A Framework Approach for Combining Qualitative and Quantitative Data: Lessons from The Cultural Concepts Of Cancer Mammography Access and Adherence

Mathilda B. Ruwe, MD, MPH, Ph.D[1]; John A. Capitman[1], PhD; Michele David, MD, MPH, MBA[2]

2007 American Public Health Association annual Meeting and Expo,, November 3-7, 2007, Washington DC

Central Valley Health Policy Institute
California State University, Fresno

Boston Medical Center
EXCEPTIONAL CARE. WITHOUT EXCEPTION.

INTRODUCTION

- This is part of a series of presentations from the Cultural Concepts of Cancer, Mammography Access and Adherence study (CCCMAA)
- The CCCMAA is a policy and methodology study
- This presentation focuses on the qualitative methodology

Presentation Goals

- Demonstrate how to analyze policy-relevant qualitative data using the framework approach
- Demonstrate conceptual and empirical properties of lay concepts of cancer
- Demonstrate predictive validity of Lay concepts of cancer in explaining mammography use

Background

- Although prevalence of mammography screening has increased across race ethnicity, disparities in screening adherence persist , even among the insured
- Behavioral explanatory models focus on individual health beliefs and acculturation theory have been extensively studied as the alternative explanations
- But individual beliefs and acculturation scales (except for language) do not constituently predict mammography use
- The CCCMAA proposes a knowledge structure approach and focuses on interpersonal behavior and structural influences rather individual behavior
- It builds on the cultural explanatory model of illness and health proposed by Kleinman (1978)

Significance-1

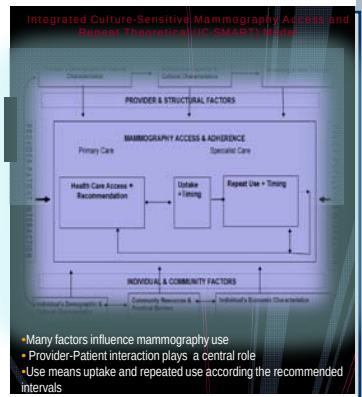
- Breast cancer exemplifies a technology paradox
- It continues to be a major national public health issue
- In early 1990s a slight decline (5%) in breast cancer mortality was observed
- But racial ethnic and age disparities have been widening despite improved access to screening and treatment (see exb.1)

Significance-2

- There is great interest in culturally tailored interventions to help eliminate disparities in breast cancer mortality and mammography screening
- But there is a lack of empirically tested, culturally sensitive theory is

CONCEPTUAL FRAMEWORK

Integrated Culture-Sensitive Mammography Access and Repeat Theoretical (IC-SMART) Model



- Many factors influence mammography use
- Provider-Patient interaction plays a central role
- Use means uptake and repeated use according the recommended intervals

METHODS

Research design

- Population based, cross-sectional study
- Theory driven
- Multi-ethnic Women: White, African Americans, Haitians and Latina/Caribbean
- Sample size: 750
- Qualitative and quantitative surveys
- Setting Eastern Massachusetts—Greater Boston

Qualitative survey questions

- What is cancer?
- What can cause cancer?
- What can cure cancer?

QUALITIVE ANALYSIS METHODS

❖ The framework approach (Pope and Mays)

- Theory driven
- Preserves original lay accounts
- Suitable for combining qualitative and quantitative
- Involves 6 steps
  1. Familiarization
  2. Identifying Thematic Frames
  3. Indexing –thematic coding
  4. Charting
  5. Mapping
  6. Interpretation

❖ Explanatory Accounts (Kleinman & Kleinman, 2004)

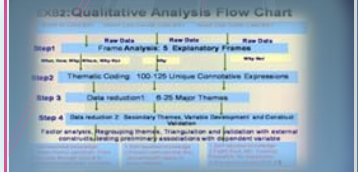
Represent 60% of lay accounts of symptoms or illness/health

- Nominal accounts
- Causal factors
- Causal Process

High inter-rater reliability –Kappa=.7

Parallels the biomedical model

exb2:Qualitative Analysis Flow Chart



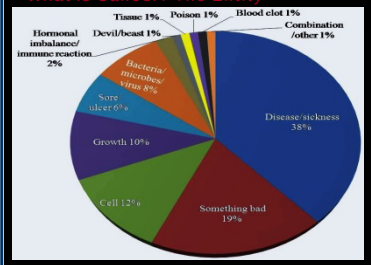
FINDINGS

The What, How, Why, Where and Why-not of Cancer: Lay Perspectives

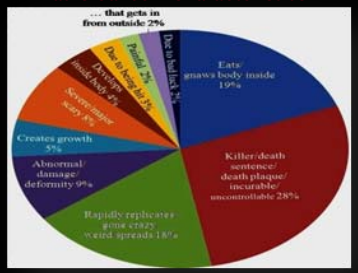
What is Cancer?

Knowledge Frames

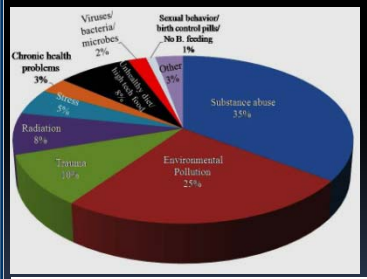
What is Cancer? The Entity



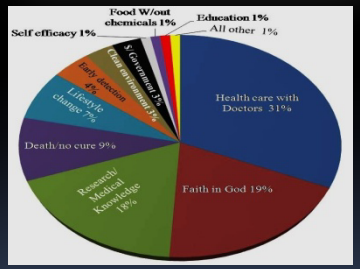
What is Cancer? Characteristics



What Can Cause Cancer?



What Can Cure Cancer?



Conceptual and Empirical Properties of Self-reported Knowledge

Bivariate association of self-reported knowledge with mammography use

Table 5-7: Impact of Self Reported Knowledge on Appropriate Mammography Uptake

Appropriate Uptake (Yes)	Self-Reported Knowledge: Yes	No	P
What is Cancer?			
Percent	53.4%	49.3%	.383
N	577	142	
What Can Cause Cancer?			
Percent	61.3%	41.8%	.0000
N	421	294	
What Can Cure Cancer?			
Percent	53.9%	51.0%	.558
N	471	246	

Table 5.8: Impact of Self Reported Knowledge with Appropriate Mammography Adherence (Biennial or Annual)

Appropriate Adherence (Yes)	Self-Reported Knowledge: Yes	No	P
What is Cancer?			
Percent	40.0%	43.0%	.158
N	577	142	
What Can Cause Cancer?			
Percent	53.0%	42.9%	.008
N	421	294	
What Can Cure Cancer?			
Percent	50.3%	45.9%	.265
N	471	246	

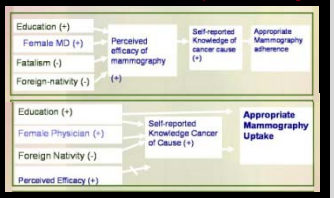
Race/Ethnicity and Self-reported Knowledge

	Haitian	White	African American	Latina/ Caribbean/ Other	Total	P
What is Cancer?						
N	277	142	155	145	719	
Percent	79.4%	84.5%	77.4%	80.7%	80.3%	.460
What Can Cause Cancer?						
N	267	130	159	155	711	
Percent	69.8%	74.6%	71.1%	63.9%	58.8%	0.000
What Can Cure Cancer?						
N	267	131	159	155	712	
Percent	71.9%	66.4%	59.7%	60.6%	65.7%	0.031

❖Haitians were less likely to report what can cause cancer

❖But more likely to report what can cure cancer

Covariance Structure of Self-reported Knowledge



- Self-reported knowledge of cancer had a Hierarchical relationship with other structural variables in relation to mammography uptake or adherence
- Self-reported knowledge of cause is a higher order construct

Discriminant Validity of Self-reported Knowledge: Correlations Patterns with Known Constructs

	What is cancer	What can cause cancer	What can cure cancer
Fatalism (1-5)	-.03	-.23**	.08*
Fatalism1	-.01	-.16**	.03
Fatalism2	-.06	-.19**	.09*
Efficacy (1-5)	.02	.14**	-.05
Efficacy1	.04	.13**	-.07
Efficacy 2	.02	.08*	-.01
Efficacy 3	.04	.15**	-.07
Modesty(1-5)	.04	.09*	-.00
Modesty 2	.03	.09*	-.02

Note pattern of positive and negative correlation

	What is cancer	What can cause cancer	What can cure cancer
Education (2high school)	.07	.28**	-.07
Researcher Evaluated Knowledge	.01	.09*	-.04
Evaluated Knowledge (1-8)	.08	.09*	-.03
Patient Language (Non-English)	-.04	-.28**	.10**
Staff Language preference	-.04	-.04	.11*
MD's Gender (female)	-.01	-.14**	.00
Income (≥20,000)	.12*	.10*	-.11*
Health behavior-Alcohol use	-.02	.08*	.01

Note little correlation with evaluated knowledge

SUMMARY

- The Framework approach facilitated identification of empirically active knowledge structure of the cultural explanatory model of cancer
- Only the explanatory Frame of what causes cancer was empirically active
- Self-reported knowledge of cancer cause was consistently associated with external variables and with mammography use
- Self-reported knowledge of cause was a strong predictor of mammography uptake and adherence than individual health beliefs
- There appears to be a hierarchical relationship between self-reported knowledge in relation to mammography use
- Self-reported knowledge is a higher order construct and more stable than individual beliefs

CONCLUSION

- The Cultural explanatory model of cancer can add to our understanding of disparities in mammography use
- The key is in identifying empirically active frames and careful qualitative analysis
- The pattern of association of self-reported knowledge with both psychological and structural variables suggests that self-reported knowledge may be a measure of collective efficacy rather than self-efficacy alone as suggested by individual behavior models

This study was made possible with the funding from the Susan Komen Breast Cancer Foundation