The Effect of Home Health Care in Reducing Hospital Readmissions: A Systematic Review

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Background

- Hospital readmission is defined as a subsequent hospital admission within 30 days of discharge from an original hospital admission.¹⁻⁵

- Hospital readmission affects 20-30% of Medicare beneficiaries.¹,²

- This accounts for costs exceeding $17 billion annually.¹
Background (continued)

• Patients with heart failure have the highest re-hospitalization rates of all patient groups.\textsuperscript{3,4}

• Approximately 25\% of patients hospitalized with heart failure are re-admitted within 30 days.\textsuperscript{3,4}

• In 2012, the Centers for Medicare and Medicaid Services initiated the use of 30-day readmission rates as a health care metric to give health systems an incentive to reduce re-hospitalization rates.\textsuperscript{4}
• Transitional care models are implemented for older adults who are hospitalized to facilitate a safe discharge and decrease hospital readmission.

• It is imperative to establish an effective model while keeping common goals in mind such as:
  • Decreasing hospital readmissions
  • Maintaining a high level of patient satisfaction
  • Increasing the patient’s ability to self-manage their health
The purpose of this systematic review was to determine if home health care was effective in reducing hospital readmissions in adults.
Methods

- **Databases**: CINAHL, HealthSource: Nursing/Academic Edition, PubMed, and ProQuest Central

- **Search Terms**: (home care OR home health) AND (rehospitalization OR readmission OR hospital readmission) AND (physical therapy or physiotherapy or rehabilitation)
Methods (continued)

• **Search Limits:** Peer-reviewed, published between 2008 and 2018, English language, and human subjects

• **Selection Criteria:** Adults over 18 years old, and primary outcome measures including hospital readmission
Records identified through database searching (n=601)

Additional records identified through other sources (n=0)

Records after duplicates removed (n=515)

Records screened by title and abstract (n=515)

Records excluded (n=487)

Full-text articles excluded, with reasons (n=23)
- Patients did not receive home health services (n=12)
- Hospital readmission was not discussed (n=10)
- Irrelevant (n=1)

Studiees included (n=5)

Full-text articles assessed for eligibility (n=68)
## Minors Scale

<table>
<thead>
<tr>
<th>Studies</th>
<th>Clearly stated aim</th>
<th>Inclusion of consecutive patients</th>
<th>Prospective collection of data</th>
<th>Endpoints appropriate to end of study</th>
<th>Unbiased assessment of study endpoint</th>
<th>Follow-up period appropriate to end of study</th>
<th>Loss to follow up less than 5%</th>
<th>Prospective calculation of the study size</th>
<th>Adequate control group</th>
<th>Contemporary groups</th>
<th>Baseline Equivalence of groups</th>
<th>Adequate statistical analyses</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maliakkal AV, Sun AZ</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td>2</td>
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<td>1</td>
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<td>2</td>
<td>15/24</td>
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<td>1</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>15/24</td>
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<tr>
<td><strong>Average Score</strong></td>
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<td></td>
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<td>15.6</td>
<td></td>
</tr>
</tbody>
</table>
Results

• 5 studies were included\textsuperscript{2-6}
• MINOR scores ranged from 15/24-17/24 with an average score of 15.6
• Sample size ranged from 68-1,348 subjects
• Average age $\geq 65$ years old
  • The average age among 4 of the studies was 79 years old\textsuperscript{2-5}
• Home health care sessions ranged from 1-6 months\textsuperscript{2-6}
• All studies included multidisciplinary care that included physical therapy
## Results (continued)

<table>
<thead>
<tr>
<th>Other Disciplines</th>
<th>Treatment</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician, social worker, and others if needed&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Patient education on medications, evaluation of home environment, and provide community resources&lt;sup&gt;2&lt;/sup&gt;</td>
<td>At least 30 days, up to 4 months depending on the patient’s needs&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Physician, nursing and occupational therapy&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Vitals, physical exam, patient education on medications, diet/fluids, and lifestyle modifications&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Monthly visits for 6 months (patients were seen more frequently if indicated)&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td>Physician and nursing&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Vitals, medication management, patient education on signs and symptoms of heart failure and self-monitoring habits&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Two, 1 hour sessions prior to discharge and then 2 weeks of home health in accordance with plan of care&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td>Physician, nursing, occupational therapy, and home health aide&lt;sup&gt;5&lt;/sup&gt;</td>
<td>Therapeutic exercise, patient education on self-management and medications, and assistive device training&lt;sup&gt;5&lt;/sup&gt;</td>
<td>Dependent on patient’s plan of care and health needs&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Not specified&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Patient education and other intervention dependent on patient needs&lt;sup&gt;6&lt;/sup&gt;</td>
<td>Dependent on patient needs&lt;sup&gt;6&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
Results (continued)

• 3 of the 5 studies found a statistically significant decrease in hospital readmission.\textsuperscript{2,3,5}
  • Average decrease of 51.4%

• 2 of the 5 studies reviewed patients with congestive heart failure and also found a statistically significant decrease in hospital readmission.\textsuperscript{3,4}
  • Average decrease of 46.6%
• One study found that home care had a low rate of negative outcomes of 6.7\%.\(^6\)
  • Negative outcomes were defined as death and hospital readmission
• One study determined home health care showed statistically significant improvements in quality of life and patient satisfaction.\(^2\)
  • One study noted a statistically significant increase in patient compliance.\(^3\)
Conclusion

• There is moderate evidence to support the implementation of multidisciplinary home health care to reduce hospital readmission among patients ≥ 65 years old.²⁻⁶

• The most effective outcomes were found with treatment lasting 6 months, however, similar results were found with home health care lasting 1 month.²⁻⁶

• Home health care improved patient compliance, physical and emotional quality of life, and patient satisfaction.²⁻³
Limitations

• One study had a small sample size of 68 individuals\textsuperscript{3}

• All databases were not searched

• Lack of explanation of interventions performed by the physical therapists as well as the members of the multidisciplinary team
Recommendations

• Future research should consider:
  • Larger sample sizes of patients
  • Patients with varying diagnoses
  • Including a detailed explanation of interventions
Clinical Relevance

• Multidisciplinary home health care should be considered by physicians in order to reduce hospital readmissions.

• This will simultaneously reduce the increasing health expenditures pertaining to hospital readmission.

• Reducing hospital readmission will optimize patient outcomes, improve quality of life, and increase patient satisfaction.
Acknowledgements

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• Dr. John Sanko, PT, EdD

• The rest of The University of Scranton’s DPT faculty and students
References


Questions?