

# Are digital psychological interventions delivering meaningful treatment to people living with pain? A scoping review

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## Introduction

- Access to psychological therapies for the treatment of chronic pain is often delayed and limited [4].
- Digital psychological interventions are efficacious in reducing pain symptoms, related-disability, and improving patient experiences [2, 3, 5, 6, 7, 9].
- Delivery of psychological interventions online, or via mobile apps also has the potential to reduce inequities in treatment access by increasing reach.
- But translation into routine clinical practice and health services and systems is slow [4].
- Optimising digital psychological interventions to deliver high-value care, may increase uptake in clinical practice.

## Primary Aim

- This systematic scoping review assesses the extent to which digital psychological interventions are delivering high value pain care, by mapping outcomes onto quadruple aim of healthcare [1, 8].



Figure 1: The quadruple aim of healthcare.

- An intervention which addresses each quadrant of the aim has the potential to deliver high-value care.

## Methods



### Information Sources: 7 Databases

- PubMed, CINAHL, Embase, Web of Science, Scopus, Cochrane, PsychInfo.



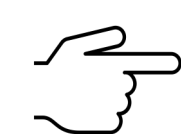
### Search Strategy

- Search terms relating to 'digital platforms' (e.g., internet, mobile application, virtual reality, video games, wearable devices), 'psychological interventions' (e.g., Cognitive Behavioural Therapy, Acceptance and Commitment Therapy) and 'chronic pain'.



### Eligibility Criteria

- Adults > 18 years, chronic musculoskeletal or primary pain, delivered psychological therapy via a digital platform, quantitative or qualitative findings, report on achieved outcomes.



### Screening Process

- Papers were screened by two independent authors.
- Conflicts were mediated by a third author.



### Data Extraction

- Information was extracted by one author and cross-checked by a second.
- Intervention outcomes were mapped onto the quadruple aim of healthcare.

## Results

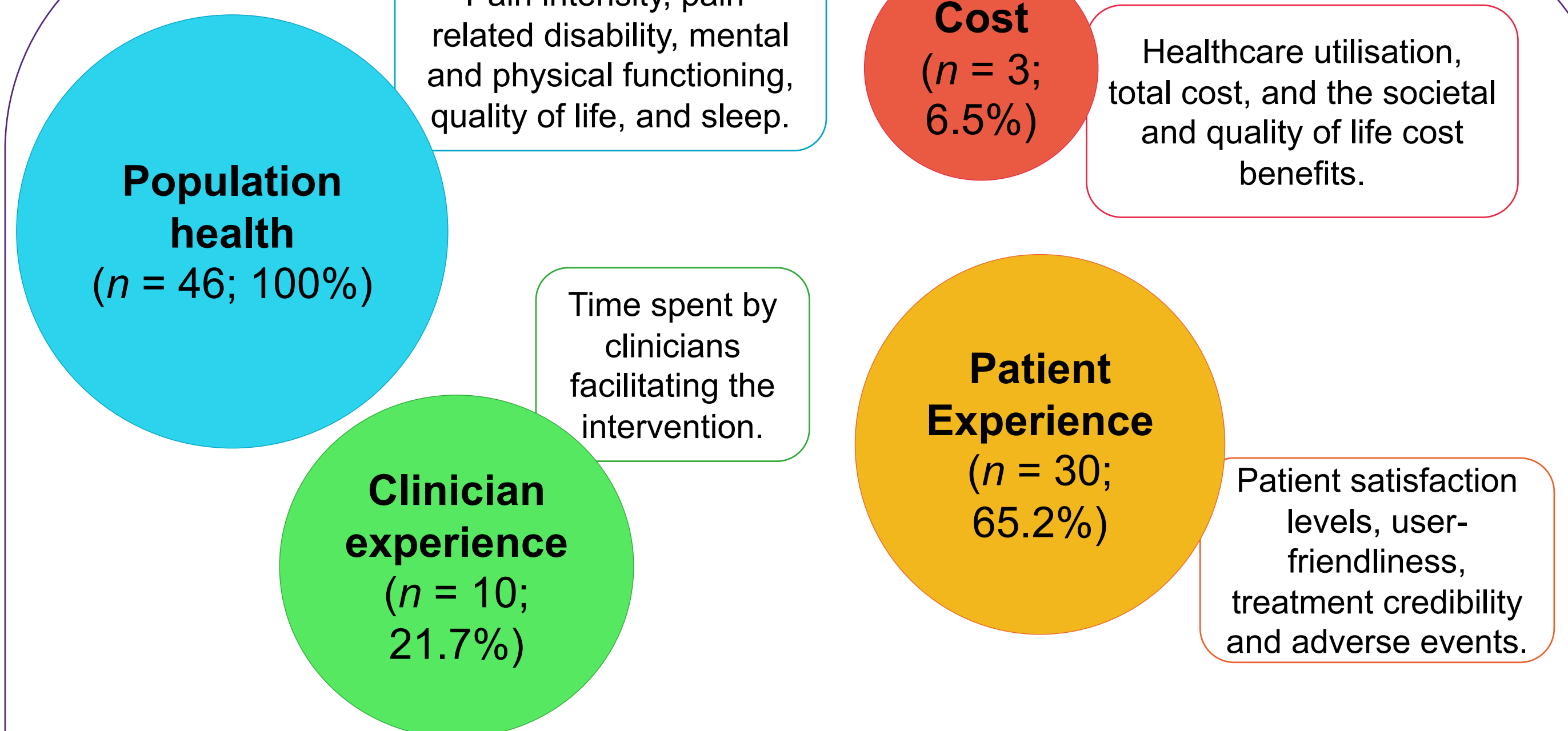


Figure 2: Percentages represent the proportion of studies which achieved outcomes in each respective quadrant of the quadruple aim. Examples of outcomes achieved are listed. Total number of included interventions,  $N = 46$ .

- 10,840 studies were screened. 52 studies were included, reporting on 46 independent interventions.
- All 46 interventions measured outcomes relating to population health. Only 6 studies described the process of selecting population health outcomes.
- 30 studies (65.2%) measuring population health outcomes, also measured the patient experience.
- < 25% of studies described the cost-effectiveness of the digital psychological interventions ( $N=3$ ) and captured the experience of clinicians ( $N=10$  studies).
- Only 2 interventions were accessible to treatment-seeking patients. That is, patients could access the intervention without participating in a research study.

## Interpretation

- All interventions measured outcomes that considered at least one quadrant, and this largely reflected population health outcomes, followed by patient experience.
- Most studies did not describe the process of selecting population health outcomes, which is considered an important component to improve outcomes that are meaningful to patients.
- Only two interventions were accessible to patients, limiting the impact of digital psychological interventions delivering high value care.

## Recommendations

- Investigate opportunities to better align digital psychological interventions with value-based health principles. Improving the value may enhance patient and clinician engagement, ultimately promoting greater integration, accessibility, and utilisation of effective and meaningful treatments.
- Better understand the clinician experience of using, prescribing, and implementing digital psychological interventions in practice, to identify solutions for increased integration into future workflow models.
- Better understand patients' needs and preferences to encourage the integration of digital psychological interventions that improve outcomes which are meaningful.
- To identify interventions that deliver the best outcomes to people with pain without compromising costs, digital psychological interventions need to be compared with interventions addressing the same or similar patient outcomes. By doing this, resources can be better allocated to support the translation of high-value digital psychological interventions.

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