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Journal:	*BMJ Open*
Manuscript ID	bmjopen-2017-017080
Article Type:	Protocol
Date Submitted by the Author:	17-Apr-2017
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Primary Subject Heading:	Mental health
Secondary Subject Heading:	Evidence based practice, Health services research
Keywords:	MENTAL HEALTH, Adult psychiatry < PSYCHIATRY, Recovery, HEALTH SERVICES

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Implementation Of The Recovery Concept Into Canadian Mental Health Services: A Protocol For A Mixed Studies Systematic Review

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ABSTRACT

Introduction: Recovery is integral to mental health planning in G-8 countries including Canada. A recovery-oriented approach to care aims to promote personal empowerment, illness self-management, and a life beyond services for people with serious mental illness (SMI), while reducing the staggering financial burden associated with mental illness. Although there is a growing body of literature on recovery-oriented services, no synthesis of research on the implementation of recovery into mental health services exists.

Objectives: A mixed studies systematic review will be conducted on recovery-oriented services for adults with SMI. Seven databases including PubMed, Ovid Medline, Ovid Embase, Ovid PsycInfo, CINAHL (Current Index to Nursing and Allied Health Literature), the Cochrane Library and Scopus will be searched for peer-reviewed empirical studies published from 1998 to December 2016.

Methods: Systematic reviews, and studies using quantitative, qualitative and mixed methodologies will be included. Secondary searches will be conducted in reference lists of all selected full text articles; and citation-tracking will be performed on articles related to those included in the review. Hand searches will also be performed in the tables of contents of three recovery-focused journals for the most recent 5 years. International experts in the field will be contacted for comments and advice. Data extraction will include identification and methodological synthesis of each study; definition of recovery; information on recovery implementation; facilitators and barriers; and study outcomes. A quality assessment will be conducted on each study. The data will be synthesized and a stepwise thematic analysis performed.

Strengths and limitations of this study

- Studies included in this knowledge synthesis will have been conducted in inpatient, outpatient and community-based mental health settings, and will cover a broad range of research methodologies. The synthesis will reveal how recovery is understood; challenges involved in implementation; and, overall, to what extent transformation to recovery oriented services and systems is occurring.
- The selection of recovery-oriented studies with an implementation focus is unique, and will allow us to draw on 5 powerful conceptual models from implementation science that provide theory-informed elements to guide data analysis and synthesis as well as the reporting of results.

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- Knowledge from the synthesis will be compiled into comprehensive and usable formats for organizational and government stakeholders, providing practical guidelines for recovery-based service reform and future evaluation.
- Limiting the search to published, peer-reviewed studies, while important for considerations of quality and methodological rigor, may overlook possible research on recovery-oriented services reported elsewhere.

Key words : mental health service, recovery-orientation, mental disorders, implementation, protocol, systematic review

Ethics and dissemination:

Ethics approval is not required for this knowledge synthesis. Findings will be disseminated through multiple knowledge translation activities including: a) symposiums; b) presentations in national and international conferences, and to local stakeholders; c) publications in peer-reviewed open access journals, d) posts on the organizational websites of participating organizations.

INTRODUCTION

Rationale

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Recovery is the focus of national mental health plans in G-8 countries[1-3]including Canada's first mental health strategy, *Changing Directions, Changing Lives*[4], and several provincial strategies[5-8]. The rationale for transformation to recovery-oriented services in mental health is compelling. While traditional mental health services have underlined professional control[9-13], reinforcing patient dependency, self-stigma and hopelessness[14-17], recovery approaches focus on individual empowerment, strong collaborative relationships between mental health service providers and service users, and community integration[18-24]. In promoting a life beyond services, recovery also meets a key ethical obligation to honor the personhood and citizenship of people with mental illness[25].

Recovery knowledge and evidence have burgeoned over the past two decades. Research exists on personal recovery[26-32], recovery-oriented services[33-40], and provider competencies[41-45]. Conceptual frameworks and standardized measures have been produced[35,46-49]. Other studies have linked the recovery approach to recognized theories, such as empowerment theory[50,51], the strengths model[52], capabilities theory[53-55], positive psychology[56-58], person-centered practice[59,60] and co-production[61,62]. Practice guidelines for recovery-oriented service provision are available[63-69], as well. In terms of the empirical literature, studies on particular agencies and programs have identified potential determinants of recovery orientation in services: for example a flexible and innovative organizational culture, results-oriented leadership and larger budgets[70] were found to be associated with recovery-oriented services, as were provider socio-professional characteristics such as greater age, higher educational levels and more professional experience[71,72]. Another recent study found

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that increasing the recovery orientation of teamwork on mental health teams[73] was associated with provider and consumer perceptions that services were recovery-oriented.

While two recent systematic reviews have been conducted on the recovery-oriented practices of mental health service providers[74,75], no known review has been published, to date, on implementation of the recovery concept into mental health services. Our review synthesizes research on the nature of recovery-oriented services, implementation challenges and overall system transformation. Work on the project initiated in August 2016, and should come to completion in spring 2018.

This project is important and timely, as mental illness affects millions of people worldwide. According to recent World Health Organization statistics[76], 350 million people are impacted by depression; 60 million people by bipolar disorder, and 21 million affected by schizophrenia. A recovery-oriented approach to healthcare is expected to reduce dependency and reduce the cost of mental healthcare, which in Canada has risen to more than $50 billion per year[4,77,78]. The project responds to a critical knowledge gap identified by knowledge users across Canada, who are responsible for implementing provincial level policy as well as shifting organizational practices to recovery.

Objectives

The goal of this paper is to present the design for a systematic review that will evaluate and synthesize published literature on the implementation of the recovery approach into mental health services for adults with SMI (schizophrenia, bipolar disorder, major depression). Each selected study will be assessed in terms of the following questions: (a) How is recovery defined in this study?; (b) How is the recovery approach implemented in this study? (c) What

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facilitators and barriers emerged in implementing recovery in this study? (d) What outcomes are reported in this study?

METHODS

Eligibility criteria

The design and methodology for the present review are reported following the Preferred Reporting Items for Systematic review and Meta-Analysis Protocols (PRISMA-P) guidelines[79].

Population: The review concerns studies of services for adults (18 yrs. +) with a primary diagnosis of schizophrenia, bipolar disorder or major depression, following the DSM-V classification for mental disorders.

Intervention: Studies will be included if they describe and evaluate the implementation of any intervention based on recovery principles that aims at transforming the orientation of mental health services, or organizations to a recovery approach.

Comparators: Studies will be eligible for inclusion whether or not they include comparison groups.

Outcomes: Selected studies should report outcomes related to the transformation of a mental health service, or organization, to a recovery-orientation. Outcomes might include change in organizational culture; more integrated service networks and partnerships; increased knowledge, skills and/or attitudinal change among mental health providers; more use of evidence based recovery-oriented best practices; greater consumer/provider collaboration, consumer self-management, and evaluation.

Study design: This will be a mixed studies review (MSR)[80,81]. The MSR integrates qualitative, quantitative and mixed methods studies, providing a rich, detailed understanding of complex

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health interventions and programs[82]. Studies representing a full range of methodologies will be included: systematic reviews and meta-analyses, randomized control trials (RCTs) and clinical trials, observational, mixed method and qualitative studies.

Time period: We would expect to find very few pertinent studies prior to 1998, when recovery was first defined in an international policy document[83]. Thus, the precise time frame for the review is 1998 to December 2016.

Setting: Research settings may include inpatient, outpatient or community-based mental health services.

Exclusion criteria: Non-research studies (e.g. editorials, letters, conference abstracts), as well as unpublished (grey) literature, dissertations, and book or book-length studies, will be excluded, as well as conceptual papers and review articles. Studies on services for addiction populations will also be excluded, as recovery is conceptualized differently in the addictions field. Language restrictions will not apply.

Information sources

Our final search strategy will be developed in consultation with an experienced research librarian on the project and will combine a broad, systematic search of the literature. Electronic search will be conducted on the following databases: PubMed, Ovid Medline, Ovid Embase, Ovid PsycInfo, CINAHL (Current Index to Nursing and Allied Health Literature), the Cochrane Library and Scopus. We will supplement our results by conducting the following secondary searches: (a) Reference lists of all selected full text articles will be scanned for additional relevant studies; (b) Citation-tracking will be performed on included articles; (c) Hand searches of tables of contents for the past 5 years will be conducted in the following key journals:

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Psychiatric Rehabilitation Journal; *Psychiatric Services*; and *Community Mental Health Journal*. Additional journals will be added if warranted; and (d) Known experts in the field will be contacted for comments and advice. We will also stay alert to serendipitous discovery that may increase results.

Pilot Search strategy

Using the Ovid Medline database, a research librarian and co-investigator on the project conducted a pilot search (Appendix 1) which generated 5164 records. For this preliminary scoping phase, the search strategy was designed to focus on 3 main components: *mental health*, *recovery* and *services*. Medical Subject Heading (MeSH) and synonyms (keywords) were combined for each of the components. While keywords will remain consistent throughout the searches, subject headings will be revised to reflect database specific preferences. Search strategies will be further revised as new subject headings and keywords are revealed.

Study records

Data management

Electronic search results will be downloaded into EndNote reference manager software, duplicates will be removed where possible, and the remaining references will be uploaded to the Distiller Systematic Review software for the screening and data extraction stages. Distiller software stores references, manages and monitors the screening and data extraction process with customized forms and automated flowcharts, and provides an audit trail for the review.

Screening and Selection process

For the first selection, two team members working independently will read titles and abstracts of each paper identified in the electronic search and assess them for relevance based

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on the inclusion and exclusion criteria. Second, the team members will read the full text of each selected article in order to confirm its inclusion in the study. Disagreements related to the inclusion of any paper will be discussed and resolved, involving a third team member if necessary. To ensure high inter-rater reliability, training exercises will be conducted prior to initiating the screening process. Team members will meet on a weekly basis to follow up on the screening process and discuss unanticipated problems.

Data items and data extraction process

In order to minimize bias, two research team members will independently extract the data. Sample elements for data extraction appear below in Table 1. The categories on the extraction grid include methodological elements based on the PICO mnemonic (PICO= population, intervention, comparison, outcome[84]) for quantitative studies. For qualitative studies, identification of data elements will correspond to the 4 research questions, and will also be guided by the 5 implementation frameworks[85-89] which, taken together, provide myriad implementation processes at different conceptual levels. For example, the 5 dimensions in the Damschroder Consolidated Framework for Advancing Implementation Science[86] include structural, intervention, individual, and "inner"/"outer" setting characteristics that describe the implementation process at the organizational level. Whereas Powell et al[88] provide 68 implementation strategies within 6 processes (planning, educating, financing, restructuring, quality management and policy) involved in clinical practice. Study limitations and gaps in knowledge will also be recorded[90]. The data extraction form will be pre-tested by the two reviewers and revised as needed. Distiller SR software will be used to manage the data extraction process.

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Table 1: Sample elements for data extraction by research question

Study ID/ Methods:	Meaning of Recovery (Q1)	Recovery Implementation (Q2)	Barriers/ Facilitators (Q3)	Recovery Outcomes (Q4)
I.D. #; location Objective Study design Participants Interventions/ comparisons Data collection Data analysis/ triangulation Quality appraisal	Definitions Conceptualizations	Consolidated framework for advancing implementation science (Damschroder et al[91]) 68 strategies for implementation of clinical innovations (Powell et al[92])	Consolidated framework (Damschroder et al)	Theoretical domains framework (Cane et al[85]) Behavior change technique taxonomy (Michie et al[87]) Conclusions Study limitations/ gaps/ contradictions/ further questions

Quality assessment

Systematic reviews will be assessed for quality based on the Assessing Methodological Quality of Systematic Reviews tool (AMSTAR) protocol. The AMSTAR is an 11-item questionnaire that assesses study design, literature searched, and scientific quality of reviews; a rating system is included. For primary research studies, quality assessment will be determined using criteria developed by Kmet (2004)[93]. This tool includes a 14-item checklist for quality criteria in quantitative studies, and a 10-item checklist for qualitative studies. A rating system (yes-2; partial -1; and no-0) is provided, as well as a calculation for summary scores. While some controversy exists on whether qualitative research should be assessed using standard quality criteria[94], we will include a quality appraisal for qualitative, as well as quantitative, studies in order to better assess the strengths and weaknesses of the evidence[95]. The selected studies will be independently assessed for quality by two reviewers. Discrepancies will be solved in consultation with the principal investigator.

Data Synthesis

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No single unifying framework exists for synthesizing quantitative and qualitative evidence for healthcare policy-makers and managers[96]. Our experience with recovery research suggests that much of the pertinent literature for review will be qualitative. Thus, our overall approach will be to convert all the evidence into qualitative form. The quantitative data will be transformed into qualitative form by extracting key concepts and findings within the elements geared to our research questions, as described above. Analytic procedures and synthesis will follow a 3-stage process: (a) organization of studies into logical categories according to their design, and methodology; and coding using NVivo 11 software; (b) within-study analysis, according to the study questions; (c) cross-study synthesis of the data using an adaptation of the stepwise thematic analysis developed by Lucas et al[95], according to the following procedures: (1) two reviewers will independently review data collated under each of the research questions; (2) codes produced by each researcher will be compared, and a consolidated list of themes produced for each research question; (3) themes occurring under each question will be clustered around common dimensions; (4) results of the thematic analysis will be presented to the research team at a consensus meeting.

Specific measures will be taken to enhance the trustworthiness of the data. As suggested by Lucas et al, directly reported participant data (e.g. verbatim quotations, or scores on attitudinal scales), and author interpretations, will be reported separately in order to retain the richness or “thickness” of the data. Detailed descriptions, contextual material, and the quality assessment of each paper will also help readers make judgments about the reliability and validity of the data. Summary tables will include counts of the papers contributing data on each theme[94].

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Dissemination

Knowledge translation will involve collaboration with our international consultants, and knowledge users, who include decision makers and managers, service providers, people with lived experience and families. Four output documents will be developed, including: 1) a critical appraisal of findings from the synthesis on recovery implementation; 2) a compendium of case studies on successful recovery implementation initiatives (sensitive to gender, race, culture); 3) a recovery implementation manual for decision makers and managers; and 4) a toolkit of recovery-enhancing practices, i.e. strategies for individual behavior change targeted at service providers and service users. Each document will be submitted to the entire team for revision and editing.

The results of the synthesis project will be widely disseminated. Knowledge translation activities will include: (a) creation of an Advisory Committee composed of the research team, Knowledge Users and international expert advisors. Quarterly telephone meetings with the Advisory to review emerging findings and provide feedback; (b) ongoing consultation/feedback between knowledge users and the research team during preparation of the 4 project outputs; (c) posting of information and updates on the websites of the organizations of knowledge users on the project, including those for people with lived experience and families; (d) organization of a one-day end-of-project symposium for dissemination of project outputs, including workshops for recording feedback and recommendations; (e) dissemination of project outputs through organizational websites; and through national and international networks (free access); (f) submission of articles to peer-reviewed, open access journals; (g) presentations at national/international conferences;

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Conclusion

The recovery approach emerged through the lived experiences of people with enduring mental health problems as they utilized the formal mental health care system. Recovery-oriented services are viewed as a more person-centered and promising approach for treating mental illness. Until now, there has been little access to knowledge concerning how mainstream mental health services are being transformed to a recovery-orientation, and with what results. Our synthesis will establish the state of knowledge and evidence on implementing recovery, and will make this knowledge available to a wide range of mental health stakeholders through dissemination activities and the publication of concrete practice tools. Results may also support the development of new recovery interventions, on which future outcome research should be considered.

Contributors:

MP is the guarantor. ES, JS and MP drafted the manuscript. All authors contributed to the development of the protocol, selection criteria, and data extraction criteria. MP and JS developed the search strategy. All authors read, provided feedback and approved the final manuscript.

Funding:

This study was funded by the Canadian Institute of Health Research, Grant # KRS 144043.

Competing interests: None

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Appendix 1

Pilot search strategy for Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily, Ovid MEDLINE(R) and Ovid OLDMEDLINE(R) 1946 to Present

#	Searches
1	recovery oriented.ti,ab,kw.
2	exp Mental Health Services/
3	recover*.ti,ab,kw.
4	2 and 3
5	Mental Health/
6	mental disorders/ or adjustment disorders/ or exp anxiety disorders/ or exp delirium, dementia, amnestic, cognitive disorders/ or exp dissociative disorders/ or exp mood disorders/ or exp neurotic disorders/ or exp personality disorders/ or exp "schizophrenia and disorders with psychotic features"/
7	((Mental or psychiatric or psychologic*) adj2 (health or illness* or disorder* or disease* or problem* or issue or issues or well being)).ti,ab,kw.
8	((adjustment or anxiety or obsessive or complusive or panic or phobic or stress or dissociative or mood or depressive or affective or personality or psychotic or paranoid) adj2 (disorder* or disease*)).ti,ab,kw.
9	(agoraphobi* or astheni* or phobia* or delirium or dementia* or depression or schizophreni* or schizoid).ti,ab,kw.
10	5 or 6 or 7 or 8 or 9
11	exp health services/ or service*.ti,ab,kw.
12	10 and 11
13	exp "Outcome and Process Assessment (Health Care)"/
14	exp delivery of health care/
15	Resource Allocation/
16	exp "Organization and Administration"/
17	exp "Quality of Health Care"/
18	exp professional competence/
19	exp Inservice Training/

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20 exp patient care management/

21 ((service* or organization* or organisation* or unit or units or department* or program* or clinic or clinics or ward or wards or staff or workforce or setting) adj4 (leader* or innovate* or objective* or change* or transform* or structure* or opportunit* or strength* or model* or priorit* or policy or policies or procedure* or ration* or allocat* or reform* or commit* or needs or improve* or assess* or responsive* or evaluat* or plan*)).ti,ab,kw.

22 ((treatment or therapy) adj2 planning).ti,ab,kw.

23 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22

24 exp Patient-Centered Care/

25 exp Self Care/ or exp Self Concept/

26 ((self or personal) adj2 (identity or concept or assess* or manage* or disclos* or efficacy or evaluat*)).ti,ab,kw.

27 ((patient or client or consumer*) adj4 (centered or centred or focus* or engage* or involve*)).ti,ab,kw.

28 ((shared or joint) adj2 decision*).ti,ab,kw.

29 exp Interpersonal Relations/

30 "Quality of Life"/ or quality of life.mp.

31 Social Support/ or Social Adjustment/

32 (social adj2 (support or integration or inclusion or adjustment)).ti,ab,kw.

33 (connected* or hope* or optimis* or trust or identity or meaning or empower* or spiritual* or giving back or stigma* or values or goal or goals or belonging or purpose or choice or citizenship or discriminat* or inequalit* or valued or roles).ti,ab,kw.

34 (partnership* or collaborat* or interpersonal or multidisciplinary or cooperat* or co-operat* or team* or group or joint).ti,ab,kw.

35 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34

36 exp Data Collection/

37 exp Psychological Tests/

38 (measur* or test* or scale* or metric* or psychometric* oe questionnaire* or instrument* or data).ti,ab,kw.

39 36 or 37 or 38

40 23 or 39

41 12 and 40

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42 41 and recover*.mp.

43 1 or 4 or 42

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Protocol for a mixed studies systematic review on the implementation of the recovery approach in adult mental health services

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2017-017080.R1
Article Type:	Protocol
Date Submitted by the Author:	06-Jul-2017
Complete List of Authors:	Piat, Myra; McGill University, Psychiatry; Douglas Mental Health University Institute, Sofouli, Eleni; Douglas Mental Health University Institute Sabetti, Judith; McGill University, School of Social Work Lambrou, Angella; McGill University Chodos, Howard; Mental Health Commission of Canada - Ottawa Briand, Catherine; Inst Univ Sante Mentale Montreal, Vachon, Brigitte ; Universite de Montreal Faculte de medecine Curran, Janet; Dalhousie University - Faculty of Health Professions
Primary Subject Heading:	Mental health
Secondary Subject Heading:	Evidence based practice, Health services research
Keywords:	MENTAL HEALTH, Adult psychiatry < PSYCHIATRY, Recovery, HEALTH SERVICES

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Protocol for a mixed studies systematic review on the implementation of the recovery approach in adult mental health services

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Word count: 3049

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ABSTRACT

Introduction:

Recovery is integral to mental health planning in G-8 countries including Canada. A recovery-oriented approach to care aims to promote personal empowerment, illness self-management, and a life beyond services for people with serious mental illness (SMI), while reducing the staggering financial burden associated with mental illness. Although there is a growing body of literature on recovery-oriented services, no synthesis of research on the implementation of recovery into mental health services exists.

Method and analysis:

A mixed studies systematic review will be conducted on recovery-oriented services for adults with SMI. Seven databases including PubMed, Ovid Medline, Ovid Embase, Ovid PsycInfo, CINAHL (Current Index to Nursing and Allied Health Literature), the Cochrane Library and Scopus will be searched for peer-reviewed empirical studies published from 1998 to December 2016. Systematic reviews, and studies using quantitative, qualitative and mixed methodologies will be included. Secondary searches will be conducted in reference lists of all selected full text articles; and citation-tracking will be performed on articles related to those included in the review. Hand searches will also be performed in the tables of contents of three recovery-focused journals for the most recent 5 years. International experts in the field will be contacted for comments and advice. Data extraction will include identification and methodological synthesis of each study; definition of recovery; information on recovery implementation; facilitators and barriers; and study outcomes. A quality assessment will be conducted on each study. The data will be synthesized and a stepwise thematic analysis performed.

Ethics and dissemination:

Ethics approval is not required for this knowledge synthesis. Findings will be disseminated through multiple knowledge translation activities including: a) a one-day symposium; b) presentations in national and international conferences, and to local stakeholders; c) publications in peer-reviewed open access journals, d) posts on the organizational websites of participating knowledge users.

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Strengths and limitations of this study

- Studies included in this knowledge synthesis will have been conducted in inpatient, outpatient and community-based mental health settings, and will cover a broad range of research methodologies. The synthesis will reveal how recovery is understood; challenges involved in implementation; and, overall, to what extent transformation to recovery oriented services and systems is occurring.
- The selection of recovery-oriented studies with an implementation focus is unique, and will allow us to draw on one powerful conceptual models from implementation science that provide theory-informed elements to guide data analysis and synthesis as well as the reporting of results.
- Knowledge from the synthesis will be compiled into comprehensive and usable formats for organizational and government stakeholders, providing practical guidelines for recovery-based service reform and future evaluation.
- Limiting the search to published, peer-reviewed studies, while important for considerations of quality and methodological rigor, may overlook possible research on recovery-oriented services reported elsewhere.

INTRODUCTION

Rationale

Recovery is the focus of national mental health plans in G-8 countries[1-3]including Canada's first mental health strategy, *Changing Directions, Changing Lives*[4], and several provincial strategies[5-8]. The rationale for transformation to recovery-oriented services in mental health is compelling. While traditional mental health services have underlined professional control[9-13], reinforcing patient dependency, self-stigma and hopelessness[14-17], recovery approaches focus on individual empowerment, strong collaborative relationships between mental health service providers and service users, and community integration[18-24]. In promoting a life beyond services, recovery also meets a key ethical obligation to honor the personhood and citizenship of people with mental illness[25].

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Recovery knowledge and evidence have burgeoned over the past two decades. Research exists on personal recovery[26-32], recovery-oriented services[33-40], and provider competencies[41-45]. Conceptual frameworks and standardized measures have been produced[35,46-49]. Other studies have linked the recovery approach to recognized theories, such as empowerment theory[50,51], the strengths model[52], capabilities theory[53-55], positive psychology[56-58], person-centered practice[59,60] and co-production[61,62]. Practice guidelines for recovery-oriented service provision are available[63-69], as well. In terms of the empirical literature, studies on particular agencies and programs have identified potential determinants of recovery orientation in services: for example a flexible and innovative organizational culture, results-oriented leadership and larger budgets[70] were found to be associated with recovery-oriented services, as were provider socio-professional characteristics such as greater age, higher educational levels and more professional experience[71,72]. Another recent study found that increasing the recovery orientation of teamwork on mental health teams[73] was associated with provider and consumer perceptions that services were recovery-oriented.

While two recent systematic reviews have been conducted on the recovery-oriented practices of mental health service providers[74,75], no known review has been published, to date, on the implementation of the recovery approaches into mental health services. Our review synthesizes research on the nature of recovery-oriented services, implementation challenges and overall system transformation. Work on the project initiated in August 2016, and should come to completion in spring 2018.

This project is important and timely, as mental illness affects millions of people worldwide. According to recent World Health Organization statistics[76], 350 million people are

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123 impacted by depression; 60 million people by bipolar disorder, and 21 million affected by
124 schizophrenia. A recovery-oriented approach to healthcare is expected to reduce dependency
125 and reduce the cost of mental healthcare, which in Canada has risen to more than $50 billion
126 per year[4,77,78]. The project responds to a critical knowledge gap identified by knowledge users
127 across Canada, who are responsible for implementing provincial level policy as well as shifting
128 mental health organizations and services to a recovery orientation.

129 **Objectives**

130 The overall goal of this review is to systematically search, assess, and synthesize,
131 implementation studies on mental health recovery from the international mental health
132 literature in order to inform, and facilitate, the transformation of Canadian mental health
133 systems and adult services to a recovery orientation. The following six research questions,
134 guided by the Consolidated Framework for Advancing Implementation Science (CFIR)[79] will be
135 applied to each selected study: (1) How was recovery defined in this study?; (2) How was the
136 recovery approach implemented in this study (Intervention)? (3) What elements from the
137 external environment (Outer setting), or internal environment (Inner setting), influenced
138 implementation in this study?; (4) What were the characteristics of participants in this study?
139 (Characteristics of individuals); (5) What processes were involved in effecting the
140 implementation?; and 6) What was the extent and effectiveness of implementation in this
141 study?

142

143 **METHODS**

144 **Eligibility criteria**

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The design and methodology for the present review are reported following the Preferred Reporting Items for Systematic review and Meta-Analysis Protocols (PRISMA-P) guidelines[80] (Appendix 1).

Population: The review concerns studies of services for adults (18 yrs. +) with a primary diagnosis of schizophrenia, bipolar disorder or major depression, following the DSM-V classification for mental disorders.

Intervention: Studies will be included if they describe and evaluate the implementation of any intervention based on recovery principles that aims at transforming the orientation of mental health services, or organizations to a recovery approach.

Comparators: Studies will be eligible for inclusion whether or not they include comparison groups.

Outcomes: Selected studies should report outcomes related to the transformation of a mental health service, or organization, to a recovery-orientation. Outcomes might include change in organizational culture; more integrated service networks and partnerships; increased knowledge, skills and/or attitudinal change among mental health providers; more use of evidence based recovery-oriented best practices; greater consumer/provider collaboration, consumer self-management, and evaluation.

Study design: This will be a mixed studies review (MSR)[81,82]. The MSR integrates qualitative, quantitative and mixed methods studies, providing a rich, detailed understanding of complex health interventions and programs[83]. Studies representing a full range of methodologies will be included: systematic reviews and meta-analyses, randomized control trials (RCTs) and clinical trials, observational, mixed method and qualitative studies.

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167 Time period: We would expect to find very few pertinent studies prior to 1998, when recovery
168 was first defined in an international policy document[84]. Thus, the precise time frame for the
169 review is 1998 to December 2016.

170 Setting: Research settings may include inpatient, outpatient or community-based mental health
171 services.

172 Exclusion criteria: Non-research studies (e.g. editorials, letters, conference abstracts), as well as
173 unpublished (grey) literature, dissertations, and book or book-length studies, will be excluded,
174 as well as conceptual papers and review articles. Studies on services for addiction populations
175 will also be excluded, as recovery is conceptualized differently in the addictions field. Language
176 restrictions will not apply.

177 **Information sources**

178 Our final search strategy will be developed in consultation with an experienced research
179 librarian on the project and will combine a broad, systematic search of the literature. Electronic
180 search will be conducted on the following databases: PubMed, Ovid Medline, Ovid Embase,
181 Ovid PsycInfo, CINAHL (Current Index to Nursing and Allied Health Literature), the Cochrane
182 Library and Scopus. We will supplement our results by conducting the following secondary
183 searches: (a) Reference lists of all selected full text articles will be scanned for additional
184 relevant studies; (b) Citation-tracking will be performed on included articles; (c) Hand searches
185 of tables of contents for the past 5 years will be conducted in the following key journals:
186 *Psychiatric Rehabilitation Journal*; *Psychiatric Services*; and *Community Mental Health Journal*.
187 Additional journals will be added if warranted; and (d) Known experts in the field will be

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contacted for comments and advice. We will also stay alert to serendipitous discovery that may increase results.

Pilot Search strategy

Using the Ovid Medline database, a research librarian and co-investigator on the project conducted a pilot search (Appendix 2) which generated 5164 records. For this preliminary scoping phase, the search strategy was designed to focus on 3 main components: *mental health*, *recovery* and *services*. Medical Subject Heading (MeSH) and synonyms (keywords) were combined for each of the components. Terms related to recovery were chosen to reflect the consumer-survivor understanding of recovery[48,85,86] While keywords will remain consistent throughout the searches, subject headings will be revised to reflect database specific preferences. Search strategies will be further revised as new subject headings and keywords are revealed.

STUDY RECORDS

Data management

Electronic search results will be downloaded into EndNote reference manager software, duplicates will be removed where possible, and the remaining references will be uploaded to the Distiller Systematic Review software for the screening and data extraction stages. Distiller software stores references, manages and monitors the screening and data extraction process with customized forms and automated flowcharts, and provides an audit trail for the review.

Screening and Selection process

For the first selection, two team members working independently will read titles and abstracts of each paper identified in the electronic search and assess them for relevance based

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on the inclusion and exclusion criteria. Second, the team members will read the full text of each selected article in order to confirm its inclusion in the study. Disagreements related to the inclusion of any paper will be discussed and resolved, involving a third team member if necessary. To ensure high inter-rater reliability, training exercises will be conducted prior to initiating the screening process. Team members will meet on a weekly basis to follow up on the screening process and discuss unanticipated problems.

Data items and data extraction process

In order to minimize bias, two research team members will independently extract the data. Sample elements for data extraction appear below in Table 1. The categories on the extraction grid include methodological elements based on the PICO mnemonic (PICO= population, intervention, comparison, outcome[87]). As well, elements corresponding to the 6 research questions will be extracted and organized using the CFIR[79], a multilevel five-dimension determinant framework[88] that constitutes a highly useful tool for identifying barriers and facilitators influencing implementation outcomes. Study limitations and gaps in knowledge will also be recorded[93]. The data extraction form will be pre-tested by the two reviewers and revised as needed. Distiller SR software will be used to manage the data extraction process.

Table 1: Sample elements for data extraction

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Study ID/ Methods	Recovery Definition & Intervention	Characteristics of the Setting		Characteristics of Individuals	Process	Implementation Outcomes
		Outer	Inner			
I.D. #; location Objective Study design Participants Interventions/ comparisons Data collection Data analysis/ triangulation Quality appraisal	-Recovery definition/ conceptualization -Intervention Characteristics source adaptability trialability complexity design& packaging costs	-Needs & resources -External links -Political pressures -Policy & incentives	-Structure -Dialogue -Culture -Tension for change -Values & Norms -Priorities -Incentives & rewards	-Knowledge & beliefs -Identification with organization -Other personal attributes	-Advance planning -« Buy-in ») opinion leaders implementation leaders champions -Execution -Feedback	-extent of successful implementation of intervention -Conclusions -Study limitations/ gaps/ -Contradictions/ further questions

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234 **Quality assessment**

235 Systematic reviews require that selected studies are assessed for quality[96]. We will the
236 Assessing Methodological Quality of Systematic Reviews tool (AMSTAR) protocol for the
237 assessment of systematic reviews. The AMSTAR is an 11-item questionnaire that assesses study
238 design, literature searched, and scientific quality of reviews; a rating system is included. For
239 primary research studies, quality assessment will be determined using criteria developed by
240 Kmet (2004)[97]. This tool includes a 14-item checklist for quality criteria in quantitative studies,
241 and a 10-item checklist for qualitative studies. A rating system (yes-2; partial -1; and no-0) is
242 provided, as well as a calculation for summary scores. While some controversy exists on
243 whether qualitative research should be assessed using standard quality criteria[98], we will
244 include a quality appraisal for qualitative, as well as quantitative, studies in order to better
245 assess the strengths and weaknesses of the evidence[99]. The Cochrane Collaboration tool will be
246 used for assessing the risk of bias in randomized control trials[100]. The selected studies will be

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247 independently assessed for quality by two reviewers. Discrepancies will be solved in
248 consultation with the principal investigator.

249 **DATA**

250 **Data Synthesis**

251 No single unifying framework exists for synthesizing quantitative and qualitative
252 evidence for healthcare policy-makers and managers[101]. Our experience with recovery research
253 suggests that much of the pertinent literature for review will be qualitative. Thus, our overall
254 approach will be to convert all the evidence into qualitative form. The quantitative data will be
255 transformed into qualitative form by extracting key concepts and findings within the elements
256 geared to our research questions, as described above. Analytic procedures and synthesis will
257 follow a 3-stage process: (a) organization of studies into logical categories according to their
258 design, and methodology; and coding using NVivo 11 software; (b) within-study analysis,
259 according to the study questions; (c) cross-study synthesis of the data using an adaptation of
260 the stepwise thematic analysis developed by Lucas et al[99], according to the following
261 procedures: (1) two reviewers will independently review data collated under each of the
262 research questions; (2) codes produced by each researcher will be compared, and a
263 consolidated list of themes produced for each research question; (3) themes occurring under
264 each question will be clustered around common dimensions; (4) results of the thematic analysis
265 will be presented to the research team at a consensus meeting.

266 Specific measures will be taken to enhance the trustworthiness of the data. As
267 suggested by Lucas et al, directly reported participant data (e.g. verbatim quotations, or scores
268 on attitudinal scales), and author interpretations, will be reported separately in order to retain

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the richness or "thickness" of the data. Detailed descriptions, contextual material, and the quality assessment of each paper will also help readers make judgments about the reliability and validity of the data. Summary tables will include counts of the papers contributing data on each theme[98].

DISSEMINATION

Knowledge translation will involve collaboration with our international consultants, and knowledge users, who include decision makers and managers, service providers, people with lived experience and families. Four output documents will be developed, including: 1) a critical appraisal of findings from the synthesis on recovery implementation; 2) a compendium of case studies on successful recovery implementation initiatives (sensitive to gender, race, culture); 3) a recovery implementation manual for decision makers and managers; and 4) a toolkit of recovery-enhancing approaches, i.e. strategies for individual behavior change targeted at service providers and service users. Each document will be submitted to the entire team for revision and editing.

The results of the synthesis project will be widely disseminated. Knowledge translation activities will include: (a) creation of an Advisory Committee composed of the research team, Knowledge Users and international expert advisors. Quarterly telephone meetings with the Advisory to review emerging findings and provide feedback; (b) ongoing consultation/feedback between knowledge users and the research team during preparation of the 4 project outputs; (c) posting of information and updates on the websites of the organizations of knowledge users on the project, including those for people with lived experience and families; (d) organization of a one-day end-of-project symposium for dissemination of project outputs, including workshops

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for recording feedback and recommendations; (e) dissemination of project outputs through organizational websites; and through national and international networks (free access); (f) submission of articles to peer-reviewed, open access journals; (g) presentations at national/international conferences;

CONCLUSION

The recovery approach emerged through the lived experiences of people with enduring mental health problems as they utilized the formal mental health care system. Recovery-oriented services are viewed as a more person-centered and promising approach for treating mental illness. Until now, there has been little access to knowledge concerning how mainstream mental health services are being transformed to a recovery-orientation, and with what results. Our synthesis will establish the state of knowledge and evidence on implementing recovery, and will make this knowledge available to a wide range of mental health stakeholders through dissemination activities and the publication of concrete recovery implementation tools. Results may also support the development of new recovery interventions, on which future outcome research should be considered.

Contributors:

Myra Piat (MP) is the guarantor. Myra Piat (MP), Eleni Sofouli (ES) and Judith Sabetti (JS) drafted the manuscript. Myra Piat (MP) Eleni Sofouli (ES), Judith Sabetti (JS), Catherine Briand (CB), Brigitte Vachon (BV) and Janet Curran (JC) contributed to the development of the selection criteria, and data extraction criteria. Angella Lambrou (AL) developed the preliminary search strategy. Howard Chodos (HC) Catherine Briand (CB), Brigitte Vachon (BV) and Janet Curran (JC) provided written feedback on the manuscript and Angella Lambrou (AL) Howard Chodos (HC) Catherine Briand (CB) Brigitte Vachon (BV) and Janet Curran (JC) approved the final manuscript.

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Funding:

This study was funded by the Canadian Institute of Health Research, grant number KRS 144043.

Competing interests: None

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APPENDIX 1 PRISMA-P 2015 Checklist

This checklist has been adapted for use with systematic review protocol submissions to BioMed Central journals from Table 3 in Moher D et al: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 **4**:1

An Editorial from the Editors-in-Chief of *Systematic Reviews* details why this checklist was adapted - Moher D, Stewart L & Shekelle P: Implementing PRISMA-P: recommendations for prospective authors. *Systematic Reviews* 2016 **5**:15

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	☒	☐	1
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	☐	☒	
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract	☐	☒	
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	☒	☐	5-34
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	☒	☐	278-280
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	☐	☒	
Support					
Sources	5a	Indicate sources of financial or other support for the review	☒	☐	282
Sponsor	5b	Provide name for the review funder and/or sponsor	☒	☐	282
Role of sponsor/funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	☐	☒	
INTRODUCTION					
Rationale	6	Describe the rationale for the review in the context of what is already known	☒	☐	66-103

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Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	☒	☐	104-116
METHODS					
Eligibility criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	☒	☐	119-151
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	☒	☐	153-165
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	☒	☐	166-175
STUDY RECORDS					
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	☒	☐	117-182
Selection process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	☒	☐	183-191
Data collection process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	☒	☐	192-201
Data items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	☒	☐	203
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	☒	☐	203
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	☒	☐	216-217
DATA					
Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized	☐	☒	
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data, and methods of combining data from studies, including any planned exploration of consistency (e.g., I^2, Kendall's tau)	☐	☒	

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Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)	☐	☒	
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	☒	☐	221-236
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)	☐	☒	
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)	☒	☐	205-219

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APPENDIX 2

Pilot search strategy for Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily, Ovid MEDLINE(R) and Ovid OLDMEDLINE(R) 1946 to Present

#	Searches
1	recovery oriented.ti,ab,kw.
2	exp Mental Health Services/
3	recover*.ti,ab,kw.
4	2 and 3
5	Mental Health/
6	mental disorders/ or adjustment disorders/ or exp anxiety disorders/ or exp delirium, dementia, amnestic, cognitive disorders/ or exp dissociative disorders/ or exp mood disorders/ or exp neurotic disorders/ or exp personality disorders/ or exp "schizophrenia and disorders with psychotic features"/
7	((Mental or psychiatric or psychologic*) adj2 (health or illness* or disorder* or disease* or problem* or issue or issues or well being)).ti,ab,kw.
8	((adjustment or anxiety or obsessive or complusive or panic or phobic or stress or dissociative or mood or depressive or affective or personality or psychotic or paranoid) adj2 (disorder* or disease*)).ti,ab,kw.
9	(agoraphobi* or astheni* or phobia* or delirium or dementia* or depression or schizophreni* or schizoid).ti,ab,kw.
10	5 or 6 or 7 or 8 or 9
11	exp health services/ or service*.ti,ab,kw.
12	10 and 11
13	exp "Outcome and Process Assessment (Health Care)"/
14	exp delivery of health care/
15	Resource Allocation/
16	exp "Organization and Administration"/
17	exp "Quality of Health Care"/
18	exp professional competence/
19	exp Inservice Training/
20	exp patient care management/
21	((service* or organization* or organisation* or unit or units or department* or program* or

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clinic or clinics or ward or wards or staff or workforce or setting) adj4 (leader* or innovate* or objective* or change* or transform* or structure* or opportunit* or strength* or model* or priorit* or policy or policies or procedure* or ration* or allocat* or reform* or commit* or needs or improve* or assess* or responsive* or evaluat* or plan*)).ti,ab,kw.

22 ((treatment or therapy) adj2 planning).ti,ab,kw.

23 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22

24 exp Patient-Centered Care/

25 exp Self Care/ or exp Self Concept/

26 ((self or personal) adj2 (identity or concept or assess* or manage* or disclos* or efficacy or evaluat*)).ti,ab,kw.

27 ((patient or client or consumer*) adj4 (centered or centred or focus* or engage* or involve*)).ti,ab,kw.

28 ((shared or joint) adj2 decision*).ti,ab,kw.

29 exp Interpersonal Relations/

30 "Quality of Life"/ or quality of life.mp.

31 Social Support/ or Social Adjustment/

32 (social adj2 (support or integration or inclusion or adjustment)).ti,ab,kw.

33 (connected* or hope* or optimis* or trust or identity or meaning or empower* or spiritual* or giving back or stigma* or values or goal or goals or belonging or purpose or choice or citizenship or discriminat* or inequalit* or valued or roles).ti,ab,kw.

34 (partnership* or collaborat* or interpersonal or multidisciplinary or cooperat* or co-operat* or team* or group or joint).ti,ab,kw.

35 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34

36 exp Data Collection/

37 exp Psychological Tests/

38 (measur* or test* or scale* or metric* or psychometric* oe questionnaire* or instrument* or data).ti,ab,kw.

39 36 or 37 or 38

40 23 or 39

41 12 and 40

42 41 and recover*.mp.

43 1 or 4 or 42

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BMJ Open

Protocol for a mixed studies systematic review on the implementation of the recovery approach in adult mental health services

Journal:	*BMJ Open*
Manuscript ID	bmjopen-2017-017080.R2
Article Type:	Protocol
Date Submitted by the Author:	18-Jul-2017
Complete List of Authors:	Piat, Myra; McGill University, Psychiatry; Douglas Mental Health University Institute, Sofouli, Eleni; Douglas Mental Health University Institute Sabetti, Judith; McGill University, School of Social Work Lambrou, Angella; McGill University Chodos, Howard; Mental Health Commission of Canada - Ottawa Briand, Catherine; Inst Univ Sante Mentale Montreal, Vachon, Brigitte ; Universite de Montreal Faculte de medecine Curran, Janet; Dalhousie University - Faculty of Health Professions
Primary Subject Heading:	Mental health
Secondary Subject Heading:	Evidence based practice, Health services research
Keywords:	MENTAL HEALTH, Adult psychiatry < PSYCHIATRY, Recovery, HEALTH SERVICES

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Protocol for a mixed studies systematic review on the implementation of the recovery approach in adult mental health services

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ABSTRACT

Introduction:

Recovery is integral to mental health planning in G-8 countries including Canada. A recovery-oriented approach to care aims to promote personal empowerment, illness self-management, and a life beyond services for people with serious mental illness (SMI), while reducing the financial burden associated with mental illness. Although there is a growing body of literature on recovery, no synthesis of research on the implementation of recovery into mental health services exists.

Objectives:

The objective is to conduct a mixed studies systematic review on the operationalization of recovery into mental health services for adults with SMI. It will inform the transformation of Canadian services to a recovery-orientation, but may be applicable to other countries.

Method and analysis:

Seven databases including PubMed, Ovid Medline, Ovid Embase, Ovid PsycInfo, CINAHL, the Cochrane Library and Scopus will be searched for peer-reviewed empirical studies published from 1998 to December 2016. Systematic reviews, and studies using quantitative, qualitative and mixed methodologies will be included. Secondary searches will be conducted in reference lists of all selected full text articles. Hand searches will also be performed in the tables of contents of three recovery-focused journals for the last 5 years. International experts in the field will be contacted for comments and advice. Data extraction will include identification and methodological synthesis of each study; definition of recovery; information on recovery implementation; facilitators and barriers; and study outcomes. A quality assessment will be conducted on each study. The data will be synthesized and a stepwise thematic analysis performed.

Ethics and dissemination:

Ethics approval is not required for this knowledge synthesis. Findings will be disseminated through knowledge translation activities including: a) a one-day symposium; b) presentations in national and international conferences, and to local stakeholders; c) publications in peer-reviewed journals, d) posts on the organizational websites.

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73 **Strengths and limitations of this study**

74 - Studies included in this knowledge synthesis will have been conducted in inpatient,
75 outpatient and community-based mental health settings, and will cover a broad range of
76 research methodologies. The synthesis will reveal how recovery is understood;
77 challenges involved in implementation; and, overall, to what extent transformation to
78 recovery oriented services and systems is occurring.
79 - The selection of recovery-oriented studies with an implementation focus is unique, and
80 will allow us to draw on one powerful conceptual models from implementation science
81 that provide theory-informed elements to guide data analysis and synthesis as well as
82 the reporting of results.
83 - Knowledge from the synthesis will be compiled into comprehensive and usable formats
84 for organizational and government stakeholders, providing practical guidelines for
85 recovery-based service reform and future evaluation.
86 - Limiting the search to published, peer-reviewed studies, while important for
87 considerations of quality and methodological rigor, may overlook possible research on
88 recovery-oriented services reported elsewhere.

89 **INTRODUCTION**

90 **Rationale**

91 Recovery is the focus of national mental health plans in G-8 countries[1-3]including Canada's first
92 mental health strategy, *Changing Directions, Changing Lives*[4], and several provincial strategies[5-
93 8]. The rationale for transformation to recovery-oriented services in mental health is compelling.
94 While traditional mental health services have underlined professional control[9-13], reinforcing
95 patient dependency, self-stigma and hopelessness[14-17], recovery approaches focus on individual
96 empowerment, strong collaborative relationships between mental health service providers and
97 service users, and community integration[18-24]. In promoting a life beyond services, recovery also
98 meets a key ethical obligation to honor the personhood and citizenship of people with mental
99 illness[25].

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Recovery knowledge and evidence have burgeoned over the past two decades. Research exists on personal recovery[26-32], recovery-oriented services[33-40], and provider competencies[41-45]. Conceptual frameworks and standardized measures have been produced[35,46-49]. Other studies have linked the recovery approach to recognized theories, such as empowerment theory[50,51], the strengths model[52], capabilities theory[53-55], positive psychology[56-58], person-centered practice[59,60] and co-production[61,62]. Practice guidelines for recovery-oriented service provision are available[63-69], as well. In terms of the empirical literature, studies on particular agencies and programs have identified potential determinants of recovery orientation in services: for example a flexible and innovative organizational culture, results-oriented leadership and larger budgets[70] were found to be associated with recovery-oriented services, as were provider socio-professional characteristics such as greater age, higher educational levels and more professional experience[71,72]. Another recent study found that increasing the recovery orientation of teamwork on mental health teams[73] was associated with provider and consumer perceptions that services were recovery-oriented.

While two recent systematic reviews have been conducted on the recovery-oriented practices of mental health service providers[74,75], no known review has been published, to date, on the implementation of the recovery approaches into mental health services. Our review synthesizes research on the nature of recovery-oriented services, implementation challenges and overall system transformation. Work on the project was initiated in August 2016, and should come to completion in spring 2018.

This project is important and timely, as mental illness affects millions of people worldwide. According to recent World Health Organization statistics[76], 350 million people are

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122 impacted by depression; 60 million people by bipolar disorder, and 21 million affected by
123 schizophrenia. A recovery-oriented approach to healthcare is expected to reduce dependency
124 and reduce the cost of mental healthcare, which in Canada has risen to more than $50 billion
125 per year[4,77,78]. The project responds to a critical knowledge gap identified by knowledge users
126 across Canada, who are responsible for implementing provincial level policy as well as shifting
127 mental health organizations and services to a recovery orientation.

128 **Objectives**

129 The overall goal of this review is to systematically search, assess, and synthesize,
130 implementation studies on mental health recovery from the international mental health
131 literature in order to inform, and facilitate, the transformation of Canadian mental health
132 systems and adult services to a recovery orientation. The following six research questions,
133 guided by the Consolidated Framework for Advancing Implementation Science (CFIR)[79] will be
134 applied to each selected study: (1) How was recovery defined in this study?; (2) How was the
135 recovery approach implemented in this study (Intervention)? (3) What elements from the
136 external environment (Outer setting), or internal environment (Inner setting), influenced
137 implementation in this study?; (4) What were the characteristics of participants in this study?
138 (Characteristics of individuals); (5) What processes were involved in effecting the
139 implementation?; and 6) What was the extent and effectiveness of implementation in this
140 study?

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142 **METHODS**

143 **Eligibility criteria**

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The design and methodology for the present review are reported following the Preferred Reporting Items for Systematic review and Meta-Analysis Protocols (PRISMA-P) guidelines[80] (Appendix 1).

Population: The review concerns studies of services for adults (18 yrs. +) with a primary diagnosis of schizophrenia, bipolar disorder or major depression, following the DSM-V classification for mental disorders.

Intervention: Studies will be included if they describe and evaluate the implementation of any intervention based on recovery principles that aims at transforming the orientation of mental health services, or organizations to a recovery approach.

Comparators: Studies will be eligible for inclusion whether or not they include comparison groups.

Outcomes: Selected studies should report outcomes related to the transformation of a mental health service, or organization, to a recovery-orientation. Outcomes might include change in organizational culture; more integrated service networks and partnerships; increased knowledge, skills and/or attitudinal change among mental health providers; more use of evidence based recovery-oriented best practices; greater consumer/provider collaboration, consumer self-management, and evaluation.

Study design: This will be a mixed studies review (MSR)[81,82]. The MSR integrates qualitative, quantitative and mixed methods studies, providing a rich, detailed understanding of complex health interventions and programs[83]. Studies representing a full range of methodologies will be included: systematic reviews and meta-analyses, randomized control trials (RCTs) and clinical trials, observational, mixed method and qualitative studies.

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3 166 Time period: We would expect to find very few pertinent studies prior to 1998, when recovery
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6 167 was first defined in an international policy document[84]. Thus, the precise time frame for the
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9 168 review is 1998 to December 2016.
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11 169 Setting: Research settings may include inpatient, outpatient or community-based mental health
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14 170 services.
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16 171 Exclusion criteria: Non-research studies (e.g. editorials, letters, conference abstracts), as well as
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19 172 unpublished (grey) literature, dissertations, and book or book-length studies, will be excluded,
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21 173 as well as conceptual papers and review articles. Studies on services for addiction populations
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24 174 will also be excluded, as recovery is conceptualized differently in the addictions field. Language
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26 175 restrictions will not apply.
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29 176 **Information sources**
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31 177 Our final search strategy will be developed in consultation with an experienced research
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34 178 librarian on the project and will combine a broad, systematic search of the literature. Electronic
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36 179 search will be conducted on the following databases: PubMed, Ovid Medline, Ovid Embase,
37
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39 180 Ovid PsycInfo, CINAHL (Current Index to Nursing and Allied Health Literature), the Cochrane
40
41 181 Library and Scopus. We will supplement our results by conducting the following secondary
42
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44 182 searches: (a) Reference lists of all selected full text articles will be scanned for additional
45
46 183 relevant studies; (b) Citation-tracking will be performed on included articles; (c) Hand searches
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49 184 of tables of contents for the past 5 years will be conducted in the following key journals:
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51 185 *Psychiatric Rehabilitation Journal*; *Psychiatric Services*; and *Community Mental Health Journal*.
52
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54 186 Additional journals will be added if warranted; and (d) Known experts in the field will be
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contacted for comments and advice. We will also stay alert to serendipitous discovery that may increase results.

Pilot Search strategy

Using the Ovid Medline database, a research librarian and co-investigator on the project conducted a pilot search (Appendix 2) which generated 5164 records. For this preliminary scoping phase, the search strategy was designed to focus on 3 main components: *mental health*, *recovery* and *services*. Medical Subject Heading (MeSH) and synonyms (keywords) were combined for each of the components. Terms related to recovery were chosen to reflect the consumer-survivor understanding of recovery[48,85,86] While keywords will remain consistent throughout the searches, subject headings will be revised to reflect database specific preferences. Search strategies will be further revised as new subject headings and keywords are revealed.

STUDY RECORDS

Data management

Electronic search results will be downloaded into EndNote reference manager software, duplicates will be removed where possible, and the remaining references will be uploaded to the Distiller Systematic Review software for the screening and data extraction stages. Distiller software stores references, manages and monitors the screening and data extraction process with customized forms and automated flowcharts, and provides an audit trail for the review.

Screening and Selection process

For the first selection, two team members working independently will read titles and abstracts of each paper identified in the electronic search and assess them for relevance based

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on the inclusion and exclusion criteria. Second, the team members will read the full text of each selected article in order to confirm its inclusion in the study. Disagreements related to the inclusion of any paper will be discussed and resolved, involving a third team member if necessary. To ensure high inter-rater reliability, training exercises will be conducted prior to initiating the screening process. Team members will meet on a weekly basis to follow up on the screening process and discuss unanticipated problems.

Data items and data extraction process

In order to minimize bias, two research team members will independently extract the data. Sample elements for data extraction appear below in Table 1. The categories on the extraction grid include methodological elements based on the PICO mnemonic (PICO= population, intervention, comparison, outcome[87]). As well, elements corresponding to the 6 research questions will be extracted and organized using the CFIR[79], a multilevel five-dimension determinant framework[88] that constitutes a highly useful tool for identifying barriers and facilitators influencing implementation outcomes. Study limitations and gaps in knowledge will also be recorded[89]. The data extraction form will be pre-tested by the two reviewers and revised as needed. Distiller SR software will be used to manage the data extraction process.

Table 1: Sample elements for data extraction

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Study ID/ Methods	Recovery Definition & Intervention	Characteristics of the Setting		Characteristics of Individuals	Process	Implementation Outcomes
		Outer	Inner			
I.D. #; location Objective Study design Participants Interventions/ comparisons Data collection Data analysis/ triangulation Quality appraisal	-Recovery definition/ conceptualization -Intervention Characteristics source adaptability trialability complexity design& packaging costs	-Needs & resources -External links -Political pressures -Policy & incentives	-Structure -Dialogue -Culture -Tension for change -Values & Norms -Priorities -Incentives & rewards	-Knowledge & beliefs -Identification with organization -Other personal attributes	-Advance planning -« Buy-in ») opinion leaders implementation leaders champions -Execution -Feedback	-extent of successful implementation of intervention -Conclusions -Study limitations/ gaps/ -Contradictions/ further questions

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233 **Quality assessment**

234 Systematic reviews require that selected studies are assessed for quality[90]. We will use the
235 Assessing Methodological Quality of Systematic Reviews tool (AMSTAR) protocol for the
236 assessment of systematic reviews. The AMSTAR is an 11-item questionnaire that assesses study
237 design, literature searched, and scientific quality of reviews; a rating system is included. For
238 primary research studies, quality assessment will be determined using criteria developed by
239 Kmet (2004)[91]. This tool includes a 14-item checklist for quality criteria in quantitative studies,
240 and a 10-item checklist for qualitative studies. A rating system (yes-2; partial -1; and no-0) is
241 provided, as well as a calculation for summary scores. While some controversy exists on
242 whether qualitative research should be assessed using standard quality criteria[92], we will
243 include a quality appraisal for qualitative, as well as quantitative, studies in order to better
244 assess the strengths and weaknesses of the evidence[93]. The Cochrane Collaboration tool will be
245 used for assessing the risk of bias in randomized control trials[94]. The selected studies will be

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independently assessed for quality by two reviewers. Discrepancies will be solved in consultation with the principal investigator.

DATA

Data Synthesis

No single unifying framework exists for synthesizing quantitative and qualitative evidence for healthcare policy-makers and managers[95]. Our experience with recovery research suggests that much of the pertinent literature for review will be qualitative. Thus, our overall approach will be to convert all the evidence into qualitative form. The quantitative data will be transformed into qualitative form by extracting key concepts and findings within the elements geared to our research questions, as described above. Analytic procedures and synthesis will follow a 3-stage process: (a) organization of studies into logical categories according to their design, and methodology; and coding using NVivo 11 software; (b) within-study analysis, according to the study questions; (c) cross-study synthesis of the data using an adaptation of the stepwise thematic analysis developed by Lucas et al[93], according to the following procedures: (1) two reviewers will independently review data collated under each of the research questions; (2) codes produced by each researcher will be compared, and a consolidated list of themes produced for each research question; (3) themes occurring under each question will be clustered around common dimensions; (4) results of the thematic analysis will be presented to the research team at a consensus meeting.

Specific measures will be taken to enhance the trustworthiness of the data. As suggested by Lucas et al, directly reported participant data (e.g. verbatim quotations, or scores on attitudinal scales), and author interpretations, will be reported separately in order to retain

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the richness or "thickness" of the data. Detailed descriptions, contextual material, and the quality assessment of each paper will also help readers make judgments about the reliability and validity of the data. Summary tables will include counts of the papers contributing data on each theme[92].

DISSEMINATION

Knowledge translation will involve collaboration with our international consultants, and knowledge users, who include decision makers and managers, service providers, people with lived experience and families. Four output documents will be developed, including: 1) a critical appraisal of findings from the synthesis on recovery implementation; 2) a compendium of case studies on successful recovery implementation initiatives (sensitive to gender, race, culture); 3) a recovery implementation manual for decision makers and managers; and 4) a toolkit of recovery-enhancing approaches, i.e. strategies for individual behavior change targeted at service providers and service users. Each document will be submitted to the entire team for revision and editing.

The results of the synthesis project will be widely disseminated. Knowledge translation activities will include: (a) creation of an Advisory Committee composed of the research team, Knowledge Users and international expert advisors. Quarterly telephone meetings with the Advisory to review emerging findings and provide feedback; (b) ongoing consultation/feedback between knowledge users and the research team during preparation of the 4 project outputs; (c) posting of information and updates on the websites of the organizations of knowledge users on the project, including those for people with lived experience and families; (d) organization of a one-day end-of-project symposium for dissemination of project outputs, including workshops

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for recording feedback and recommendations; (e) dissemination of project outputs through organizational websites; and through national and international networks (free access); (f) submission of articles to peer-reviewed, open access journals; (g) presentations at national/international conferences;

CONCLUSION

The recovery approach emerged through the lived experiences of people with enduring mental health problems as they utilized the formal mental health care system. Recovery-oriented services are viewed as a more person-centered and promising approach for treating mental illness. Until now, there has been little access to knowledge concerning how mainstream mental health services are being transformed to a recovery-orientation, and with what results. Our synthesis will establish the state of knowledge and evidence on implementing recovery, and will make this knowledge available to a wide range of mental health stakeholders through dissemination activities and the publication of concrete recovery implementation tools. Results may also support the development of new recovery interventions, on which future outcome research should be considered.

Contributors:

Myra Piat (MP) is the guarantor. Myra Piat (MP), Eleni Sofouli (ES) and Judith Sabetti (JS) drafted the manuscript. Myra Piat (MP) Eleni Sofouli (ES), Judith Sabetti (JS), Catherine Briand (CB), Brigitte Vachon (BV) and Janet Curran (JC) contributed to the development of the selection criteria, and data extraction criteria. Angella Lambrou (AL) developed the preliminary search strategy. Howard Chodos (HC) Catherine Briand (CB), Brigitte Vachon (BV) and Janet Curran (JC) provided written feedback on the manuscript and Angella Lambrou (AL) Howard Chodos (HC) Catherine Briand (CB) Brigitte Vachon (BV) and Janet Curran (JC) approved the final manuscript.

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Funding:

This study was funded by the Canadian Institute of Health Research, grant number KRS 144043.

Competing interests: None

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APPENDIX 1 PRISMA-P 2015 Checklist

This checklist has been adapted for use with systematic review protocol submissions to BioMed Central journals from Table 3 in Moher D et al: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 **4**:1

An Editorial from the Editors-in-Chief of *Systematic Reviews* details why this checklist was adapted - Moher D, Stewart L & Shekelle P: Implementing PRISMA-P: recommendations for prospective authors. *Systematic Reviews* 2016 **5**:15

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	☒	☐	1
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	☐	☒	
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract	☐	☒	
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	☒	☐	5-34
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	☒	☐	278-280
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	☐	☒	
Support					
Sources	5a	Indicate sources of financial or other support for the review	☒	☐	282
Sponsor	5b	Provide name for the review funder and/or sponsor	☒	☐	282
Role of sponsor/funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	☐	☒	
INTRODUCTION					
Rationale	6	Describe the rationale for the review in the context of what is already known	☒	☐	66-103

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Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	☒	☐	104-116
METHODS					
Eligibility criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	☒	☐	119-151
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	☒	☐	153-165
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	☒	☐	166-175
STUDY RECORDS					
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	☒	☐	117-182
Selection process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	☒	☐	183-191
Data collection process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	☒	☐	192-201
Data items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	☒	☐	203
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	☒	☐	203
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	☒	☐	216-217
DATA					
Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized	☐	☒	
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data, and methods of combining data from studies, including any planned exploration of consistency (e.g., I^2, Kendall's tau)	☐	☒	

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Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)	☐	☒	
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	☒	☐	221-236
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)	☐	☒	
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)	☒	☐	205-219

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APPENDIX 2

Pilot search strategy for Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily, Ovid MEDLINE(R) and Ovid OLDMEDLINE(R) 1946 to Present

#	Searches
1	recovery oriented.ti,ab,kw.
2	exp Mental Health Services/
3	recover*.ti,ab,kw.
4	2 and 3
5	Mental Health/
6	mental disorders/ or adjustment disorders/ or exp anxiety disorders/ or exp delirium, dementia, amnestic, cognitive disorders/ or exp dissociative disorders/ or exp mood disorders/ or exp neurotic disorders/ or exp personality disorders/ or exp "schizophrenia and disorders with psychotic features"/
7	((Mental or psychiatric or psychologic*) adj2 (health or illness* or disorder* or disease* or problem* or issue or issues or well being)).ti,ab,kw.
8	((adjustment or anxiety or obsessive or complusive or panic or phobic or stress or dissociative or mood or depressive or affective or personality or psychotic or paranoid) adj2 (disorder* or disease*)).ti,ab,kw.
9	(agoraphobi* or astheni* or phobia* or delirium or dementia* or depression or schizophreni* or schizoid).ti,ab,kw.
10	5 or 6 or 7 or 8 or 9
11	exp health services/ or service*.ti,ab,kw.
12	10 and 11
13	exp "Outcome and Process Assessment (Health Care)"/
14	exp delivery of health care/
15	Resource Allocation/
16	exp "Organization and Administration"/
17	exp "Quality of Health Care"/
18	exp professional competence/
19	exp Inservice Training/
20	exp patient care management/
21	((service* or organization* or organisation* or unit or units or department* or program* or

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clinic or clinics or ward or wards or staff or workforce or setting) adj4 (leader* or innovate* or objective* or change* or transform* or structure* or opportunit* or strength* or model* or priorit* or policy or policies or procedure* or ration* or allocat* or reform* or commit* or needs or improve* or assess* or responsive* or evaluat* or plan*)).ti,ab,kw.

22 ((treatment or therapy) adj2 planning).ti,ab,kw.

23 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22

24 exp Patient-Centered Care/

25 exp Self Care/ or exp Self Concept/

26 ((self or personal) adj2 (identity or concept or assess* or manage* or disclos* or efficacy or evaluat*)).ti,ab,kw.

27 ((patient or client or consumer*) adj4 (centered or centred or focus* or engage* or involve*)).ti,ab,kw.

28 ((shared or joint) adj2 decision*).ti,ab,kw.

29 exp Interpersonal Relations/

30 "Quality of Life"/ or quality of life.mp.

31 Social Support/ or Social Adjustment/

32 (social adj2 (support or integration or inclusion or adjustment)).ti,ab,kw.

33 (connected* or hope* or optimis* or trust or identity or meaning or empower* or spiritual* or giving back or stigma* or values or goal or goals or belonging or purpose or choice or citizenship or discriminat* or inequalit* or valued or roles).ti,ab,kw.

34 (partnership* or collaborat* or interpersonal or multidisciplinary or cooperat* or co-operat* or team* or group or joint).ti,ab,kw.

35 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34

36 exp Data Collection/

37 exp Psychological Tests/

38 (measur* or test* or scale* or metric* or psychometric* oe questionnaire* or instrument* or data).ti,ab,kw.

39 36 or 37 or 38

40 23 or 39

41 12 and 40

42 41 and recover*.mp.

43 1 or 4 or 42

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