Paths to Leisure Physical Activity among Adults with Intellectual Disabilities: Social Support and Self-Efficacy

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Citation

Overview

- Goal of the research study
- Background
- Methods
- Results
- Conclusions and directions for future research
Research Study Goal

- To examine social support and self-efficacy as potential determinants of leisure physical activity for adults with intellectual disabilities living in supported living settings
Approximately 1% of the U.S. population has an intellectual disability (ID) (Lee et al., 2000)

Physical activity participation insufficient for health (Stanish, Temple, & Frey, 2006; Peterson, 2007)
Adults with Intellectual Disability and Chronic Disease

- As life expectancy has increased, chronic disease risks have increased
  (Sutherland, Murray, & Iacono, 2002)

- Also at risk for secondary conditions
  (Rimmer, 1999)

- High rates of obesity and cardiovascular disease
  (Draheim, 2006; Janicki et al., 2002; Rimmer & Yamaki, 2006)
Correlates of Physical Activity

- Social Cognitive Theory (SCT) – theoretical framework for this study (Bandura, 1986a)
- Self-efficacy
- Social support

Social support → Self-efficacy → Behavior

(Bandura, 1986b)
Correlates of Physical Activity among Adults with Intellectual Disabilities

- Correlates demonstrated in the literature:
  - Social influence variables
  - Residential setting
  - Perceived barriers to physical activity
    - cognitive-emotional barriers, access/physical barriers

  (Frey, Buchanan, & Sandt, 2005; Heller, Hsieh, & Rimmer, 2002; Heller, Ying, Rimmer, & Marks, 2002; Rimmer et al., 1995; Robertson et al., 2000)

- No empirical studies examining role of self-efficacy or social support for physical activity for this population
The Supported-Living Setting

- Compared to those living in more restrictive settings, those living in community settings experience:
  - Worse cardiovascular disease risk profile
  - Lower levels of physical activity
  - Higher levels of obesity
  (Draheim, McCubbin, & Williams, 2002; Rimmer, Braddock, & Fujiura, 1994; Rimmer, Braddock, & Marks, 1995; Robertson et al., 2000)

- Appropriate setting for an intervention, with large numbers of individuals with shared needs
Participation

- **Eligibility criteria**
  - Receive at least 10 hours per week of staff support
  - Aged 18-60
  - Mild to moderate level of intellectual impairment
  - Able to participate meaningfully in study interview

- **Recruitment and response**
  - 480 in initial recruitment pool (from 13 agencies)
  - 179 total consented (39.0% of eligible)
Methods: Study Variables

- Survey: oral interview, self-report
  - Self-efficacy and social support
  - Leisure physical activity participation
    - Walking and bicycling for transportation and leisure, participation in exercise, sports, fishing, gardening

- Demographic/descriptive information collected from respective agencies, including:
  - Gender
  - Age
  - Level of intellectual impairment
  - Employment status

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Participants

- **Age:** mean 37.2 years
- **Community:**
  - 31% urban
  - 45% mid-size
  - 24% rural
- **Intellectual disability:**
  - 67% mild
  - 33% moderate
- **Gender:** 52% male
- **Employment:**
  - 56% sheltered employ.
  - 38% community employ.
  - 6% unemployed/students
- **Physical disability:** 8%
- **Down syndrome:** 16%
Methods: Scale Development

- Item pools developed for:
  - Self-efficacy
  - Social support: family, staff, roommates with ID

- Item pool development
  - Initial item pool created from the literature, informed by focus groups of individuals with ID (n=12)
  - Content validation study by expert panel (n=3)
  - Items piloted with individuals with ID (n=6)
Methods: Scale Validity and Reliability

- **Validity**
  - Content validity study
  - Pearson correlations with leisure physical activity calculated as measure of construct validity
    - SS: $r = .21 - .24$;  SE: $r = .37$  (all $p < .05$)

- **Reliability**
  - Test-retest of random sub-sample (n=25)
    - SS: .70 - .79;  SE: .49;  LPA participation: .75
  - Internal reliability: CFA and Cronbach’s $\alpha$
    - SS: $\alpha = .70 - .74$;  SE: $\alpha = .73$
Methods: Survey methods

- Administered the scales and leisure physical activity participation measure as an oral interview

- All self-report, although individuals were assisted by support staff as needed/requested

- Items included to screen for acquiescence and recency response biases (Stancliffe & Parmenter, 1999)

- 152/171 eligible individuals completed survey
  - rejected 19/171 (11.1%) due to validity concerns
Analysis

- Utilized structural equation modeling (SEM) techniques to create path models

- Relationship between variables for:
  - Entire sample
  - Two different age groups
Pearson correlation matrix of study variables.

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**p<.01
Figure 1. Path model predicting leisure physical activity participation score for the total sample. $X^2 = 6.822$, $p = .15$, ns; NFI = .96; RFI = .89.
Figure 2. Path model predicting leisure physical activity participation score for the younger adult sub-group (ages 18-34 years). $X^2 = 1.321$, $p = .86$, ns; NFI = .98; RFI = .95.
Figure 3. Path model predicting leisure physical activity participation score for the older adult sub-group (ages 35-60 years). $X^2 = 2.066$, $p = .72$, ns; NFI = .98; RFI = .94.
Conclusion – Social Support

- Social support from three different groups is related to physical activity participation
  - Family
  - Paid staff
  - Peers with ID

- Relative importance of three groups changes with age
Conclusion – Self-Efficacy

- Self-efficacy is a salient construct for this population

- Self-efficacy mediates the relationship between social support and practice of leisure physical activity participation

Social support ➔ Self-efficacy ➔ Behavior

(Bandura, 1986b)
Future Directions

- Development and evaluation of proposed intervention
References


References


Pearson correlation matrix for younger subsample (18-34 years).

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*p<.05, **p<.01
Pearson correlation matrix for older subsample (35-60 years).

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*p<.05,  **p<.01

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## Scale Validity

Partial correlation with leisure PA

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* *p<.05, **p<.01

- Partial correlation coefficients indicated construct validity
- Expert panel review established face validity

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## Scale Reliability

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<tr>
<th>Name</th>
<th>α</th>
<th>ICC</th>
<th>X²</th>
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## Confirmatory factor analysis

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Physical activity correlations: Self-report vs. Pedometry

- Physical activity correlates literature; Prochaska, Rodgers, & Sallis (2002)

- Self-report PA summaries (i.e. “Leisure physical activity participation” variable) do not correlate with pedometry variables

- Self-report frequency of several activities does positively correlate with pedometry variables:
  - Walking
  - Team sport
  - Weight lifting (some pedometry variables)

- Self-perception of activity level:
  - does not correlate with pedometry variables
  - does correlate with PA summaries, several individual activities

- Self-report scale test-retest reliability: ICC = .745
Scales

- Social Support
  - Family – 7 items; Staff – 6 items; Peers – 5 items
    - “Does anyone in your family/your staff/your roommates do physical activities with you?”
    - “Does anyone in your family/your staff drive you somewhere to do physical activities?”

- Self-efficacy – 7 items
  - “Do you think you can do physical activities even when you are very busy?”
  - “Do you think you can do physical activities even when you are feeling sad or depressed?”