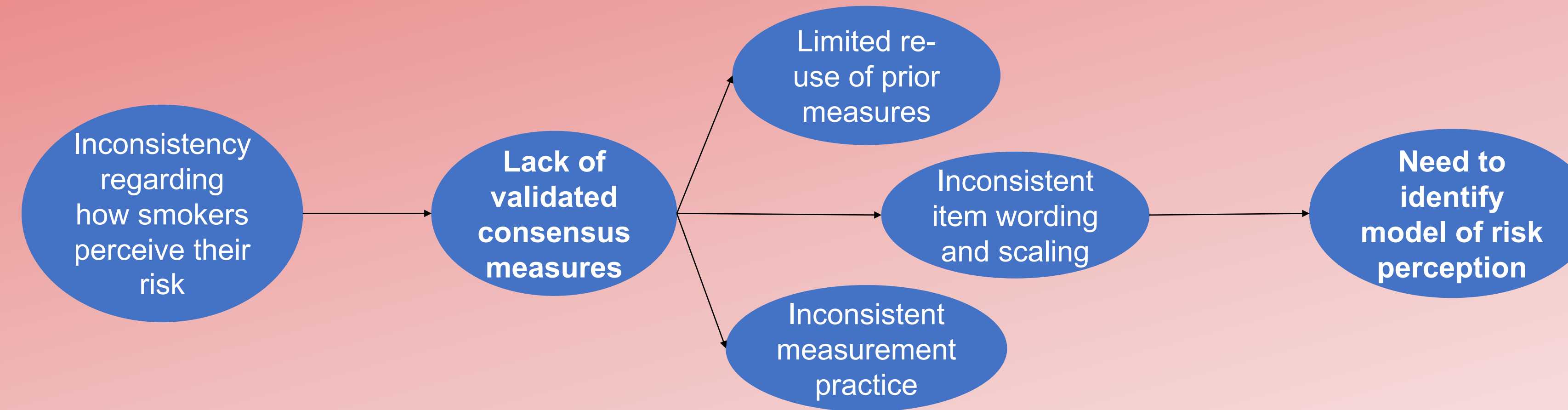
Affective

- The emotional response associated with risk
- Worry or anxiety

Experiential

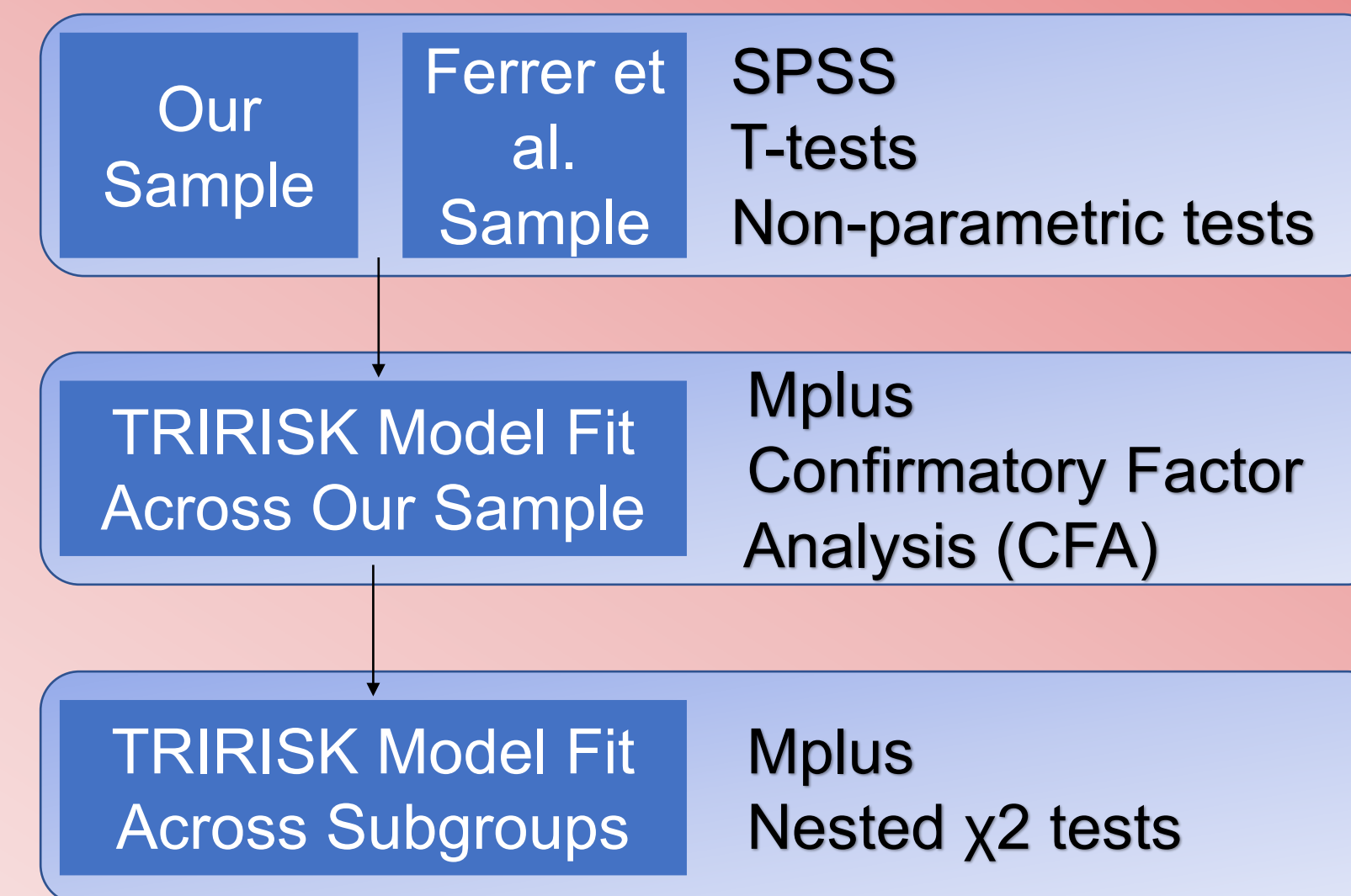
- Rapid judgments
- Integrates deliberative and affective

INTRODUCTION



METHODS

- Cross-sectional, web-based survey on reactions to the e-cigarette flavor restriction in New York
- Developed and conducted at Roswell Park
- Conducted between July and October 2020
- Address-based sampling
- Participants were recruited from New York, were 18 or older, and agreed to participate in the study



RESULTS

Table 1: Model fit indices for the TRIRISK Model

	CANCER						RESPIRATORY ILLNESS					
	χ^2	df	p	CFI	RMSEA (95% CI)	SRMR	χ^2	df	p	CFI	RMSEA (95% CI)	SRMR
Final model	694.22	124	0.00	0.95	0.08 (0.08, 0.09)	0.05	795.95	127	0.00	0.96	0.09 (0.08, 0.09)	0.04
One factor	3128.93	135	0.00	0.74	0.18 (0.17, 0.18)	0.11	2762.86	135	0.00	0.84	0.17 (0.16, 0.17)	0.70
Two factor 1	2280.80	134	0.00	0.82	0.15 (0.15, 0.16)	0.08	1968.80	134	0.00	0.89	0.14 (0.13, 0.15)	0.05
Two factor 2	2141.32	134	0.00	0.83	0.15 (0.14, 0.15)	0.09	1942.63	134	0.00	0.89	0.14 (0.13, 0.14)	0.06

RESULTS

Table 2: Standardized factor loadings of final models

Item Number	CANCER		RESPIRATORY ILLNESS	
	Coefficient	p-value	Coefficient	p-value
Deliberative	alpha=0.73		alpha=0.76	
2	0.84	0.00	0.94	0.00
1	0.75	0.00	0.87	0.00
3	0.83	0.00	0.88	0.00
4	0.60	0.00	0.65	0.00
5	0.49	0.00	0.66	0.00
10	0.62	0.00	0.71	0.00
Affective	alpha=0.97		alpha=0.98	
11	0.90	0.00	0.97	0.00
12	0.95	0.00	0.97	0.00
13	0.95	0.00	0.97	0.00
14	0.85	0.00	0.92	0.00
15	0.88	0.00	0.92	0.00
16	0.83	0.00	0.90	0.00
Experiential	alpha=0.56		alpha=0.61	
17	0.91	0.00	0.93	0.00
18	0.78	0.00	0.90	0.00
6	0.62	0.00	0.78	0.00
7	0.54	0.00	0.60	0.00
8	0.34	0.00	0.34	0.00
9	0.53	0.00	0.71	0.00

Table 3: Comparing TRIRISK model fit across groups

	CANCER		RESPIRATORY ILLNESS	
	Unconstrained Model	Modified Constrained Model	Unconstrained Model	Modified Constrained Model
Sex				
Chi square	907.10	796.44	991.64	930.28
DF	263	268	269	281
Male contribution	365.44	386.04	449.91	460.94
Female contribution	541.67	410.40	541.73	469.34
Race Dich				
Chi square	994.13	855.81	1017.04	793.39
DF	263	269	269	274
White contribution	589.92	431.94	654.94	405.00
Other contribution	404.21	423.88	362.10	388.40
Education Dich				
Chi square	922.66	764.78	1089.41	791.97
DF	263	267	269	273
Less than college contribution	346.42	369.09	375.34	391.88
College or more contribution	576.23	395.69	714.07	400.09
Smoking status				
Chi square	1233.86	1184.89	1244.03	1079.83
DF	402	424	411	430
Current contribution	288.03	333.80	300.11	352.97
Former contribution	362.82	394.46	347.39	360.96
Never contribution	583.00	456.63	596.54	365.90

CONCLUSIONS

Additional evidence in support of the TRIRISK model for cancer risk perceptions

Extend the TRIRISK model to respiratory illness risk perceptions

Supports the idea that risk perception is not a unitary construct

The TRIRISK model was invariant and will fit well across multiple subgroups

Rationale to use the TRIRISK model in future projects

Can inform how risk communication should be designed

ACKNOWLEDGMENTS

Model retrieved from "Ferrer RA, Klein WMP, Persoskie A, et al. (2016) The Tripartite Model of Risk Perception (TRIRISK): Distinguishing Deliberative, Affective, and Experiential Components of Perceived Risk. *Annals of behavioral medicine* 50: 653-663." This work was supported by a cooperative agreement from the National Cancer Institute and US Food and Drug Administration Center for Tobacco Products under Award Number U54CA228110. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH or the FDA.