Self-management skills in chronic disease management – what role does health literacy have?

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Background

• Self-management and chronic disease outcomes

• Self-management definition:

  ‘the ability of an individual, in conjunction with family, community, and healthcare professionals, to manage symptoms, treatments, and lifestyle changes’

  \(\text{(Schulman-Green et al, 2012).}\)

• Lifestyle behaviours.

• Biomedical vs. biopsychosocial.
Health literacy definition:

*the degree to which individuals have the capacity to obtain, process, & understand basic information & services needed to make appropriate decisions regarding their health* (Nielsen-Bohlman et al 2004).

Health literacy model (Sorensen et al, 2012)
Self-management
Exercise
Adherence
WHO Top Ten Causes of Death

The 10 leading causes of death in the world 2012

- Ischaemic heart disease: 7.4 million
- Stroke: 6.7 million
- COPD: 3.1 million
- Lower respiratory infections: 3.1 million
- Trachea bronchus, lung: 1.6 million
- HIV/AIDS: 1.5 million
- Diarrhoeal diseases: 1.5 million
- Diabetes mellitus: 1.5 million
- Road injury: 1.3 million
- Hypertensive diseases: 1.1 million
Impact of Health Literacy

- Behaviours: adherence, self-management skills (Berkman et al, 2011).
- Causal pathways behind these associations unclear.
- Deconstructing self-management (Dr. Rima Rudd).
Deconstructing Self-management

Newman et al (2009) proposed three models which describe the development of self-management behaviours in those with chronic diseases:

1. The Common Sense Model
   (Leventhal et al, 1992)

2. Social Cognitive Theory
   (Bandura, 1986)

3. Theory of Planned Behaviour
   (Ajzen, 1991)
Common Sense Model (CSM)

(Leventhal et al, 1992)
Social Cognitive Theory (SCT)

(Bandura, 1986)
Theory of Planned Behaviour (TPB)

(Ajzen, 1991)
Causal Pathways
Health Literacy - Health Outcomes

Passche-Orlow & Wolf, 2007
AIM

• To investigate the impact of HL on self-management by systematically reviewing the literature.

• Focussing on three patients characteristics, i.e. knowledge, self-efficacy, & beliefs - as described by the 3 behavioural models.
METHODS

The review comprised three phases:

1. Systematic search of the literature.
2. Study selection and data extraction.
Methods
Phase 1 – Search Strategy

• Inclusion criteria:
  - Published in English.
  - Adults >18 years.
  - Health literacy measured using a validated tool.
Methods
Phase 1- Search Strategy

• Electronic Search:
  - Pubmed, EMBASE, CINAHL Plus, Pedro, Cochrane databases of systematic reviews.

• Key words:
  - Health literacy, chronic pain, musculoskeletal, renal, diabetes, lung disease, cardiovascular disease, pulmonary disease
Methods
Phase 2 – Study Selection

- Titles & abstracts of potential papers independently reviewed – 2 reviewers.

- Full papers reviewed by PI.

- Protocol described using the Preferred Reporting Items for Systematic Reviews & Meta-Analyses (PRISMA).

- Proforma developed to summarise study characteristics
Methods
Phase 3 – Quality and Strength

• Quality rating: The Effective Public Health Practice Project (EPHPP).

• Strength of evidence: Agency for Healthcare Policy & Research (AHCPR)
### QUALITY ASSESSMENT TOOL FOR QUANTITATIVE STUDIES

**EPHPP**

**Effective Public Health Practice Project**

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**GLOBAL RATING FOR THIS PAPER (circle one):**

- 1: STRONG (no WEAK ratings)
- 2: MODERATE (one WEAK rating)
- 3: WEAK (two or more WEAK ratings)
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<td>Generally consistent findings provided by (a systematic review of) multiple moderate quality studies</td>
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<tr>
<td>C</td>
<td>Generally consistent findings provided by (a systematic review of) multiple low quality studies</td>
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<td>D</td>
<td>One diagnostic study (high or low quality) or inconsistent findings from a (a systematic review of) multiple studies</td>
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<tr>
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Adapted from Agency for Health Care Policy and Research and Cochrane Back Review Group (AHCPR) (See Fullen et al, 2008)
RESULTS

Articles identified through electronic database search (n= 712):
• PUBMED (n= 382)
• EMBASE (n= 241)
• CINAHL (n= 76)
• Pedro (n= 7)
• Cochrane (n= 1)
• Hand search and bibliography scan (n= 5)

Duplicates removed (n= 93)

Titles and abstracts screened for inclusion (n= 619)

Excluded on title and abstract (n= 534)

Full articles assessed for eligibility (n= 85)

Excluded (n= 54) after obtaining full articles due to:
• lack of valid health literacy tool utilized.
• no chronic non-malignant disease assessed.
• no knowledge, self-efficacy, or beliefs assessed.
• study design being other than observational or interventional in design.

Articles included in the final review (n= 31):
• Cardiovascular (n= 14)
• Musculoskeletal (n= 6)
• Respiratory (n= 3)
• Diabetes (n= 2)
• Renal disease (n= 2)
• HIV (n= 1)
• Multiple chronic conditions (n= 3)
RESULTS

• Study Designs:
   C/S (n=24), longitudinal (n=4), RCTs (n=3).

• Study Location:
   Primary care (n=10), secondary care (n=13),
   community settings (n=8).

• Quality Ratings:
   Strong (n=6), moderate (n=12), weak (n=13).
## RESULTS

<table>
<thead>
<tr>
<th>Health literacy tool</th>
<th>N. of studies</th>
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<tr>
<td>Test of functional health literacy in adults (TOFHLA)</td>
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<tr>
<td>s-TOFHLA</td>
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### Results: Health Literacy Levels

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# Summary of Results

## Cardiovascular Studies

Total No. of Studies: 15

Conditions: Heart failure, Stroke, Hypertension

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Summary of Results

**Musculoskeletal Studies**

Total No. of Studies: 6

Conditions: Chronic pain, OA, RA, Osteoporosis

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## Summary of Results

### Respiratory Studies

**Total No. of Studies:** 3  
**Conditions:** Asthma

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## Summary of Results

### Diabetes Studies

Total No. of Studies: 3

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## Summary of Results

### Multiple Disease Studies

Total No. of Studies: 3

Conditions: Cardiovascular, Respiratory, Muskuloskeletal, Diabetes

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## Summary of Results

### Renal Studies

Total No. of Studies: 1

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### HIV Studies

Total No. of Studies: 1

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<td>Beliefs:</td>
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Discussion

- 3 patients characteristics identified, via well-established behavioural models: CSM, SCT, TPB
- Total no. of studies: 31
- Knowledge (n=25): 22 studies found association
- Self-efficacy (n=8): 4 studies found association
- Beliefs (n=4): 3 studies found association
- Best practice guidelines advocate self-management.
Limitations

- English only
- Majority cross-sectional in design.
- 13 papers rated weak quality (EPHPP)
- Heterogeneity of the studies included - findings were not generalizable to all chronic diseases.
Conclusions

• There is an association between HL and self-management skills.

• More robust research, with interventional components needed.

• Consider utilising HL frameworks (e.g. Passche-Orlow and Wolf, 2007).
Acknowledgements

• Collaborators:
  Dr E. Werner, University of Oslo
  Dr C. Doody, UCD
  Dr C. Blake, UCD

• Funders:
References