Novel Barriers to Exercise for Patients with Chronic Kidney Disease

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Disclosures

• Authors: Mary Hannan, MSN, APN, AGACNP-BC & Ulf G. Bronas, PhD, ATC, FSVM, FAHA

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• Institution: University of Illinois at Chicago, College of Nursing, Biobehavioral Health Science

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• Objectives:
  ▣ Describe the most commonly reported barriers that patients with chronic kidney disease report that prevent them from exercising
  ▣ Determine the key components of a nursing assessment and education plan to evaluate and overcome barriers to regular exercise for patients with chronic kidney disease
Background

- Chronic kidney disease (CKD) is a common chronic condition
- CKD leads to a myriad of debilitating consequences
- Exercise is known to promote health and possibly delay certain co-morbidities of CKD
- Despite these benefits, patients with CKD are not exercising
- Barriers to exercise for patients with CKD are not well defined

(Aramovic & Stefanovic, 2012; Avesani et al., 2012; Hill et al., 2016; Momeni, Nematolahi, & Nasr, 2014; Smart, McFarlane, & Cornelisse, 2013; World Health Organization, 2015)
Purpose

• The purpose of this integrative review is to investigate the barriers that adult patients with CKD throughout the world report that prevent them from exercising.
Methods

• Seven electronic databases searched

• Key words searched:
  - Exercise OR physical activity OR motor activity
  - End stage renal disease OR kidney disease OR chronic renal failure OR hemodialysis OR ESRD OR dialysis
  - Chronic kidney disease OR chronic renal insufficiency OR CKD
  - Barriers OR contraindications OR hurdles OR compliance OR patient compliance OR adherence OR concordance OR guideline adherence OR self perception OR self concept OR treatment refusal OR motivation OR health knowledge, attitudes, practice
Methods

• Inclusion criteria
  - Patients > 18y.o.
  - CKD Stage 3-5 or End Stage Renal Disease (ESRD)
  - Patient reported barriers to exercise
  - Available in English

• Exclusion criteria
  - Only provided associations of exercise limitations and frequency
  - Only provided reasons for non-participation in exercise intervention studies
  - Post kidney transplant
Records identified through database search

- CINAHL (n=75)
- PubMed (n=69)
- Medline via Ovid (n=53)
- Embase (n=29)
- PsyInfo (n=104)
- Scopus (n=43)
- Proquest Dissertations and Theses (n=1)

(n =367)

Additional records identified through hand searches of reference lists

(n =17)

Records after duplicates removed

(n =266)

Records screened

(n =266)

Full-text articles assessed for eligibility

(n =58)

Studies included in synthesis

(n =14)

Records excluded:

- Sample not CKD 3-5 or ESRD=122
- Provider identified barriers= 3
- Transplant patients= 5
- Children= 4
- Not about exercise= 32
- No patient identified barriers=37
- Only available in Spanish= 1
- Review articles=4

(n = 208)

Full-text articles excluded:

- No patient identified barriers to regular exercise= 26
- Review article, no patient identified barriers= 9
- Only discussed reasons for withdrawing from an intervention study= 6
- Epidemiological associations of exercise and limitations= 1
- Sample not entirely CKD 3-5 or ESRD= 1
- Provider barriers= 2

(n =44)

(Moher, Tetzlaff, Altman, & The Prisma Group, 2009)
Results

- 14 included articles
- Article date range: 2001-2015
- Eight different countries
- Design
  - Descriptive quantitative: 8 studies
  - Qualitative: 4 studies
  - Mixed method: 2 studies
## Most Commonly Reported Barriers

<table>
<thead>
<tr>
<th>Reported Barrier</th>
<th>Number of Times Found in the Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatigue and Low Energy</td>
<td>12</td>
</tr>
<tr>
<td>Co-morbid Health Conditions</td>
<td>8</td>
</tr>
<tr>
<td>Lack of Time or Access</td>
<td>7</td>
</tr>
<tr>
<td>Fear of Falling</td>
<td>6</td>
</tr>
<tr>
<td>Pain</td>
<td>5</td>
</tr>
<tr>
<td>Depression</td>
<td>3</td>
</tr>
<tr>
<td>Lack of Motivation</td>
<td>3</td>
</tr>
<tr>
<td>Being Incapable of Exercise</td>
<td>2</td>
</tr>
<tr>
<td>Environmental Limitations (weather, air quality, etc.)</td>
<td>2</td>
</tr>
<tr>
<td>&quot;Renal disease&quot; (CKD or ESRD)</td>
<td>2</td>
</tr>
<tr>
<td>&quot;Being out of shape&quot;</td>
<td>1</td>
</tr>
<tr>
<td>Concern of Complications</td>
<td>1</td>
</tr>
<tr>
<td>Dislike of Exercise</td>
<td>1</td>
</tr>
<tr>
<td>Employment</td>
<td>1</td>
</tr>
<tr>
<td>Exercise Is Tiring</td>
<td>1</td>
</tr>
<tr>
<td>Healthcare Provider Guidance</td>
<td>1</td>
</tr>
<tr>
<td>Lack of Company</td>
<td>1</td>
</tr>
<tr>
<td>Lack of Interest</td>
<td>1</td>
</tr>
<tr>
<td>Lack of Money</td>
<td>1</td>
</tr>
<tr>
<td>Lack of Understanding</td>
<td>1</td>
</tr>
<tr>
<td>Shortness of Breath</td>
<td>1</td>
</tr>
<tr>
<td>Stress</td>
<td>1</td>
</tr>
<tr>
<td>Vascular Access</td>
<td>1</td>
</tr>
<tr>
<td>Weakness</td>
<td>1</td>
</tr>
</tbody>
</table>
Continued Results

• Barriers reported are complex and diverse

• The most commonly reported barrier was fatigue and low energy, followed by co-morbid health conditions
Discussion

• **Fatigue and low energy** was the most frequently reported barrier to exercise. This is **not** consistent with:
  - Barriers reported by healthy individuals
  - Barriers identified by healthcare providers of patients with CKD
  - Barriers being addressed in research focused on increasing exercise in patients with CKD

• **International differences in barriers**

Nursing Implications

- Assessment of barriers
- Care planning related to barriers
- Patient education

(Davies, 2011; Young et al., 2015)
Questions?

References


