


Empowerment May Mediate the Relationship between Health Literacy and Advocacy

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Introduction Review of Literature Methods Results Discussion

Objective


- To examine the relationships among parental:
 - health literacy
 - empowerment
 - and advocacy
 in the context of food allergies management in elementary schools



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Understanding how to manage food allergies may require high levels of health literacy.



- Parents' low health literacy is associated with health behaviors that may not be helpful for their children's health (DeWalt et al., 2007; DeWalt & Hink, 2009; Yin et al., 2007)
- Yet, parents often drive the implementation of food allergy safety practices in local schools (Lawlis et al., 2017)

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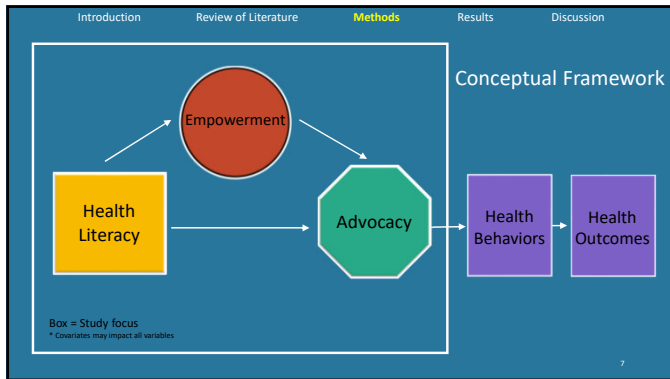


Relationships are unclear among health literacy, empowerment, and chronic disease management^a

- Several health literacy models include a psychosocial mediator between health literacy and health outcomes^b
 - Mixed evidence: Empowerment as a mediator^c
- Health literacy has been measured predominately through a proxy of functional health literacy^d

^aCrohn Dahl & Eklund Karlsson, 2016. ^bBaker, 2006; Cudjoe et al., 2020; Paasche-Orlow & Wolf, 2007; Squires et al., 2012; von Wagner et al., 2009. ^cSak et al., 2017; Schulz & Nakamoto, 2013; Schulz et al., 2017; Shin & Lee, 2018; R. Wang, et al., 2016. ^dAl Sayah et al., 2013; Berkman et al., 2011; DeWalt & Hink, 2009.

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Participants

Inclusion Criteria:
Self-reported

- Parents, guardians, or primary caregivers
- of children with life-threatening food allergies
- Diagnosis was confirmed by a healthcare provider
- Child attended an elementary school (kindergarten through 6th grade) in-person in the USA at any time during the prior 12 months
- Age > 18; English; internet access

Exclusion Criteria:
Previous participation in pilot study or main study

Small Incentive:
Offered for every participant in:

- Pilot study
- Main study

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Methods

for development of measures and refinement of methods

- Adapt**
 - Adapted measures for food allergies
- Prefest**
 - Performed cognitive interviewing
 - Content validity
- Revise**
 - Revised wording of items
- Pilot**
 - Recruited convenience sample (N=33)
 - Web-based survey
 - Feasibility
 - Test/re-test reliability & validity
- Refine**
 - Refined items, measures, & methods

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Measures

Health Literacy

- Functional HL
- Communicative HL
- Critical HL

Parental Health Literacy

Degree of difficulty with health literacy tasks

- 3 subscales
- 12 items
- 5 response options
 - Very difficult to Very easy

(Adapted from Ishikawa, et al., 2008b)

Parental Empowerment

Degree of agreement with empowered statements

- 3 sub-constructs
- 9 items
- 5 response options
 - Strongly disagree to Strongly agree

(Adapted from Londoño & Schulz, 2015; Warren et al. 2015; others)

Parental Advocacy

Perceived effectiveness of advocacy efforts

- 3 sub-constructs
- 13 items
- 5 response options
 - Not successful to Completely successful

(Adapted from Burke et al. 2016; Burke & Sandman, 2017; Cawthon & Caemmerer, 2014b; Malec, Brown, & Moessner, 2010; Wright & Taylor, 2014)

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Main Study: Recruitment and Participant Survey Flow

Recruitment ads: Nov 2020 – Feb 2021
27 food allergy organizations

- Support groups, patient registry, food bank
- via emails, private social media groups, blogpost, & magazine

Final N = 313

- 310 completed ≥ 93% progress through survey
- Median 20-minutes completion
- Data were anonymized
- Minimal missing data

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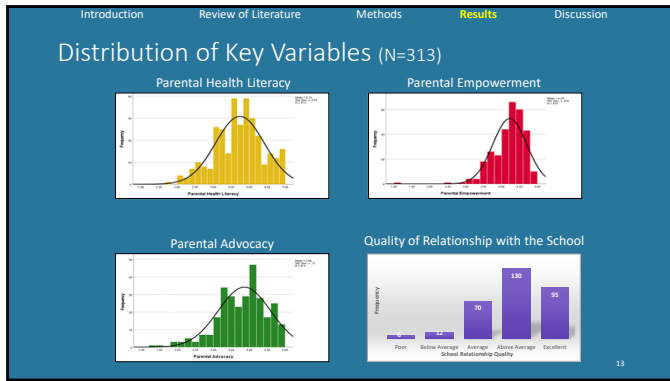
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Participant Characteristics

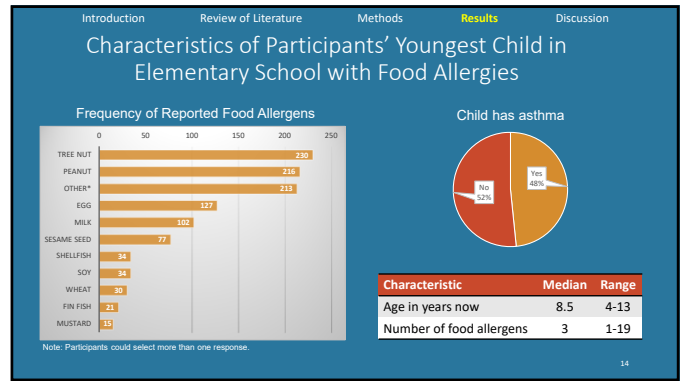
Characteristic	Frequency (N=311)	%
Primary caregiver role: Mother	301	96.8
Bachelor's degree or higher	270	86.8
Race: White	264	84.9

Characteristic	Median	Range
Food Allergy Knowledge Score (N=312)	6.0	1.0 - 8
Food Allergy Quality of Life (N=312)	3.4	1.2 - 5
Perceived Effectiveness of Cause Advocacy Efforts (N=255)	3.3	1.0 - 5

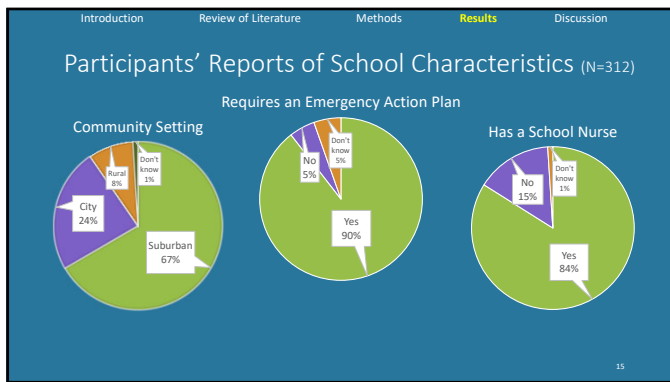
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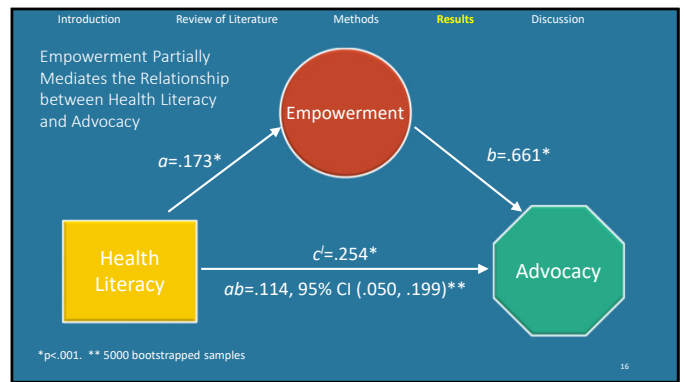
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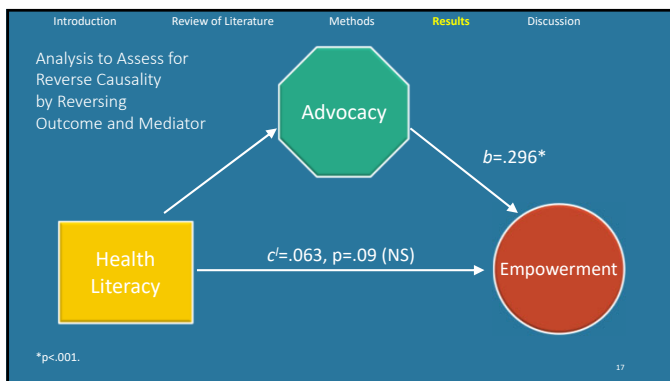
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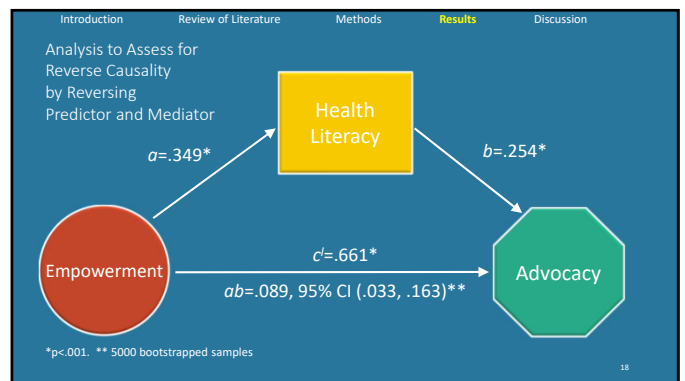
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Discussion

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    graph LR
      HL[Health Literacy] --> E[Empowerment]
      E --> A[Advocacy]
      HL --> A
  
```

The relationship between parental health literacy and advocacy may be mediated by parental empowerment

- Mixed evidence: Empowerment as mediator on the pathway from health literacy to health outcomes^a
- Caution with interpretation:
 - Cross-sectional study
 - Reverse causality between the health literacy and empowerment cannot be ruled out

*Nurbeam, 200, 2008; Schultz et al., 2017; Shin & Lee, 2018; Sak et al., 2017

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Strength and Limitations

Strengths

- Pre-testing and pilot testing
 - Measures
 - Adapted health literacy & empowerment measures
 - Created an advocacy measure
 - Methods
 - Recruitment & online survey
 - Pre-set quality criteria
- Robust statistical methods
 - PROCESS macro for mediation

Limitations

- Generalizability of study sample
- Self-selection bias
- Historical bias
- Cross-sectional study design
- Self-reported measures of constructs

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Implications for Public Health: Contributions to the Field of Health Literacy

Adapted a 3-dimensional health literacy measure (FCCHL) using rigorous methods for parents of children with a chronic condition

Empowerment may mediate the relationship between health literacy and advocacy

- Complements conceptual models of health literacy that contain a psychosocial factor on the pathway from health literacy to health outcomes (Baker, 2006; Cudjoe et al., 2020; Paasche-Orlow & Wolf, 2007; Squires et al., 2012; von Wagner et al., 2009)

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    graph LR
      HL[Health Literacy] --> E[Empowerment]
      E --> A[Advocacy]
      A --> HB[Health Behaviors]
      A --> HO[Health Outcomes]
  
```

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Implications for Public Health

- Importance of parental empowerment in association with health literacy and advocacy
 - When teaching families about food allergies management
 - Impart knowledge and skills
 - Enhance empowerment
 - Increase self-efficacy

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Future Research

Assess influence of covariates on mediation analyses

Do longitudinal studies to determine causality in mediation pathways

Assess measures' construct validity more: discriminant validity, factor analysis, item analysis, differentiation

Complete a complementary qualitative data analysis on this topic

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Conclusion

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