

A Systematic Review of Findings and Methods in Economic Evaluations of Dyadic Healthcare Interventions

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Background

- Dyadic interventions target two groups of people as the 'unit of care'
- HTA agencies increasingly acknowledge the importance of caregiver outcomes and costs
- Evaluation challenges include the aggregation of outcomes and associated equity considerations
- Exploring the methods analysts have adopted will provide insight into these challenges

What is a dyadic intervention?

- Difficult to define due to heterogeneity in:
 - degree of involvement and interaction
 - roles played by each member of the dyad
- **Our definition**
 - population includes (at least) two groups of individuals as the recipients/beneficiaries of care
 - Each group has at least one cost estimate and one outcome that is fully and independently attributable
 - designed primarily to improve the health of at least one of the groups of recipients/beneficiaries

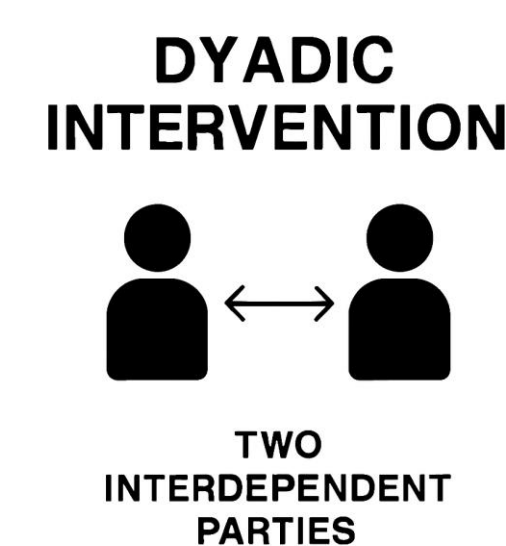


Figure: PRISMA flow diagram

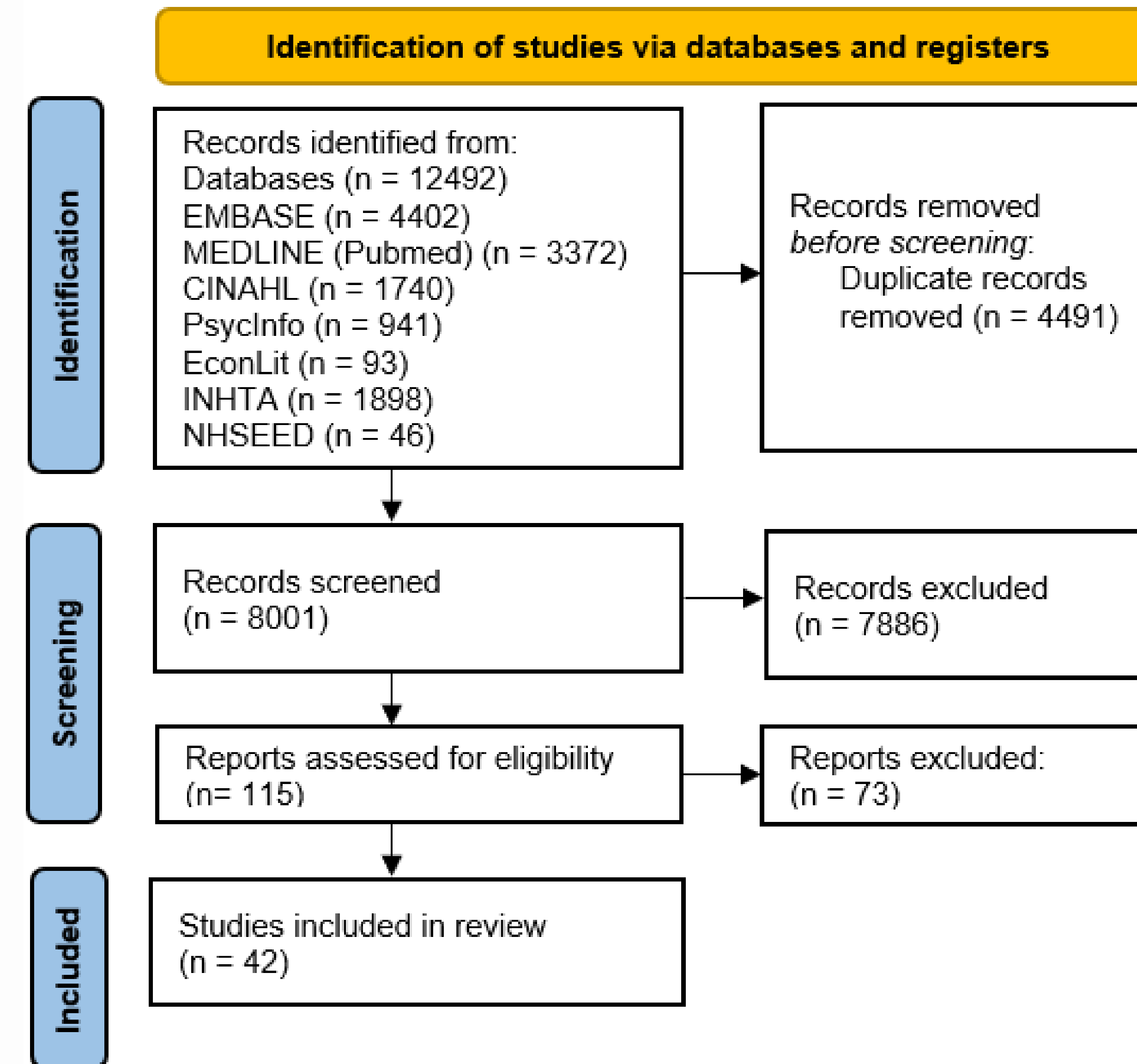


Table: Included study characteristics (n=42)

Characteristics	n (%)
Region	
Europe	35 (83.3)
North America	3 (7.1)
Asia	2 (4.8)
Australia	2 (4.8)
Disease or condition	
Neurodegenerative disorders (e.g., dementia)	20 (47.6)
Mental health disorders (e.g., depression, self-harm)	8 (19.0)
Neurodevelopmental disorders (e.g., ADHD)	2 (4.8)
Neurological disorders (e.g., stroke)	3 (7.1)
Chronic physical diseases (e.g., cancer, diabetes)	6 (14.3)
Others (e.g., atopic eczema, frailty)	3 (7.1)
Dyadic nature of intervention	
Intentional	23 (54.8)
Incidental	19 (45.2)
Economic evaluation type	
Cost-utility analysis	31 (73.8)
Multiple (cost-effectiveness + cost-utility analysis)	10 (23.8)
Cost-consequences analysis	1 (2.4)
Study design	
Trial-based	36 (85.7)
Model-based	5 (11.9)
Observational (cohort)	1 (2.4)
Primary perspective	
Health-care payer/sector	25 (59.5)
Societal	15 (35.7)
Not stated	2 (4.8)

Objectives

Primary objective

- Examine the methodologies used to measure and value costs and outcomes in the economic evaluation of dyadic healthcare interventions

Secondary objectives

- Summarize evidence on the effectiveness and cost-effectiveness of dyadic interventions
- Compare cost-effectiveness findings between 'caregiver only' interventions (using published reviews) and dyadic interventions

Methods

Databases and duration: MEDLINE, CINAHL, PsycINFO, Embase, EconLit, international Health Technology Assessment database, and the NHS Economic Evaluation Database from 01/01/1990 to 31/08/2024*

Eligibility: Must be an *economic evaluation (CUA, CEA, CCA or CMA)*, with the intervention being *dyadic* and *healthcare* related, where both *costs and outcomes* of the dyad are explicitly measured, and the article is published in *English* in a *peer-reviewed* journal

Extraction: Characteristics of the primary study and dyadic economic evaluation, costs and outcomes, secondary/sensitivity analyses, methodological issues, and national HTA guidelines

Quality assessment: Consensus Health Economic Criteria (CHEC) list (methodological rigour) & CHEERS 2022 (reporting standards)

Preliminary findings (42 studies – see Figure and Table)

Commonalities

- Societal perspective often adopted (even if just as a secondary case)
- Productivity loss often considered as a cost component
- Additive summation is a common means of aggregation

Differences

- The degree of involvement of the dyadic parties varies significantly
- Non-health related costs (e.g., out-of-pocket costs, leisure time loss, etc.) are less commonly incorporated

Discussion

Our findings advance discussion on the following:

- Additive summation of outcomes
 - equal or differential weighing within the dyad
 - practical and ethical implications
- Health spillovers beyond the dyad
- Guidelines/framework for defining a dyadic intervention
 - Should incidental dyadic interventions count?
 - Is there potential for manipulation?
 - Implications for cost-effectiveness threshold?



* Update being undertaken

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