

# CONSERVATION OF RESOURCES THEORY AS A FRAMEWORK FOR KT: AN OVERVIEW OF A PROGRAM OF RESEARCH

Celeste Alvaro, Ph.D.

Assistant Professor (Research)  
Atlantic Health Promotion Research Centre  
Dalhousie University, Halifax, NS

June 10-11, 2010  
KU2010 Colloquium, Halifax

*Knowledge translation is the synthesis, exchange and application of knowledge to accelerate the benefits of innovation in strengthening health systems and improving people's health*

*(adapted from CIHR, 2006; WHO, 2005)*



# Research Team

Dalhousie University Team (Atlantic Health Promotion Research Centre):



Celeste Alvaro, Ph.D.  
Researcher



Renée Lyons, Ph.D.  
Co-Principal Investigator  
Bridgepoint Health, University  
of Toronto



Grace Warner, Ph.D.  
Co-Principal  
Investigator

Co-Authors & Co-Investigators:



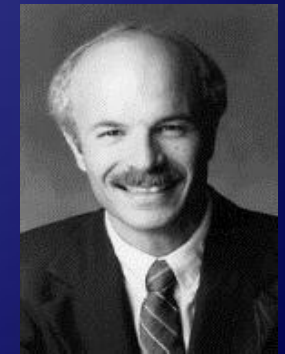
Steven Hobfoll,  
RUSH Medical College  
Chicago, USA



Patricia Martens,  
University of  
Manitoba, Canada



Ronald Labonté,  
University of  
Ottawa, Canada



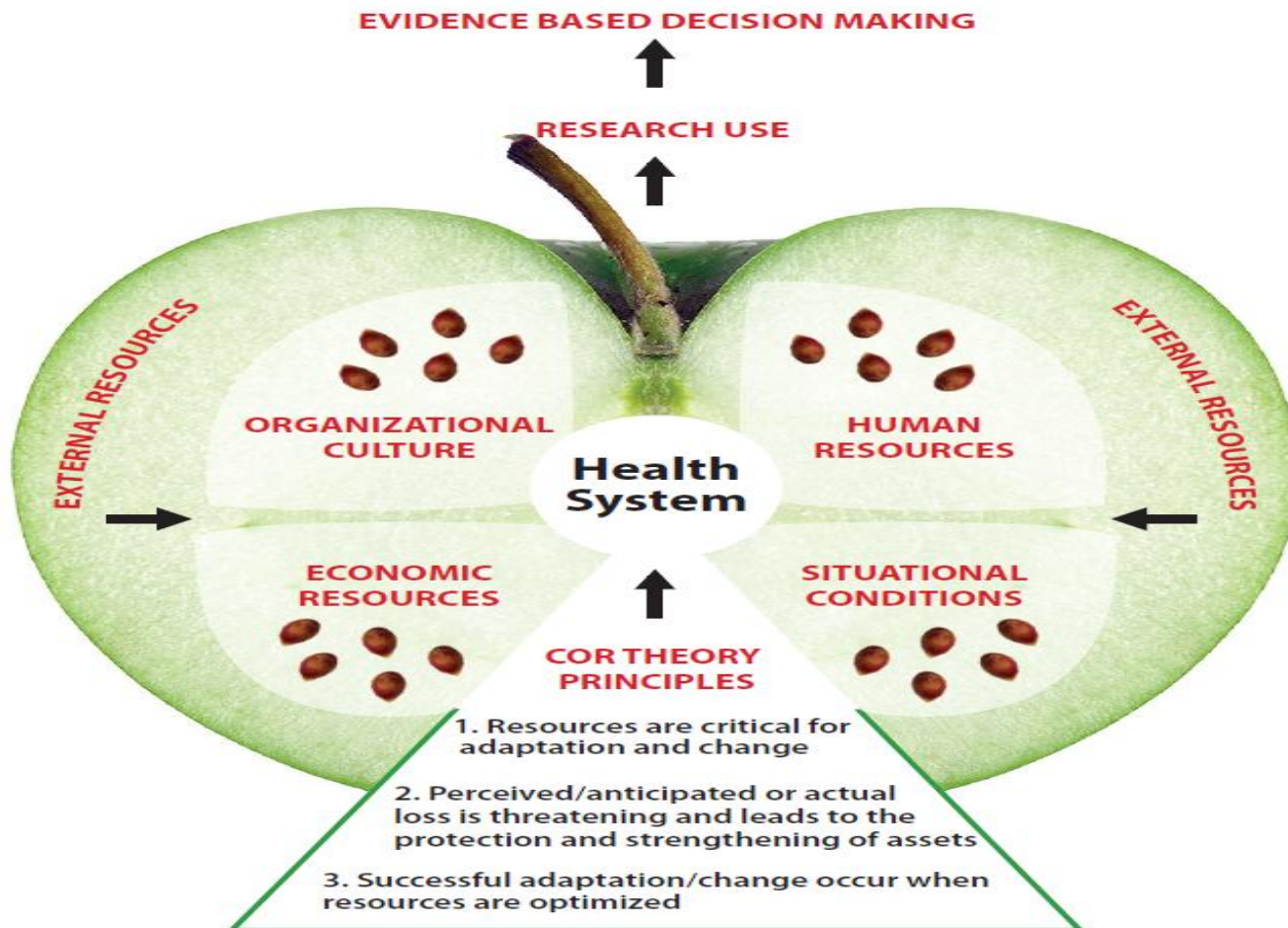
Richard Brown,  
University of  
California, Los  
Angeles, USA

# Rationale

- ◆ Health system challenges
  - ◆ Under resourced/poorer health status
- ◆ Conservation of Resources (COR) Theory (Hobfoll, 1989)
- ◆ COR theory & KT
  - ◆ Resources for research uptake
  - ◆ Threat of resource loss = resistance to research use
  - ◆ Optimizing resources for capacity building

# COR-KT MODEL

**Description:** The four categories of organizational resources form the core of the COR-KT model. Indicators within a given category can be visualized as the seeds of evidence-informed change. Perceived, anticipated, or actual resource loss stemming from research use leads to the protection of resources. Fear of resource loss must be countered through proactive and adaptive coping strategies (as evidenced in the COR theory literature), thereby fostering organizational preparedness to act on research evidence. Research uptake occurs when resources are optimized.



# Study 1: Literature Synthesis

## Objective:

- ♦ To identify the organizational resources required for research uptake

## Literature Review:

- ♦ Databases Searched: PubMed, Web of Science, Psych Info, etc.
- ♦ Search Terms: Knowledge Translation, Knowledge Transfer & Exchange, Knowledge Utilization, Research Utilization, etc.
- ♦ Informed by Diffusion of Innovations and Organizational Change theories

## Results:

- ♦ Extensive list of organizational resources & citations (see handout)

# Study 2: Multiple Case Study Validation of The COR-KT Model

## Objective:

- ◆ To validate & classify the list of resources identified in KT literature
- ◆ To determine the relevance of COR theory to research use in health systems

## Method:

- ◆ 4 Cases
  - Aging Well in Rural Places
  - Bikeways in HRM
  - Yarmouth Stoke Project
  - Food Security in Nova Scotia
- ◆ Document Review
- ◆ Key Informant Interviews
  - government decision makers, researchers, and practitioners (n = 44)

# Interview Questions

- ◆ COR-KT Theme 1
  - ◆ Resources critical for research use
  - ◆ Critical resources as a function of KT stage
- ◆ COR-KT Theme 2:
  - ◆ Resource-related concerns
  - ◆ Resource Loss & Gain
- ◆ COR-KT Theme 3:
  - ◆ Actions to optimize resources

# RESULTS – COR-KT Theme 1: Resources for Research Use

## Human Resources

- ♦ Adequate staff (skilled)
- ♦ Champion
- ♦ Open to change
- ♦ Willingness to cooperate
- ♦ Trust

## Economic Resources

- ♦ \$ to cover costs of research acquisition and implementation
- ♦ Flexibility to reallocate funds
- ♦ Budget constraints

## Organizational Culture

- ♦ Collaboration
- ♦ Flexibility to make changes
- ♦ Organizational buy-in

## Situational Resources

- ♦ Timing (research + organizational needs)
- ♦ Catalyst
- ♦ Stability
- ♦ Geographic isolation

## \*External Resources\*

- ♦ Greater health system support for research use
- ♦ Public support for evidence based policy/practice changes



# Critical Resources as a Function of KT Stages

Research Use

Human & Economic Resources

Human & Economic Resources

Organizational Culture

Research Evidence

*"...need the resources to do it ...ultimately, dollars and human resources." YSP 006*

*"Having people in place to implement best practices, that was most important later on...but to get there, you need the support of the organization." YSP 008*

*"I think organizational culture [is most critical in the beginning]. If the Nutrition Council wasn't interested, and if particular organizations weren't open to partnering, even having the right people in the right places and the latitude to work on it within their positions, we wouldn't have moved [forward]." FS 004*

# COR-KT Theme 2:

## Motivation to Conserve Resources

- ◆ **Concerns stemmed from:**
  - ◆ resources being spread too thin
  - ◆ potential loss to other programs
  - ◆ the sustainability of research based changes
- ◆ **Concerns resulted in:**
  - ◆ Learned helplessness, defeat
  - ◆ Resistance to change
  - ◆ Skepticism concerning the benefits of research uptake
- ◆ **Factors contributing to the salience of resource loss**
  - ◆ Prior experience
  - ◆ Losing a champion
  - ◆ Losing skilled staff

# COR-KT Theme 3:

## Actions to Optimize Resources

- ◉ *"A champion makes all the difference in the world"* BW 004
  - ◆ Buy-in
  - ◆ Involvement
- ◉ Knowledge translation activities
  - ◆ Education/training opportunities
- ◉ Collaboration and/or partnerships between researchers and users
- ◉ Investments
  - ◆ Reallocation of funds
  - ◆ *"Investment in people"* AW 002
- \*External bolstering of resources\*
  - ◆ Political and Public Support
  - ◆ Research Access
  - ◆ Economic Resources
  - ◆ Community and/or national recognition

# Study 3: Online Survey

## Objective:

- ◆ To improve understanding of factors affecting research use within health systems in Nova Scotia
- ◆ To assess the perceived importance of organizational resources
- ◆ To assess the perceived prevalence of organizational resources within their organization

## Method:

Online survey: 76-item questionnaire (quantitative and qualitative)

- 59 Participants (58 females, 1 male) within Nova Scotia;
  - practitioners (n=17), health promotion workers (n=13), managers/policy decision makers (n=12), physicians (n=3), researchers (n=2), and other (n= 12)

# Research Use & Challenges

Research was mainly used to: 'implement/develop or introduce evidence-based programs or practices' ; 'develop/implement policy change'

## Research Outcomes:

- + 'improving a policy/practice/program' ; 'enhancing understanding/knowledge/awareness'; 'offering evidence based support' -- "The positive outcomes were that future programs were developed based on needs identified by the population" (*Researcher*)
- difficulties with research/data -- "sometimes the research can seem outdated, irrelevant to the local context, and often hard to decipher" (*Health Promotion Worker*)

**Challenges** : 'Accessing and interpreting data' ; 'ensuring quality, relevance, and applicability of research' -- "Staff struggled with the research, struggled with buy-in, fully understanding the intent, and being able to critically appraise the research". (*Health Promotion Worker*)

# Importance & Prevalence of Organizational Resources (by Index)

	N	Mean	Standard Deviation
Organizational Culture (13 items)			
Importance Index <sup>a</sup>	48	7.81	1.50
Prevalence Index <sup>b</sup>	35	4.84	1.87
Human Resources (30 items)			
Importance Index <sup>a</sup>	27	7.96	1.51
Prevalence Index <sup>b</sup>	18	5.13	1.83
Condition Resources (9 items)			
Importance Index <sup>a</sup>	31	7.56	1.46
Prevalence Index <sup>b</sup>	26	5.00	1.92
Economic Resources (6 items)			
Importance Index <sup>a</sup>	36	7.65	1.50
Prevalence Index <sup>b</sup>	26	4.49	1.81

*Note: Within each category, means NOT sharing a common subscript differ significantly ( $p < .05$ ); the non-response rate was greater than 10% for all indexes.*

# Importance & Prevalence of Organizational Resources (by Item)

	N	Mean	Standard Deviation
An organizational culture that supports “research use”			
Importance <sup>a</sup>	51	8.14	1.43
Prevalence <sup>b</sup>	48	5.65	2.13
Human resources that support “research use”			
Importance <sup>a</sup>	51	7.78	1.86
Prevalence <sup>b</sup>	46	5.07	2.09
Condition resources that support “research use”			
Importance <sup>a</sup>	46	7.52	1.93
Prevalence <sup>b</sup>	41	4.88	2.23
Economic resources that support “research use”			
Importance <sup>a</sup>	48	7.65	1.87
Prevalence <sup>b</sup>	42	4.31	2.23

*Note: Within each category, means NOT sharing a common subscript differ significantly ( $p < .05$ ); the non-response rate was greater than 10% for each question.*

# Noteworthy Trends

- ◆ Importance:
  - ◆ OC & HR were rated most important
  - ◆ CR & ER were rated least important
  - ◆ No significance among categories on indirect ratings (i.e. by index)
  - ◆ OC significantly more important than CR & ER on direct ratings (i.e. by item)
- ◆ Prevalence:
  - ◆ ER consistently rated least prevalent
- ◆ High number of “don’t know” responses
  - ◆ 87% of the non-responses were actually made up of “don’t know” (particularly in the economic resource questions).
  - ◆ lack of knowledge of the resource categories may speak to the organizational culture



# The Discrepancy Score of Organizational Resources

- ◆ A discrepancy score for each item and organizational category was derived from the difference between the importance and prevalence ratings
  - ◆ the five highest discrepancies scores span the four organizational resource categories
  - ◆ items with the lowest discrepancy mean scores are mainly within HR & CR

# Highest and Lowest Discrepancy Scores

Highest Discrepancy Score Items	Organizational Resource Category	N	Mean	Standard Deviation
Adequate funds to acquire and implement research	Economic Resources	49	3.78	2.81
Discretionary/flexible funds	Economic Resources	44	3.77	2.61
Sufficient time to access, assess, and implement research	Condition Resources	55	3.73	3.06
Willingness to cooperate with research use even if it contradicts prior practice	Human Resources	49	3.51	2.62
Collaboration between researchers and users of research	Organizational Culture	51	3.45	2.45

Lowest Discrepancy Score Items	Organizational Resource Category	N	Mean	Standard Deviation
Minimal impact to other areas of the organization during policy/practice change	Condition Resource	35	1.31	1.75
A catalyst or trigger that heightens the needs for research	Condition Resource	50	1.56	2.39
Low staff turnover	Human Resources	50	1.74	2.52
Trust in research(ers)	Human Resources	54	1.91	2.24
Receptivity to collaboration	Human Resources	56	1.98	2.00

# The Importance-Prevalence Discrepancy

- ◆ There is a statistical difference between the means for each organizational resource category
  - ◆ i.e. across all categories of organizational resources the sample population rated the importance of an organizational resource category higher than its' prevalence within the organization.
- ◆ This discrepancy measure may be a good indicator of why or why not research is used
  - ◆ i.e. if a resource is not prevalent, but is considered important, research use may be minimized.

# Qualitative Analysis of the Importance/Prevalence of Resources

## ◆ Economic Resources

- ◆ 'funding is constrained/limited/there are competing interests/priorities'
- ◆ a substantial amount of participants were unaware of the budget/funding

## ◆ Organizational Culture

- ◆ 'resistance to change/slow to implement change/ability to adapt to change'
- ◆ 'the organizational culture supports research use'.

## ◆ Human Resources

- ◆ 'Need for specific competencies/personal attributes that support research use'

## ◆ Condition Resources

- ◆ 'Competition/priorities'
- ◆ 'lack of resources'

# Implications

- ◆ All organizational resources were found to be **more important** than they were **prevalent**.
  - ◆ Suggests: supply (prevalence) < demand (importance) of organizational resources.
  - ◆ This imbalance may create barrier to research use within the organizations.
- ◆ Lack of interest and/or low response rate to the study may speak to a general lack of interest in research use within the NS health organization.

# Overall Implications

## Theoretical Implications:

- ◆ Framework to understand Health Systems Capacity for Research Use
- ◆ Extends COR theory to the health systems context

## Health Systems Implications:

- ◆ COR-KT Theory Guided Action Strategy - Interventions to facilitate the uptake of research evidence within health systems
  - ◆ Assess resource strengths and limitations
  - ◆ Overcome fear of resource loss
  - ◆ Optimize Resources for Research Use
  - ◆ Increase prevalence of resources that have higher importance
- ◆ COR-KT Theory PLUS...
  - ◆ COR theory is not a “stand alone theory”
  - ◆ Other theories can be used to effect change in research uptake (e.g., organizational change theories, social psychological theories, social movement theories, empowerment theories, etc.)

# Contact Information

[Celeste.Alvaro@dal.ca](mailto:Celeste.Alvaro@dal.ca)

Tel: 902.494.3189

Atlantic Health Promotion Research Centre

Dalhousie University

Suite 209 City Centre Atlantic

1535 Dresden Row

Halifax, NS B3J 3T1

<http://www.ahprc.dal.ca>