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Measurement-based care educational programmes for clinical trainees in mental healthcare: a scoping review protocol

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ABSTRACT

Introduction Measurement-based care (MBC) represents the approach of regularly using symptom rating scales to guide patient care decisions in mental healthcare. MBC is an effective, feasible and acceptable approach to enhance clinical outcomes in various disciplines, including medicine, psychology, social work and psychotherapy. Yet, it is infrequently used by clinicians, potentially due to limited education for care providers. The objective of this scoping review is to survey the characteristics of MBC educational programmes for undergraduate, graduate and postgraduate clinical trainees in mental healthcare.

Methods and analysis Using database-tailored search strategies, we plan on searching Medline, PsycINFO, Embase, CINAHL and Cochrane Central for relevant studies. Thereafter, we will analyse the selected studies to extract information on the delivery of educational programmes, the clinical and educational outcomes of these programmes, and the potential enablers and barriers to MBC education. In this paper, we articulate the protocol for this scoping review.

Ethics and dissemination This scoping review does not require research ethics approval. The findings from this scoping review will be incorporated into the creation of a novel MBC curriculum and handbook. Results will be disseminated at appropriate national or international conferences, as well as in a peer-reviewed journal publication.

Strengths and limitations of this study

- The results of this scoping review will map the literature on measurement-based care (MBC) educational programmes for trainees, thus aiding mental healthcare educators in future development of curricula for learners.
- This scoping review's search strategy and protocol was developed in collaboration with an experienced medical librarian and takes a broad approach to review the literature on MBC education in the fields of medicine, psychology, social work and psychotherapy.
- A wide array of article types, such as research papers, conference proceedings, programme evaluation and quality improvement initiatives, will be incorporated in this review, in order to reflect diverse sources of knowledge.
- A limitation of this review is the exclusion of any full text articles not available in English.
- Relevant articles may be missed given that various keywords are used to describe MBC with differences in various fields; however, we reduced this risk by integrating several relevant terms into our database-tailored search strategies, checking reference sections of selected studies, and searching for articles citing selected studies via Google Scholar.

INTRODUCTION

Measurement-based care (MBC) involves the routine use of validated rating scales to monitor patient symptoms, and the implementation of these results to guide patient care.[1 2] MBC is an effective approach to improve patient outcomes for a diverse array of patients and across care providers.[3–5] Additional benefits of MBC include (but are not limited to) enhancing care quality and satisfaction, fostering therapeutic bonds between patients and clinicians, and improving collaboration between care providers.[6] Hypothesised mechanisms of MBC's benefits include faster detection of non-response to treatment, greater patient understanding of their symptoms, and improved therapeutic alliance; however, additional studies on potential mechanisms of action are necessary.[7] Moreover, recent studies have demonstrated the feasibility of incorporating MBC into regular patient care, its acceptability to patients and its perceived helpfulness by care providers in clinical encounters.[8–10]

It is important to note that research evidence to support use of MBC has been scrutinised, particularly in two recent Cochrane reviews.[11 12] Both reviews questioned the quality of evidence to support MBC due to insufficient blinding of participants or study personnel, significant

risk of attrition bias and variability in effect size estimates between studies. However, since the publication of these results, higher-quality studies were developed to address these concerns. For example, one randomised controlled trial blinded outcome assessors, demonstrating a significant benefit of MBC compared with treatment as usual for depression response and remission rates.[13] In this trial, there was no significant difference between the two study arms in drop-out rates. Additionally, a more recent review of MBC noted that the 2016 Cochrane review excluded studies where MBC enhanced other components of care, disparate from its most common usage in clinical practice.[7] An inconsistency in effect size may also reflect inadequate training of healthcare providers in delivering MBC. This possibility is supported by a recent randomised controlled trial that found only one of two study sites demonstrated significant improvement in outcomes with MBC, differing based on greater clinician adherence to MBC.[14] Another systematic review found a reliable benefit of MBC when it is comprehensively implemented.[8] Potentially insufficient and variable education contributes to inconsistent competency and fidelity to MBC. This supports the need for a scoping review on MBC education.

Despite the wealth of evidence on MBC, only 17.9% of psychiatrists use MBC at all, and only 5% use it in every session—its evidence-based schedule.[15 16] Evidently, there is a widespread quality gap between the research literature, and clinical practice of MBC. Past reviews explored several explanations for this schism. System barriers include few protocols and absent financial or personnel resources to implement MBC, while provider barriers include concerns that measures are time-consuming and false perceptions that rating scales negatively affect rapport-building.[7] Meanwhile, patient barriers include concerns about breaches of confidentiality, and whether reported outcomes will affect relationships with healthcare providers.[7] One of the most commonly noted reasons for not using MBC is 'limited formal training', suggested by both resident and staff physicians.[6] From this training, clinicians could adapt their practice of MBC to diverse clinical settings, respectful of differences in resources, literacy and culture. As with many areas of clinical practice, healthcare providers need dedicated training to learn the new skillset of MBC.

A more comprehensive literature review is deeply needed to stimulate research on this topic and inform future MBC educational programmes in disciplines such as psychiatry and social work. The purpose of this scoping review is to survey the available literature on MBC educational initiatives for trainees. Given the goal of identifying and mapping the available evidence on MBC education across a range of disciplines, and given the suspected small number of studies that exist, a scoping review approach was deemed appropriate.

METHODS AND ANALYSIS

For this review, we formed a team of colleagues with expertise in MBC, medical education and information sciences, including an experienced medical librarian. To improve the relevance of results to trainees, medical learners were also included as coauthors. This team collaborated on all aspects of this review protocol, including development of the research question, search strategy, study selection, charting process, critical appraisal approach and synthesis methods.

From possible review approaches, a scoping review was selected to clarify the types of available evidence on this topic, identify the range of available knowledge regarding trainee education on MBC, and to highlight knowledge gaps.[17] From the authors' understanding, there are no prior reviews focused on MBC education, making a scoping review useful for surveying the available literature. In contrast to a systematic review where study types and quality standards are prespecified to create a clear answer to a research question, scoping reviews involve a wide range of study types and commonly aim to survey all available evidence on a topic to answer a broader research question. It will not yield an answer on the most effective approach for educating trainees about MBC, but for the understudied field of MBC education, a scoping review should aid in the identification of key gaps. This scoping review protocol was grounded in the scoping review framework created by Arksey and O'Malley,[18] with enhancements from Levac *et al*[19] and Peters *et al*.[20 21] To foster clear methodology reporting, this protocol is also guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews checklist (PRISMA-ScR) and results from a scoping review of scoping reviews.[22 23] We organised our protocol according to the five stages of (1) identifying the research question, (2) identifying relevant studies, (3) study selection, (4) charting the data and (5) collating, summarising and reporting the results.[18] Given the involvement of several key stakeholders in authoring this review, the optional formal consultation exercise was omitted. See a completed copy of the PRISMA-ScR for this article in online supplemental appendix A.

Stage 1: identifying the research question

Our research question is, 'What are the characteristics of MBC educational programmes for undergraduate, graduate and postgraduate clinical trainees involved in mental healthcare according to the current literature?'. Clinical trainees in this context refers to those enrolled in programmes related to medicine, social work, psychology or psychotherapy. We chose to exclude practising independent clinicians from this review because effective educational programmes for that population would likely be different from those for clinical trainees in mental healthcare, owing to different structures for professional development, distinct educational needs and unique competing demands. Additionally, we hope to use the results of this review to inform the development of MBC educational competencies for national accreditation bodies, such as the Joint Royal Colleges of Physicians Training Board in the UK, the Accreditation Council for

Graduate Medical Education in the USA and the Royal College of Physicians and Surgeons of Canada.

To answer this research question, we identified several subquestions:

1. What types of evidence exist for MBC educational programmes?
2. How are MBC educational programmes structured and delivered to trainees? What resources or educational methods are used in these educational programmes?
3. What are the educational and clinical outcomes of MBC educational programmes? What enablers and barriers may contribute to these outcomes?

Stage 2: identifying relevant studies

The authors developed this review's search strategy in collaboration with an experienced medical librarian to find available published work or conference proceedings. Through June 2021, we searched the following electronic databases: Ovid Medline, PsycINFO, Embase, Cochrane Central and Ebsco CINAHL. These databases were chosen for relevance and breadth. Search strategies involved the key concepts of 'measurement-based care' and 'education', adapted for each database (for details, see online supplemental appendix B) and united using Boolean logic. From the work of Lewis *et al*,[7] several related terms were incorporated into the search concept for MBC, including 'feedback-informed treatment', 'routinely monitoring client progress', 'outcome monitoring and feedback', 'patient-focused research', 'patient-level feedback', 'patient-reported outcome measures' and 'routine outcome monitoring'. The only limit was that articles must be in English. Given that articles relevant to MBC education may have been published using alternative keywords prior to the original coining of the term MBC, all years through June 2021 were considered. For breadth, articles included both those that were published and those in conference proceedings. The authors checked the reference sections of selected studies for further relevant articles. Selected studies were also copied to Google Scholar to check for any relevant papers that cited these studies. Search results were transferred to Covidence for use in study selection and data charting.[24] Covidence is a software platform for research reviews that simplifies article screening and data extraction. This service automatically removes multiple copies of the same citations. From the initial search on 2 July 2021, 2373 studies were found with 1205 duplicates removed, resulting in 1168 articles included in the study selection process.

Stage 3: study selection

Articles will be selected through a two-stage process involving abstract and title screening, and then, full-text screening. Two reviewers will assess five articles for abstract and title screening, and then compare results to ensure a common understanding of inclusion criteria. Any disagreements will be resolved by consultation of one of the study investigators. Then, the reviewers will screen 20% of articles for inclusion in the review. At this point, inter-rater reliability will be assessed using Cohen's K.[25] If Cohen's K is greater than 0.7, the reviewers will proceed to screen the remaining articles for inclusion in the review. If less than 0.7, reviewers will meet to address disagreements during the review process. Abstract and title screening will then be restarted. Following abstract and title screening, full-text screening will be completed using the same principles.

Articles selected for this review must be available in English as a full text, concern an educational programme, the programme should involve MBC, and the programme should be intended for clinical trainees in mental healthcare (whether at the undergraduate or postgraduate level). These articles could include commentaries, case studies, programme evaluation, quality improvement initiatives, research papers or conference abstracts. For clarity, this definition of trainees includes, but is not limited, to trainees in medicine, social work, psychology, or psychotherapy. Articles not available in English as a full text, review articles, dissertations, book chapters and articles concerning educational programmes targeted at practising independent clinicians will be excluded. The study selection process will be presented as a PRISMA flow chart .

Stage 4: charting the data

We adapted the standardised charting form from Shen *et al* for use in this scoping review.[26] Novel sections included for this review were: number of participants, description of educational content, educational programme costs, educational framework, evaluation framework and educational outcomes as per the Kirkpatrick-Barr framework.[21] Given their limited relevance, American Psychiatric Association/American Psychosomatic Medicine principles were excluded from our charting form. Data charting domains include article details, study details (if applicable), educational programme details and implementation factors. Full-text reviewers will be trained in how to use the charting form and thereafter, chart independently. Throughout the process, these reviewers can provide feedback from charting and the form will be developed through an iterative process. Charted data will be collated by a study investigator and validated to ensure accuracy. When multiple articles concern the same educational programme, they will be merged into a single unit of analysis.

Stage 5: collating, summarising and reporting the results

Several details concerning the articles, studies and educational programmes will be collated with descriptive statistics. Data will also be qualitatively reviewed by study investigators to identify descriptive themes concerning how educational programmes are structured and delivered to trainees, the outcomes of these programmes and potential contributors (ie, enablers and barriers) to these outcomes. Educational outcomes of these programmes will also be organised according to the Kirkpatrick-Barr framework, including learners' reactions, attitudinal

change, knowledge/skills acquisition, behavioural change, changes in organisational practice and benefits to patients/clients.[27] Possible enablers and barriers to these outcomes will be organised according to a realist framework into contexts and mechanisms.[28]

Patient and public involvement

Patients or the public were not involved in the development, reporting or dissemination plans of this protocol. Medical learners were involved as coauthors in this study to provide insights from the learner perspective.

DISCUSSION

Outside of the inherent restriction by the available evidence, there are some limitations of this review to consider. One limitation is that it will not determine the effectiveness of MBC educational programmes given the use of a scoping review methodology. However, the available evidence is likely to be of low-quality and MBC educational programmes are unstandardised. As a result, a precise effect size estimate would be unattainable and likely unhelpful to educators or researchers. Moreover, from a realist perspective, educational programmes are embedded within a specific context suited to a unique population, and effective curricula would differ depending on their educational environments. Additionally, relevant articles may be missed because diverse keywords are used to describe MBC in different fields. We reduced this risk by integrating several relevant terms into our database-tailored search strategies, checking reference sections of selected studies and searching for articles citing selected studies via Google Scholar. Another limitation is the exclusion of any full text articles not available in English.

We hope that the results from this scoping review will be helpful to educational researchers in surveying the available literature on MBC educational programmes. From this lens, this review may aid in identifying educational models, evidence gaps and facilitators or barriers to MBC training outcomes. Educators may better understand past MBC educational programme strengths and challenges to design more effective curricula for clinical trainees. Hopefully, once completed, this scoping review of MBC education can serve as a scaffold for needed developments in MBC training for clinical trainees in mental healthcare.

ETHICS AND DISSEMINATION

This scoping review does not require research ethics approval. Results will be disseminated at appropriate national or international conferences, and in a peer-reviewed journal publication.

Contributors As per ICMJE guidelines, all authors made substantial contributions to the conception and designof the protocol. The protocol was drafted by DEF and critically revised in collaboration with AEW, HL, AB and KW. All authors reviewed andapproved the final version of the protocol to be published and agreed to be accountable for all aspects of the publication.

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Patient consent for publication Not applicable.

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Appendix A. Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

Section	**Reported on Page #**
Title	1
Structured summary	2
Rationale	3-7
Objectives	7-8
Protocol and registration	Article. Registration not available
Eligibility criteria	8-9
Information sources	8-9
Search	Appendix B
Selection of sources of evidence	9
Data charting process	10
Data items	10
Critical appraisal of individual sources of evidence	Not applicable
Synthesis of results	10
Selection of sources of evidence	Not applicable given protocol
Characteristics of sources of evidence	Not applicable given protocol
Critical appraisal within sources of evidence	Not applicable given protocol
Results of individual sources of evidence	Not applicable given protocol
Synthesis of results	Not applicable given protocol
Summary of evidence	Not applicable given protocol
Limitations	11
Conclusions	11-12
Funding	12

From: Tricco AC, Lillie E, Zarin W, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med*2018;169(7):467-73. doi:10.7326/m18-0850

Appendix B. Search Strategies for Scoping Review

Database: Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions(R) <1946 to July 01, 2021> Search Strategy:

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1 measurement based care.mp. (297)
2 feedback informed treatment.mp. (16)
3 (routine* adj2 monitor* adj2 (client* or progress*)).mp. (20)
4 "outcome* monitoring and feedback".mp. (9)
5 patient* focused research.mp. (44)
6 patient* level feedback.mp. (8)
7 patient* reported outcome* measure*.mp. (15242)
8 routine outcome* monitoring.mp. (255)
9 or/1-8 (15828)
10 exp Education, Professional/ (309937)
11 (educat* or train* or mentor* or teach* or preceptor* or coach* or instruct*).ti,hw,kf. (841831)
12 or/10-11 (862698)
13 9 and 12 (359)
14 limit 13 to english language (358)

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Database: Embase Classic+Embase <1947 to 2021 Week 25> Search Strategy:

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1 measurement based care.mp. (372)
2 feedback informed treatment.mp. (19)
3 (routine* adj2 monitor* adj2 (client* or progress*)).mp. (27)
4 "outcome* monitoring and feedback".mp. (9)
5 patient* focused research.mp. (74)
6 patient* level feedback.mp. (11)
7 patient* reported outcome* measure*.mp. (13570)
8 routine outcome* monitoring.mp. (315)
9 or/1-8 (14342)
10 exp medical education/ (354082)
11 exp nursing education/ (90739)
12 exp paramedical education/ (98170)
13 exp allied health education/ (319)

14 (educat* or train* or mentor* or teach* or preceptor* or coach* or instruct*).ti,hw,kw. (1530136)
15 or/10-14 (1557538)
16 9 and 15 (855)
17 limit 16 to english language (850)

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Database: EBM Reviews - Cochrane Central Register of Controlled Trials <May 2021> Search Strategy:

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1 measurement based care.mp. (60)
2 feedback informed treatment.mp. (12)
3 (routine* adj2 monitor* adj2 (client* or progress*)).mp. (4)
4 "outcome* monitoring and feedback".mp. (6)
5 patient* focused research.mp. (6)
6 patient* level feedback.mp. (5)
7 patient* reported outcome* measure*.mp. (2520)
8 routine outcome* monitoring.mp. (36)
9 or/1-8 (2644)
10 exp Education, Professional/ (4848)
11 (educat* or train* or mentor* or teach* or preceptor* or coach* or instruct*).ti,hw. (111426)
12 or/10-11 (111809)
13 9 and 12 (196)
14 limit 13 to english language (178)

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Database: APA PsycInfo <1806 to June Week 4 2021> Search Strategy:

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1 measurement based care.mp. (247)
2 feedback informed treatment.mp. (53)
3 (routine* adj2 monitor* adj2 (client* or progress*)).mp. (17)
4 "outcome* monitoring and feedback".mp. (12)
5 patient* focused research.mp. (75)
6 patient* level feedback.mp. (2)
7 exp patient reported outcome measures/ (393)
8 patient* reported outcome* measure*.mp. (2197)

9 routine outcome* monitoring.mp. (317)
10 or/1-9 (2859)
11 exp medical education/ (24932)
12 exp nursing education/ (6436)
13 exp paraprofessional education/ (688)
14 exp Education/ (444504)
15 exp Educational Programs/ (93862)
16 (educat* or train* or mentor* or teach* or preceptor* or coach* or instruct*).ti,hw,id. (630008)
17 or/11-16 (719210)
18 10 and 17 (139)
19 limit 18 to english language (137)

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Cinahl Search Strategy. Search done on July 2, 2021.

Search ID#	Search Terms	Search Options	Results
S14	S9 AND S13	Limiters - English Language Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	189
S13	S10 OR S11 OR S12	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	729,440
S12	MW (educat* or train* or mentor* or teach* or preceptor* or coach* or instruct*)	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	654,336
S11	TI (educat* or train* or mentor* or teach* or preceptor* or coach* or instruct*)	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	240,690
S10	(MH "Education, Health Sciences+")	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	283,979
S9	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	4,782

S8	TX routine outcome monitoring	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	114
S7	TX patient* reported outcome measure*	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	4,503
S6	TX patient* level feedback	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	5
S5	TX patient* focused research	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	19
S4	TX "outcome monitoring and feedback"	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	4
S3	TX (routine* N2 monitor* N2 client* N2 progress*)	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	1
S2	TX feedback informed treatment	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	6
S1	TX measurement based care	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	140