

# Four Steps to Better Posters... and Better Communications

Penn State University College of Nursing



April 2015

**What Kind  
of a Poster Person  
Are You?**

**Talent Scout**

**Mentor**

**Brainstormer**

**Advocate**

**Connector/Shmoozer**

**Presenter**



**Posters!**

# Leadership!



**Posters!**

# Poster Session!

# Overview

- **4 Steps to Effective Poster Sessions**
  - Poster exercise
- **Poster Review and Discussion**

# **Four Steps**

**(from Prepared to Perfect)**

# Steps to Effective Poster Sessions

1. Think strategy
2. Get on message
3. Hone your design
4. Practice your “pitch”

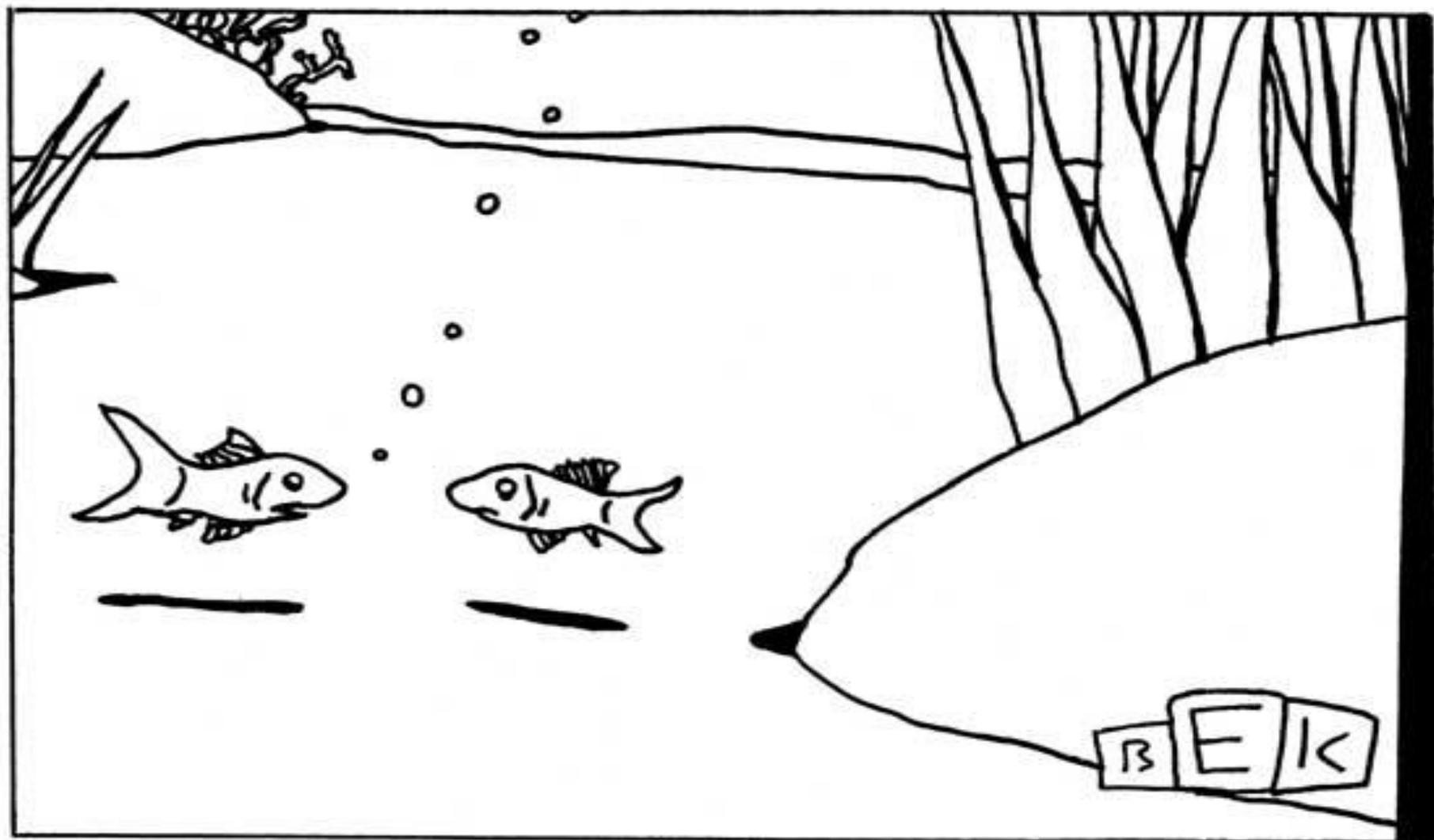




# 1

## Strategy

- Set a clear objective
- Make sense of the environment
- Know your audience



*"I want the whole package—the little bowl, the colored pebbles, the plastic castle."*

# Get SMART\*



- Specific
- Measurable
- Attainable
- Realistic
- Time-bounded

\*From “The Spitfire Strategies Smart Chart 3.0,” Washington, DC.  
[www.spitfirestrategies.com](http://www.spitfirestrategies.com)

# From Fuzzy to SMART

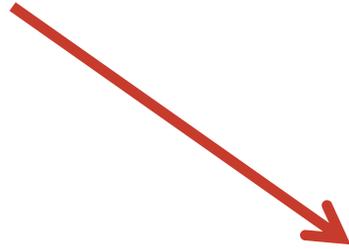
- Fuzzy Objective
  - Make a successful presentation about my research at the ENRS meeting next week in DC.



- SMART Objective
  - In preparation for, participation in and follow up to the 2015 ENRS meeting, connect with five key academic leaders who provide constructive feedback and/or support to my research agenda.



# Understand the Environment





**Know Your Audience**

# General Poster Strategy

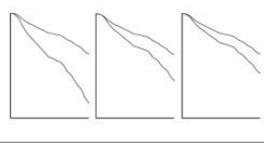
- Engagement as objective
- Poorly lit, competitive environment
- Scientific audience, on the move
- You are in control
  - Large visual format
  - Conversation starter, not a mini-paper

## WHEN BAD THINGS HAPPEN TO OLDER PERSONS

Illnesses and injuries leading to either hospitalization or restricted activity represent important sources of disability for community-living older persons, regardless of the presence of physical frailty. These intervening events may be suitable targets for the prevention of disability.

the role of intervening events on the development of disability

Kaplan-Meier Curves for Development of Any Disability/Severe Disability According to the Presence of Physical Frailty at Baseline



Number at risk:	No physical frailty			Physical frailty		
	432	350	273	47	432	388
	322	151	103	5	322	243

	Physical frailty at baseline	Disability-free survival (%)	95% CI
Baseline	100	100	
1 month	95	95	(93, 97)
3 months	88	88	(85, 91)
6 months	80	80	(76, 84)
1 year	70	70	(65, 75)
2 years	50	50	(43, 57)
3 years	35	35	(27, 43)
4 years	25	25	(17, 33)
5 years	18	18	(10, 26)

**BACKGROUND**  
A better complete understanding of the underlying process would likely facilitate the development of interventions aimed at preventing disability among community-living older persons.

**OBJECTIVES**  
1) To evaluate the relationship between intervening events and the development of disability.  
2) To determine whether this relationship is modified by the presence of physical frailty.

**METHODS**  
Prospective study of 714 noninstitutionalized, community-living persons aged 75+ years.  
Longitudinal participants who had physical frailty at baseline were included in the analysis of physical frailty, which was defined on the basis of three self-rated variables.  
Follow-up participants who identify intervening events for up to 5 years to determine the occurrence of disability.  
The Kaplan-Meier method for estimating disability, which included illnesses and injuries leading to either hospitalization or restricted activity.

## End-of-Life Care in Nursing Homes is Improving

Suzanne S. Prevoost, RN, PhD and J. Brandon Wallace, PhD  
School of Nursing and Department of Sociology & Anthropology



### INTRODUCTION

**Background**  
• 25% of Americans die in nursing homes  
• Projected to increase to 40% by 2020

**End-of-Life Care Problems in Nursing Homes**  
• High prevalence of pain  
• Excessive use of life-sustaining therapies  
• Poor communication with families  
• Lack of advance care planning

**Hospice Care**  
• Nursing home residents are less likely to receive hospice care than people who die in other locations  
• Residents who get hospice care have:  
• More aggressive pain management  
• Less invasive procedures  
• Less hospitalization prior to death  
• Higher family satisfaction with care

### PURPOSE

In light of recent local and national initiatives to enhance end-of-life care, we conducted an analysis of nursing home HDS assessment data to examine the changing patterns of end-of-life care in nursing homes from 2006-2008.

### METHODS

Secondary analysis of Minimum Data Set (MDS) assessment data for 103 for-profit nursing homes located primarily in the Southeast, ranging in size from 20 - 474 beds. Trends were examined in 6 month intervals from January, 2006 to December, 2008.

**Sample Demographics**  
• 60% Female  
• 93% Caucasian  
• 73% White, 26% Black, or other  
• 78% Above the age of 75

**Samples per Six Month Interval**

Month	Number of Deaths	Number of Denies
Jan - July 2004	20,111	2,999
Aug - December 2004	20,218	2,276
Jan - July 2005	20,322	2,884
Aug - December 2005	20,742	2,820
Jan - July 2006	22,895	2,770
Aug - December 2006	23,475	2,574

**Our findings suggest that:**  
• More residents are being identified as terminal  
• More are receiving hospice care  
• Fewer are receiving tube feedings  
• More have DNR orders

While these findings demonstrate improvements in EOL care, they also support the belief that the dying trajectory is frequently undocumented and many residents who could benefit from hospice care do not receive it.

### RESULTS

### CONCLUSIONS

The investigators would like to thank the John A. Hartford Foundation and the National of HealthCare Cooperative for their support of this project.

## The Effect of a Music and Noise/Light Reduction Program on the Sleep and Agitation of Nursing Home Residents with Dementia

**Purpose of the Study**  
The purpose of this study was to evaluate the effectiveness of a non-pharmacological sleep-inducing strategy consisting of a custom programmed music, sensory room, and environmental control program of music and light adjustment to improve the quality and quantity of sleep and daytime alertness among long-term residents with dementia in a nursing home. The specific objectives of this study were to determine: 1) the prevalence of sleep-related problems among residents with dementia; 2) the prevalence of sleep-related problems among residents with dementia who were in the music and light program; and 3) the prevalence of sleep-related problems among residents with dementia who were in the music and light program and who were also in the music and light program.

**Results**  
Results indicate that both music and environmental control programs for dementia care may be effective in promoting sleep and daytime alertness among long-term residents with dementia. However, more research is needed to determine the effectiveness of these programs in other settings and with different populations of dementia care residents.

**Conclusions**  
Both individual music and noise/light reduction programs may be effective in promoting sleep and daytime alertness among long-term residents with dementia. However, more research is needed to determine the effectiveness of these programs in other settings and with different populations of dementia care residents.

**Statement of Methods**  
Each individual music and noise/light reduction program was implemented in a separate room. The program consisted of a custom programmed music, sensory room, and environmental control program of music and light adjustment to improve the quality and quantity of sleep and daytime alertness among long-term residents with dementia in a nursing home.

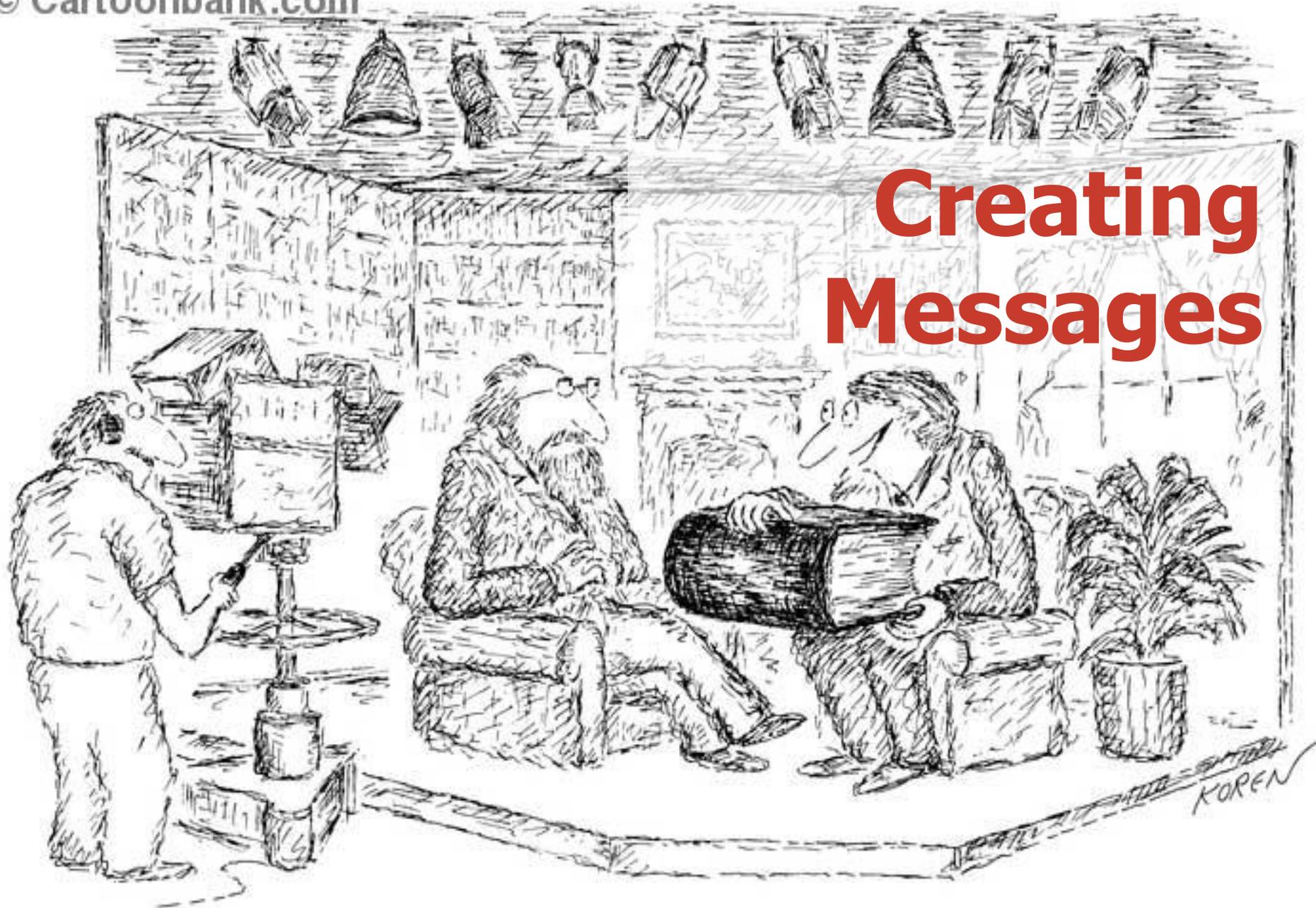
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**Message**



Your message here!

- Message = distillation
- Adapting messages
- Message challenges



# Creating Messages

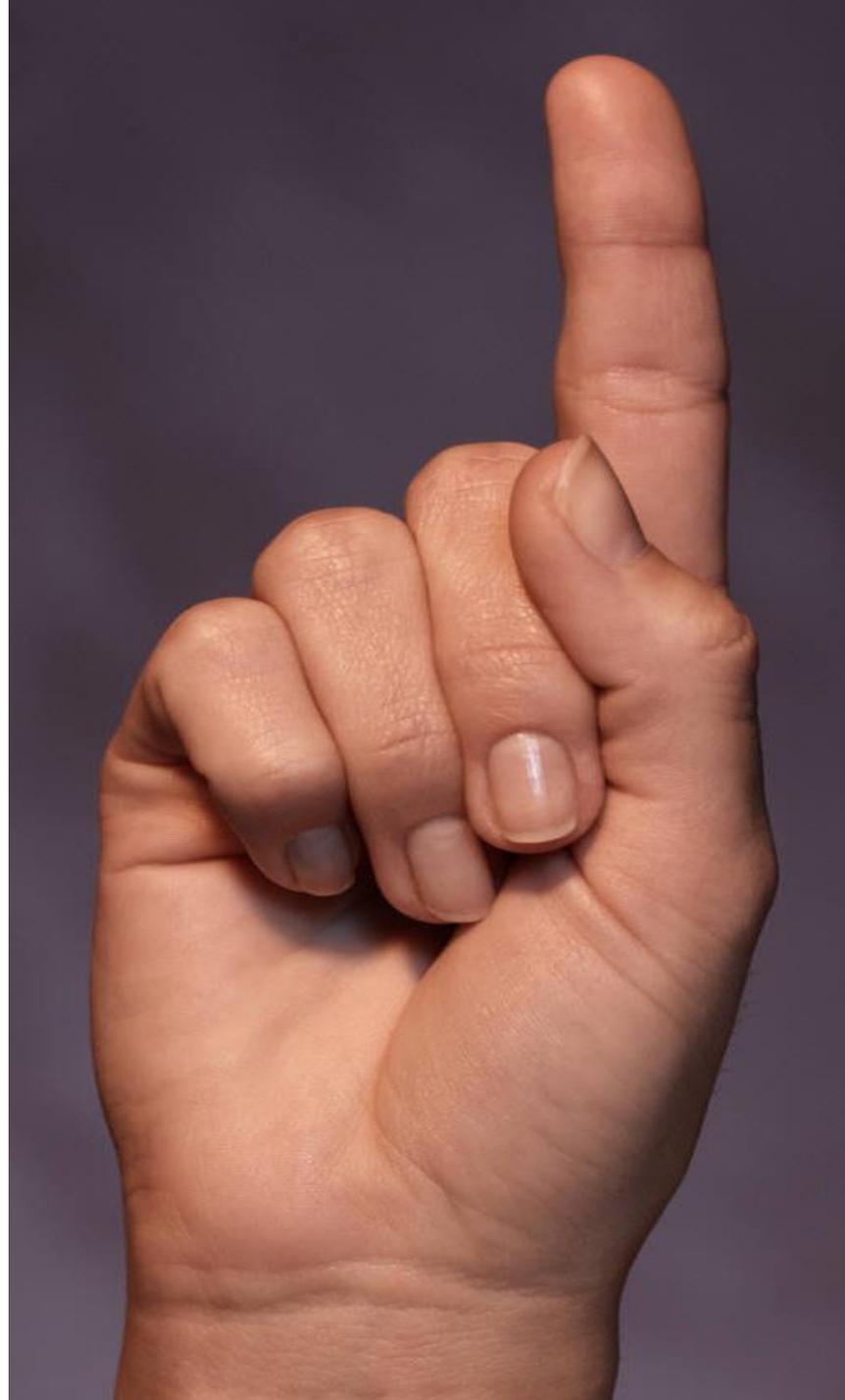
*"If you were to boil your book down to a few words, what would be its message?"*

# “One Thing” Message

A good message\*  
completes the following  
four statements:

- The **one** thing your audience needs to know is...
- The reason this is **important** to this audience is...
- What this audience should **do** is...
- It is **urgent** for this audience to act now because...

\*Courtesy of Valerie Denney, Denney Communications



# Adapting Messages



- Audience values
- Audience expectations
- Multiple audiences

# Message Challenges

- Complexity
- Jargon
- Opacity/abstraction
- Lack of emotion
- “Off key”



*“You’re right. It does send a powerful message.”*





## Thinking Inside the Box: Four Simple Steps to More Effective Posters

### Poster Development Worksheet

**1. What is the OBJECTIVE of your poster?** (For example: To find two potential collaborators? To meet and engage one potential funder? To get five people's feedback on what your next piece of research should focus on?)

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**2. Who is your TARGET AUDIENCE?** (Be as specific as possible (e.g. "People in other disciplines who are doing related research and who are looking to partner in an interdisciplinary project." "Participants at GSA" is too broad.)

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**3. What is your MAIN MESSAGE?** The ONE THING you want your target audience to know.

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# 3

## Design

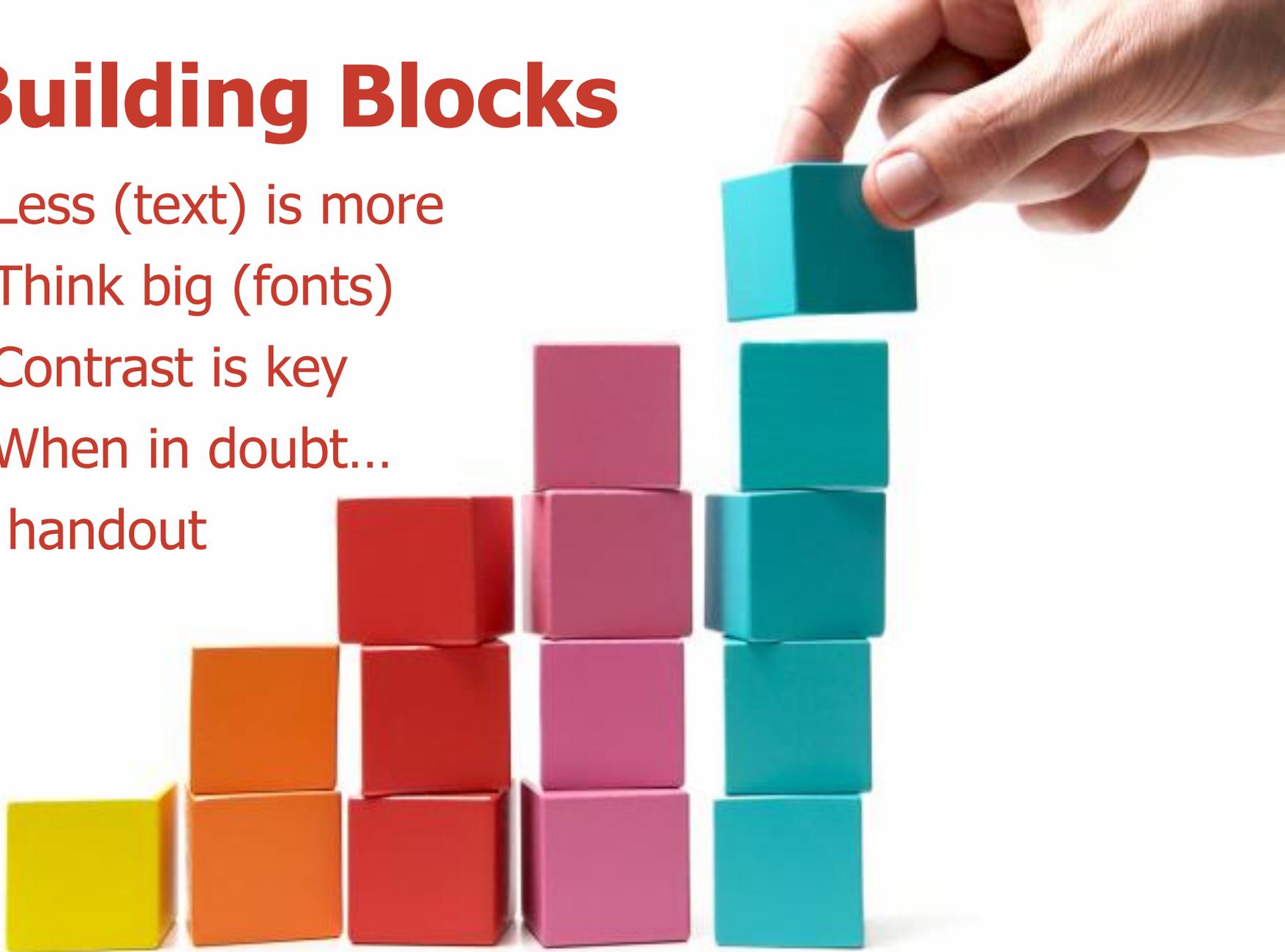


- Know the basics
- Message drives design
- Get help

# Building Blocks

- Less (text) is more
- Think big (fonts)
- Contrast is key
- When in doubt...

handout



# Think Grid

## End-of-Life Care in Nursing Homes is Improving

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### INTRODUCTION

#### Background

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#### End-of-Life Care Problems in Nursing Homes

- High prevalence of pain
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- Poor communication with families
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In light of recent local and national initiatives to enhance end-of-life care, we conducted an analysis of nursing home MDS assessment data to examine the changing patterns of end-of-life care in nursing homes from 2004-2006.

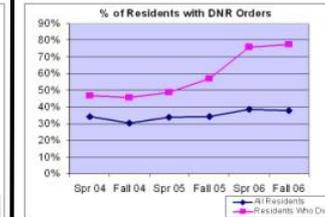
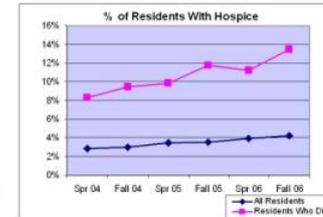
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#### Sample Demographics

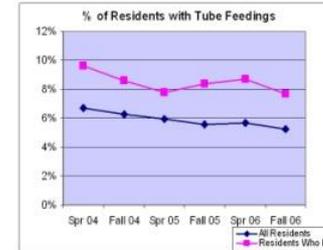
- 69% Female
- 91% Caucasian
- 73% Widowed, single, or divorced
- 78% Above the age of 75

### RESULTS



#### Hospice Care

- Nursing home residents are less likely to receive hospice care than people who die in other locations
- Residents who get hospice care have
  - More aggressive pain management
  - Less invasive procedures
  - Less hospitalization prior to death
  - Higher family satisfaction with care



#### Samples per Six Month Interval

Interval	Number of Residents	Number of Deaths
•Jan. – July 2004	22,111	2,999
•July – December 2004	20,219	2,270
•Jan. – July 2005:	23,331	3,064
•July – December 2005:	22,743	2,630
•Jan. – July 2006:	22,869	2,730
•July – December 2006:	22,675	2,574

### CONCLUSIONS

Our findings suggest that:

- More residents are being identified as terminal
- More are receiving hospice care
- Fewer are receiving tube feedings
- More have DNR orders

While these findings demonstrate improvements in EOL care, they also support the belief that the dying trajectory is frequently undocumented and many residents who could benefit from hospice care do not receive it.



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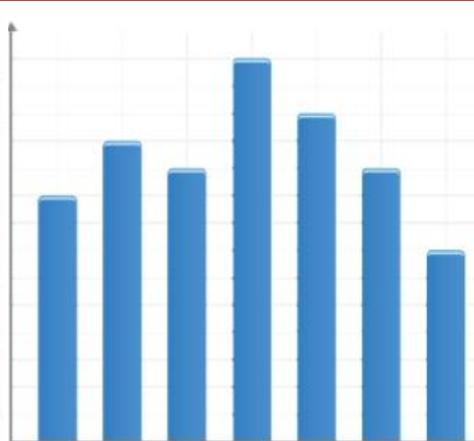
# Message

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**Table 1. Health Status and Age of New Medicaid Eligibles**

	Medicaid (%)	Uninsured (%)
<b>Health Status</b>		
% Good Health	81.6	89.5
% Poor Health	18.4	10.5
<b>Age</b>		
18-24	30.4	33.7
24-45	22.6	29.2
35-45	15	14.7
45-55	18.6	13.3
55-64	13.4	9.2

Source: Robert Wood Johnson Foundation and the Urban Institute, *The Health Status of New Medicaid Enrollees Under Health Reform*, August 2010



## We demonstrated three key learnings

1. The characteristics of cancer survivors
2. The kinds of medical problems cancer survivors have
3. The implications of comorbid illness in cancer survivors for patients and for doctors

(i.e., table, graph, photo, colored text box, etc.)

# Get Design Support!

- Templates/models
- Mentor and peer review
- Graphics departments and other pros



# PosterBuzz.com

Poster  
BUZZ



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## Welcome to PosterBuzz

Scientific posters are an increasingly popular form of professional communications. Poster sessions provide a unique, face-to-face opportunity for researchers to engage their peers, get needed feedback, prompt new ideas, and meet potential collaborators.

Posters are everywhere at professional association and society meetings across the country, and yet most scientists and academics struggle to put something useful up on the wall. Then they spend poster sessions standing around hoping somebody, anybody, will come by and talk with them about their work.

So who to call? Backed by a team of communications experts who have worked with academic leaders during the last two decades, **PosterBuzz** is here to help. It is a unique



**BUZZWORTHY**



# PHYSICAL FRAILTY, INTERVENING EVENTS AND THE DEVELOPMENT OF DISABILITY IN ACTIVITIES OF DAILY LIVING AMONG COMMUNITY-LIVING OLDER PERSONS

Thomas M Gill MD, Heather Allore PhD, Theodore R Holford PhD, Zhenchao Guo PhD, Yale University School of Medicine

## BACKGROUND

Among community living older persons, the inability to perform essential activities of daily living (ADL) without the assistance of another person is common, highly morbid, and costly. An important impediment to the development of interventions to prevent disability is an incomplete understanding of the mechanisms underlying the disabling process. Previous epidemiologic studies have focused almost exclusively on identifying vulnerable older persons at risk for disability. Relatively little is known, in contrast, about the role of intervening events that precipitate disability. While recent evidence suggests that disability may occur insidiously, particularly among older persons who are physically frail, most episodes of disability appear to be preceded by a discernable intervening event.

## OBJECTIVES

To evaluate the relationship between intervening events and the development of disability and to determine whether this relationship is modified by the presence of physical frailty.

## STUDY POPULATION

Members of the Precipitating Events Project (PEP Study) 754 community-living persons, aged 70+ years, who required no personal assistance in bathing, dressing, walking, or transferring. Persons who were physically frail, as denoted by a timed score > 10 sec on the rapid gait test (i.e. walking back and forth over a 10-foot course as quickly as possible), were oversampled to ensure a sufficient number of participants at increased risk for ADL disability. Participation rate was high: 75.2%.

## DATA COLLECTION

### ASSESSMENTS

Comprehensive home-based assessments were completed at baseline, 18, and 36 months by trained research nurse using standard instruments. Telephone assessments of intervening events and ADL function were completed monthly for up to 5 years with a 99.2% completion rate.

### INTERVENING EVENTS

Acute hospital admissions; Kappa = 0.94 for accuracy. Other illnesses or injuries leading to restricted activity. "Since we last talked on (date of last interview), have you stayed in bed at least half the day due to an illness, injury or other problem?" "Since we last talked on (date of last interview), have you cut down on your usual activities due to an illness, injury or other problem?" Test-retest reliability. Kappa = 0.90 for the presence or absence of restricted activity.

Table 1. Baseline Characteristics of Study Participants

Characteristic*	Physically Frail		P Value
	No (n=432)	Yes (n=322)	
Mean age, years	76.9 ± 4.7	80.4 ± 5.4	<.001
Female, n (%)	260 (60.2)	227 (70.5)	.003
Non-Hispanic white, n (%)	399 (92.4)	283 (87.9)	.039
Lives alone, n (%)	148 (34.3)	150 (46.6)	<.001
Mean education, years	12.5 ± 2.8	11.3 ± 2.9	<.001
Chronic conditions, mean	1.6 ± 1.2	2.2 ± 1.3	<.001
Cognitively impaired, n (%)	35 (8.1)	51 (15.8)	<.001
Depressive symptoms, n (%)	61 (14.1)	85 (26.5)	<.001

Characteristic	No (n=432)	Yes (n=322)	P Value
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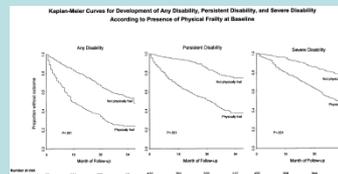
Table 3. Association Between Proximate Intervening Events and Disability Outcomes According to Physical Frailty at Baseline

Proximate Intervening Event	Level of Baseline Physical Frailty	Multivariable Hazard Ratio*			
		Any Disability	Persistent Disability	Severe Disability	
Hospitalization	All participants	60	44	132	
	Physically frail	34	32	93.2	
	Not physically frail	117	73	261	
Restricted activity only	All participants	5.1	3.3	7.3	
	Physically frail	4.1	3.3	5.2	
	Not physically frail	6.6	2.9	13	

\*All values are statistically significant at P < .001

Table 4. Population Attributable Fractions

Intervening Event	Any Disability	Persistent Disability	Severe Disability
Hospitalization	.48	.46	.66
Restricted activity only	.19	.13	.16



## DISABILITY OUTCOMES

### PRIMARY

Time to first occurrence of any disability over 5-year follow-up period

### SECONDARY

**Persistent:** new disability present for at least 2 consecutive months

**Severe:** new disability in three or more ADLs

## EXPOSURE PERIOD FOR INTERVENING EVENTS

### PROXIMATE

Month prior to assessment of disability

### DISTANT

Time from baseline assessment to two months prior to onset of disability or to a censoring event for participants who did not develop the relevant disability outcome

## STATISTICAL ANALYSIS

Evaluated time to first occurrence of any disability, persistent disability, and severe disability, respectively, according to physical frailty at baseline using Kaplan-Meier method.

Used time-dependent Cox proportional hazards method to evaluate multivariate relationship between the independent variables, including the proximate and distant intervening events, and the development of each of the three disability outcomes; and subsequently stratified results by physical frailty at baseline.

Calculated population attributable fractions of the three disability outcomes for each of the two proximate intervening events

## SUMMARY

Intervening events, including illnesses and injuries leading to either hospitalization or restricted activity, were strongly associated with the development of disability in essential activities of daily living. These associations were limited to events occurring within a month of disability onset, were observed for three distinct disability outcomes, persisted despite adjustment for several potential confounders, and were present among persons who were physically frail and those who were not physically frail.

## IMPLICATIONS

Our results highlight the importance of intervening events as a potential target for the prevention of disability, regardless of the presence of physical frailty.



# WHEN BAD THINGS HAPPEN TO OLDER PEOPLE: THE ROLE OF INTERVENING EVENTS ON THE DEVELOPMENT OF DISABILITY

Thomas M Gill MD, Heather Allore PhD, Theodore R Holford PhD, Zhenchao Guo PhD Yale University School of Medicine

## WHAT WE LEARNED

Illnesses and injuries leading to either hospitalization or restricted activity represent important sources of disability for community-living older persons, **regardless** of the presence of physical frailty.

These intervening events may be suitable targets for the prevention of disability.

## BACKGROUND

A more complete understanding of the disabling process would likely facilitate the development of interventions aimed at preventing disability among community-living older persons.

## OBJECTIVES

To evaluate the relationship between intervening events and the development of disability

To determine whether this relationship is modified by the presence of physical frailty

## METHODS

Prospective study of 754 nondisabled, community-living persons, aged 70+ years

Categorized participants into two groups according to the presence or absence of physical frailty, which was defined on the basis of slow gait speed

Followed participants with monthly telephone interviews for up to 5 years

- > to determine the occurrence of disability
- > to ascertain exposure to intervening events, which included illnesses and injuries leading to either hospitalization or restricted activity

## RESULTS

Kaplan-Meier Curves for Development of Any Disability, Persistent Disability, and Severe Disability According to Presence of Physical Frailty at Baseline

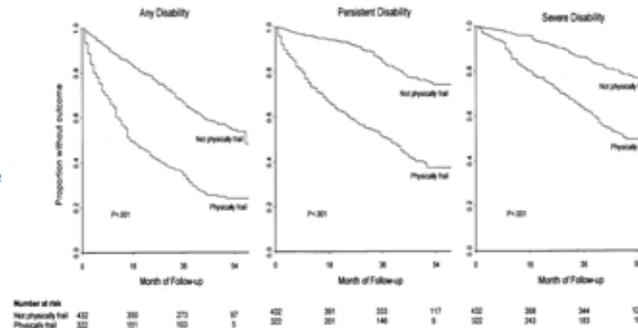


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Proximate Intervening Event	Level of Baseline Physical Frailty	Any Disability	Persistent Disability	Severe Disability
Multivariable Hazard Ratio*				
Hospitalization	All participants	60	44	132
	Physically frail	34	32	93.2
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Restricted activity only	All participants	5.1	3.3	7.3
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Characteristic*	Physically Frail		P Value
	No (n=432)	Yes (n=322)	
Mean age, years	76.9 ± 4.7	80.4 ± 5.4	<.001
Female, n (%)	260 (60.2)	227 (70.5)	.003
Non-Hispanic white, n (%)	309 (71.4)	263 (81.9)	.039
Lives alone, n (%)	148 (34.3)	150 (46.6)	<.001
Mean education, years	12.5 ± 2.8	11.3 ± 2.9	<.001
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Depressive symptoms, n (%)	61 (14.1)	95 (29.5)	<.001

Table 4. Population Attributable Fractions

Proximate Intervening Event	Any Disability	Persistent Disability	Severe Disability
Hospitalization	.48	.40	.66
Restricted activity only	.19	.13	.16

Table 2. Factors Associated with Development of Any Disability

Factor	Multivariable Hazard Ratio	95% CI	P Value
Age per each 5 years	1.3	1.2 to 1.5	<.001
Female sex	1.1	0.9 to 1.4	.57
Non-Hispanic white	0.9	0.6 to 1.3	.56
Lives alone	0.7	0.6 to 0.9	<.001
Years of education	1.0	0.9 to 1.0	.85
No. of chronic conditions	1.1	1.0 to 1.2	.06
Cognitive impairment	1.3	1.0 to 1.8	.07
Depressive symptoms	1.3	1.0 to 1.7	.03
Physical frailty	2.2	1.8 to 2.7	<.001
Proximate intervening events			
Hospitalization	60	46 to 76	<.001
Restricted activity only	5.1	3.8 to 6.7	<.001
Distant intervening events			
Hospitalization	1.0	0.9 to 1.1	.69
Restricted activity only	1.0	1.0 to 1.1	.27



# Bring the Heat!

**4**

**Pitch**



# Only connect!



- Pique interest (Did you know...?)
- Connect with your audience
- Make it personal
- Tell a (brief) story
- Practice!

# Poster Review

# What are the Best Screening Items for Delirium Detection at the Bedside?

DM Fick<sup>1</sup>; SK Inouye<sup>2</sup>; LH Ngo<sup>3</sup>; J Guess<sup>4</sup>; RN Jones<sup>5</sup>; ER Marcantonio<sup>6</sup>



## WHAT WE LEARNED: "A brief (less than one minute) 2 item screening can detect delirium with 93% sensitivity"

### INTRODUCTION

- Delirium, an acute state of confusion with impaired attention, cognition, and consciousness, is common in older adults and leads to poor clinical outcomes.
- Delirium is extremely costly, with estimates ranging from \$38 to \$152 billion annually.
- Yet, delirium is often under-detected at the bedside.
- Delirium screening in clinical practice can be labor-intensive and challenging to apply at the bedside.
- Thus, our aim was to identify one or two simple bedside tests that could be used to quickly screen for delirium.

### STUDY AIMS

To determine the best-performing single and two item pairs of cognitive screening items to identify delirium by a clinical reference (gold) standard.



### METHODS

- We utilized the 3D-CAM study cohort of 201 patients. Participants were age 75 or older, admitted to the general medicine service of a large teaching hospital.
- Patients underwent cognitive screening (items, such as orientation, word recall, digits spans, days of the week and months of the year backwards) by trained interviewers.
- Independently, patients underwent clinical assessment for delirium and dementia involving a patient interview, medical record review, and interviews with family members. The clinical reference standard based delirium and dementia diagnoses was determined by an expert panel.
- Individual items from the cognitive screening were compared to the clinical reference standard delirium diagnosis to determine their sensitivity (percent of reference standard positive cases identified) and specificity (percent of reference standard negative cases identified).
- Sensitivity and specificity were calculated, along with 95% exact confidence intervals for the items.

### RESULTS

- Of the 201 participants (mean age 84, 27% with baseline dementia), 42 (21%) had delirium based on the clinical reference standard.
- The best single screening item with the highest sensitivity is 'months of the year backwards' with a sensitivity of 83% and specificity of 69%. The best two-item screen was the combination of 'months of the year backwards' and 'What is the day of the week?' with sensitivity of 93% and specificity of 64%. A positive screen was an error, "don't know" response or no response. For the two-item screener, if either item was positive, the screen was positive.
- When stratified by baseline cognition (dementia vs. MCI + normal) 'What is the day of the week?' and 'months of the year backwards' had sensitivity of 96% and specificity of 43% in persons with dementia. Table 4 shows the results for the dementia strata only.

Characteristic	
Age, mean (SD)	84 (5.4)
Sex, n (%) female	125 (62)
White, n (%)	177 (88)
*Education, n (%)	
Less than High School	20 (10)
High School Graduate	75 (38)
Any College	100 (49)
Vision interfered with interview, n (%)	5 (2)
Hearing interfered with interview, n (%)	18 (9)
English as second language n (%)	10 (5)
*Education missing in 6 (3%) of participants	

Screen Item	Screen Positive (%) <sup>a</sup>	Sensitivity (95% C.I.) <sup>b</sup>	Specificity (95% C.I.) <sup>b</sup>
Months backwards	42	0.83 (0.69,0.93)	0.69 (0.61,0.76)
Four digits backwards	56	0.83 (0.69,0.93)	0.52 (0.44,0.60)
What is the day of the week?	21	0.71 (0.55,0.84)	0.92 (0.87,0.96)
What is the year?	16	0.55 (0.39,0.70)	0.94 (0.9,0.97)
Have you felt confused during the past day?	14	0.50 (0.34,0.66)	0.95 (0.9,0.98)
Number of patients with Delirium = 42 <sup>a</sup> Screen Positive: Error, don't know, or no response <sup>b</sup> C.I., Confidence interval			

Screen Item 1	Screen Item 2	Screen Positive (%) <sup>a</sup>	Sensitivity (95% C.I.) <sup>b</sup>	Specificity (95% C.I.) <sup>b</sup>
What is the day of the week?	Months backwards	48	0.93 (0.81,0.99)	0.64 (0.56,0.70)
What is the day of the week?	Four digits backwards	60	0.93 (0.81,0.99)	0.48 (0.4,0.56)
Four digits backwards	Months backwards	65	0.93 (0.81,0.99)	0.42 (0.34,0.50)
What type of place is this?	Four digits backwards	58	0.90 (0.77,0.97)	0.51 (0.43,0.50)
What is the year?	Four digits backwards	59	0.90 (0.77,0.97)	0.50 (0.42,0.5)
Number of patients with Delirium = 42 <sup>a</sup> Screen Positive: Error, don't know, or no response on either question <sup>b</sup> C.I., Confidence Interval				

Screen Item 1	Screen Item 2	Screen Positive (%) <sup>a</sup>	Sensitivity (95% C.I.) <sup>b</sup>	Specificity (95% C.I.) <sup>b</sup>
What is the day of the week?	Months backwards	77	0.96 (0.82,1.00)	0.43 (0.24,0.63)
What is the day of the week?	Four digits backwards	77	0.93 (0.76,0.99)	0.39 (0.22,0.59)
Four digits backwards	Months backwards	77	0.93 (0.76,0.99)	0.39 (0.22,0.59)
** 1 Participant with learning problems grouped with Dementia Number of patients with Delirium = 28 <sup>a</sup> Screen Positive: Error, don't know, or no response on either question <sup>b</sup> C.I., Confidence Interval				

### CONCLUSIONS

- We were able to identify single screening items with greater than 80% sensitivity and pairs of items with greater than 90% sensitivity relative to a clinical reference standard delirium.
- The best two-item screen was the combination of 'months of the year backwards' and 'What is the day of the week?' with a sensitivity of 93%. The best single screening item is 'months of the year backwards' with a sensitivity of 83%.
- Administering these items might be an important first step in systematic methods for delirium bedside case identification (combined screening and subsequent diagnosis using the CAM algorithm) in hospitalized older adults.
- Future work should test the best screening items across different settings and providers to determine the most cost efficient and timely manner to screen for delirium at the bedside and improve patient outcomes.





Madeline F. Mattern, MS, FNP-C, CNE

College of Nursing, The Pennsylvania State University

## Background

Anxiety prevalence - 40 million American adults age 18 years and older (about 18%)

Stepped treatment guidelines AHRQ:

- Interpersonal, Psychosocial Treatments
- Antidepressants (SSRI or SNRI)

Professional Guidelines:

- Antidepressants (SSRI or SNRI)
- Interpersonal, Psychosocial Treatments

No Benzodiazepines (BZDs)

Physician management of anxiety:

- Benzodiazepine (BZD) use & abuse

Quantitative studies:

- Global prevalence rates up of BZD use up to 76%

NPs' Practices in only 1 Study of secondary analysis of depression and anxiety management:

- Antidepressants for anxiety
- High percentage of BZDs prescribed by 40%
- Antipsychotics prescribed
- More education needed

Research has shown Nonpharmacological Interpersonal, Psychosocial Treatments lessened anxiety:

- Cognitive Behavioral Therapy (CBT)
- Counseling
- Computerized Modalities
- Complementary and Alternative Medicine (CAM) Approaches:

- Exercise
- Kouk Sun Do
- Yoga
- Kava

## Purpose & Questions

The purpose of this study was to examine the management practices used by Pennsylvania primary care NPs for patients with GAD

1. What level of knowledge do NPs currently have regarding GAD management techniques?
2. What are NPs' current management practices, pharmacological and non-pharmacological, of patients diagnosed with GAD?

## Methods

- Nonexperimental design
- IRB
- Convenience sample = 94 (Power analysis N=100)
- Survey (Content Validity)
- Survey Monkey® x 3
- Descriptive analysis
- Reliability analysis
- Linear Regression



Table 1. Demographics

Demographics	
Female	93%
Male	7%
21-30 yrs	8%
31-40 yrs	15%
41-50 yrs	28%
51+	43%
Range of years practicing as an NP	
0-5 yrs	38%
6-10 yrs	3%
11-20 yrs	48%
21-30 yrs	8%
31+ yrs	3%
Type of NP Program	
Adult	14%
Family	83%
Mental Health	3%
Separate MH or P content in NP program	
No	77%
Yes	18%
Unsure	7%

## Results

Research Question #1: Education

Sample consistent with general population of NPs (see Table 1)

Training and Continuing Education Related to Anxiety:

- ~50% indicated a need for more continuing education

Regression Analysis:

NPs who had a mental health course in their basic NP education chose counseling/psychotherapy as the priority treatment (p = 0.001)

Research Question #2: Management Strategies

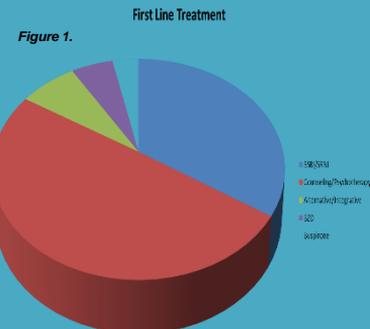
Top Five First Line Treatments for Patients with GAD (Figure 1)

Barriers to Psychological/Counseling Strategies

- Lack of financial resources
- Lack of providers in the geographical area
- Lack of time to spend with patient
- Lack of preparation to deliver psychotherapeutic interventions

Overuse and Long-term use of BZDs

- BZDs 4th for first line treatment (7.95%)
- BZDs used before Internet-based modalities, buspirone, herbal
- 14.69% used BZDs for greater than 6 months
- Including 5.63% ongoing basis



## Discussion

Education

- NPs continuing education
- NP student education: Mental health unit
- Increase Patient Education

Practice

- Reduce BZD use
- Reduce Barriers to Psychological/Counseling Treatment
- Increase use of nonpharmacological treatment
- Psychosocial/CAM

Future Research

- Increase the sample size to include nationwide primary care NPs
- Obtain data from electronic health record
- Qualitative components
- Use of CAM/ Barriers to Psychosocial modalities



## Limitations

- Limited Generalizability
- Sample – Convenience, Small
- Survey tool developed for this project
- Comorbidity with depression
- Possible collaboration with other providers for treatment plans

## References

Handout



## BACKGROUND

Informal caregivers provide significant contributions to end-of-life care, from post-diagnosis treatment through the final hours of life.

Caring for a person with a life-threatening illness is an extended commitment, spanning months or even years of declining health and function.

Despite variations in trajectories of living with and dying from varied life-threatening illnesses, the caregiving experience is patterned and marked by a unifying theme of “seeking normal”

Observed variations in caregivers’ capacity to establish a sense of “normal” in the face of progressive decline and changing caregiving demands prompted an investigation of resilience as a conceptual marker of the potential to handle adversity with less distress.



## RESILIENCE...

*thriving in the face of adversity*

*Linguistic cues may be useful clinical markers of resilience for targeting caregiver support*

## PURPOSE

### PURPOSE

To identify expressions of resilience used by informal caregivers providing care through the end of life (EOL)

## METHODS

### METHODS

Framework: Theoretical components of resilience were identified through an analysis of theoretical formulations used in multiple contexts.

Dataset: Longitudinal interviews with caregivers over 6-12 months in the later phases of EOL caregiving

EOL exemplars: Three distinct death trajectories: lung cancer; amyotrophic lateral sclerosis; advanced heart failure

Analytic technique: Thematic analysis of linguistic patterns of expressing conceptual features of resilience.

## FINDINGS

### FINDINGS:

Caregiving across trajectories of life-threatening illnesses is marked with dynamic changes in the care recipients’ condition and caregiving demands

Variations in response to patterned adversity (i.e., anticipated decline due to illness trajectory) were apparent

Caregivers manifesting resilience focused on the present/immediate future; made required decisions and regained stability (i.e. “normal”)

Other caregivers carried memories of past adversities into the present; expressed difficulty framing decisions, and reported unhealthy coping strategies (low resilience)

Expressions of resilience among informal caregivers providing EOL care include reference to:

**Perception of adversity:** Context of demand

**Adaptive strategies:** Description of actions, thoughts, behaviors used in coping with adversity

**Thriving:** Indications of growth, confidence in capacity, sense of ‘moving on’ (or lack thereof)

## CONCLUSIONS

Recognizing linguistic patterns of resilience (or lack of resilience) may be a useful clinical marker for targeting interventions to support at-risk informal caregivers by building a stronger set of adaptive strategies.

Data used in this study were collected under NIH/NINR Grant # 1R01NR010127 Exploring the Formal/Informal Caregiver Interface across 3 Death Trajectories [Project Dates 2008-2012]. The content is solely the responsibility of the authors & does not necessarily represent the official views of the NIH/NINR

# More Posters

# End-of-Life Care in Nursing Homes is Improving

Suzanne S. Prevost, RN, PhD and J. Brandon Wallace, PhD  
 School of Nursing and Department of Sociology & Anthropology

## INTRODUCTION

### Background

- 25% of Americans die in nursing homes
- Projected to increase to 40% by 2020

### End-of-Life Care Problems in Nursing Homes

- High prevalence of pain
- Excessive use of life-sustaining therapies
- Poor communication with families
- Lack of advance care planning

### Hospice Care

- Nursing home residents are less likely to receive hospice care than people who die in other locations
- Residents who get hospice care have
  - More aggressive pain management
  - Less invasive procedures
  - Less hospitalization prior to death
  - Higher family satisfaction with care



## PURPOSE

In light of recent local and national initiatives to enhance end-of-life care, we conducted an analysis of nursing home MDS assessment data to examine the changing patterns of end-of-life care in nursing homes from 2004-2006.

## METHODS

Secondary analysis of Minimum Data Set (MDS) assessment data for 103 for-profit nursing homes located primarily in the Southeast, ranging in size from 20 – 474 beds. Trends were examined in 6 month intervals from January, 2004 > December, 2006.

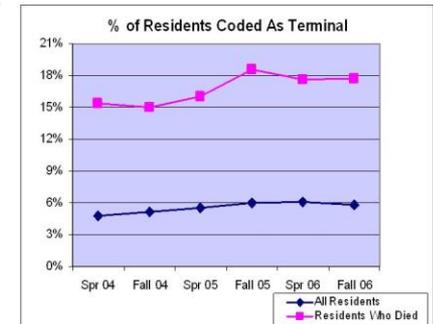
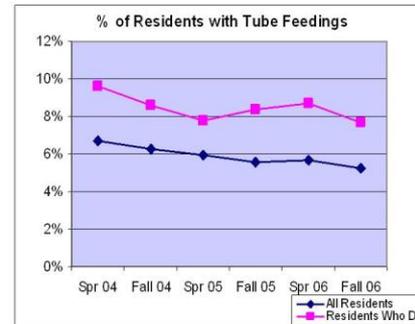
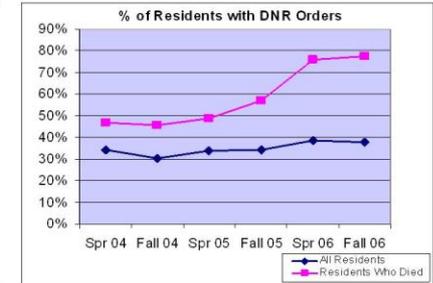
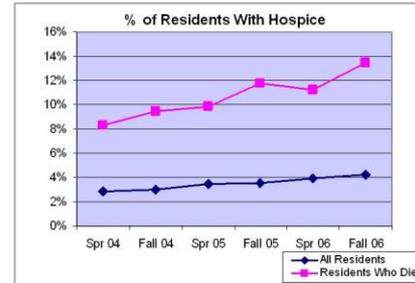
### Sample Demographics

- 69% Female
- 91% Caucasian
- 73% Widowed, single, or divorced
- 78% Above the age of 75

### Samples per Six Month Interval

	Number of Residents	Number of Deaths
•Jan. – July 2004	22,111	2,999
•July – December 2004	20,219	2,270
•Jan. – July 2005:	23,331	3,064
•July – December 2005:	22,743	2,630
•Jan. – July 2006:	22,869	2,730
•July – December 2006:	22,675	2,574

## RESULTS



## CONCLUSIONS

Our findings suggest that:

- More residents are being identified as terminal
- More are receiving hospice care
- Fewer are receiving tube feedings
- More have DNR orders

While these findings demonstrate improvements in EOL care, they also support the belief that the dying trajectory is frequently undocumented and many residents who could benefit from hospice care do not receive it.

# Persistent Pain in Assisted Living Facilities

C.A. Kemp, BSN, RN, BC; L.L. Miller, PhD, RN; H.M. Young, PhD, GNP, FAAN; S.K. Sikma, PhD, RN

## What We Learned

Older adults with persistent pain living in assisted living facilities are more likely to have fallen in the previous year and require assistance with mobility.

### Background

- Persistent pain is a common, debilitating condition among older adults regardless of residence<sup>1</sup>
- Assisted living facilities (ALFs) are the fastest growing segment of the senior housing market<sup>2</sup>

### Purpose & Aims

This study describes the phenomenon of persistent pain in older adults residing in eight ALFs in Washington & Oregon

#### Aims

- Compare demographic characteristics, cognitive status, ADL function, & number of falls in past year in the pain group & non-pain group
- Describe analgesic orders of the pain group

### Sample

- 156 residents from the Medication Management in Assisted Living Facilities study (NINR R21 NR009102-01) participated in this study
- Pain group (n=92, 59%) vs. non-pain group (n=64, 41%)
- Pain group inclusion criteria:
  - Routine or PRN opioid analgesic order OR
  - Routine (>once daily) non-opioid analgesic order OR
- Pain-related diagnosis (e.g., arthritis, sciatica, "knee pain")

### Methods

- Secondary data analysis
- Cross-sectional, descriptive design

### Results

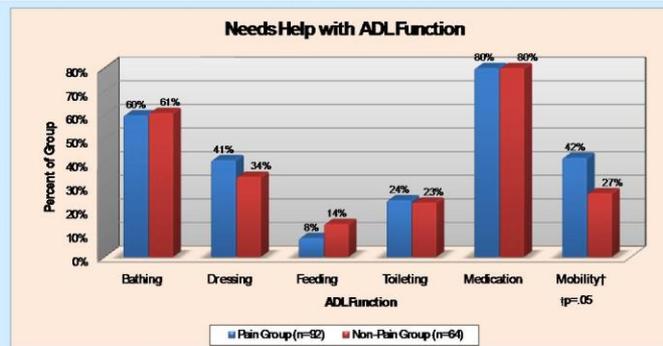


Table 1a – Sample Characteristics, Categorical Variables

Characteristics	Pain Group (n=92) n (%)	Non-Pain Group (n=64) n (%)
Gender		
Male	14 (15)	15 (23)
Female	78 (86)	49 (77)
Ethnicity		
Caucasian	89 (97)	62 (97)
Other	2 (2)	2 (3)
Not reported	1 (1)	
Legal represent.		
Self	63 (68)	39 (61)
Family member	26 (28)	23 (36)
Other	3 (3)	1 (1)
Not reported		1 (1)
Payment source*		
Private	60 (66)	52 (81)
Medicaid	31 (34)	12 (19)
Cognitive status		
Alert	46 (50)	35 (55)
Confused, memory problems	40 (44)	24 (38)
Not reported	6 (6)	5 (8)
Fell in past year	48 (52)	26 (41)

\*p=.04

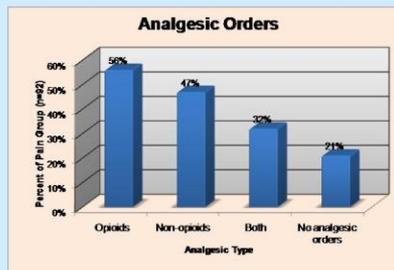


Table 1b – Sample characteristics, continuous variables

Characteristics	Pain group (n=92) mean (SD)	Non-pain group (n=64) mean (SD)	p-value
Age (years)	83 (7.8)	83 (6)	ns
ADL Function score	1.7 (1.4)	1.6 (1.6)	ns
Length of stay (months)	25.4 (22)	23.5 (18.3)	ns

### Discussion

- Prevalence of persistent pain in sample (59%) matches prevalence of persistent pain in other studies with older adults
- All residents required assistance with 1 to 2 ADLs on average; however, residents in the pain group required significantly more assistance with mobility
- 50% of residents in pain group fell in past year compared with 41% in non-pain group, although difference was not significant

### Next Steps

- Examine correlations among falls, mobility, and analgesic orders in assisted living residents
- Describe changes in analgesic orders over 6-month period of parent study
- Examine impact of analgesic order changes on number of falls and assistance with mobility

### Limitations

- Research questions formulated based on available data
- Data collected by chart review with minimal data verification
- Cross-sectional design prohibits analysis of changes over time or causal effect

### Acknowledgments

NINR R21 NR009102-01  
John A. Hartford Building Academic Geriatric Nursing Capacity Pre-Doctoral Scholarship



# WHAT DO OCTOGENARIANS BELIEVE ABOUT PHYSICAL ACTIVITY?



Catherine A. Sarkisian, MD, MSPH,\* Carol M. Mangione, MD, MSPH, Arleen F. Brown, MD, PhD, Sonja Rosen, MD, Thomas R. Prohaska, PhD.  
<sup>1</sup>David Geffen School of Medicine at UCLA, Los Angeles, California; <sup>2</sup>University of Illinois, Chicago School of Public Health, Chicago, IL.

## WHAT WE LEARNED

Octogenarians in these focus groups identified fear of loss of function, and the need to keep mentally and physically active, but not beliefs about improved life expectancy, to be important determinants of physical activity.

**Implications/Next Steps:** Interventions aimed at increasing walking among octogenarians might increase their impact by shifting the incentive focus away from health improvement, and towards maintenance of physical and mental functioning.

## Background

- Over 12 million Americans will be octogenarians by 2030; most will be ambulatory.
- The vast majority of ambulatory octogenarians do not participate in regular physical activity.

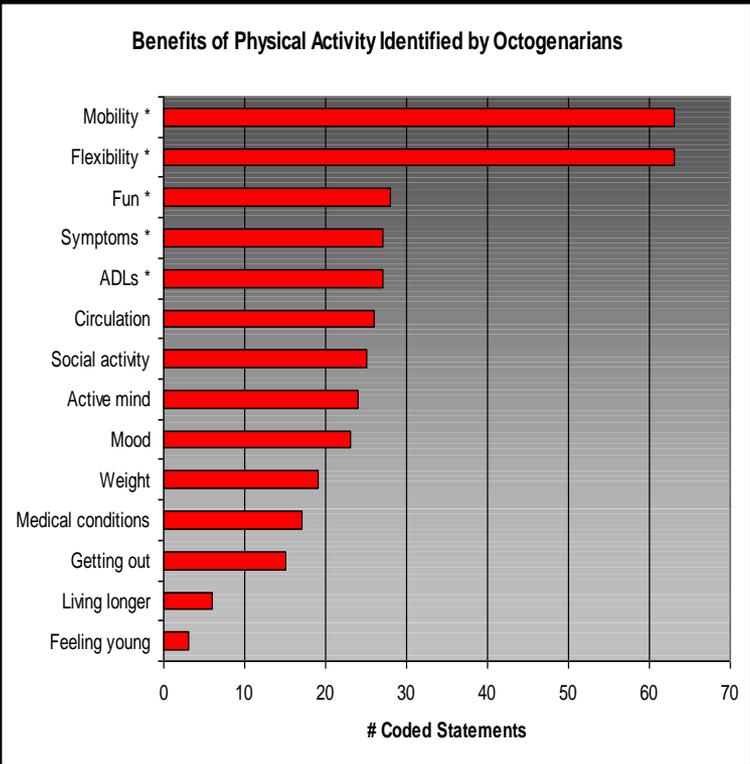
## Objective

- To identify octogenarians' beliefs and attitudes about physical activity

## Methods

- Recruited English-speaking octogenarians at 8 low-income senior residential housing units
- Conducted 1-hour focus groups using standardized open-ended script
- Grounded theory approach
- Transcripts read independently by 3 investigators to identify themes and develop coding template
- 4<sup>th</sup> investigator coded each line
- Reliability of coding scheme assessed on 5% of lines by 2<sup>nd</sup> coder – 83% agreement

## RESULTS



\* Benefit Identified in ≥ 7 of 8 focus groups

## Major Themes

1. Physical activity is not regarded as an **optional** activity one might do in order to improve health outcomes, but rather as activities of daily living **necessary** to maintain mobility/ independence/ health/life.
  - Sample quotes:
    - “I still do my housework, we have to keep going.”
2. **Fear of loss** is a major source of motivation for participation in physical activity.
  - Sample quote:
    - “a lot of people sit down and they don't think about it and the next thing you know, they can't do anything . . . “
    - “you stop doing things, and you're not always able to do them again.”
3. Physical and mental health are regarded as inseparable phenomena.
  - Sample quotes:
    - “If you just sit all day and don't do anything you're no longer thinking anymore so you get brain dead.”
    - “Once you get lazy at walking, you get lazy at thinking and you just sit and become like a vegetable.”

# Please Don't Measure My "Burden" Duty and Satisfaction Are What Matter to Me

Lyda C. Arévalo-Flechas PhD, RN

The University of Texas Health Science Center at San Antonio

## What We Learned & Where We Are Headed

Measures for burden in the majority population may not assess the same concept in Latinos/Hispanics and other populations. The best measures of the impact of caregiving duties and the interventions to minimize negative effects may lie in concepts that express the impact more positively.

Duty fulfillment and satisfaction are proposed as positive perceptions of what Latino/Hispanic Alzheimer's caregivers experience. Further qualitative exploration of these concepts will provide the basis for instruments to measure these two types of caregiver perception not considered in current theoretical models.

## Background

- Burden is not the best way to describe the impact of caregiving on Latino/Hispanic caregivers of a relative with Alzheimer's disease.
- Current models do not consider the role culture and language play in how caregiving is perceived.
- Spanish lacks a word that translates to the English "burden." The Spanish word "carga" translates only to a physical load.
- Neither "burden" nor "carga" are culturally competent words to accurately describe Latino/Hispanic caregiving.

## CULTURALLY INFORMED CONCEPTUAL ORIENTATION OF CAREGIVING

### ANTECEDENTS

Regardless of racial or ethnic background, caregivers face these day-to-day situations that are antecedents to coping and perception

### CONSEQUENCES

The resulting outcome is the perception that the caregiver has of the overall caregiving experience.

#### Realities of Caregiving

#### Coping

#### Perception of Caregiving

#### Caregiver Expenditure:

Degree to which one offers time, as well as physical, financial, environmental, and personal resources on behalf of another.

#### Caregiver Coping Response

Degree to which caregiver mobilizes resources (personal, physical, financial, social, and environmental) to increase one's ability to manage stressful events.

#### Caregiver Duty Fulfillment

Degree to which a person feels honored to be a dutiful caregiver and responsible for another.

#### Caregiver Satisfaction

Degree to which caregiver perceives balance between the changes made to care for another and sense of duty or responsibility.

#### Caregiver Burden

Degree to which one perceives the inability to deal with the stress when responsibility for another is assumed.

#### Examples:

Amount of money spent.  
Amount of time spent.  
Amount of travel time.  
Amount of hours slept.  
Amount of time to self.

#### Examples:

Lazarus Coping Scale  
Geriatric Hopelessness Scale  
Perceived Social Support Scale  
Social Functioning Scale

Scales that reflect the Latino/Hispanic values and collectivist perception of caregiving.  
To be developed.

#### Examples:

Carer's Assessment of Satisfaction Index  
Positive Aspects of Caregiving  
Pending Cross-cultural validation

#### Examples:

Screen for Caregiver Burden  
Revised Memory and Behavior Problem Checklist  
Pending cross-cultural validation

CULTURE AND LANGUAGE

## Assumptions

- Each culture gives people a way to see the world (Spradley, 1979). This worldview is passed from one generation to the next primarily through language.
- More than a way to communicate, language also creates and expresses cultural reality (Spradley, 1979). Ways of perceiving, categorizing, and thinking about one's world result directly from one's language.
- The linguistic (cognitive) categories that make up one's reality and define actions are meanings (Krauss, 2005). Meaning is essential to human life (Frank, 1963). Meaning making allows us to make sense of our lives and experiences, as humans.

# Quality and Inequality in Home Care of Older Adults:

How do cultural background and social policy influence publicly and privately funded home care practices?

Elana Buch, University of Michigan

## Background

- Home care is one of the fastest growing industries in the U.S.
- Home care workers and recipients often come from different class and ethnic backgrounds.
- Research suggests that home care participants' backgrounds may effect their ideas about of quality care.
- Current research primarily focuses on publicly funded care.

## Research Questions

- How is cultural background related to home care participants' understandings of home care quality?
- How does public vs. private funding influence participants' ability to shape home care practices?
- How do home care practices reproduce or transform pre-existing social relations and formal labor conditions?

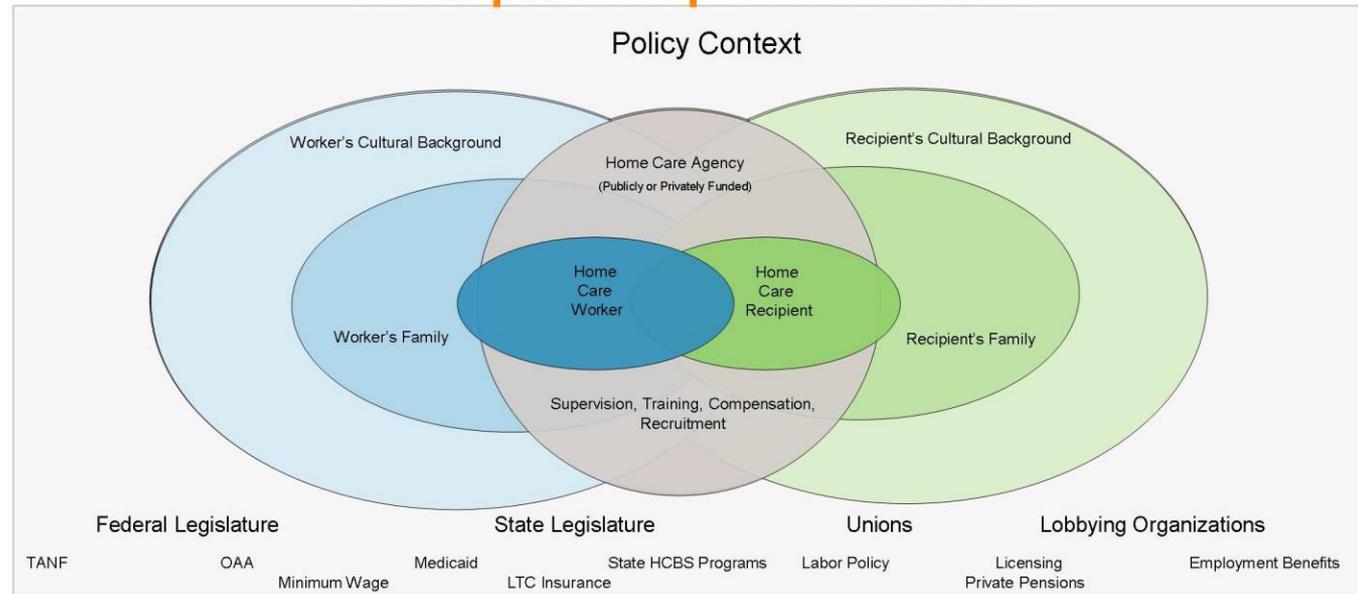
## Methods

- Research sites: One publicly and one privately funded home care agency in Chicago, IL.
- Sample: Nested sample includes 15 worker-recipient pairs (criteria = cognitively-able older adults receiving avg. of 8 hrs. care/week) , available family members, agency supervisors and industry leaders.
- Data collection: Participant observation in homes and agency offices, life care history interviews, document and policy review.

## Preliminary Findings

- Workers and recipients from diverse cultural backgrounds suggest that quality care helps the recipient maintain social personhood. However, meanings of personhood are culturally informed. Workers try to learn about recipients' families, cultural backgrounds and personalities, adjusting care to reflect recipient's understanding of personhood.
- Private pay recipients act and are treated like consumers who have the right to control their care. Clients in publicly funded programs tend to frame the care offered to them as a gift, and thus to build relationships with workers based on norms of reciprocity rather than those of market exchange.
- Lack of acknowledgement of workers' role in maintaining recipients' social personhood exacerbates pre-existing social inequalities (greater in privately than publicly funded care). Reciprocal relationships between publicly funded workers and recipients can lead to political action addressing common causes of inequality in their lives.

## Conceptual Map of Home Care



# A Life of Quality?



Tara L. Nickle, MSW  
University at Albany, SUNY  
[tn7719@albany.edu](mailto:tn7719@albany.edu)

## Systematic review and meta-analysis of interventions relevant to quality of life for persons with intellectual disabilities and dementia

### Background

Shifts in population, life expectancy, and associated prevalence rates have brought attention to services for persons with intellectual disabilities (ID) and dementia, which are ill-prepared to meet growing needs.

### Aim

Synthesis of ID literature in order to assess: 1) the effectiveness of psychosocial interventions with QOL-related outcomes, and 2) their relevance for persons who are aging with dementia.

### Methods

Use of a QOL conceptual framework with targeted domains/indicators (Schalock & Verdugo, 2002).

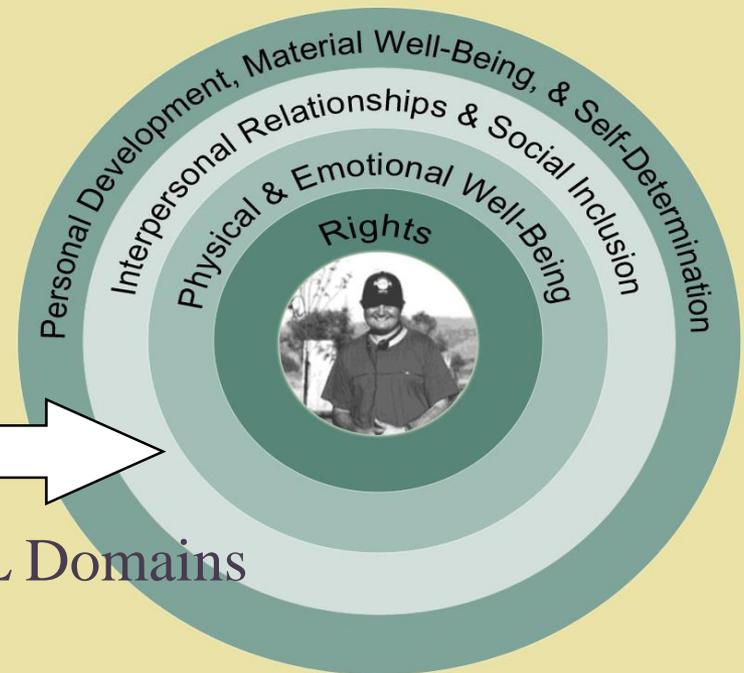
Electronic and hand searches to uncover published studies spanning 25 years from databases, journals, conference proceedings, reference lists, etc.

Study selection, quality assessment, and data abstraction undertaken by two independent reviewers.

Narrative synthesis of studies and fixed/random effects meta-analyses by classified QOL domain.



Key QOL Domains



# geriatric NEUTROPHILS

The implications of immunosenescent neutrophils in neutropenic older adults with cancer

## BACKGROUND:

- Immunosenescence
- Refers to age related changes in structure and function within the immune system
  - Renders older adults more vulnerable to infection than younger adults
  - Vulnerability magnified by disease and treatment affecting immune function
  - Has critical implications for older adults immunocompromised because of neutropenia

## PURPOSE:

To review the intersection of immunosenescence and neutropenia, focusing on innate immunity and implications for neutropenic older adults with cancer, and to examine current management of neutropenia in light of immunosenescence.

## METHODS

Literature culled from searches in MEDLINE using keywords neutropenia, immunosenescence and related terms was reviewed and critiqued to achieve the stated purpose.

## FINDINGS

- Geriatric neutrophils form a weaker line of defense against infection
- Blunted mobilization response when the hematopoietic system under stress
  - Decreased phagocytic ability
  - Premature apoptosis
  - Decreased intracellular killing ability

Geriatric neutrophils may partly account for neutropenia's devastating impact on older adults

- Neutropenia related infection occurs in up to 48% of older adults
- Neutropenia related hospital stays are 13.5 days vs. 7 days for younger adults
- Neutropenia related mortality is reportedly 5-30% for those over 70 years old

## ELEMENTS OF CURRENT PRACTICE:

Fever indicates infection

Administer growth factors to increase production of neutrophils

Neutropenic diet includes restricting vitamin rich foods

Neutropenia is associated with considerable physical and psychological stress

## CRITIQUE:

20-30% of older adults with an infection never develop a fever

Growth factors stimulate production of geriatric neutrophils

Malnutrition has a negative effect on immune function

Physical and psychological stress has a negative impact on immune function

## IMPLICATIONS FOR RESEARCH AND PRACTICE:

Broaden assessment to include emphasis on atypical presentation of infection in older adults

Give growth factors according to guidelines and expand interventions to include nonpharmacologic supportive care

Reconsider neutropenic diet and consider supplementation with immune boosting elements

Research to explore the physical and psychosocial impact of neutropenia from the older adult's perspective

**MARGARET H. CRIGHTON, MSN, RN**

John A. Hartford Foundation Building Academic Geriatric Nursing Capacity Scholar



# WHEN BAD THINGS HAPPEN TO OLDER PERSONS

the role of intervening events on the development of disability

Thomas M Gill MD, Heather Allore PhD, Theodore R Holford PhD, Zhenchao Guo PhD Yale University School of Medicine

Illnesses and injuries leading to either hospitalization or restricted activity represent important sources of disability for community-living older persons, regardless of the presence of physical frailty. These intervening events may be suitable targets for the prevention of disability.

Proximate Intervening Event	Level of Baseline Physical Frailty	Any Disability	Persistent Disability	Severe Disability
Multivariable Hazard Ratio				
Hospitalization	All participants	5.0	4.4	13.2
	Physically frail	3.4	3.2	9.2
	Not physically frail	1.17	1.73	2.61
Restricted Activity Only	All participants	5.1	3.3	7.3
	Physically frail	4.1	3.3	5.2
	Not physically frail	6.6	2.9	1.3

## BACKGROUND

A more complete understanding of the disabling process would likely facilitate the development of interventions aimed at preventing disability among community-living older persons

## OBJECTIVES

- 1) To evaluate the relationship between intervening events and the development of disability
- 2) To determine whether this relationship is modified by the presence of physical frailty.

## METHODS

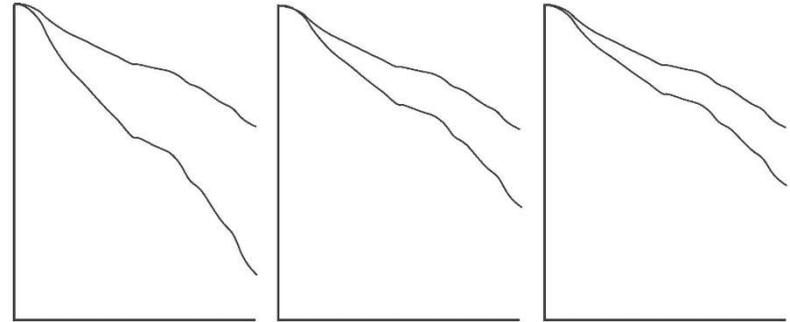
Prospective study of 754 nondisabled, community-living persons, aged 70+ years

Categorized participants into two groups according to the presence or absence of physical frailty, which was defined on the basis of slow gait speed

Followed participants with monthly telephone interviews for up to 5 years

- to determine the occurrence of disability
- to ascertain exposure to intervening events, which included illnesses and injuries leading to either hospitalization or restricted activity.

Kaplan-Meier Curves for Development of Any Disability and Severe Disability According to the Presence of Physical Frailty at Baseline



Number at risk:

	0	1	2	3	4	5	6	7	8	9	10	11	12
Not physically frail	432	350	273	97	432	361	333	117	432	388	344	125	
Physically frail	322	151	103	5	322	201	146	9	322	243	183	19	

Characteristic	Physically Frail		
	No (n=432)	Yes (n=322)	P Value
Mean age, years	76.9±4.7	80.4±5.4	<.001
Female, n[%]	260 [60.2]	227 [70.5]	.003
Non-Hispanic white, n[%]	399 [92.4]	283 [87.8]	.039
Lives alone, n[%]	148 [34.3]	150 [46.6]	<.001
Mean education, years	12.5±2.8	11.3±2.9	<.001
Chronic conditions, mean	1.6±1.2	2.2±1.3	<.001
Cognitively impaired, n[%]	35 [8.1]	51 [15.8]	<.001
Depressive symptoms, n[%]	61 [14.4]	95 [29.5]	<.001

Proximate Intervening Event	Any Disability	Persistent Disability	Severe Disability
Hospitalization	.48	.46	.66
Restricted Activity Only	.19	.13	.16

Factor	Multivariable Hazard Ratio	95% CI	P Value
Age per each 5 years	1.3	1.2 to 1.5	<.001
Female sex	1.1	0.9 to 1.4	.57
Non-Hispanic white, n[%]	.9	0.6 to 1.3	.56
Lives alone	0.7	0.5 to 0.9	<.001
Years of education	1.0	0.9 to 1.0	.85
No. of chronic conditions	1.1	1.0 to 1.2	.06
Cognitive impairment	1.3	1.0 to 1.8	.07
Depressive symptoms, n[%]	1.3	1.0 to 1.7	.03
Physical frailty	2.2	1.8 to 2.7	<.001
Proximate intervening events			
Hospitalization	5.0	4.6 to 7.6	<.001
Restricted activity only	5.1	3.8 to 6.7	<.001
Proximate intervening events			
Hospitalization	1.0	0.9 to 1.1	.69
Restricted activity only	1.0	1.0 to 1.1	.27



# The Effect of a Music and Noise/Light Reduction Program on the Sleep and Agitation of Nursing Home Residents with Dementia

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William F. Connell School of Nursing  
Boston College

Graphic Design: Chad Abraham Miantich

## Purpose of the Study

The purpose of this study is to evaluate the effectiveness of a non-pharmacological sleep enhancing strategy consisting of a resident-centered protocol using calming music and an environmentally-centered protocol of noise and light abatement to improve the quality and quantity of sleep and daytime agitation in nursing home (NH) residents with Alzheimer's Disease (AD). The specific objectives of this controlled clinical intervention are: 1) to evaluate the effectiveness of resident-centered strategy consisting of calming music to enhance the quality and quantity of sleep and to reduce levels of daytime agitation; 2) to develop and evaluate the effects of an environmental strategy to abate noise and light in the nighttime nursing home environment on the quality and quantity of sleep and levels of daytime agitation; and 3) to evaluate the combined effect of a resident-centered sleep enhancing strategy and the environmental noise/light abatement strategy on these measures.

## Statement of Methods

The design consisted of a two-phase controlled clinical intervention trial conducted in three skilled nursing facilities. The study utilized a within subjects design with each of the 27 subjects acting as his/her own control. Subjects were monitored for 16 days (24 hrs/day) utilizing wrist Actigraphy under four conditions (each consisting of 4 days). Condition 1 gathered baseline measures; Condition 2 consisted of ½ hour of individualized calming music at bedtime; Condition 3 consisted of a noise/light reduction program; Condition 4 consisted of music at bedtime plus the noise/light abatement program. Outcome variables included total sleep time, time of sleep latency (time needed to fall asleep) and daytime agitation levels.

## Results

Results indicate that both music and environmental interventions designed to enhance sleep may be effective non-pharmacologic approaches for improving total sleep time, reducing the period of sleep latency, and improving daytime agitation scores, however only reduction of sleep latency under each condition proved to be significantly different from baseline at the p<.02 level using paired t-tests with a Bonferroni correction for avoiding Type 1 error.

	Baseline	Music	Noise/Light Reduction	Music/Noise/Light Reduction
Total Sleep Time	274 minutes	337.5 minutes	313.8 minutes	332.8 minutes
Sleep Latency	46.5 minutes	38.8 minutes*	35.0 minutes*	39.5 minutes*
Agitation	82.8	74.3	82.3	73.8

\*p<.02

## Conclusions

Both individualized music and a noise/light reduction program significantly reduced sleep latency in a pilot study of 27 elderly nursing home residents with dementia. Although positive effects on total sleep time and decreases in daytime agitation were noted, no statistically significant differences were discerned.

Key Words: Alzheimer's/Dementia/Quality of Life/Clinical Trials

The research reported in this poster was supported the by National Institute on Aging. The investigators retained full independence in the conduct of this research.

# Going Poster

## Remember the Four Steps

1. Think strategy
2. Get on message

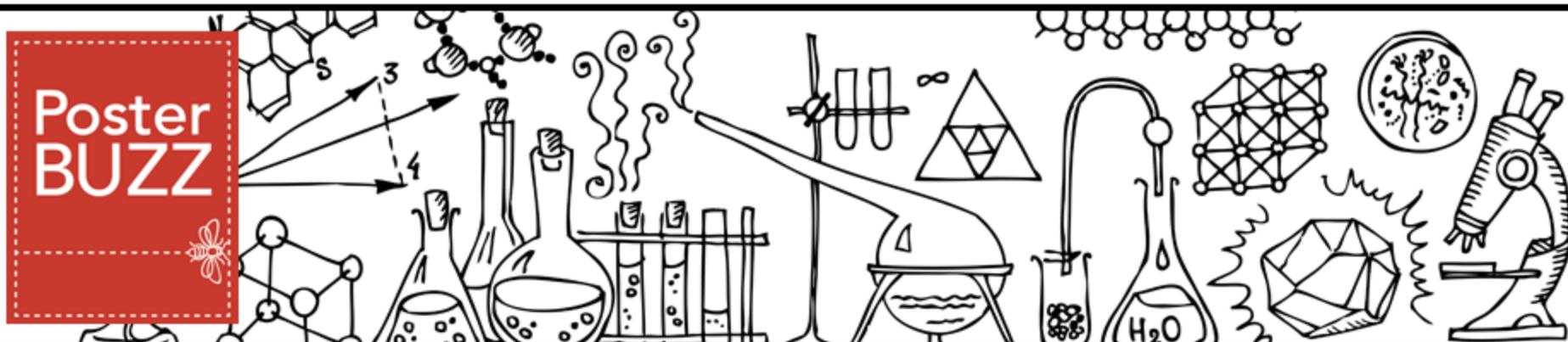
*Take a breath...then*

3. Hone your design
4. Practice your “pitch”

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