



Illness Representations of African American Adolescents with Asthma

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Objectives

- Background
- Purpose
- Model
- Illness Representations by Gender and Asthma Impairment
- Illness Representations and Asthma Self-management

Background



- **Problem: Inadequate self-management among adolescents with asthma**
- Significant problem among African American adolescents with asthma
 - Higher prevalence and death rates than whites
 - Relative to all races/ethnicities-more emergency room visits, more hospitalizations, less ambulatory visits
 - Males exhibit more treatment delays
- Gaps in the literature
 - Factors (illness representations, gender, asthma impairment) associated with adolescents self-management behaviors
 - Studies of African American adolescents with asthma



Purpose

Goals of the study of African American adolescents (ages 14-16 years) with asthma were to explore:

- differences in illness representations by gender, and level of asthma impairment, and gender by asthma impairment
- relationships between cognitive and emotional illness representations and asthma self-management behaviors, gender, and asthma impairment



The Study

Design: Descriptive, cross-sectional correlational study

Sample: Inclusion Criteria

- (a) self-identify as an African American
- (b) ages 14 through 16 years according to self-reported birthdates
- (c) self-reported treatment for asthma in the past year
- (d) school placement in a regular classroom, based on self-report of classroom placement

Total n=133; Males n=65, Females n=68

Asthma Impairment:

Well Controlled

Not Well Controlled

Recruited from urban and rural populations



Recruitment Strategies

- Comprehensive set of strategies necessary to recruit adequate numbers of this underrepresented population
- Most effective strategies, yielding highest number of participants:
 - collaboration with personal, professional, religious, and social networks
 - design of the recruitment materials
 - establishing trust between adolescent and parents
 - gift card incentive
 - participation in youth-oriented activities and community events



Illness Representations

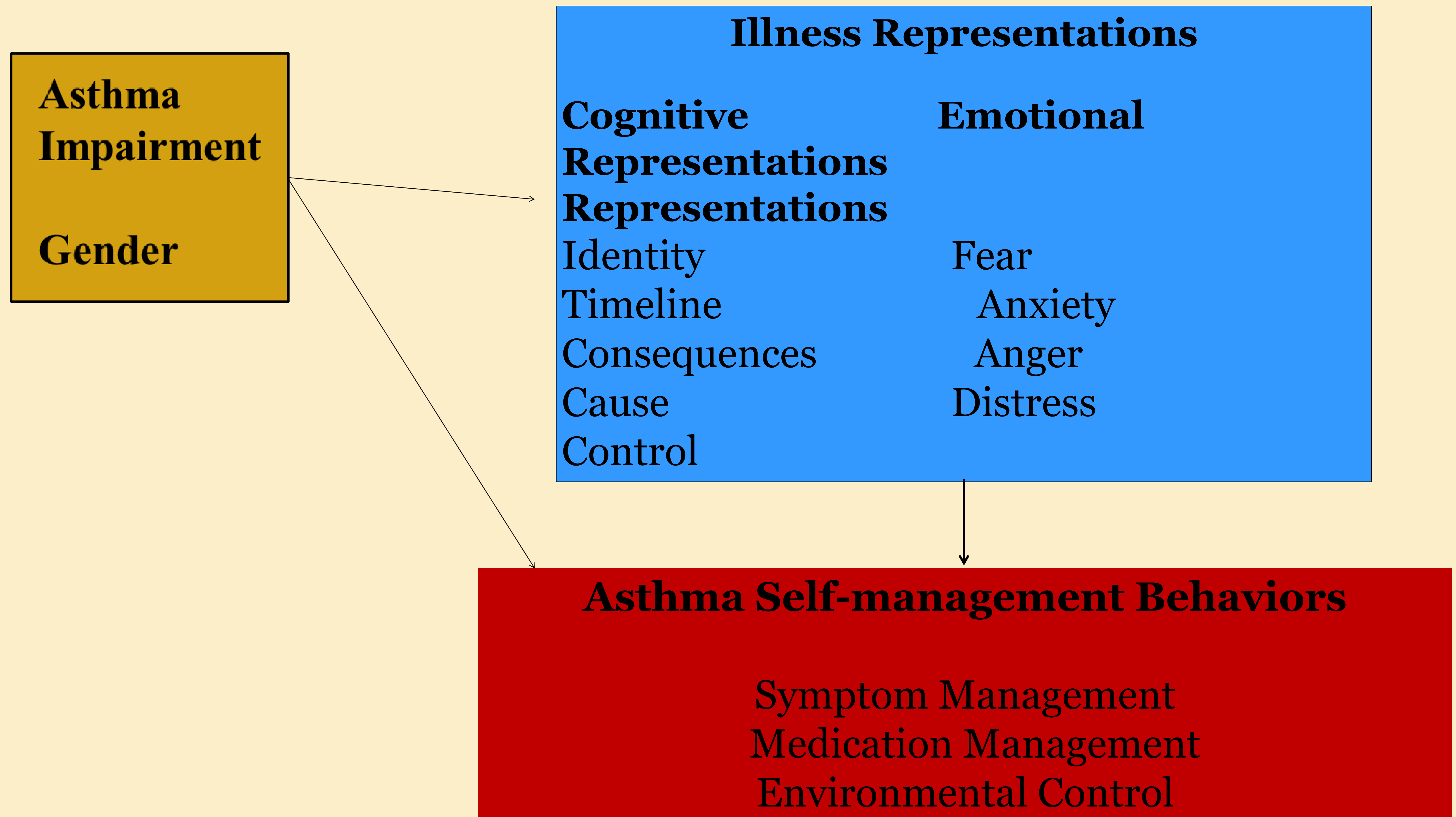
- Illness representations, that is, mental representations of knowledge, experience and beliefs relative to illness, can influence how individuals self-manage their illness (Cameron & Leventhal, 2003).
- However, illness representations have not been well studied in adolescents with asthma.

Illness Representations

Common Sense Self-Regulation Model

- **Cognitive:**
 - Identity-symptoms related to asthma
 - Acute/Chronic Timeline-asthma is acute or chronic illness
 - Cyclical Timeline-asthma is perceived as episodic, varying in nature.
 - Consequences-asthma is a serious illness, has a negative effect on their lives
 - Personal Control-individuals believe that asthma is amenable to their control
 - Treatment Control-medical treatments could control asthma symptoms
 - Cause-individuals identified the causes of their asthma
- **Emotional:** emotions assessed- fear, anger, distress, and anxiety.

The Illness Representations Self-management Model



Instruments and Data Analysis

- Asthma Control Test
- Illness Perceptions Questionnaire-Revised
- Asthma Self-Care Practice Instrument
- Demographics Questionnaire

- Data Analysis: ANOVA, MANOVA, Pearson correlation coefficients, and Multiple Regressions.

Illness Representations by Gender, Asthma Impairment, Gender by Asthma Impairment

Subscale	F (1,129)	Significance
Identity		
Gender	1.530	.595
Asthma Impairment	11.16	.152
Gender *Asthma Impairment	.915	.341
Acute/Chronic Timeline		
Gender	8.162	.005**
Asthma Impairment	4.634	.033**
Gender *Asthma Impairment	4.793	.030**
Cyclic Timeline		
Gender	1.079	.301
Asthma Impairment	6.634	.011**
Gender *Asthma Impairment	.127	.723
Consequences		
Gender	.109	.742
Asthma Impairment	14.931	.000**
Gender *Asthma Impairment	.198	.657
Personal Control		
Gender	.246	.621
Asthma Impairment	3.418	.067
Gender *Asthma Impairment	1.020	.314
Treatment Control		
Gender	.089	.766
Asthma Impairment	12.980	.000**
Gender *Asthma Impairment	.224	.637
Psychological Attributes (Cause)		
Gender	1.95	.165
Asthma Impairment	3.901	.050**
Gender *Asthma Impairment	.549	.460
Emotional Representations		
Gender	407	.525
Asthma Impairment	8.378	.004**
Gender* Asthma Impairment	.502	.480

**p<.05

Illness Representations by Gender	<u>Total</u>	<u>Males</u>	<u>Females</u>	p
	M (SD)	M (SD)	M (SD)	
Cognitive Representations				
Identity	5.55 (2.32)	5.32 (2.27)	5.76 (2.37)	.276
Acute/Chronic Timeline	19.11 (4.62)	17.62 (4.31)	20.54 (4.47)	.000*
Cyclical Timeline	12.92 (3.29)	12.40 (3.12)	13.41 (3.40)	.077
Consequences	16.57 (4.65)	16.02 (4.77)	17.10 (4.51)	.179
Personal Control	22.49 (3.61)	22.86 (3.56)	22.13 (3.56)	.247
Treatment Control	18.75 (3.03)	19.09 (2.93)	18.43 (3.11)	.207
Illness Coherence	18.05 (4.66)	17.94 (4.48)	18.16 (4.85)	.784
Causes				
Psychological Attributes	13.98 (4.58)	14.25 (4.09)	13.72 (5.02)	.511
Risks	7.89 (3.18)	7.65 (2.91)	8.13 (3.42)	.380
Behavioural	6.34 (2.53)	6.31 (2.12)	6.37 (2.88)	.892
Emotional Representations	13.18 (4.67)	12.66 (4.69)	13.68 (4.64)	.212

Illness Representations by Asthma Impairment	Well <u>Controlled</u>	Not Well <u>Controlled</u>	p
	M (SE)	M (SE)	
Cognitive Representations			
Identity	5.05 (.32)	5.90 (.27)	.048*
Acute/Chronic Timeline	17.98 (.62)	19.91 (.52)	.021*
Cyclical Timeline	11.80 (.44)	13.71 (.37)	.002**
Consequences	14.68 (.62)	17.91 (.51)	.000**
Personal Control	22.92 (.49)	22.19 (.40)	.257
Treatment Control	19.65 (.39)	18.12 (.33)	.004**
Causes			
Psychological Attributes	12.98 (.63)	14.69 (.52)	.042*
Risks	6.95 (.43)	8.56 (.35)	.005**
Behavioral	5.87 (.35)	6.67 (.29)	.089
Emotional Representations	11.83 (.62)	14.13 (.52)	.006**

Note: N=133, *p <.05; **p<.01

Pearson Product-Moment Correlations between Illness Representations and Asthma Self-management Behaviors

Illness Representations	Symptom Management	Medication Management	Environmental Control
Cognitive Representations			
Identity	.175*	.039	.203*
Acute/Chronic Timeline	.005	.122	.090
Cyclical Timeline	.011	-.100	.003
Consequences	.210*	.129	.149
Personal Control	.090	.135	.183
Treatment Control	.248**	.120	.121
Causes			
Psychological Attributes	.041	-.071	.019
Risks	.110	-.043	.095
Behavioral	.012	-.087	.107
Emotional Representations	.060	-.014	.138

Note: N=133, *p <.05; **p<.01

Regression Model for Illness Representations and Symptom Management

Model	B	Beta	t	Sig.	R ²
(Constant)	2.005		.109	.914	
Identity	1.205	.137	1.521	.131	.015
Timeline Acute/Chronic	-.073	-.016	-.163	.871	.020
Consequences	1.135	.258	2.427	.017*	.040
Personal Control	-.097	-.017	-.184	.854	.022
Treatment Control	2.052	.304	3.069	.003*	.065
Timeline Cyclical	-.809	-.130	-1.379	.170	.012
Emotional	-.182	-.042	-.384	.702	.001
Cause (Psychological Attributes)	-.784	-.038	-.394	.694	.108
Gender	-1.307	-.032	-.350	.727	.000
Asthma Impairment	5.949	.144	1.499	.136	.015

Total Variance Explained by Model: R² = 16.2%; F(10,22)=2.37, p=.014

Independent Variable Contributions: Treatment Control r²=6.5%; Consequences r²=4.0%

Limitations

- Cross-sectional design did not enable measurement of possible change in illness representations over time.
- Given the developmental changes during adolescence, it would be useful to conduct future research with adolescents over time.
- Low reliability of some of the IPQ-R subscales was also a limitation.

Contributions to the Literature-Illness Representations

➤ **Illness Representation by Gender**

- Females held more chronic beliefs (Also in adults, Halm et al. 2006, Jessop & Rutter, 2003)-what about males perceptions?

➤ **Illness by Asthma Impairment**

Cognitive Representations

- Identity
- Acute/Chronic Timeline –Also in adult studies; Not well controlled females held more beliefs about the chronicity of their asthma
- Cyclical Timeline
- Consequences –Our adolescents and the parents in Paterson, 1999, not children
- Treatment Control-Our adolescents and the parents in Paterson, 1999, not children
- Psychological Attributes-Also in adult studies; we recommend clinical emphasis in adolescents
- Risks-Also in adult studies; we recommend clinical emphasis in adolescents

Emotional Representations

(No significant differences in means of self-management by gender, asthma impairment, or gender by asthma impairment)

➤ **Illness Representations associated with Asthma Self-management Behaviors**

- IR/Environment-Identity
- IR/Symptom Management-Identity, Consequences, Treatment Control,

➤ **Illness Representations Contributions to Variances in Self-management Behaviors**

- IR/Symptom Management-Consequences and Treatment Control



Conclusion

Findings suggest that:

- 1) Perceptions of asthma chronicity may vary by gender
- 2) Cognitive and emotional illness representations may also vary by level of asthma impairment in African American adolescents
- 3) Illness representations were associated with some self-management behaviors and contribute to symptom management

Future research could include: Tailored Illness Representations Study; Illness Representations and Self-management Behaviors of African American Adolescents with High Risk Asthma; Factors That Predict Adolescents' Asthma Self-management Behaviors

