From Idealist to Realist—Designing and Implementing Shared Decision-Making Interventions in the Choice of Antipsychotic Prescription in People Living With Psychosis (SHAPE): A Realist Review (Part 2—Designing SDM Interventions: Optimizing Design and Local Implementation)

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Background: Shared decision-making (SDM) implementation remains limited in psychosis management, particularly within antipsychotic prescribing. When and why prescribers engage in SDM within these contexts is largely unknown. Part 2 of this 2-part realist review aimed to understand what SDM intervention strategies and local implementation contexts are responsible for successful prescriber engagement and why.
Study design: CINAHL Plus, Cochrane Library, Embase, PsycINFO, PubMed, Scopus, Sociological Abstracts, Web of Science, and Google Scholar were searched for evidence to develop realist program theories explaining relationships between meso- and micro-level contexts and impact on prescriber behaviors.
Study results: From 106 included documents, 5 program theories were developed explaining mechanisms responsible for increasing prescriber engagement with desired behaviors, alongside facilitative features within service delivery contexts and workforce development. Key mechanisms included reducing prescriber fear of sole responsibility for harm, reducing the perceived burden of SDM, increasing prescriber confidence in their ability to productively negotiate treatment consultations and their confidence to safely increase patient autonomy within decision-making. These mechanisms should be the focus of those interested in designing SDM interventions to increase prescriber engagement and those responsible for translating results of effective interventions into real-world settings to ensure facilitative contexts are maintained.
Conclusion: Intervention strategies that should be prioritized for scale-up include attempting SDM within existing therapeutic relationships, adopting a multidisciplinary team (MDT) responsibility for SDM implementation, and workforce training in skillsets required of effective SDM application. Efforts to standardize psychosis care via MDTs and systematically reduce discontinuity and fragmentation of care are required at policy-level.

Key words: realist review/shared decision making/antipsychotics/decision aid

Introduction

Shared decision-making (SDM) is a decision-making model whereby scientific knowledge, clinician expertise, and patient preferences are combined to inform treatment decisions.[1] Despite SDM being increasingly featured in the rhetoric of government policy and best practice guidance within mental health, implementation remains limited.[2,3] This is particularly so in psychosis management and

within antipsychotic prescribing, where evidence suggests clinician-led decision-making prevails.[4–8] Antipsychotic choice within psychosis management is considered largely a preference-sensitive decision, where differences between treatments primarily center around differences in side effect liability.[9] Such preference-sensitive decisions are considered the ideal target for SDM.[10,11] Many interventions have been assessed for their efficacy in increasing SDM application within antipsychotic prescribing.[5] However, results have proven variable and inconsistent. Considerable uncertainty remains regarding defining characteristics of effective interventions and the impact of context on effective implementation. Questions of how and why some interventions work (and others do not) and what features within mental health settings are required for the successful translation of research findings into real-world settings remain unaddressed.[12]

Addressing these questions requires a novel approach to evidence synthesis—one beyond traditional aggregative approaches addressing questions of whether, on average, SDM interventions are effective.[13] Instead, a methodology that can (1) provide answers about "how" and "why" interventions work and (2) account for contextual factors within implementation settings, is required. Realist reviews are a theory-driven, interpretative approach to evidence synthesis that aims to produce explanatory theories outlining how and why interventions work, for whom, in what circumstances and to what extent. Within this methodological orientation, interventions do not cause outcomes. Instead, interventions generate outcomes through individuals' responses to resources, ideas, and practices that interventions introduce, which are shaped by wider contexts.

Explanatory theories produced within realist reviews are called program theories. Within a program theory (PT), the unit of explanation is a context-mechanism-outcome configuration (CMOC), which represents an explanation of the relationship between some particular context (which interventions aim to modify), underlying causal processes (mechanisms) and outcomes. Thus, realist PT produces explanations of how outcomes are generated. In this way, realist methodology attends to the ways complex interventions—implemented within typically complex settings—may have different effects among different people, depending on the contexts in which they are introduced. Recommendations for policy, practice, and intervention design are informed by understanding captured within PT.[14–16]

This realist review aimed to address 2 questions:

1. Within antipsychotic treatment decisions during psychosis management, what are the impacts of structural and contextual factors on prescriber engagement with SDM processes? Here, structural factors refer to broader political, cultural, economic, social, and environmental conditions at local,

Table 1. Division of Realist Review Results Across Paper 1 (Part 1) and Paper 2 (Part 2). Definitions of Macro-, Meso-, and Micro-Level Factors Can Be Found Elsewhere[19,20]

Part 1—Macro-level factors: structural or contextual factors that exist at an institutional* or societal level and are beyond the influence of individual organizations or practitioners.•
- PT 1—Biomedical model informing clinician training and professional socialization
- PT 2—Legislative and regulatory frameworks prioritizing harm reduction
- PT 3—Absence of committed leadership
- PT 4—Cultural and social norms within psychosis management
- PT 5—Insufficient resourcing of mental health services

Part 2—Meso-level factors: Local organizational* influences that typically characterize or define parameters of service delivery.•
- PT 6—Established trust in patient–prescriber relationships
- PT 7—Multidisciplinary responsibility for facilitating SDM

* Institution here refers to a broader concept that encompasses established systems, norms, and practices that govern and influence the wider practice of mental health. Organization refers to a structured entity formed by individuals with a common purpose or goal.

Part 2—Micro-level factors: Attributes or characteristics of individual practitioners and their practice environments that shape prescribing behaviors.• PT 8—Workforce training in SDM skillsets
- PT 9—Patient training in SDM skillsets
- PT 10—Antipsychotic treatment decision aids

national, or international levels that influence individual prescriber behavior.[17]

2. How do interventions designed to improve SDM application within antipsychotic treatment decisions work; what intervention strategies are likely responsible for effective interventions?

Outline of Review Results

Due to volume, review results have been divided in two. This paper (part 2) addresses the second research question; part 1 addressed the first and is available elsewhere.[18] To direct readers, **Table 1** contains an overview of program theories produced addressing both research questions and divided according to whether each program theories addresses macro-, meso-, and micro-level influences.

Methods

Review methods were published a priori (PROSPERO CRD42023443783).[12] A brief overview is outlined here.

An assumption underpinning the review is that SDM implementation is clinically appropriate and ethically justifiable. A collaborative decision was made to focus on developing an in-depth understanding of when and why prescribers engage with SDM processes within psychosis management. Thus, this review does not focus directly on patient needs. This decision was primarily agreed on

the basis that a significant contributor to the SDM implementation gap is a lack of understanding regarding prescriber needs for engaging in behaviors required of effective SDM application. This was supported by scoping searches prior to review commencement.[21] Here, "prescriber" refers to medical and nonmedical prescribers, that is, nurses and pharmacists.[22] Where a specific group is being referred to, this is highlighted within program theories.[18] Review inclusion and exclusion criteria are outlined in **Table 2**. This review included 5 iterative stages following methodology outlined by Pawson et al. and followed RAMESES publication standards for reporting realist reviews findings.[25–27] A completed checklist is contained within the supplementary appendix, alongside an explanation of protocol deviations.

Work conducted within this review was informed by continuous engagement with a clinician and lived experience stakeholder group.[12] The clinician stakeholder group represented consultant psychiatrists, nonconsultant psychiatric doctors, psychiatric nurses, and psychiatric pharmacists. Clinicians also represented those working in practice and within policy development. Peer support worker representation was also included within the clinician stakeholder group. Members of this group were identified through places of work, partnership organizations, and through contacts of the research team. Stakeholder groups met online via virtual meetings 5 times over the course of the project and had further discussions via email correspondence. The role of stakeholder groups included (1) deciding on the initial focus of the review and advising on content within initial program theories (IPTs), (2) providing feedback on the credibility or completeness of emerging program theories, and (3) identification of additional data sources not previously identified.

Initial Program Theories

Initial program theories containing explanatory statements to be subsequently tested and refined were constructed via scoping searches to identify (1) common SDM intervention strategies, (2) existing theoretical perspectives underpinning the inclusion of selected intervention strategies, and (3) impact of contextual factors on prescriber engagement with SDM interventions. Initial program theories were further developed by consulting research team member's experience within current psychiatric practice and two 1.5-hour online workshops with clinician and lived experience stakeholder groups. Within workshops, facilitators and barriers to prescriber engagement with SDM practices and principles within psychosis management were discussed. Initial program theories were then subject to formal testing via literature searching.[18]

Formal Literature Searching

Formal literature searching combined terms in various combinations across 4 categories: SDM, intervention

design/implementation, antipsychotic treatment, and psychosis or psychotic illnesses. In consultation with a medical librarian, CINAHL Plus, Cochrane Library, Embase, PsycINFO, PubMed, Scopus, Sociological abstracts, and Web of Science were searched from 1990 to December 13th, 2023. A gray literature search was undertaken via Google Scholar on June 24th, 2024 following guidance by Haddaway et al.[28] Alerts were established across all databases to identify data sources published until October 2024. Screening of all articles was undertaken using Covidence (http://www.covidence.org). To adequately address research questions of how and why interventions work, the range of data sources eligible for inclusion in a realist review must diverge from agreed practice within traditional systematic reviews. Within realist reviews, data sources are selected based on their ability to provide relevant explanatory information for identifying contexts, mechanisms, and outcomes and building associated configurations. Consequently, rich data sources can include gray literature. Thus, data sources that were considered eligible for inclusion included quantitative (eg, randomized controlled trials, survey research) and qualitative research studies, but also gray literature, for example, policy and governments documents, book chapters, and editorials.[13–15]

An illustrative example of the integration of these methodologically diverse data sources is provided by the following: results of randomized controlled trials are eligible for inclusion on the basis of providing detailed information about an intervention strategy, which is seen as modifying the context within a CMOC. Results of intervention studies also provide useful information regarding the average efficacy of an intervention, that is, an outcome. However, to identify the mechanism(s) responsible for the success of a specific intervention strategy, results of semi-structured qualitative interviews, or focus group research, would likely be required. Furthermore, when attempting to explain the results of a successful implementation attempt of the intervention strategy in one clinical practice setting, but not in another, gray literature documents detailing the comparative design and delivery of mental health services in the respective settings would also be required.

Further Literature Searches Informed by Stakeholder Engagement

Following IPT development, subsequent engagement with the clinician stakeholder group identified formalized risk management practices as prominent barriers to their engagement with SDM processes, particularly positive risk-taking. Positive risk-taking is defined as risk management, which improves patient's quality of life and plans for recovery, while remaining aware of the safety needs of the person and the public.[29] Positive risk-taking conceptually overlaps with much of the theory informing SDM models and a willingness to engage in positive

Table 2. Review Inclusion and Exclusion Criteria

Population	Include:• Adult participants (aged 18-65 years) experiencing an episode of psychosis in the context of a psychotic illness where extended antipsychotic treatment is indicated. Exclude:• Participants with treatment-resistant schizophrenia (due to clozapine being the preferred treatment choice among this cohort). • Participants experiencing substance/medication-induced psychosis or psychosis in the context of an underlying medical condition where continued antipsychotic treatment is unlikely.
Intervention	Any intervention designed to increase the application of SDM between prescribers and patients within decisions impacting antipsychotic treatment. Whilst within implementation research "interventions" can broadly encompass individual-level, system-level, and organizational-level programs or government systems or organizational policies,[23] the majority of SDM research within psychosis management has focused on developing individual-level strategies, and more recently, optimizing local service delivery contexts.[21] Hence, the term "intervention" here refers to its use within these contexts.
Comparator	Not applicable.
Outcome	In the case of studies assessing the efficacy of SDM interventions, eligible studies included those where outcomes related to evidence of SDM application. Assessing effective SDM application has been assessed using a variety of different outcome measures, typically measured via assessments of patient perceived involvement in decision-making.[5] For example, use of the Shared-Decision-Making Questionnaire (SDM-Q-9), the CollaboRATE scale or the Perceived Involvement in Care Scale (PICS).[24] We also included studies where prescriber perceived involvement in SDM was the primary outcome measure.
Timing	Use of interventions to inform choice of antipsychotic treatment (including initial treatment, change of treatment, or continuation of treatment) as part of acute psychosis management, ie, when an individual is experiencing an episode of psychosis or in the initial recovery period.
Setting	Include• Inpatient and outpatient settings, including community mental health teams and primary care settings, to account for differing models of care within mental health service delivery Exclude:• Forensic settings.

risk-taking is a prerequisite for prescriber SDM engagement.[30] Following movement through Pawson's methodology in a nonlinear fashion,[25] it was identified that additional IPTs were required outlining the relationship between risk management practices and their impact on prescriber behaviors for subsequent testing. Additional searches within PubMed, Embase, PsycINFO, CINAHL, and Google Scholar were undertaken from 1990 to June 24th, 2024 to identify data sources discussing factors influencing prescriber adoption of risk-averse prescribing behaviors or positive risk-taking practices within psychosis management. Results were used to further test, refine, or refute these IPTs.[18] All search methods are contained within the supplementary appendix.

Selection Criteria

Selection of data sources for inclusion was based on relevance (whether data could contribute to the testing, advancement, and development of IPTs) and rigor (whether methods used to generate relevant data were credible and trustworthy). Richness of each individual data source was also considered, according to criteria originally outlined by Booth et al. and expanded upon by others,[31,32] whereby data sources could have "conceptual richness" or "contextual thickness." Conceptual richness describes the degree of theoretical and conceptual development that explains how an intervention is expected to work. Contextual thickness entails sufficient detail that enables the reader to establish (1) what is occurring in the intervention and in the wider context, and (2) to infer whether findings can be transferred to other people, places, situations, and environments.[31,32] Quality assurance checks were completed as outlined in the study protocol,[12] with a quality measurement assigned to each individual data source based on a global assessment of relevance, rigor, and richness using a 1-5 star rating system as outlined by Howe et al.[33] Only 4- and 5-star documents contributed to PT development.[12] Five-star documents were deemed the most conceptually rich, or contextually thick, and so, most relevant to PT development.

Data Extraction and Analysis

Relevant excerpts from data sources were extracted and mapped onto IPTs using a standardized data extra form. All data were coded using NVivo (Release 1.7.1 for Mac). Sections of text were initially coded into broad conceptual categories. Subsequently, a realist logic of analysis was applied, whereby data excerpts were coded as a CMOC where relevant, and in other cases, as dyads (C-M, M-O, C-O).[16] Tentative CMOCs were reviewed by research team members and refined iteratively before final program theories were agreed. Final program theories were also reviewed by stakeholder group members to support the assessment of simplicity and coherence of argument.[34] While rigor of individual data sources was assessed, assessment of quality was also made at the level of arguments made by assessing coherence and of the final program theories by assessing plausibility, based on available data and arguments proposed.[18,34]

Substantive (Formal) Theory

To support the development of coherent arguments,[34] the project team's theoretical knowledge base was consulted to identify a potentially relevant substantive theory within other disciplines to further refine program theories.[15] Potentially suitable substantive theories were assessed using criteria outlined by Shearn et al.[35] Given the focus on understanding prescriber behavior, the COM-B Model for Behavior Change was used a framework to further interpret and strengthen the plausibility of CMOCs and resultant program theories.[36] The COM-B model proposes that to engage in a behavior (B) at any given time, a person must feel that they are both physically and psychologically capable of doing so (C), and have the social and physical opportunity (O) to exhibit the behavior as well as the want or the need to demonstrate the behavior more than competing behaviors at that moment—motivation (M). Capability, and opportunity are shown as influencing the relationship between motivation and behavior, rather than motivation itself.[36,37]

Results

Through initial and targeted database searches, 3,927 data sources were identified for initial screening. A further 1,221 were identified through supplementary searching methods. Following title and abstract screening of 3,540 data sources, 295 full texts were assessed for eligibility. A total of 106 data sources were subsequently included for screening against IPTs and development of new program theories. Seven SDM interventions were identified as eligible for review.[38–44] Searching and screening results are summarized in **Figure 1**.

Quality assessment of individual data sources assigned 21 data sources a 5-star rating and 52 a 4-star rating. Details of study characteristics and quality assessments can be found in the supplementary appendix. While program theories are presented in **Table 3**, the supplementary appendix contains the followings:

1. Individual CMOCs that contributed to each PT.
2. List of data sources that contributed to program theories 1-5
.3. Excerpts from data sources used to build CMOCs.
4. Theory from COM-B model used to inform data interpretation and CMOC development.

Meso- and Micro-Levels Factors Influencing Prescriber Engagement With SDM Processes and Supportive Interventions (Program Theories 6-10)

In Part 1, program theories 1-5 explained the impact of specific contextual and structural factors on reducing prescriber engagement with SDM processes.[18] Here, program theories 6-10 outline features of service delivery (PT 6 + 7) and intervention strategies targeting patient-prescriber interactions within consultations (PT 8-10) that can increase prescriber engagement in behaviors required of effective SDM application. Relationships between these contexts, including the modifying influences of intervention strategies, their resultant impact on prescriber behaviors, and explanations of causal processes (mechanisms) are contained within **Figure 2**. The term clinician is used here where supporting evidence relates to mental health professionals involved in psychosis management within acute care settings.

Optimizing Local Service Delivery Contexts to Facilitate Prescriber Engagement in SDM Practices (Program Theories 6 + 7; Meso-Level Factors)

PT6—*Established Trust in Prescriber–Patient Relationships*

Psychotic illnesses are heterogeneous in their presentation; the impact of psychosis on decision-making capacity will vary in severity across people and in the same person over time.[45] To increase prescriber engagement with SDM within psychosis management, prescribers require flexibility regarding timing of increasing patient autonomy within decision-making.[41,46,47] Affording flexibility to prescribers allows them to account for the individual's unique illness presentation and, in part, addresses the tension they experience between reducing risk of harm and increasing patient autonomy.[7,48,49] Uniform attempts at implementation of SDM interventions are more likely to be met with resistance and low levels of prescriber engagement due perceived restrictions on flexibility.[46,50,51] Flexibility regarding SDM implementation also affords prescribers the time and opportunity to develop trust in patients. Within psychosis management, there is generally greater clinician concern regarding risk of harm to patients or others.[52] Prescriber trust in patients facilitates their engagement in positive risk-taking by increasing their confidence in the accuracy of their assessments of risk associated with specific decisions among individual patients and accordingly, their confidence in the appropriateness of increasing patient autonomy within decision-making.[7,29,30,53–58]

PT7—*Multidisciplinary Team Responsibility for Facilitating SDM*

Adoption of a multidisciplinary responsibility for facilitating SDM within antipsychotic prescribing was identified as one feature of efficacious SDM interventions.[39,41,59,60] The perceived time commitment required of SDM is a commonly cited barrier to increased prescriber engagement.[57] Where medical prescribers report inadequate time to discuss, or to become sufficiently knowledgeable about, comparative differences between antipsychotic treatments, particularly differences in risk profiles,[61] prescribers often resist initiating discussions
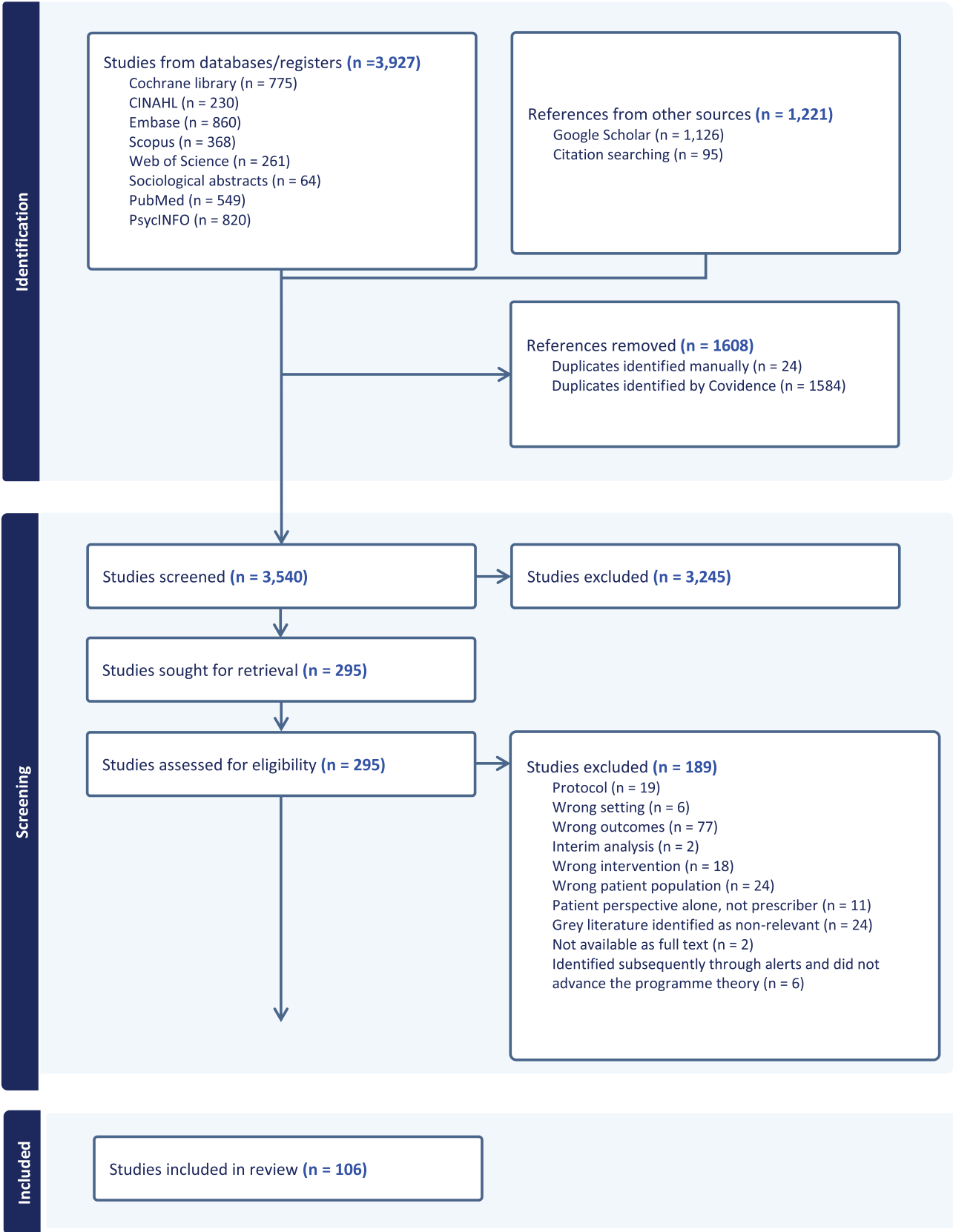
Identification

Studies from databases/registers **(n =3,927)**
 Cochrane library (n = 775)
 CINAHL (n = 230)
 Embase (n = 860)
 Scopus (n = 368)
 Web of Science (n = 261)
 Sociological abstracts (n = 64)
 PubMed (n = 549)
 PsycINFO (n = 820)

References from other sources **(n = 1,221)**
 Google Scholar (n = 1,126)
 Citation searching (n = 95)

References removed **(n = 1608)**
 Duplicates identified manually (n = 24)
 Duplicates identified by Covidence (n = 1584)

Screening

Studies screened **(n = 3,540)** → Studies excluded **(n = 3,245)**

Studies sought for retrieval **(n = 295)**

Studies assessed for eligibility **(n = 295)** → Studies excluded **(n = 189)**
 Protocol (n = 19)
 Wrong setting (n = 6)
 Wrong outcomes (n = 77)
 Interim analysis (n = 2)
 Wrong intervention (n = 18)
 Wrong patient population (n = 24)
 Patient perspective alone, not prescriber (n = 11)
 Grey literature identified as non-relevant (n = 24)
 Not available as full text (n = 2)
 Identified subsequently through alerts and did not advance the programme theory (n = 6)

Included

Studies included in review **(n = 106)**

Figure 1. PRISMA Flow Diagram of Literature Review Searching and Screening

about collaborative antipsychotic prescribing.[51,62] While clinician-led decision-making is perceived as an efficient use of limited consultation time,[63] prescribers also resist attempting SDM in these contexts due to

the lack of confidence in their ability to discharge their duty of care should patient preferences reflect antipsychotic treatments with which prescribers are less familiar.[51,53,64] In such circumstances, other, trusted MDT

Table 3. Wording of Final Program Theories 6-10

PT6—Established trust in patient–prescriber relationships
If prescribers have autonomy regarding timing of implementation (context), they are more likely to engage with SDM interventions (outcome) as they perceive their agreement to integrate these interventions into their practice does not place limits on the flexibility they require for deciding when sharing of responsibility for treatment decisions with individual patients is appropriate (mechanism). In longitudinal antipsychotic treatment decisions, eg, changing antipsychotic treatment to align with patient preferences, prescriber trust in patients (context) supports their engagement in positive risk-taking (outcome). Prescribers feel reassured about their ability to accurately predict the likely future actions of patients and their illness trajectory, and so, are more confident in the accuracy of their risk assessments (mechanism). Confidence in the accuracy of prescriber risk assessments (context) supports prescriber engagement in positive risk-taking (outcome) by providing prescribers with reassurance about the appropriateness of giving greater autonomy to patients within treatment decisions (mechanism). Prior prescriber knowledge of patient's illness history (context) can also build prescriber confidence in the appropriateness of increasing patient autonomy within treatment decisions (mechanism), facilitating their engagement in SDM (outcome).

PT7—Multidisciplinary responsibility for facilitating SDM
Adoption of a multidisciplinary responsibility for implementation of SDM during antipsychotic treatment consultations can facilitate medical prescriber engagement with SDM practices in certain circumstances. Where medical prescribers report inadequate comparative knowledge of antipsychotic medications, or insufficient time within consultations to discuss these in the detail required to adequately counsel patients (context), these prescribers resist initiating discussions about the availability of different treatment options (outcome) due to the lack of confidence in their ability to discharge their duty of care specific to prescribing of medications (mechanism), should patients request prescribing of an antipsychotic with which the prescriber is less familiar.
Other multidisciplinary team members, eg, pharmacists, whom prescribers trust are sufficiently knowledgeable, completing the informational and evaluative work of SDM prior to treatment consultations (context) can facilitate prescriber engagement with patient treatment preferences (outcome) by reducing their perceived time commitment to SDM engagement (mechanism) within consultations. These team members completing the work required to facilitate SDM within treatment consultations (context) can also support prescribing of antipsychotic medications prescribers are less familiar with, but align with patient preferences (outcome), by increasing prescriber confidence that patients have been appropriately counseled, particularly regarding risks of antipsychotic medications (mechanism).
Specific to risk-averse organizational cultures, care provision to those experiencing psychosis via effective multidisciplinary teams (context), including where decision-making is collaborative, can support prescriber engagement in positive risk-taking (outcome). For example, changing an antipsychotic to align with patient treatment preferences. A perceived team responsibility for decision-making can decrease prescriber fear of sole responsibility for adverse outcomes (mechanism) that may result from not adopting risk-averse prescribing practices. Prescriber trust in the professionalism and competence of team members who support their engagement in positive risk-taking (context) is a prerequisite for prescriber engagement (outcome). Prescriber trust in team members who recommend their engagement in positive risk-taking practices enables prescribers to feel confident in the appropriateness of the recommendation and that they are appropriately discharging their duty of care to the patient (mechanism), and to feel reassured (mechanism) that team members will enact a shared responsibility for decisions and any potential adverse outcomes (mechanism).

PT8—Workforce training in SDM skillsets
Among patients with psychosis, many prescribers resist application of SDM within antipsychotic treatment consultations (outcome) due to an incorrect conflation of shared decision-making with patient-led decision-making (context). Where this conflation exists, prescribers fear their engagement in SDM equates with the role of their clinical expertise being lost or given lesser value than patient preferences (mechanism) within what is typically perceived as a critical decision. Some prescribers also believe SDM involves providing information to patients, but that decisional processes remain clinician-led (context). These prescribers subsequently disregard the need for additional training in SDM skillsets (outcome) due to a belief that they already practice SDM (mechanism) but explaining to patients the rationale for their decided treatment decisions.
Even in the case of correct understanding of processes reflected within SDM models (context), prescribers often fear the creation of conflict (including around the need for antipsychotic medications) or worsening of patient distress should they attempt to engage in collaborative discussions about antipsychotic treatment among people with psychosis (mechanism). These prescribers revert to clinician-led decision-making to increase patient access to timely treatment (outcome). Where prescribers are provided with tailored training and supervision relevant to engaging people experiencing psychosis in SDM, ie, effective communication and negotiation skills (context) prescribers are more likely to attempt SDM with these patients (outcome) and engage with their treatment preferences (outcome). Tailored training and supervision facilitates prescribers to feel more confident in their ability to negotiate antipsychotic treatment consultations effectively (mechanism), such that treatment decisions will consider both clinical expertise and patient preferences. Continued supervision following training (context) can also facilitate improved prescriber awareness of their communication styles within consultations (mechanism), which can facilitate self-challenging of behaviors not reflective of SDM values (outcome).
Where workforce engagement with SDM models represents a significant change in practice, training existing multidisciplinary teams in the theory and skillsets required for the implementation of SDM facilitates capacity building within teams (context), including development and strengthening of skills and abilities. This can increase team members, including prescriber, adoption of SDM practices (outcome) as team members feel a shared sense of accountability in facilitating change (mechanism). This shared sense of accountability can facilitate team members challenging practices that are not reflective of SDM and problem-solving perceived barriers to their engagement in SDM practices.

Table 3. Continued

PT9—Patient training in SDM skillsets

Where patients are prepared for, and active within, consultations (being informed about antipsychotic treatment options, their illness and asking questions) in settings where prescribers have also been trained in SDM skillsets (context), prescribers are more likely to engage with patient treatment preferences (outcome) as they perceive patients to be more competent (mechanism) and committed to greater ownership in decision-making (mechanism). Greater perceived ownership among patients within consultations (context) reassures prescribers about the appropriateness of sharing responsibility for treatment decisions with them (mechanism) and increases the likelihood of prescriber engagement in SDM processes (outcome). Where patient training is provided with the goal of facilitating patient activation within consultations, but without accompanying prescriber education and training in SDM skillsets (context) required to facilitate cultural changes supportive of increased patient empowerment, prescribers are less likely to engage with patient treatment preferences (outcome) as within these circumstances, patient activation is more likely to be incorrectly perceived as confrontational (mechanism).

PT10—Antipsychotic treatment decision aids

Where prescribers report competing demands for time as a significant barrier to their engagement in SDM during antipsychotic treatment consultations, patient engagement with decision aids that prescribers deem comprehensive in informing patients about benefits and risks of different treatment options (context) may support prescriber engagement with patient treatment preferences (outcome). Patient engagement with information sources prescribers judge to be reliable could facilitate the evaluative and informational work of SDM, and so, reduce prescriber perceived time commitment to prescriber engagement in SDM within consultations (mechanism). Patient knowledge of antipsychotic treatment options through their engagement with decision aids (context) may also increase the likelihood of prescribers engaging with their treatment preferences (outcome) and challenge prescriber passive compliance with previous prescribing practices (outcome), including prescribing antipsychotics with which prescribers are most familiar. Patient knowledge of antipsychotic treatments can encourage greater conscious awareness of prescribing behaviors among prescribers during consultations (mechanism). Comprehensive decision aids may also facilitate prescriber education on antipsychotic treatment options (context) which can increase their engagement with patient treatment preferences (outcome) by increasing prescriber confidence in prescribing antipsychotics with which they are less familiar but that align with patient preferences (mechanism). Prescribers are more likely to engage with recommendations for treatment produced through patient interactions with decision aids (outcome) where the output consists of a potential range of treatment options for further collaborative discussion between patient and prescriber (context) as prescribers are reassured that patient use of decision aids, and their integration within treatment consultations, does not preclude the role of clinical expertise, including their knowledge of patients' illness history, in influencing antipsychotic treatment decisions (mechanism). Where prescribers report competing priorities for consultation time, integration of decision aids and resultant treatment recommendations into existing health delivery systems (context) will likely be required for prescriber engagement (outcome) such that their use within consultations is not a perceived additional burden for prescribers (mechanism).

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members completing the evaluative and informational work of SDM with patients can facilitate medical prescriber engagement with patient's treatment preferences by reducing prescriber time commitment to SDM and increasing their confidence that patients have been appropriately counseled.[46,59,60,65–67]

In paper 1, perceived prioritization on harm reduction within leadership and governance structures was identified as increasing prescriber adoption of clinician-led decision-making and reducing their willingness to engage in positive risk-taking.[18] Adoption of a multidisciplinary responsibility for applying SDM within antipsychotic prescribing can facilitate the development of psychological safety among medical prescribers.[29,30,51,68–70] In the case of implementing initiatives requiring positive risk-taking practices, a perceived collaborative responsibility for decision-making can decrease prescriber fear of sole responsibility for adverse outcomes and subsequent exposure to professional risk.[29,30,67,68,71] However, certain attributes of teams are required to facilitate mechanisms responsible for increasing prescriber engagement in positive risk-taking. Medical prescriber trust in the professionalism and competence of team members with the expertise to influence their prescribing practices is necessary for prescribers to feel confident in the appropriateness of their engagement in positive risk-taking for the therapeutic benefit of patients. Prescribers also need to trust that team members will enact a shared responsibility

for treatment decisions and associated sequalae.[64,67,69,70] Cultures of risk aversion among professional groups can damage prescriber trust prerequisite for their engagement in positive risk-taking.[29,55,70]

Designing SDM Interventions to Facilitate Prescriber Engagement (Program Theories 8-10; Micro-Level Factors)

Historically SDM interventions have been developed with a primary focus on providing patients with antipsychotic treatment information or skillsets to facilitate bi-directional communication within consultations.[5,38,40–44] More recent interventions have expanded skillset provision to include patients, prescribers, and nonprescribing clinicians,[39,41] incorporated use of digital technologies to ascertain patient preferences and prepare patients for consultations,[38] and varying the timing of when SDM interventions are integrated within psychosis management.[41] While potentially effective at improving patients' communicative competencies, this review identified an absence of sufficient empirical and theoretical research supporting patient "activation" within antipsychotic treatment consultations as an effective primary intervention strategy in systematically increasing prescriber engagement in SDM.[38,43,72] Interventions that address workforce training needs in skillsets required of SDM application are more likely to promote widespread
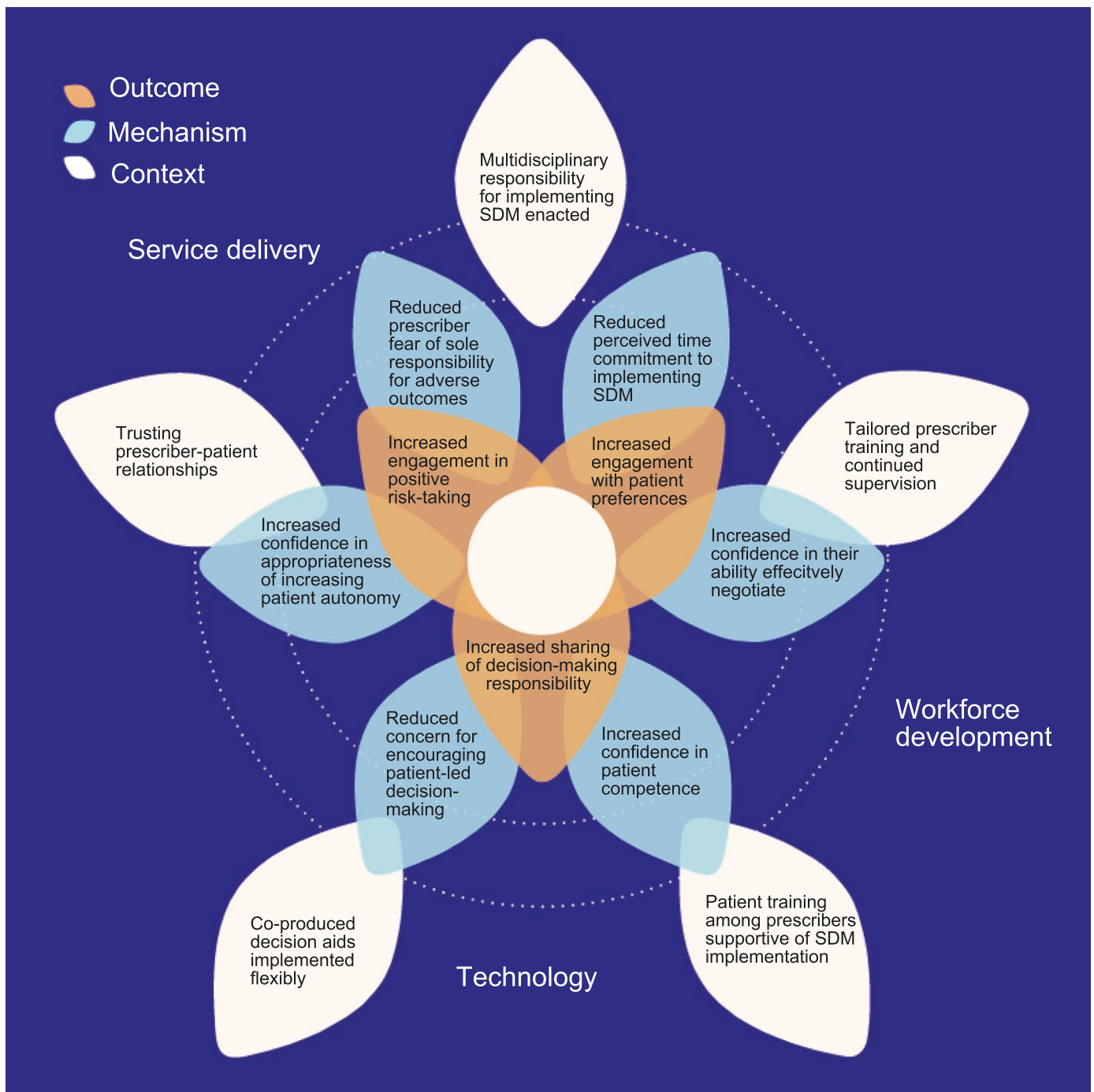
Figure 2. Program Theories 6–10 Outline Features of Service Delivery, Workforce Development and Antipsychotic Treatment Decision Aids That Function to Increase the Likelihood of Prescriber Engagement in Behaviors Required of Effective SDM Application

prescriber engagement.[39,56] Similarly, while a popular intervention strategy, this review did not identify sufficient evidence supporting the passive implementation of antipsychotic treatment decision aids into consultations as effective in facilitating systematic prescriber engagement in SDM within antipsychotic prescribing.[11,38,43,44,54] Further details are discussed further within program theories 8-10.

PT8—Workforce Training in SDM Skillsets

Decisions impacting antipsychotic treatment are perceived by most prescribers as critical decisions within psychosis management.[70] Many misconceptions exist among prescribers about the level autonomy provided to patients reflected within SDM models. It is not uncommon for prescribers to incorrectly conflate SDM with patient-led

decision-making.[46,51,54,59,73] Where this conflation exists, initiation of conversations whereby treatment options—including the potential for patient preferences to be no treatment—can be perceived by prescribers as handing over decisional power to patients whose illness reduces insight and where the consequences of a "wrong" decision could be serious.[73,74] Prescribers subsequently resist attempting SDM due to a fear their engagement within a critical treatment decision equates with the role of their clinical expertise being lost or given lesser value than that of patient preferences.[7,46,54,75] Additional misconceptions include prescribers believing their engagement in SDM involves informing patients about treatment options, but that decisional responsibility remains with prescribers. These prescribers subsequently discount the need for additional training in skillsets required of SDM application due to a belief they already sufficiently implement SDM.[50,51,76]

Even where an accurate understanding exists of assumptions inherent within SDM models, fear surrounding evoking conflict or worsening distress based on a disagreement about the need for antipsychotic medication also serve as barriers to prescribers attempting SDM within psychosis management.[57,77,78] Tailored training and continued supervision in effective communication and negotiation skills specific to psychosis management can facilitate prescriber engagement in SDM.[39,50,56,78] Development of such skillsets can increase prescriber confidence in their ability to engage in productive treatment discussions among people with psychosis, such that treatment decisions can reflect clinical expertise, whilst also considering patient preferences. Continued supervision after initial training is particularly important for the development of such confidence.[29,50,51,59,75,77,79] Formal training and ongoing supervision are also facilitative of improved prescriber awareness of their communication styles, allowing for self-correction of behaviors not reflective of SDM principles.[50,78–81]

Collective training of cohesive multidisciplinary teams (MDTs) in skillsets relevant to SDM application can be uniquely beneficial where workforce implementation of SDM represents a significant technical and cultural change.[39,41,50,51] Team training facilitates necessary capacity building, including the development and strengthening of skills and abilities among teams, and increases the perception of a shared sense of accountability in facilitating change. This can subsequently increase opportunities for interprofessional challenging of practices not reflective of SDM values and facilitate collaborative problem-solving of perceived implementation barriers.[46,51]

PT9—Patient Training in SDM Skillsets

In the absence of accompanying prescriber training in the application of skillsets required of SDM, and in the context of SDM application typically representing a

significant change in practice, patient activation within treatment consultations is more likely to be incorrectly perceived by prescribers within acute psychosis management as challenging behavior, confrontational, or as patients being "difficult."[38,42,43,50,57,72] Where prescribers are provided with complementary SDM training as in PT8, patients with demonstrable knowledge and communicative competencies within consultations are more likely to be perceived as competent and committed to greater ownership within decision-making. Greater perceived commitment to decision-making responsibility among patients can provide prescribers with reassurance regarding the appropriateness of sharing decision-making responsibility with patients.[51,56,57,59,62,82–84]

PT10—Antipsychotic Treatment Decision Aids

Passive integration of antipsychotic treatment decision aids into consultations was not identified as a facilitator of systematic prescriber engagement in SDM based on current evidence.[38,44] Instead, mechanisms responsible for decreasing prescriber engagement and triggered by factors popular within the design and implementation of current decision aids were identified. In the case of tools designed to produce recommendations for treatment rather than a list of prompt questions to inform consultations, prescribers are more likely to engage with treatment recommendations where they consist of a potential range of antipsychotic treatment options for further collaborative discussion.[54] Where decision aids are used to inform discussions rather than provide definitive treatment recommendations, prescribers are reassured that their integration into consultations is less likely to result in patient-led decision-making.[47,50,53,54,85]

For some prescribers, reassurance about the reliability of empirical research informing the output of decision aids is important to secure their engagement, particularly where patient preferences are different to that of prescribers' typical prescribing patterns. Prescribers are generally more concerned about patients being adequately informed about risks than benefits of antipsychotic treatment, driven by fear of exposure to professional risk in the absence of patients not being adequately counseled.[61,64] Thus, prescriber trust in the quality of tools intended to inform their prescribing needs to be established rather than assumed.[53,54,85] In the context of increasing competing priorities for time within consultations,[63] prescriber engagement with decision aids will be encouraged by their integration into existing healthcare delivery systems, such that prescriber engagement is not perceived to be an additional burden.[50,51,78,85]

Discussion

Within part 2 of this 2-part realist review, 5 program theories outlining key mechanisms responsible for promoting prescriber engagement with behaviors required of

SDM application and facilitative features within service delivery contexts and workforce development were outlined. Three program theories were developed explaining (1) how effective MDT working can increase prescriber engagement in positive risk-taking and reflection of patient preferences within antipsychotic treatment decisions, (2) the importance of formal prescriber training and continued supervision in SDM skillsets in increasing prescriber willingness to engage in SDM, and (3) the facilitative function of trusting prescriber–patient relationships in increasing prescriber engagement in positive risk-taking. Two program theories outlined the insufficiency of sole patient training in communication competencies and the passive integration of antipsychotic treatment decisions aids into consultations in systematically facilitating prescriber engagement in SDM within antipsychotic prescribing. Intervention design and implementation features likely required to counter mechanisms responsible for reducing prescriber engagement with these intervention strategies were outlined.

Our synthesis identified prescriber trust in patients as a key context facilitating their engagement in positive risk-taking. Particularly within psychosis management where clinicians typically feel a heavy burden of responsibility,[86] prescriber-reported trust in patients can provide prescribers with confidence in the safety of increasing patient autonomy within decision-making.[18] Studies within this review identified reduced prescriber SDM engagement among patients new to services.[59] Better doctor–patient relationships were also found to predict improved SDM application within medication decisions.[87] Consequently, efforts should be dedicated to attempting SDM in the context of existing trusting patient–prescriber relationships. However, increasingly common features of mental health service delivery internationally, including discontinuity and fragmentation of care between acute and community settings, alongside high caseloads reducing time and opportunity to develop therapeutic relationships,[88–90] can impair the development of prescriber-patient trust.[50,67] Thus, similar to the requirement for structural interventions outlined in part 1,[18] until features of service delivery contexts precluding the development of therapeutic relationships are systematically addressed, they will continue to impede widespread implementation of SDM within psychosis management.

Care provision within effective MDTs was also identified as a supportive context increasing prescriber engagement in positive risk-taking. Within increasingly common risk-averse organizational cultures,[63] a perceived collaborative responsibility for decision-making decreases prescriber fear of sole responsibility for potential adverse outcomes resulting from not adopting risk-averse prescribing practices.[18] Even within cultures supportive of positive risk-taking, effective multidisciplinary working was identified as a service delivery context that can increase reflection of patient preferences within

treatment decisions by addressing barriers of insufficient time or knowledge of antipsychotic treatments required to facilitate SDM.[7] Average consultation length not being significantly increased by SDM application is often cited as a means of encouraging prescriber engagement.[13] However, an underappreciated aspect of medical prescriber engagement in SDM is the complexity associated with evidence-based antipsychotic prescribing.[47] Both the number and diversity of available antipsychotics are increasing.[91] It requires considerable clinician time outside of consultations to become familiar with antipsychotic treatments and develop confidence in their ability to integrate patient preferences with contemporary scientific knowledge within prescribing decisions.[92]

Whilst standardizing care delivery via MDTs and including members with expertise in psychopharmacology is likely to increase patient autonomy within antipsychotic prescribing, for scale-up of this effective intervention strategy, understanding how to facilitate collaborative multidisciplinary working is needed.[93] The facilitative function of an effective MDT in improving prescriber engagement in SDM processes requires prescriber trust in team members to enact a shared responsibility for decisions and associated consequences. Scepticism among psychiatrists regarding other professional's willingness to share decision-making responsibility was identified within this review.[29,70] Conversely, difficulties team members encounter conceptually and practically when attempting to share power and influence with psychiatrists and cultures of risk aversion within non-medical professional groups were also identified.[55,70,94] Wider theoretical analysis of SDM models has been criticized for neglecting to account for the typical complex dynamics of interprofessional collaboration.[66,95,96] The importance of interprofessional trust in facilitating increased patient autonomy within decision-making also has important consequences for service delivery in the case of existing teams providing psychosis care, including the impact of member rotation and staff turnover rate.

Psychiatrists have previously reported some patient behaviors as inducing more participatory behaviors within them.[62] However, this review did not identify sufficient evidence demonstrating improving patient's communicative competencies as systematically increasing prescriber engagement in SDM within psychosis management.[5] This may be because patient "activation" does not address primary prescriber implementation barriers relating to insufficient time, tension between implementing SDM and protecting patient safety, and exposure to liability in the event of harm.[18] In comparison, our synthesis identified that wider workforce training was effective in facilitating prescriber engagement in SDM processes. Fear of creating interpersonal conflict and misconceptions about SDM depriving them of influence within prescribing decisions were identified as common reasons for prescribers resisting SDM within psychosis management. Formal

training and supervision specific to facilitating collaborative communication among people experiencing psychosis was identified as increasing prescriber confidence in their ability to productively negotiate treatment consultations. Furthermore, collective training of cohesive teams increases the perception of a shared sense of accountability in facilitating the extent of cultural and practical changes typically required of SDM implementation.[51] In contrast to a prior focus on prescriber education,[5] training and continued supervision should be expanded to MDTs.

Hopes have previously been expressed that the integration of antipsychotic treatment decision aids into consultations could outsource the work required of prescribers within consultations to facilitate SDM.[84] However, prescriber concern regarding antipsychotic treatment decision aids as being reductionist and encouraging patient-led decision-making were important conceptual barriers to prescriber engagement. Individualized antipsychotic treatment is essential to optimizing clinical outcomes in psychosis management.[10] Patient use of decision aids during acute psychosis can create fear among prescribers that they will be deprived of the required influence within antipsychotic prescribing to reflect the complexity inherent within effective psychosis management.[54] The importance of prescriber trust in information sources supporting their prescribing has also been overlooked within decision aid development. Both co-production

and purposeful incorporation within decision aid design of mechanisms providing prescribers with the ability to confirm reliability of antipsychotic treatment information are required. When developing any tool for implementation into antipsychotic prescribing consultations, prescribers require flexibility regarding timing of implementation, such that they perceive the tool as supportive, rather than a restriction on their practice.

Even empirically efficacious SDM interventions will be difficult to implement at scale within real-world settings included in this review due to misalignment with the complex social, cultural, legal, political, and professional realities common to these settings.[18,97,98] Within part 1, the relationship between contexts within (1) leadership and governance structures, (2) workforce development, and (3) service delivery functioning to reduce prescriber engagement with desired behaviors and the need for structural interventions focusing on altering contexts in which health services operate were outlined.[18] An overview of mechanisms identified in Part 1 and Part 2 as responsible for increasing or decreasing prescriber engagement with behaviors required of SDM application is outlined in **Figure 3**.[18] Such mechanisms, their resultant influence on prescriber behavior and the contexts responsible for their activation, should be the focus of those interested in implementing SDM within antipsychotic prescribing at organizational-, institutional-, and policy-level.
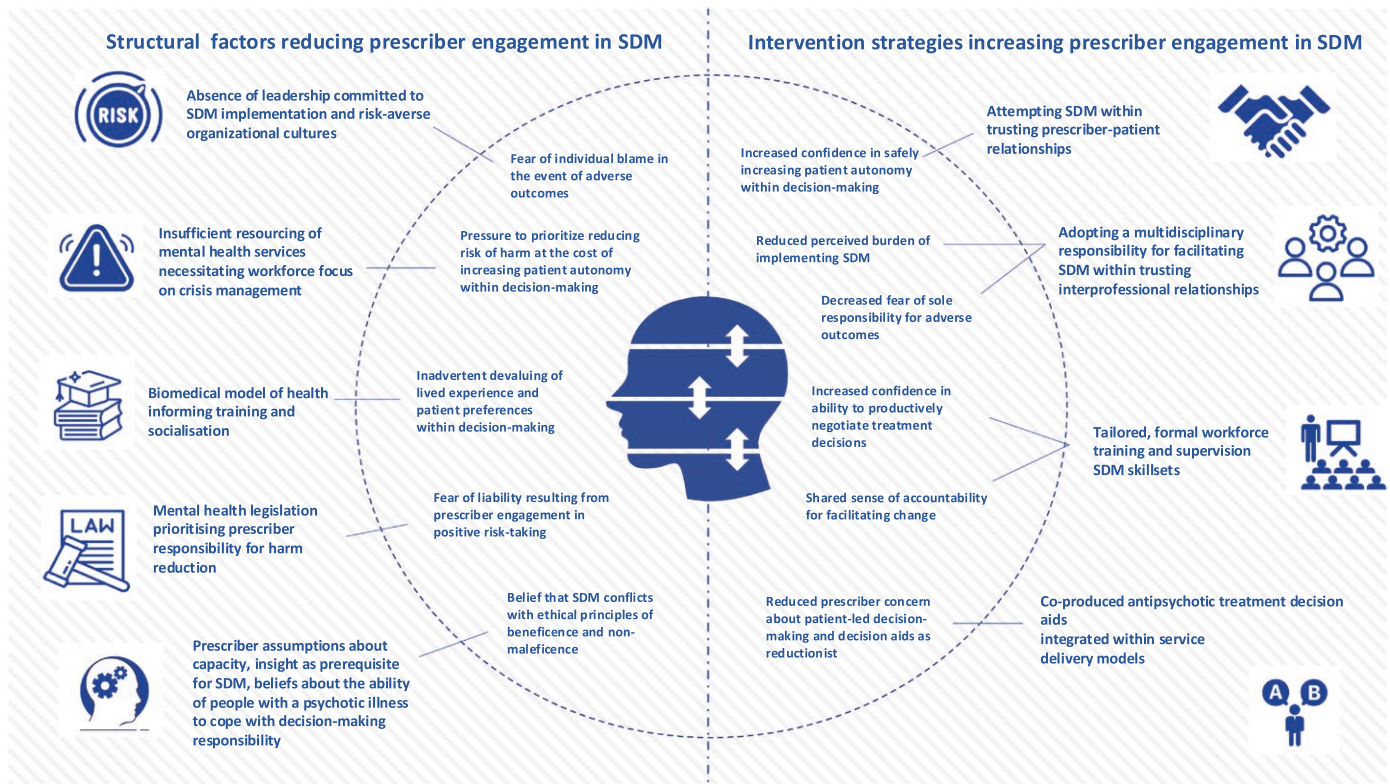

Structural factors reducing prescriber engagement in SDM

- Absence of leadership committed to SDM implementation and risk-averse organizational cultures
- Fear of individual blame in the event of adverse outcomes
- Insufficient resourcing of mental health services necessitating workforce focus on crisis management
- Pressure to prioritize reducing risk of harm at the cost of increasing patient autonomy within decision-making
- Biomedical model of health informing training and socialisation
- Inadvertent devaluing of lived experience and patient preferences within decision-making
- Mental health legislation prioritising prescriber responsibility for harm reduction
- Fear of liability resulting from prescriber engagement in positive risk-taking
- Prescriber assumptions about capacity, insight as prerequisite for SDM, beliefs about the ability of people with a psychotic illness to cope with decision-making responsibility
- Belief that SDM conflicts with ethical principles of beneficence and non-maleficence

Intervention strategies increasing prescriber engagement in SDM

- Attempting SDM within trusting prescriber-patient relationships
- Increased confidence in safely increasing patient autonomy within decision-making
- Reduced perceived burden of implementing SDM
- Adopting a multidisciplinary responsibility for facilitating SDM within trusting interprofessional relationships
- Decreased fear of sole responsibility for adverse outcomes
- Increased confidence in ability to productively negotiate treatment decisions
- Tailored, formal workforce training and supervision SDM skillsets
- Shared sense of accountability for facilitating change
- Reduced prescriber concern about patient-led decision-making and decision aids as reductionist
- Co-produced antipsychotic treatment decision aids integrated within service delivery models

Figure 3. An Overview of Mechanisms Identified in Part 1 and Part 2 as Responsible for Increasing or Decreasing Prescriber Engagement with Behaviors Required of SDM Application[18]

This review is not without limitations. Shared decision-making as a concept stems from a Western, liberal, and individualistic view of human relations.[45] Most evidence assessing SDM within SMI also originates from high-income countries.[21] Within cultures where a more paternalistic approach to care is the norm, or low- or middle-income countries, intervention strategies that increase prescriber engagement with SDM practices explained here may not be effective, and thus, review results may not be readily transferable to these settings. This review does not directly address patient needs for effective SDM engagement, including the role of caregivers, and is an obvious area for complimentary realist research. An epistemological assumption with a realist methodological orientation is that knowledge is always partial and accruing.[26] Thus, despite its comprehensiveness, this review does not claim to represent a definitive picture of structural and contextual factors decreasing prescriber engagement with SDM practices nor a definitive statement of the universal practices of clinicians. Rather, it explains factors that influence prescriber behaviors supported by available empirical and gray literature, with the intention of highlighting factors beyond the influence of individual clinicians and services requiring purposeful intervention for SDM implementation.[18]

Conclusion

Part 2 of this 2-part realist review aimed to understand what SDM intervention strategies and local implementation contexts are responsible for successful prescriber engagement during antipsychotic prescribing and why. Across 5 program theories, key mechanisms responsible for promoting prescriber engagement with desired behaviors were outlined, alongside facilitative features within service delivery contexts and workforce development. Key mechanisms included reducing prescriber fear of sole responsibility for harm, reducing the perceived burden of SDM within consultations, increasing prescriber confidence in their ability to productively negotiate antipsychotic treatment consultations, and their confidence in the safety of increasing patient autonomy within decision-making. These mechanisms should be the focus of those interested in designing novel SDM interventions to increase their likelihood of successful prescriber engagement and those responsible for translating results of empirically efficacious interventions into real-world settings to ensure evidence-based, facilitative contexts are maintained.

Current SDM intervention strategies that should be prioritized for scale-up to increase prescriber engagement include attempting SDM in the context of existing trusting prescriber–patient relationships, adopting an MDT responsibility for SDM implementation within antipsychotic prescribing and workforce training and supervision in developing skillsets required of effective SDM application within psychosis management. This review identified the insufficiency of the current design of antipsychotic treatment decision aids as systematically increasing prescriber engagement. Mechanisms increasing likely prescriber engagement with decision aids that should be the target of future design iterations include establishing prescriber trust in tools as a reliable information source, reducing prescriber concern for their encouragement of patient-led decision-making and providing reassurance that the integration of decision aids into their practice does not place limits on the flexibility prescribers require timing of increasing patient autonomy within decision-making.

Supplementary material

Supplementary material is available at https://academic.oup.com/schizophreniabulletin.

Author contributors

I.F. conceptualized the initial idea with the final concept for the study informed by all authors. J.H. and I.M. provided realist methodological support. L.S. and E.C. provided supervision to I.F. I.F., L.S., and E.C. coordinated project administration, including provided access to resources and software. I.F. conducted the literature searches. I.F., L.S., and E.C. conducted the screening and selection of final data sources. Data extraction was conducted by I.F. with methodological support from J.H.. Rigour, richness, and relevance assessments were conducted by I.F., E.C., and L.S. All authors were involved in data analysis, including interpretation and finalizing wording of CMOCs and program theories. I.F. drafted the initial paper and prepared the figures. All authors reviewed, contributed, and edited the final manuscript.

Conflicts of interest

M.H. has received honoraria for consultancy/speaking from H. Lundbeck and Otsuka. Y.Z.I. has received honoraria for consultancy/speaking from SMI Adviser and is a member of PCORI's Advisory Panel on Clinical Effectiveness and Decision Science (CEDS).

Ethics committee approval

Primary data were not collected, and therefore, ethical approval was not required for this review.

Data sharing

All data analysis documents are included in the supplementary appendix included with this study.

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