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How have apps for Bipolar Disorder been evaluated: a scoping review

Newcastle University

Introduction

- Bipolar Disorder is a severe mental illness affecting 1% of the population

- It is characterised by repeated episodes of depression and mania

- NICE (National Institute of Health and Care Excellence) recommends mood charting to allow patients to recognize their individual relapse signature and seek help early

- There has been a surge of research around smartphone apps

- In order to develop an app, reliable evaluation must be undertaken using a robust framework

- My research investigated how apps had been evaluated, in order to inform future developments into app evaluation
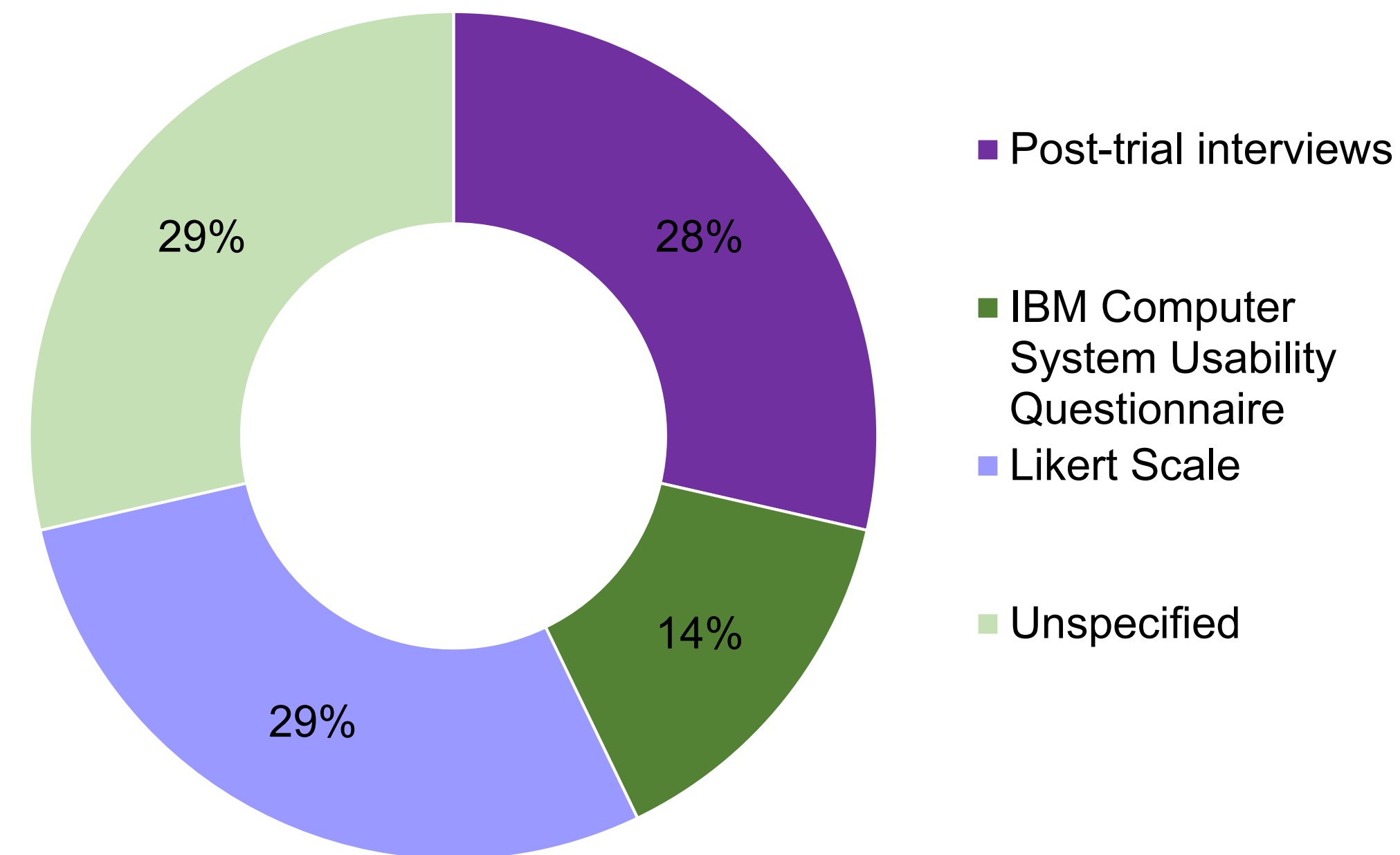
Aims

1. Collect data on current practices on evaluation of apps used in bipolar disorder

2. Identify areas for best practice in app evaluation
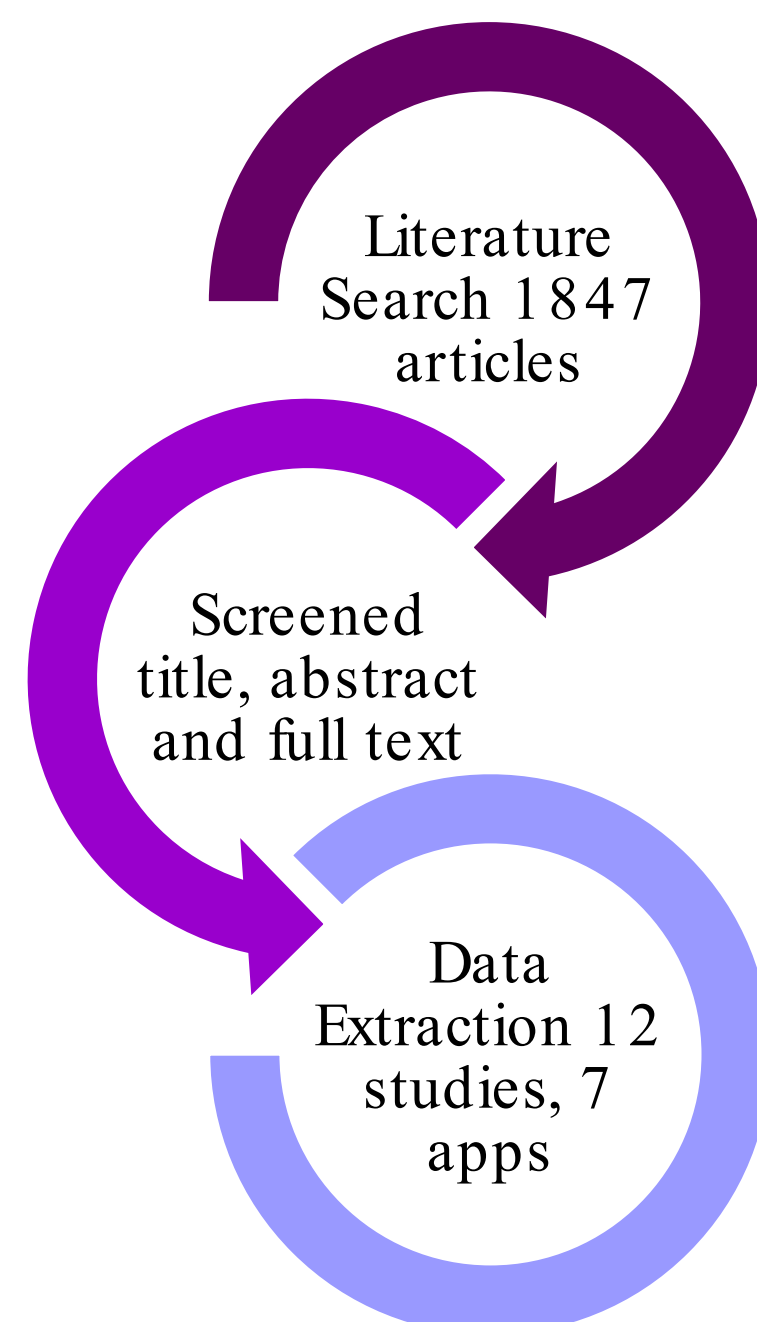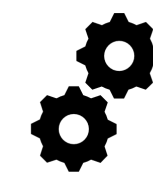
Usability and Functionality Evaluation

- Post-trial interviews — 28%
- IBM Computer System Usability Questionnaire — 14%
- Likert Scale — 29%
- Unspecified — 29%

IBM Computer System Usability Questionnaire- psychological measurement evaluation framework for computer systems
Likert Scale- a commonly used psychological measurement scale

Outcome Measure Methods

Number of times used
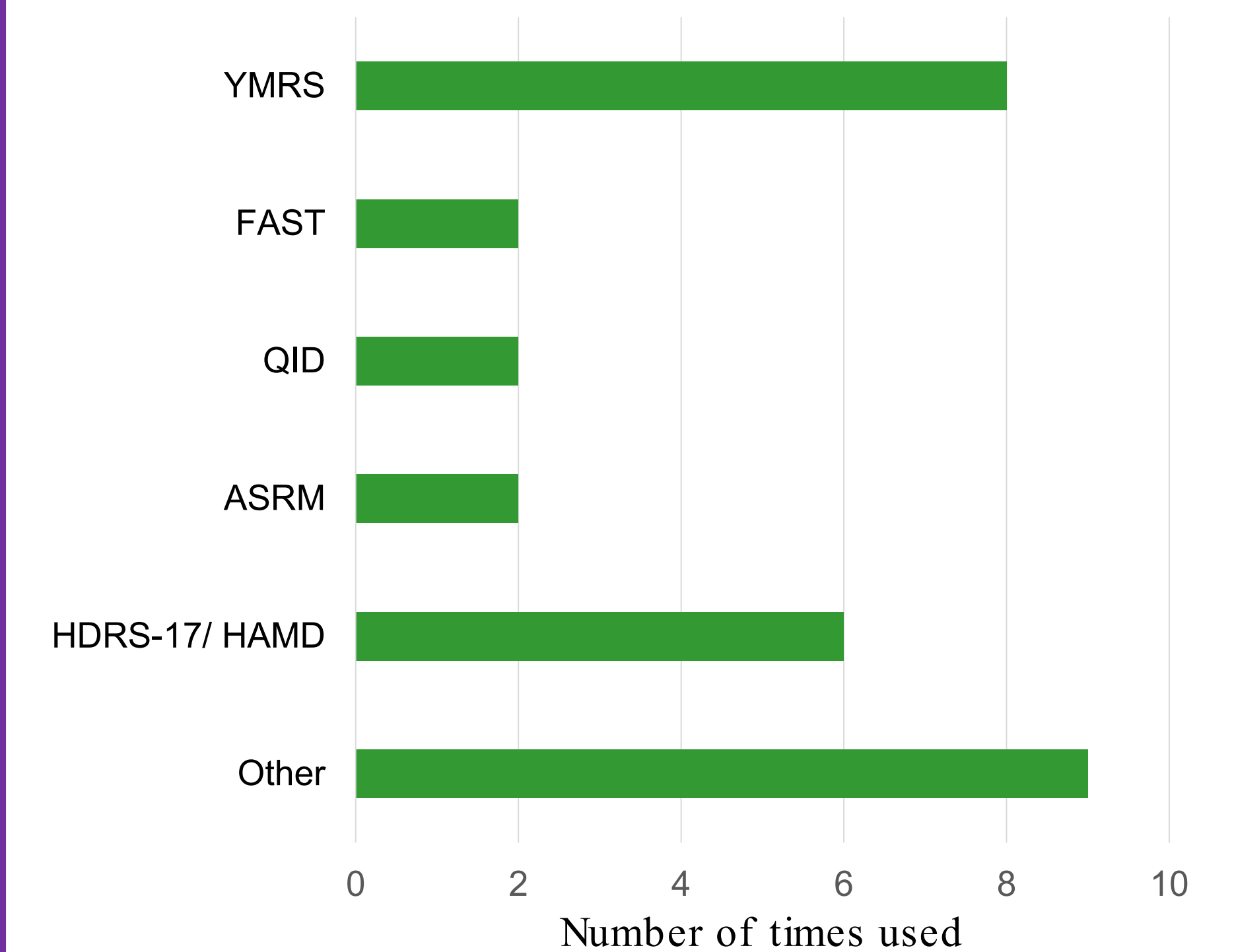
FAST- Functional Assessment Short Test
QIDS- Quick Inventory of Depressive Symptomatology Self-Report
ASRM- Altman Self-rating Mania Scale
HAMD/ HDRS-17- Hamilton Depression Rating Scale
YMRS- Young Mania Rating Scale

Method

Literature Search 1847 articles

Screened title, abstract and full text

Data Extraction 12 studies, 7 apps

Results

- MONARCA was the predominant app studied with six studies assigned

- 376 people with Bipolar Disorder Type I or II were studied

- Only five studies examined usability and functionality of the apps

- 15 outcome evaluation measures were used. The most widely employed measure was YMRS (Young Mania Rating Scale). Nine different studies utilised subjective markers. Mood and energy level were the most commonly utilised subjective markers, being used four times each

- 11 of the 12 studies discussed whether the aims of the app were actually measured. There was debate into whether other confounding factors affected the efficacy of the apps. The most commonly debated confounder was patients' stability and euthymia at the time of study

- Five studies commented on the future of app evaluation. Two of these studies focussed on the personalisation of these apps in order to improve adherence and to detect early warning signs

Conclusions

- Assessment scores are a scientific, replicable method of monitoring process and outcome measures, however they do not apply to the shift that modern medicine is currently taking

- A more holistic, patient-centred approach is being undertaken and so with that, more emphasis should be put on the users' experiences rather than just quantitatively measurable outcomes

- This will result in patients feeling respected and so increasing adherence rates in both the short and long term

- Half of the studies investigated evaluated the same app (MONARCA); this shows the lack of availability of a wide range of options for patients, particularly the freedom to find a personalised app, as requested by participants