The Value of Home Health for Individuals Living with Heart Failure: A Systematic Review

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Overview

Background

Purpose

Methods

PRISMA

PEDro Scoring

Results

Conclusion

Limitations

Recommendations

Clinical Relevance
Background

Heart failure is the end stage of heart disease characterized by periods of clinical stability and instability\(^1\)

Results in decreased quality of life (QOL)\(^1\)

Number one cause of hospital readmissions across the country\(^2\)

Inadequate evidence exists for best practice following hospital discharge\(^2\)

Home health has been found to improve physical, psychological, and environmental domains of QOL\(^3\)
Value

Value is defined as cost-effectiveness, hospital readmission, patient experience, and quality of life$^4$
Importance of Value

Triple Aim defined by the Institute for Healthcare Improvement$^5$

- Improve population health$^5$
- Reduce healthcare costs$^5$
- Improve patient experience$^5$

Current system focused on financially incentivized market$^5$

- Healthcare decisions and delivery based on monetary gains by insurance companies and providers$^5$

New healthcare reforms have moved toward alternative value-based payment models in continuum of care$^5$

- PDGM began January 1st, 2020$^6$
Purpose

To determine the value of home health compared to other post-acute settings for individuals living with heart failure
Methods
Databases Searched

ProQuest

Health Source

JAMA

CINHAL

Medline
Search Terms

(“Heart failure” OR “congestive heart failure” OR CHF) AND

(“Home health” OR “home care” OR “home-based rehab”) AND

(physical therapy OR physiotherapy OR rehabilitation) AND

(value OR “patient experience” OR “patient satisfaction” OR “quality of life”)
Search Limits

Peer-reviewed RCTs

English

Human subjects

Published between 2009 and 2019
Selection Criteria

Adults with a diagnosis of heart failure

Receiving home health care or other post-acute care

Included selected outcomes to assess value
Exclusion Criteria

If patient had comorbidities of:

- Diabetes
- COPD
- Hospice Care
PRISMA

Identification

Records identified through database searching (n=491)

Records after duplicates removed (n=486)

Additional records identified by hand search (n=0)

Records screened by Title & Abstract (n=486)

Records Discarded by Title & Abstract (n=464)

- Article is irrelevant (n=302)
- Does not meet the intervention (n=84)
- Does not include primary or secondary outcome (n=37)
- Does not include population (n=41)

Records screened by full text for eligibility (n=22)

Records excluded, with reasons (n=17)

- Does not meet the intervention (n=9)
- Does not include primary or secondary outcome (n=1)
- Does not meet comparator (n=7)

Records included (n=5)
## 5 Randomized Control Trials

<table>
<thead>
<tr>
<th>PEDro Scores</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<th>9</th>
<th>10</th>
<th>11</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tibaldi et al (^7)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>7/10</td>
</tr>
<tr>
<td>Brännström et al (^8)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>7/10</td>
</tr>
<tr>
<td>Sahlen (^9)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>7/10</td>
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<tr>
<td>Stewart (^10)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>7/10</td>
</tr>
<tr>
<td>Levine et al (^11)</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>7/10</td>
</tr>
</tbody>
</table>
Results

Five RCTs fulfilled the criteria

PEDro scores of 7/10

Samples ranged from 21 to 280 subjects (546 total) with heart failure (NYHA class 2-4)

Home care sessions ranged from 6-18 months, with unspecified visits per week

All five studies included multidisciplinary care (PT, OT, Physician, Nursing)
Results (continued)

Primary Outcomes:

To assess value included:

Cost effectiveness

Hospital readmission

Patient experience

Secondary Outcomes:

Quality of life
### Results: Cost of Care

<table>
<thead>
<tr>
<th>Article</th>
<th>Home Health</th>
<th>Comparator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tibaldi$^7$</td>
<td>$158.73 per day</td>
<td>$401.37 per day (inpatient hospital)</td>
</tr>
<tr>
<td>Sahlen$^9$</td>
<td>€140,000</td>
<td>€205,000 (control group)</td>
</tr>
<tr>
<td>Levine et al$^{11}$</td>
<td>52% lower than control group – no dollar amount given</td>
<td></td>
</tr>
<tr>
<td>Stewart$^{10}$</td>
<td>$34 AUD per day</td>
<td>$52 AUD per day (clinic based)</td>
</tr>
</tbody>
</table>
## Results: Hospital Readmission

<table>
<thead>
<tr>
<th>Article</th>
<th>Home Health</th>
<th>Comparator</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brännström et al(^8)</td>
<td>15 rehospitalizations in 103 days</td>
<td>53 rehospitalizations in 305 days (usual care)</td>
<td>Not reported</td>
</tr>
<tr>
<td>Tibaldi et al(^7)</td>
<td>84 days to hospital readmission</td>
<td>69 days to hospital readmission (inpatient)</td>
<td>P = 0.02</td>
</tr>
<tr>
<td>Stewart(^10)</td>
<td>96 (67%) had unplanned rehospitalizations</td>
<td>95 (69%) had unplanned rehospitalizations (clinic based)</td>
<td>p = 0.279</td>
</tr>
<tr>
<td></td>
<td>60 (62%) had multiple hospitalizations</td>
<td>52 (55%) had multiple hospitalizations</td>
<td></td>
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</table>
One study reported a primary outcome of patient experience, concluding positive experiences in both home and usual care. Picker Patient Experience Questionnaire - experience measures were recorded during the 30-day interview.
# Results: QOL

<table>
<thead>
<tr>
<th>Article</th>
<th>Tool</th>
<th>Home Health</th>
<th>Comparator</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brännström et al⁸</td>
<td>EuroQol (EQ-5D)</td>
<td>57.6 +/- 19.2</td>
<td>48.5 +/- 24.4</td>
<td>p = 0.05</td>
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<tr>
<td>Sahlen⁹</td>
<td>QALY</td>
<td>At baseline:</td>
<td>At baseline:</td>
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<tr>
<td></td>
<td></td>
<td>0.569</td>
<td>0.538</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>After intervention:</td>
<td>After intervention:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>improved 0.006 points</td>
<td>declined 0.024 points</td>
<td></td>
</tr>
<tr>
<td>Levine et al¹¹</td>
<td>EuroQol Visual Analogue Scale</td>
<td>75/100</td>
<td>65/100</td>
<td>p = 0.05</td>
</tr>
<tr>
<td>Stewart¹⁰</td>
<td>Minnesota Living with Heart Failure Questionnaire</td>
<td>48.8 +/- 21.9</td>
<td>46.0 +/- 20.5</td>
<td>p = 0.279</td>
</tr>
</tbody>
</table>
Conclusion

There is moderate to strong evidence supporting home health care for individuals living with heart failure to improve value defined by cost, hospital readmission, patient experience and quality of life
Limitations

Small sample size

Varied outcome measures

No specific interventions described for home health visits

Databases searched
Recommendations

Future research should consider:

Collecting more data on the patient experience

Specific description of interventions
Clinical Relevance

Clinicians should consider referrals for post-acute home care for appropriate patients living with heart failure because of greater value compared to other post-acute settings.


Questions?
Appendix: PEDro Scoring

All Evidence is not Created Equal


PEDro is a critical appraisal tool intended to identify methodological flaws in the physical therapy literature providing consumers of research evidence objective data regarding the strength of such evidence.

<table>
<thead>
<tr>
<th>Study</th>
<th>1</th>
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<tr>
<td>Grade</td>
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</tbody>
</table>

1. Eligibility criteria were specified.
2. Subjects were randomly assigned to groups.
3. Allocation was concealed.
4. Groups were similar at baseline.
5. Subjects were blinded.
6. Therapists who administered the treatment were blinded.
7. Assessors were blinded.
8. Measures of key outcomes were obtained from more than 85% of subjects.
9. Data were analyzed by intention to treat.
10. Statistical comparisons between groups were conducted.
11. Point measure and measures of variability were provided.

Criterion number 1 is not used to generate the total score. Therefore, the total maximum score is 10.