

The impact of adherence on costs and effectiveness of telemedical patient management in heart failure: A systematic review

A. S. Hameed^{1,3}, S. Sauermann², G. Schreier³

¹Faculty of Business and Economics, Mendel University, Brno, Czech Republic;

²Institute of Biomedical Engineering, University of Applied Sciences Technikum Vienna, Austria;

³Assistive Healthcare Information Technology, AIT Austrian Institute of Technology GmbH, Graz, Austria

Ahmed Saeed Hameed
Faculty of Business and Economics,
Mendel University
xhameed@mendelu.cz

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Current state of economic evaluation

- **Crucial economic factors affecting the adoption and acceptance of telemedicine service**
- **Difficulties to determine the added value of telemedicine services is due to the lack of economic evaluation mechanisms**

Objectives of the dissertation

- **Development of an economic evaluation model based on the cost-benefit approach to analyze and evaluate the relevant costs and outcomes of telemedicine services as well as the definition of monetary conversion factors**
- **Assessment of the impact of patients' adherence to pharmacological and non-pharmacological recommendations on the costs of treatment**
- **Proof of concept for the developed economic model**

Objectives of the systematic review

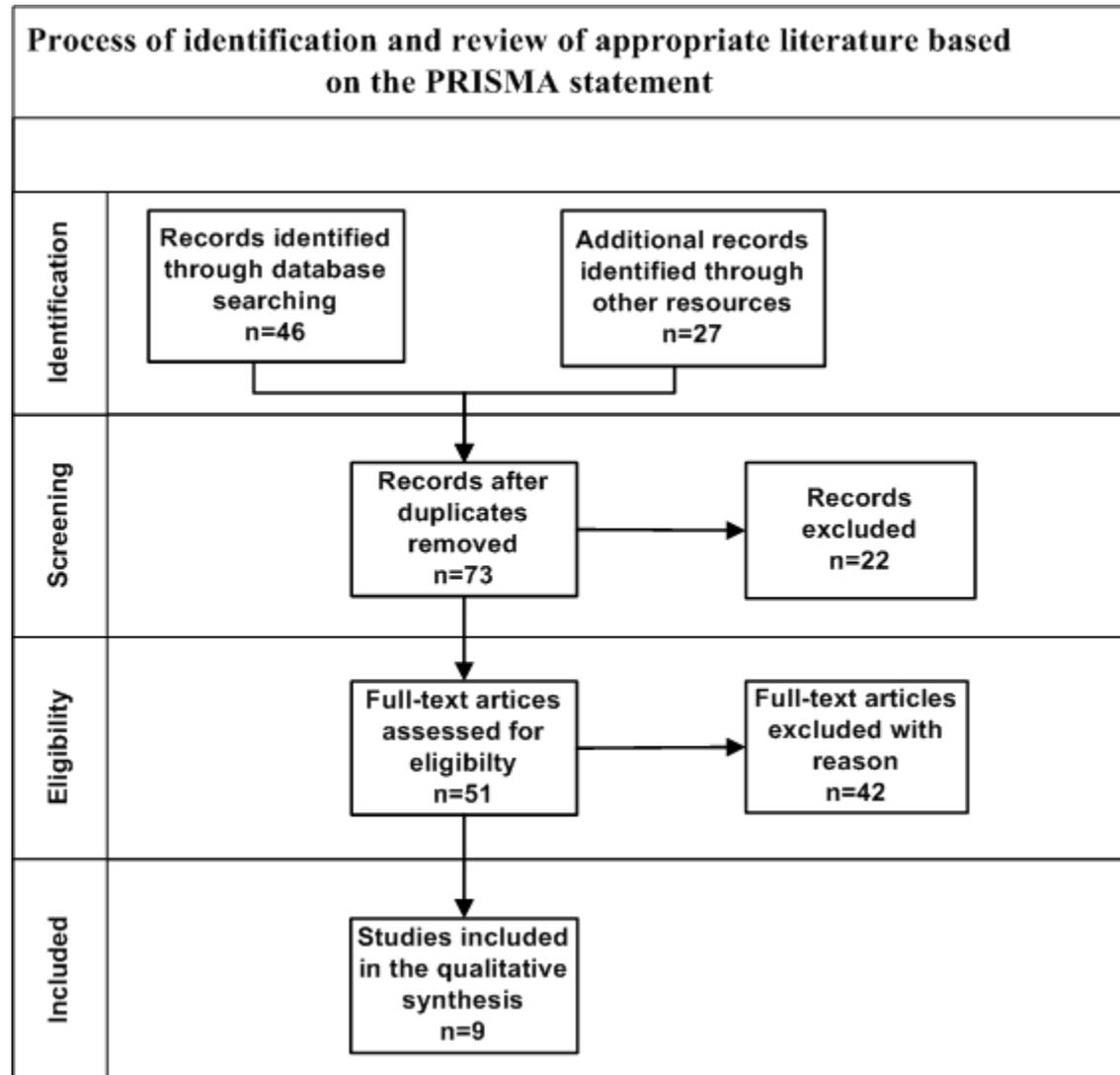
- **Analyze the economic impact of patients' adherence to pharmacological and non-pharmacological recommendations on the treatment costs of heart failure patients**
- **Determine whether patients' adherence has been considered as a key factor in existing economic evaluation models**

Methods of systematic review

Multi-stage procedure based on the PRISMA-Statement¹:

- 1) **Definition of keywords and technical terms:** telemedicine, telemonitoring, telehealth, eHealth, remote monitoring, adherence, compliance, cost-effectiveness, cost-benefit, heart failure, healthcare costs, hospitalization, drug costs
- 2) **Review of abstracts and excluded papers:** purely technical focus, lacking the characteristics of a research paper, or being out of scope
- 3) **Full text review of paper whether if:** healthcare method is specified, patients' adherence is analyzed, if impact of adherence on healthcare costs is reported

Flowchart of the systematic review



Results of the systematic review

- **Sample size of patients differed considerably (n=20-863)**
- **Duration of patients' participation varied widely (3-41 months)**
- **Geographic area covered countries from North America, Europe and Asia**
- **Some of the findings were partly contradictory**
- **Reported cost reduction depended on the used healthcare method (telemedicine vs. standard) and diseases treated**
- **Usability as factor of influence since the studies were carried out between 1998 and 2014**

Conclusion

- **There is currently no evidence that increased patients' adherence, supported by using telemedicine services, has led to a reduction in treatment costs**
- **A holistic assessment of all relevant economic costs and outcomes related to patient adherence is still missing**

Conclusion*

Treatment method	Telemedicine	6	
	Standard care	1	2
		Clinical outcomes ¹	Healthcare costs ²
Impact of patients' adherence			

* Simplified presentation

¹ Clinical outcomes are the end result of medical interventions applied to patients

² Healthcare costs are the sum of medical procedures and drug costs

n Number of papers associated to the criteria

Discussion and outlook

- **No general statement can be made regarding the impact of adherence on healthcare costs for patients with HF**
- **Definition of a common set of criteria for an in-depth aggregation of results is missing (e.g. objective of study, duration and type of treatment, technology used, type of disease and patients' demographics)**

Discussion and outlook

■ Open questions

- Does increased patients' adherence using telemedicine lead to a reduction of healthcare costs?
- Availability of necessary data associated with patients' adherence?

■ Next steps

- Definition of the relevant costs and outcomes estimation parameters for CB model
- Definition of required medical and economical data samples and specific questionnaire to measure patients' adherence

Thank you for you attention!