

A Systematic Literature Review of Economic Evaluations of Community-Based Interventions to Improve Mobility, Continence, and Psychological Wellbeing in Individuals with Neuro-Physical Disabilities

Ms Áine J. Gorman MSc¹, Dr Ann Kirby¹, Dr Peter Cleary², Dr Mari O'Connor¹ and Dr Aileen Murphy¹

¹Department of Economics ²Department of Accounting and Finance, Cork University Business School, University College Cork.

INTRODUCTION

Individuals with neuro-physical disabilities (NPDs) require comprehensive support to manage their physical and emotional wellbeing in such a way that maximises health resource utilization (Jones et al., 2016). Despite changing ideologies advocating for increased community healthcare, which is often more cost-effective compared to expensive acute care (Denis et al., 2012), the literature suggests studies examining the economic impact of such interventions, particularly community-based interventions, are poorly documented (Moore et al., 2006).

OBJECTIVES

Identify, collate, and summarise empirical evidence on economic evaluations of interventions for continence, mobility, and psychological wellbeing in individuals with NPDs within a community-based setting.

METHODS

- Systematic literature review carried out between Feb 6th – April 17th, 2023.
- Six databases searched as recommended by national guidelines; MEDLINE, CINAHL, PubMed, University of York's Centre for Reviews and Dissemination, PsycINFO, Cochrane Library.
- Search strategy guided by PICOS framework (Table 1). Search strings – three groups of search terms: population condition, intervention characteristics and economic filters.
- Focus on community-based studies examining minimally to non-invasive interventions, as well as clinical-based studies examining interventions which could be performed at the community level.
- Studies published since January 1990 considered.
- Methodological quality assessed using the CHEC-List, CHEERS and Philips Checklist.

Table 1 PICOS Framework (Inclusion and Exclusion)

Category	Inclusion Criteria	Exclusion Criteria
Population	Individuals with NPDs, including but not limited to: <ul style="list-style-type: none"> Congenital – Spina Bifida, Hydrocephalus, Muscular Dystrophy, Cerebral Palsy, etc. Acquired – Spinal cord injury, childhood stroke etc. Progressive – Multiple sclerosis, Parkinson's disease etc. 	Studies dealing solely with neuro disabilities i.e., no physical element. Studies which combine neuro and neuro-physical populations and outcomes.
Intervention	Any intervention to improve mobility, continence, or psychological wellbeing. Focus on minimal or non-invasive methods.	Studies which consider invasive methods.
Comparator	Any relevant comparator.	None.
Outcome	Any economic outcome, including but not limited to cost effectiveness, cost benefit, cost utility, economic improvement etc.	None.
Study Design	Full or partial economic evaluations, health technology assessments and observational studies with a healthcare provider, patient, or societal perspective.	Studies in the form of protocols or short commentaries. Studies not in the English language.
Setting/Context	Community or out-patient clinic setting.*	Non-community or out-patient clinic setting.

Note: Amended to include studies referring to interventions conducted in a clinical or hospital setting which could be undertaken at the community level. Consultation with clinical experts in their respective fields to determine suitability for implementation in the community.

RESULTS

- Fourteen studies were included in the review; 4 continence, 5 mobility and 5 psychological wellbeing (Figure 1).
- Study Setting: 36% Community, 21% Community and Clinical, 43% Clinical Setting (Figure 2).
- Interventions Examined: *Continence* – Abdominal massage and transanal irrigation; *Mobility* – Several at-home mobility programmes and physiotherapy; *Psychological Wellbeing* – Cognitive behavioural therapy in various forms, telecounselling and adjustment group therapy.

Figure 1 Study Selection Flow Diagram

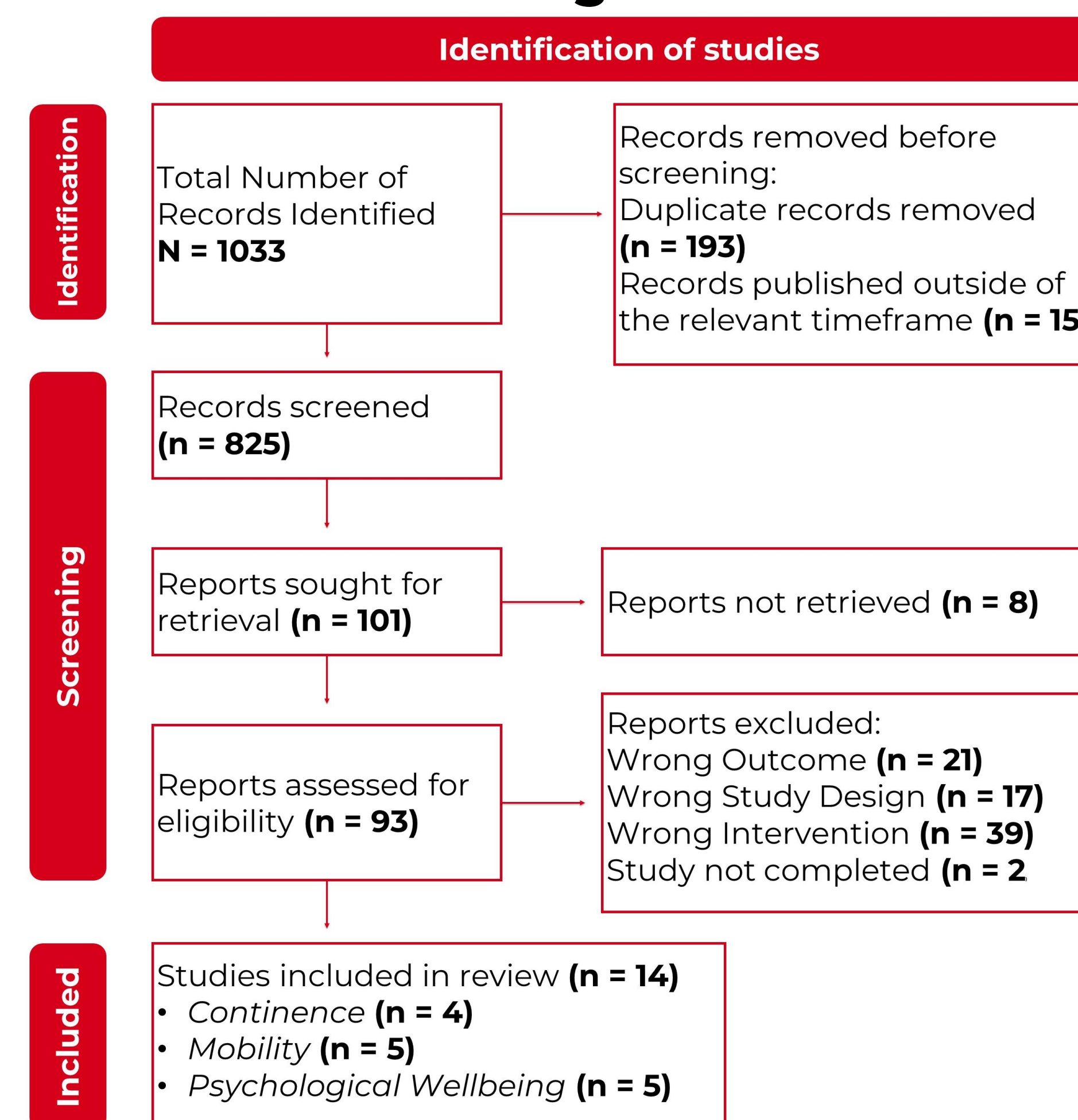


Figure 2 Study Setting

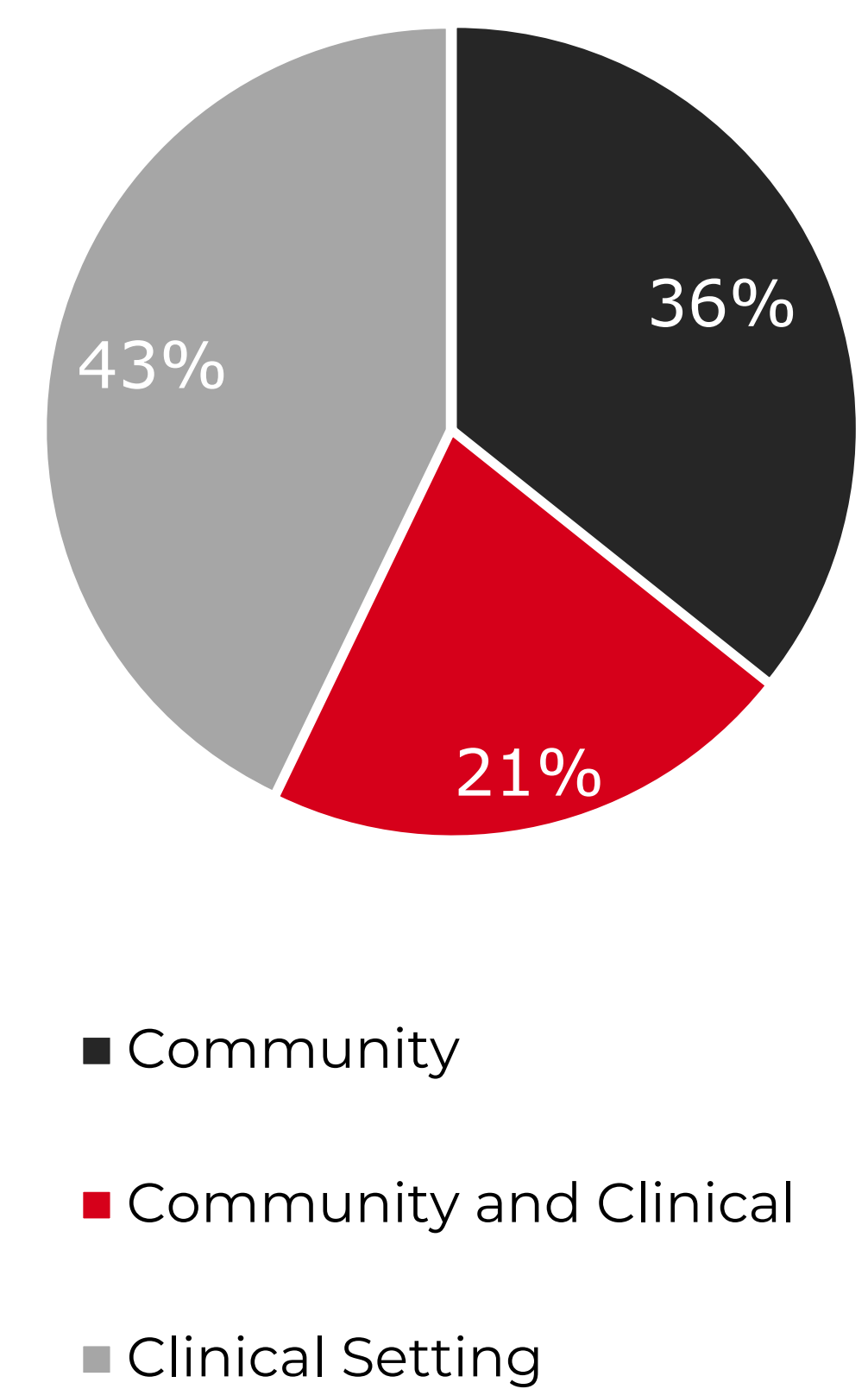


Table 2 Economic Study Characteristics

Category	Results Description
Country of Study	UK (n = 10), US (n = 1), Australia (n = 1), Japan (n = 1), Germany (n = 1)
NPD Examined	Multiple Sclerosis (n = 10), Spinal Cord Injury (n = 3), Range of NPDs (n = 1)
Economic Study Type	Cost-Effectiveness Analysis (n = 1), Cost-Utility Analysis (n = 4), Cost-Effectiveness + Cost-Utility Analysis (n = 3), Cost and Outcome Comparison (n = 2), Cost Description and Outcome Comparison (n = 4)
Full or Partial Evaluation	Full: Continence (n = 3), Mobility (n = 1), Psychological Wellbeing (n = 4) Partial: Continence (n = 1), Mobility (n = 4), Psychological Wellbeing (n = 1)
Primary Perspective	Society (n = 1), Society and Health Care Provider (n = 1), Health Care Provider (n = 5), Health Care Provider and Patient (n = 1), Health Care Payer (n = 1), Not Stated (n = 5)
Time Horizon	Short time horizon: n = 12 (10 weeks to a year). Lifetime horizon: n = 2.
Discount Used	2% - 3.5% p.a. (n = 2)
Outcome Measure Used	EQ-5D (3L or 5L) (n = 9), Beck Depression Inventory (n = 1), Multiple Sclerosis Impact Scale (8 Dimension) (n = 2), General Health Questionnaire (n = 1), No Measure Used (Partial Economic Evaluation) (n = 6).
Data Source	Clinical RCT (n = 8), Pilot trial (n = 1), Feasibility trial (n = 3), Multiple informing a decision analytics model (n = 2)

CONCLUSIONS

- Evidence skewed towards examining progressive NPDs (71%), with few considering acquired NPDs (21%) and none considering solely congenital NPDs.
- Economic methodology used is heterogenous, with studies using a variety of evaluation methods, outcome measures, perspectives and time horizons (Table 2).
- Economic evidence regarding the use of community-based interventions for NPD management is scarce.
- Most economic evaluations were reported alongside clinical trials (n = 12), and few provided information on the development of health economic analysis plans (n = 2).
- Reliance on trial evidence may be limiting the range of interventions and populations considered in such economic evaluations. Increased utilisation of decision analytic modelling would facilitate systematic synthesis of data from multiple sources to overcome issues with short time horizons and comparators.

REFERENCES

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