

Frequency and Variety of Activities in Older Adults:

Development of the Variety of Activity Questionnaire

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Sources of Support

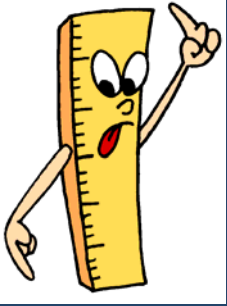
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Background

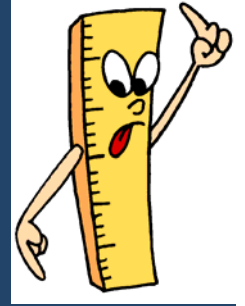
- The challenge of demographics
- Research focus on how to keep older adults independent in the community
- The emerging role of activity

How activity benefits older adults

- Physical activity and exercise
 - Decrease incidence of cognitive impairment and dementia (Laurin, 2001; Yaffe, 2001)
 - Maintain physical function and mobility (Brach 2003, 2004)
- Cognitive and social activity
 - Protect against mild cognitive impairment and dementia (Verghese, 2006; Wilson, 2002)
 - Protect against dementia, depression, maintain well being (Zunzunegui, 2003, Menec 2003)



Measuring Activity



- Physical Activity and Exercise Measures
 - Poor validity for sedentary individuals (Richardson, 1994)
 - Decreased reliability and validity for 75 and over (Harada, 2001)
- Activity Indexes – Cognitive and Social
 - Poorly defined (Ghisletta, 2006)
 - Different time frames
- No reliable or validated measure for all four activity domains
- Best way to quantify activity?

Evidence for Variety

- Cognitive Function
 - Increase number of cognitive activities = decreased dementia (Verghese, 2002, 2006)
 - Increase number of exercise activities = decreased dementia (Podewils, 2005)
- Physical Function - Falls Prevention Literature
 - Interventions with greater variety significantly decreased falls (Campbell, 1999; Barnett, 2003; Suzuki, 2004)

Purpose

- To develop, test, and validate a brief tool called the Variety of Activity Questionnaire (VAQ) to quantify the frequency and variety of activity in cognitive, social, physical and exercise activity domains

Methods

Development of VAQ

- Identification of domain specific activities
- Review by experts
- Pilot testing

Development of VAQ: Scoring

- Scoring
 - Frequency (Range = 0 – 259)
 - Total Activity Score (TA)
 - Variety (Range = 0 – 37)
 - Variety of Activity Score (VA)

Participants

- Inclusion Criteria
 - 70 or over
 - Living independently in the community
- Exclusion Criteria
 - Significant cognitive decline measured by the SPMSQ
 - Major health event or surgery in last six months
 - Diagnosis of progressive neurological disorder
 - Latter stages of terminal disease
 - Unable to read, write, or speak English
 - Unable to walk independently with or without an assistive device

Procedure

- Testing done at recruitment site
 - 218 volunteered, 196 eligible
- Completed demographic and VAQ
- Volunteers for additional assessments:
 - 30 participants recruited to retake VAQ after one week
 - 55 participants recruited to complete activity logs for 7 days

Analyses

- Questionnaire Items
 - Participation rates of activities
 - Exploratory factor analysis
 - Activity domains
 - Principal component analysis with varimax rotation
- Outcomes
 - TA, VA test – retest reliability = ICC (2,1)
 - TA, VA concurrent validity (7 day) = ICC (2,1)

Results

Demographics

Variables (n = 196)	Mean (SD)
Age	78.7 (6.3)
BMI	25.9 (5.0)
Number of Health Conditions	2.7 (1.6)
	Percentage of Subjects
Gender (female)	79
Black	28
White (non-Hispanic)	70
Asian/White (Hispanic)	2
Married	35
Widowed	45
Divorced	10
Single	3
Other	7
Less than high school	16
High School/GED	26
Associate Degree	16
Bachelor's Degree	18
Graduate Degree	24

Frequency of Activities

<u>Daily</u>	%	<u>Never</u>	%
Read	86	Golf	98
Light Housework	76	Hike	88
Meal Prep	76	Team Games	85
Phone	75	Swim/Water Aerobics	80
Music	45	Strength Training	80
Climb Stairs	33	Bicycle	75
Walk for Errands	29	Childcare/Caregiving	74
Puzzles	27	Dancing	74
Home Exercise	25	Work/Volun, active	69

Exploratory Factor Analysis

- Principal component analysis = 14 factors
- Kaiser-Meyer-Olkin test = 0.58
 - unacceptable/miserable (Kaiser, 1974)
- Poor item reliability for factors (range 0.35 - 0.67)

Reliability and Validity

	VAQ1 mean (95% CI)	VAQ2 mean (95% CI) n=30	7-day mean (95% CI) n=53	Reliability ICC	Validity ICC
TA n = 30	71.4 (64.5 – 78.4)	73.3 (65.8 – 80.8)		0.69	0.57
n = 53	92.5 (80.9 – 104.1)		89.6 (72.8-106.4)		
n = 196	77.6 (74.4 – 80.8)				
VA n = 30	18.5 (16.7 – 20.3)	20.6 (18.8-22.3)		0.72	0.71
n = 53	20.7 (19.5 – 22.0)		17.4 (16.3-18.5)		
n = 196	20.8 (20.0 – 21.5)				

Discussion

- Factor Analysis
 - Appropriate for this population?
- Reliability and Validity
 - Acceptable reliability and validity
 - Excellent in comparison to other tools
- Utility

Strengths

- Representative sample of North Carolina
- Good psychometrics
- Descriptive data on activities
- Quality and ease of the VAQ

Limitations

- VAQ
 - Sample size
 - Under-sampling of men
 - Regional bias
 - Test-retest reliability
 - In-person interview versus phone
- Cross-sectional data

Conclusions/Future Research

- Brief, reliable, valid tool
- Assess associations with physical and cognitive function
- Increase sample size
 - Determine if amenable to factor analysis
- Determine if self-administration is feasible
- Determine if tool is sensitive to change

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