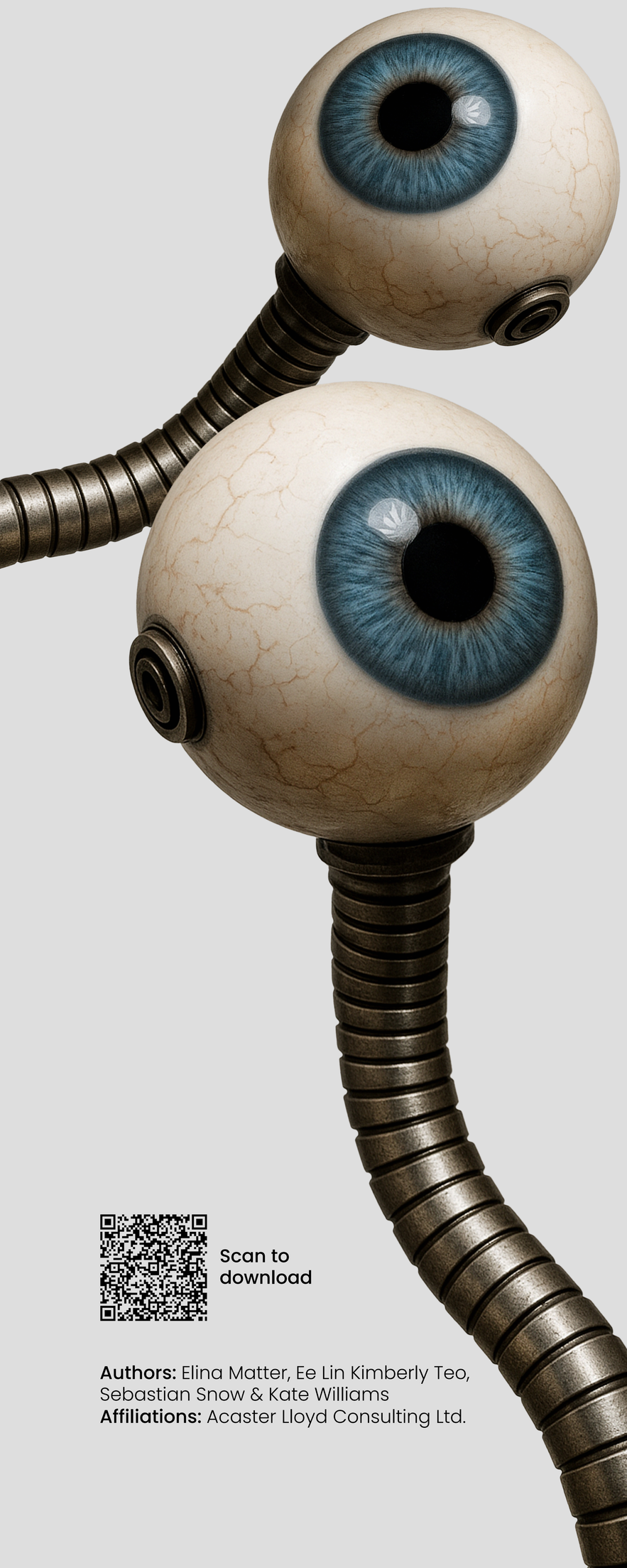
PCR222

Acaster Lloyd

AI-assisted abstract screening: strengths and limitations of identifying patient-reported outcome instruments



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Objective

To compare the speed and ease of use of traditional manual screening versus two AI-assisted platforms (Covidence and Rayyan) for identifying PRO instruments in abstracts related to head and neck squamous cell carcinoma (HNSCC).

Background

Abstract screening is a critical yet resource-intensive step in literature reviews; screening process can differ depending on the aim of the review.

For reviews focused on identification of patient-reported outcome (PRO) instruments, key information (e.g. instrument names) is often extractable from abstracts alone, minimising the need for full-text review.

Artificial Intelligence (AI)-assisted platforms offer potential to enhance efficiency while preserving accuracy.

Methods

Study design

Targeted literature review to identify PRO instruments for HNSCC.

Manual screening

One primary reviewer screened all abstracts in Excel (10% double-screening for quality control).

Keywords manually highlighted; PRO instrument names listed in columns.

If an abstract did not specify name of quality-of-life instrument referenced, full text was reviewed (conference abstracts excluded).

AI-assisted screening

Conducted using Covidence and Rayyan platforms.

Predefined inclusion and exclusion keywords lists enabled automated highlighting.

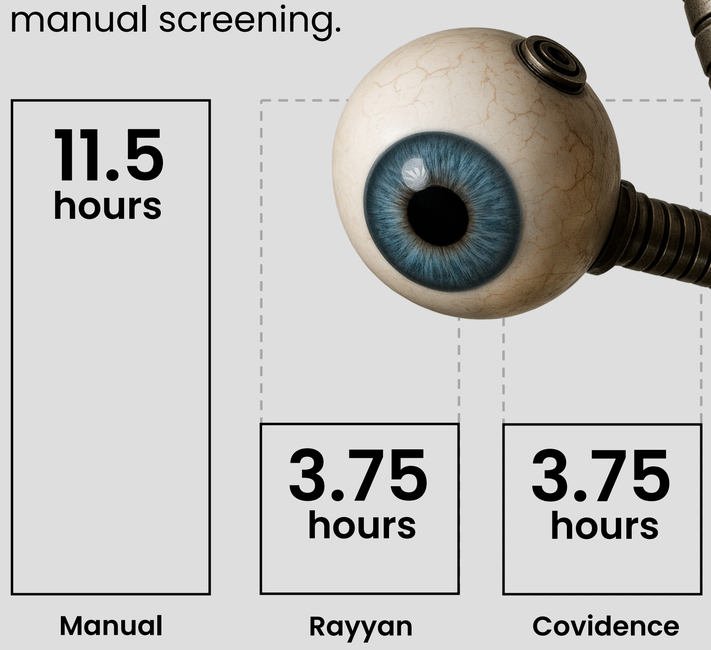
Keyword lists iteratively updated by reviewer for screening efficiency.

Outcomes

Recorded abstract screening time and platform-specific strengths and limitations.

Results

Use of both AI tools led to faster screening when compared to manual screening.



The strength of both AI tools was keyword highlighting. However, both AI tools led to screening more studies for inclusion compared to manual screening due to difficulty distinguishing conference abstracts from manuscripts. This led to inclusion of studies that would have been excluded at the abstract stage if the publication type was clearly stated.

	Manual	Rayyan	Covidence
Extraction of PRO instrument name while screening	✓	✓	✗
Quick resolve of conflicts between screeners	✓	✗	✓
Ability to determine if a publication can be full-text reviewed	✓	✗	✗
Abstract re-ordering based on relevance	✗	✓	✓

Conclusions

AI-assisted screening was faster by up to 67%, compared to traditional methods.

Study limitations included reliance on free versions of AI platforms and potential researcher learning effects. Future research should explore the use of AI-assisted platforms for other aspects of literature reviews, including a comparison of accuracy across methods.

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