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## A Systematic Review of Shared Decision Making Interventions for Service Users with Serious Mental Illnesses: State of Science and Future Directions

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### Abstract

**Objective:** Shared decision making (SDM) is a health communication model that may be particularly appealing to service users with serious mental illnesses, who often want to be more involved in making decisions about their mental healthcare. The purpose of this systematic review was to describe and evaluate participant, intervention, methodological, and outcome characteristics of SDM intervention studies conducted within this population.

**Methods:** Systematic searches of the literature through April 2020 were conducted and supplemented by hand-searching of reference lists. Fifty-three independent studies of SDM interventions that were conducted with service users with serious mental illnesses and included a quantitative or qualitative measure of the intervention were included in the review. Data were independently extracted by at least two reviewers.

**Results:** Most studies were conducted with middle-aged, male, white individuals from western countries. Interventions fell into the following categories: decision support tools only, multi-component interventions involving decision support tools, multi-component interventions not involving decision support tools, and shared care planning/preference elicitation interventions. Most studies were randomized controlled trials of sufficient sample size. Outcomes assessed were diverse, spanning decision-making, clinical, functional, treatment engagement/adherence, and other constructs.

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**Conclusions:** This review suggests important future directions for research, including the need to evaluate the impact of SDM within special populations (e.g., young adults, racial/ethnic minorities), to expand interventions to a broader array of decisions, users, and contexts, and to establish consensus measures to assess intervention effectiveness.

### Keywords

decision support; decision aids; person-centered care

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### Introduction

Serious mental illnesses are defined as a long-term disability due to a mental condition that interferes with employment, interpersonal relationships, activities of daily living, self-care, and is characterized by repeated psychiatric hospitalizations (1). Service users with serious mental illnesses, such as psychotic or affective disorders, highly value the opportunity to be involved in decision-making about their treatment (2–5). However, this occurs less often in practice than what is desired due to systemic, treatment provider, and service user factors, including time constraints during the clinical encounter, concerns about the ability of service users to participate in decision-making, and self-stigma (6).

Shared decision making (SDM) is an effective health communication model that may enhance service users' knowledge about their conditions and treatment options, and facilitate improved treatment decision-making between service users, treatment providers, and other stakeholders through a variety of means (7, 8). For example, Decision Aids (DAs), or decision support tools, are a common type of SDM intervention that help service users and providers make informed, values-consistent treatment decisions by describing, comparing, and discussing treatment options (9). Other SDM approaches typically include decision coaching, guidance, and/or motivational and self-management strategies (10, 11). SDM interventions have been applied to a variety of health conditions and treatment-related decisions, with positive effects for reducing decisional conflict, improving knowledge of health conditions and relevant treatments, enhancing decision quality, and increasing acceptance of recommended treatment (12, 13). While less common in mental health, SDM interventions have been developed for service users who experience serious mental illnesses, targeting choices about psychotropic medication (14, 15) and other decisions [e.g., family involvement in care (16)].

A growing recognition of the promise of SDM interventions for service users with serious mental illnesses has led to opportunities to examine their characteristics and outcomes across individual studies. Hauser and colleagues (17) conducted a systematic review of controlled trials in order to examine the effect of SDM on patient-relevant, disease-specific outcomes. This review included only three studies conducted with service users with schizophrenia and produced mixed findings as to whether participation in SDM improves patient-relevant outcomes in this population. In a systematic review and meta-analysis of 11 randomized controlled trials of SDM in psychosis, Stovell and colleagues (18) found a small effect of SDM on empowerment, but no significant effects on the service user-provider relationship or decision-making ability. In a systematic and scoping review including 31 studies,

Zisman-Ilani et al. (11) demonstrated the heterogeneity of SDM tools and interventions for service users with mental health conditions, including those with serious mental illnesses, and described their associated outcomes. Zisman-Ilani (11) also developed a typology of SDM components including providing information, discussion about patient preferences and values, communication skills training, shared care planning, facilitating patient motivation, and goal setting [(11) Table 1 p. 206]. These reviews make important contributions to the literature, but are either focused on specific outcomes or include both service users with and without serious mental illnesses. A more comprehensive review of SDM interventions for people with serious mental illnesses is needed to advance work in this area by identifying trends, and possible gaps, in delivery and evaluation.

The purpose of this systematic review was to describe and evaluate studies related to SDM interventions for service users with serious mental illnesses. We aimed to address three primary questions about the evidence base for SDM in this population: (a) What are the characteristics of participants of these interventions? (b) How have interventions been implemented? (c) How might outcomes vary by intervention type? As such, our review was designed to provide an account of the state of the science, lessons for development and implementation of SDM interventions and tools, and possible areas for future discovery.

## Methods

### Search Strategy and Selection Criteria

The reviewers followed the PRISMA Statement & Checklist (19) for reporting guidance of the review process. To identify studies to include or consider for this systematic review, the reviewer team worked with a medical librarian to develop detailed search strategies for each database. The search strategy was piloted in PubMed Legacy (NLM) and was translated to Embase (Elsevier), Web of Science (Clarivate Analytics), PsycInfo (EBSCOhost), and Applied Social Sciences Index & Abstracts (Proquest) using a combination of keywords and subject headings. A grey literature search included APA PsycNet (a list of search terms is available within the online supplement). The search was limited to the English language (the primary language of the review team) and articles published since 1980, as this was around the time when the concept of SDM began to appear in the academic literature (8). The original search was completed on July 11, 2018 and was updated on April 15, 2020. The reference lists of included articles were also hand-searched for other potential studies.

The first and last authors screened the titles and abstracts of all identified articles in order to determine which full-texts should be accessed and evaluated. These authors then cross-screened 10% of the included full-text articles to ensure consistency in the selection process, dividing up the screening of the remainder of full-text articles after achieving a high level of agreement (>80%) and discussing all discrepancies to consensus. Articles were included in the review if they met all of the following criteria: (a) all participants were service users with serious mental illnesses, as defined by the Substance Abuse and Mental Health Services Administration (SAMHSA) (1); (b) interventions included “elements of discussion or communication of health information between a provider and patient or caregiver, and aimed to enhance patient participation, involvement, or self-determination in decisions about the guiding or planning of treatment” (11) (p. 192); (c) studies of decision support tools

or decision aids were included only when they were used as part of an appointment, meeting, or consultation between providers and service users or caregivers; (d) article types included all except review papers, editorials, development papers, protocol papers, or survey studies of views, perceptions, or attitudes toward SDM; (e) studies included quantitative or qualitative measures assessing the process or outcomes of interventions. Articles were excluded if participants, interventions, or article types did not meet these criteria.

### Data Extraction

Data extraction was performed independently by at least two reviewers using a data dictionary. Characteristics of each study's participants (e.g., country of origin; demographic characteristics), experimental intervention (e.g., intervention name and components; format; duration/frequency; type of interventionist; setting; intended user(s): service user, other supporter, mental health provider), methods (e.g., study design and quality), and outcomes (e.g., constructs and time points assessed) were recorded. Informed by Zisman-Ilani and colleagues' (11) typology, intervention components included decision aids/decision support tools, eliciting shared care planning, preference elicitation, facilitating patient motivation, decision coaching, decision guidance, and communication skills training. Interventions were subsequently grouped into decision support tools only; multi-component interventions involving decision support tools; multi-component interventions not involving decision support tools; and shared care planning/preference elicitation interventions. We followed Perestelo-Perez et al. (20) in categorizing decision-making outcomes into SDM antecedents, SDM process, and SDM outcomes; all other outcomes were grouped based on patterns that emerged in the data. If primary versus secondary outcomes were specified by study authors, only primary outcomes were extracted; for studies in which this information was not provided, all outcomes were extracted. Discrepancies were discussed to consensus. Data were synthesized using count and frequency statistics.

### Risk of Bias and Study Quality

Risk of bias for each study that included quantitative data was independently evaluated by two reviewers using the Cochrane Collaboration Risk-of-Bias tool (21). Study quality of each study that included qualitative data was independently rated by two reviewers using the Critical Appraisal Skills Programme (CASP) qualitative checklist tool (22). Mixed methods studies were evaluated using both tools. Discrepancies were resolved by discussion until consensus was reached.

Given that this research only evaluated pre-existing data and did not involve interaction with human subjects, it did not require ethics committee approval.

## Results

### Study Selection

As shown in the PRISMA flow diagram in the online supplement, the systematic database search resulted in 15,358 records (including 98 grey literature records). After removal of duplicate records, 11,711 eligible records were exported to Covidence ([covidence.org](https://www.covidence.org)), the recommended systematic review platform by Cochrane Reviews. Fifty-nine records

of 53 separate studies were included in this review. Method, participant, and intervention characteristics of included studies are summarized in Table 1 (23–78).

### Participant Characteristics

Participants represented many nationalities, as studies were conducted in the United States (N=25) (14–16, 24, 28–32, 34, 36, 41–43, 45, 49, 51–52, 55–56, 62, 64–65, 68–70, 73, 75, 78), the United Kingdom (N=10) (26, 33, 40, 50, 53–54, 57–58, 66–67, 71, 74), Germany (N=6) (25, 35, 37, 59–61), the Netherlands (N=4) (38–39, 46–47), Australia (N=2) (44, 63), Japan (N=2) (27, 72), Saudi Arabia (N=1) (23), Finland (N=1) (77), Israel (N=1) (48), and across multiple countries (N=1) (76). Six studies (eight records) (27, 42, 44, 62, 70, 73, 75, 77) were conducted with young adults between the ages of 18 and 30 years, while 47 studies (51 records) (14–16, 23–26, 28–41, 43, 45–61, 63–69, 71–72, 74, 76, 78) evaluated SDM interventions primarily among middle- and older-aged adults with serious mental illnesses. Half of studies included more male than female participants. Of the studies that reported information on the racial and ethnic background of participants (N=26), the majority included predominantly white participants. The average percentage of participants in other racial and ethnic categories was relatively small in these studies [black (37%), Asian (3%), Native American (1%), multi-racial (3%), Hispanic/Latinx (16%)]. Psychiatric diagnoses of participants included schizophrenia-spectrum and other primary psychotic disorders (e.g., schizophrenia, delusional disorder) in 38 studies, affective disorders (e.g., bipolar, major depression) in 36 studies, anxiety disorders (e.g., post-traumatic stress disorder) in 9 studies, personality disorders (e.g., borderline personality disorder) in 9 studies, and unspecified serious mental illness in 3 studies.

### Intervention Characteristics

Studies explored a range of SDM interventions. Five studies were of decision support tools only, which focused on psychiatric medication (15, 23, 26), treatment options for depression (24), or questions to ask during an outpatient clinical encounter (25). Twenty-three studies described multi-component interventions involving decision support tools. Of these, the most frequently evaluated intervention (N=8 studies) (14, 28, 30–32, 34, 43, 45) was CommonGround, a computerized decision support center staffed by peer specialists and intended to be used in preparation for psychiatric medication consultation meetings. Other interventions within this category also focused on decisions related to psychiatric medications (35–36, 40, 42), psychiatric rehabilitation services (48), smoking cessation (29), or selecting mental health treatment options within primary or outpatient psychiatric care settings (27, 33, 37–39, 41, 44, 46–47). Seventeen studies (21 records) (16, 49, 50–68) were of multi-component interventions not involving decision support tools. Most commonly, interventions in this category were designed to elicit service users' preferences for future mental health treatment, including joint crisis planning and facilitated psychiatric advance directives (53–58, 66–67). Finally, 10 studies (69–78) were of interventions focused exclusively on shared care planning/service user preference elicitation. These interventions did not include decision support tools or other SDM components, such as coaching or guidance. For example, two of these studies were of Open Dialogue (73, 77), an approach to engage young adults with early psychosis in shared decision making with treatment providers and other supporters.

Most interventions were delivered in a face-to-face format, with many also including either paper or electronic materials; one intervention (61) was delivered by telephone only. When reported (N=44 studies), the intended duration of interventions ranged from a single session to up to three years. Most commonly, interventions were delivered by mental health providers (e.g., psychiatrists, therapists), sometimes in concert with a peer specialist, and in some cases they were delivered by a trained research assistant or primary care provider. The majority of interventions were implemented in outpatient settings; six were delivered in inpatient settings, and five within primary care. Interventions were intended to be used by service users and mental health providers in 30 (57%) studies; service users only in 12 (23%) studies; service users, mental health providers, and other supporters in five (9%) studies; service users and other providers (e.g., pharmacists, primary care physicians) in three (6%) studies; and service users and other supporters (e.g., family members) in three (6%) studies.

### Methods Characteristics

Twenty-six studies (29 records) (49%) were randomized controlled trials, 17 studies (32%) were quasi-experimental studies, and 5 studies (9%) were naturalistic studies. Eighteen studies (20 records) (34%) were qualitative or had a qualitative component. Sample sizes ranged from 12 to 3379.

**Risk of Bias and Study Quality**—Risk of bias ratings of quantitative studies and study quality ratings of qualitative studies are presented in Tables 1–2 of the online supplement. For quantitative studies, the “allocation concealment,” “blinding of participants and personnel,” and “blinding of outcome assessment” items of the Cochrane Collaboration Risk-of-Bias tool (21) received the highest percentage of high risk ratings (53%, 88% and 53%, respectively), while the “selective reporting” item received the lowest percentage of high risk ratings (4%). “Other bias” was noted in 8% of studies for reasons including selection bias, internal validity concerns, and implementation issues. For qualitative studies, the greatest percentage of studies (50%) failed to satisfy the “Has the relationship between researcher and participants been adequately considered” item of the Critical Appraisal Skills Programme (CASP) qualitative checklist tool (22). However, it was determined that most (80%) qualitative studies provided a clear statement of the research, justified the use of qualitative methods, used an appropriate design to achieve the study aims, used an appropriate recruitment strategy, appropriately attended to ethical issues, and provided a clear statement of findings.

### Outcomes

Several studies (N=9) collected data at a single time point (e.g., after exposure to the intervention), 21 studies utilized a pre-post design or otherwise collected data at two time points, 18 studies included follow-up assessments ranging from 4 weeks to 5 years after exposure to the intervention, and the remaining 5 studies utilized a data collection procedure that was ongoing throughout the study period.

Outcome characteristics of quantitative studies that either compared differences between experimental and control groups (if multi-group) or that examined change over time (if



single-group) are summarized in Table 2. While process and outcome measures were variable across studies, we describe patterns in the findings across intervention types.

**Decision Support Tools Only**—Decision support tools were associated with positive findings related to SDM outcomes [i.e., decisional conflict (15)], and treatment engagement/adherence (23). There was mixed evidence about their impact on SDM process [i.e., treatment satisfaction (23, 25), perceived involvement in decision-making (24)], and other outcomes [i.e., beliefs about medication (23), length of clinical encounter (25) and other feasibility outcomes (24)]. Studies did not detect differences between experimental and control groups in terms of SDM antecedents [i.e., participation preferences, decision self-efficacy (25–26)], or mental health or functional outcomes [i.e., depression symptom severity, quality of life (23)].

**Multi-Component Interventions Involving Decision Support Tools**—There was limited evidence regarding the impact of multi-component interventions involving decision support tools on SDM antecedents [i.e., service users' decision-making preferences (40, 43)], with the exception of one study that found a favorable effect on decision self-efficacy within the experimental group (48). In terms of SDM process, five studies demonstrated a positive impact on service user involvement in decision-making (37, 40, 43–44, 48) while one study failed to find an effect of the intervention on patient-centered communication (28). Mixed findings also pertained to SDM outcomes [i.e., decisional conflict (38–40, 44), perceived effectiveness of the decision-making process (27), satisfaction with the decision (41), knowledge about treatment options (48)], treatment engagement/adherence (31, 35, 37, 41–42, 45, 48), mental health outcomes [i.e., symptoms (35, 37, 41, 43, 48)], and other outcomes [i.e., smoking cessation outcomes (29), psychiatrists' adherence to clinical practice guidelines (36, 42), length of clinical encounter (37), attitudes toward medication, cost effectiveness (40), side effects (42), and service user activation (43)]. Negative findings pertained to service user/provider relationships (40) and global functioning (35).

Qualitative studies reported favorable attitudes toward CommonGround among both mental health providers and service users (14, 30, 34). Another qualitative study demonstrated favorable attitudes toward and comfort engaging in SDM among service users participating in depression treatment (33).

**Multi-Component Interventions Not Involving Decision Support Tools**—Three studies found positive effects associated with multi-component interventions not involving decision support tools on functional outcomes [i.e., global functioning (52, 63), residential and employment status (49), quality of life (52)]. There was mixed evidence about their impact on SDM antecedents [i.e., decision-making competence (55), decision-making preferences (59, 68), decision self-efficacy (59)]. Mixed findings also pertained to SDM process [i.e., treatment satisfaction (52, 56, 59, 64, 68) responsibility for decision-making (59)], SDM outcomes [i.e., decisional conflict (64), decision-making skills and knowledge (68), knowledge about mental health (65)], mental health [i.e., psychiatric symptoms (16, 52, 59, 65, 68), perceived recovery and mental health (16, 63, 68), hospitalizations (53, 61, 66–67)], and other outcomes [i.e., treatment costs (52), family involvement in treatment (16), attitudes toward medication, health locus of control (59), self-management (63), stigma

beliefs (65), implementation outcomes (68)]. Three studies failed to find an effect of these interventions on treatment engagement/adherence (59, 60, 67). One study did not detect significant differences in service user/provider relationships (59).

Qualitative analysis of the content of advance directives and joint crisis plans demonstrated how service users may use these tools to disclose crisis symptoms, request respectful and compassionate treatment, and express preferences for medication, hospital, and medical care (54, 56–57). Two qualitative studies identified barriers to implementation of joint crisis planning and collaborative care from the perspective of providers and service users (50, 58).

**Shared Care Planning/Preference Elicitation Interventions**—One study found that shared care planning/preference elicitation interventions was associated with improved SDM outcomes [i.e., knowledge of care plan (78)]. There was mixed evidence about the impact of these interventions on SDM process [i.e., perceived autonomy support (70, 74) treatment satisfaction (72, 78)], mental health [i.e., psychiatric symptoms (73, 77), hospitalizations (77)] and functional outcomes [i.e., level of functioning (73), quality of life (76), employment status (77)]. One study of this intervention type found no significant differences in SDM antecedents [i.e., decision self-efficacy (73)]. Another study found no differences in other outcomes [i.e., duration of untreated psychosis (77)].

A qualitative study of service users' experiences with early intervention in psychosis services, reported that a focus on shared care planning/preference elicitation, especially regarding medication, was considered to be a facilitator to engagement and adherence (75). Another qualitative study of SDM on an inpatient psychiatric unit generally supported feasibility of implementation (71).

## Discussion

### Summary of Evidence

The current review provides a comprehensive account of the state of the science related to SDM interventions for service users with serious mental illnesses. It expands on findings from previous reviews and meta-analyses by describing participant, intervention, and methodological characteristics across studies and illuminating the range of outcomes assessed and reported.

Study samples were relatively homogenous. Based on the available data, most studies were conducted with middle-aged, male, and white individuals from western countries. Disproportionately few studies were conducted with young adults. It should be noted that many studies, especially those conducted outside of the United States, did not report race and ethnicity data, precluding the ability to draw conclusions about the potential role of these factors on outcomes of SDM interventions among service users with serious mental illnesses. This is important because problems with provider bias, literacy, and provider mistrust are particularly pronounced among individuals from racial and ethnic minority backgrounds within other service user populations, which may limit the degree to which these individuals are able to engage in SDM (79–82).



Consistent with Zisman-Ilani and colleagues' review (11), we found that a variety of SDM interventions have been tested among service users with serious mental illnesses. With the exception of CommonGround and joint crisis planning, studies rarely examined the same intervention. Many interventions focused specifically on medication-related decisions, with some exceptions targeting other decisions (e.g., goal setting, treatment planning, smoking cessation, family involvement in care). The majority of interventions were delivered in a face-to-face format by mental health providers in outpatient settings. Peer specialists facilitated the decision-making process in a subset of studies, most often by assisting individuals with using digital decision support tools and providing educational and motivational support. Intervention duration was highly variable, with decision support tools and joint crisis planning/advance directives having the shortest duration and CommonGround having the longest. Most interventions were designed to support SDM between mental health providers and service users.

Our review indicates an established and maturing literature on SDM interventions for service users with serious mental illnesses. Approximately half of quantitative studies were randomized controlled trials of sufficient sample size, and many qualitative studies fulfilled a large proportion of quality appraisal criteria. However, methodological limitations were noted. Over half of studies collected data at a single time point or used a pre-post design, limiting the ability to determine longer-term impacts of SDM interventions on outcomes. Issues with blinding, selection bias, internal validity, and implementation were also noted. Further, many studies were lacking sufficient detail about methodology, making quality appraisal more challenging. This was especially true regarding outcome reporting of quantitative studies, and data analysis procedures of qualitative studies. These findings call for the development of guidelines for reporting SDM intervention studies for this population.

Similar to Perestelo-Perez et al.'s review of measurement of SDM interventions in mental health (20), outcome constructs and measures were highly variable across studies. Commonly assessed were involvement in decision-making (most often measured subjectively according to service users' perspectives), decisional conflict, service users' satisfaction with care planning processes or treatment, psychiatric symptoms, and medication/treatment adherence. Other outcomes included quality of life, functioning, therapeutic relationships, psychiatric hospitalizations, and implementation outcomes.

It is no surprise that, given this diversity of outcomes and the range of interventions evaluated, findings across studies were mixed. Yet, an examination of patterns in findings across studies points to possible benefits associated with specific types of interventions. For example, consistent with Zisman-Ilani (11), decision support tools only demonstrated positive findings related to treatment engagement/adherence in one randomized controlled trial and SDM outcomes (i.e., decisional conflict) in another. Studies of multi-component interventions involving decision support tools consistently showed positive impacts on service user involvement in decision-making; most were quasi-experimental in nature. Also similar to Zisman-Ilani (11), multi-component interventions not involving decision support tools demonstrated positive findings across various study designs related to functional outcomes, with many studies also showing favorable effects for SDM antecedent, process, and outcome variables (e.g., decision-making competence

and preferences; treatment satisfaction; decisional conflict). Finally, preference elicitation/shared care planning interventions-only demonstrated positive findings related to SDM outcomes (i.e., knowledge) in a single randomized controlled trial; findings were mixed in other outcome domains. In accordance with Stovell (18), no intervention types clearly demonstrated benefits regarding service user/provider relationships. One possibility for these mixed findings is that only some of these interventions improved service user-provider communication, and therefore have limited impact on later health outcomes. Of course, these findings may also be attributable to methodological factors (e.g., variability in measurement tools, study design, and sample characteristics) rather than intervention effectiveness, and should be interpreted with caution. Future comparative effectiveness research and meta-analytic studies might further examine which SDM interventions work best in relation to these outcomes.

### Limitations

Several limitations to this review merit discussion. First, we did not contact study authors to determine if additional articles should be included. Further, studies of person-centered interventions that were not characterized using terms such as ‘SDM,’ ‘decision aids,’ or ‘decision support’ may not have been identified by our search. It is therefore possible that relevant articles were missed. However, the comprehensiveness of the search strategy increases confidence that key studies were identified. Second, due to the fact that many interventions were multi-component, it is not possible to isolate the effect of specific components on outcomes. Future dismantling studies may be especially useful for this purpose. Finally, while the comprehensiveness of this review allowed for inclusion of multiple study designs and may be considered a strength, drawing conclusions across controlled and non-controlled trials requires careful consideration of variability in methodological rigor. Further, because the heterogeneity of measures, settings, and sample characteristics precluded the use of meta-analysis on the full dataset (83), the purpose of this review was to provide a descriptive account of the SDM literature and not to synthesize data for analysis. Consequently, judgements about effectiveness were based solely on the detection of statistically significant differences in outcomes and do not account for effect size. We urge caution in the interpretation of the reported positive and negative findings and encourage that subsets of similar studies from this review be subjected to meta-analysis in future research.

### Conclusions

Results from this systematic review highlight important areas for future research and practice. First, while the relative homogeneity of sample characteristics across studies enhances understanding of whom the evidence base for SDM is built upon, it suggests that additional research is needed to test the effectiveness of SDM interventions among special populations. In particular, young adults with serious mental illnesses are a difficult to engage group and may especially benefit from participation in SDM (84, 85). Indeed, the majority of reviewed quantitative studies that were conducted primarily with young adults demonstrated positive findings (42, 44, 62, 70, 73), and a qualitative study concluded that SDM was considered to be an engagement facilitator by young people (75). Future

studies should focus on developing, adapting, and testing SDM tools for young adults with serious mental illness, especially to elucidate impacts on engagement and other outcomes. Additionally, the effectiveness of SDM among service users with serious mental illnesses from racial and ethnic minority backgrounds should be a priority in future research, given the combination of underrepresentation in current research and relatively higher need for these kinds of interventions.

Second, this review uncovered current trends in the delivery of SDM interventions as well as some significant gaps. Many interventions were targeted towards specific decisions, users, and contexts. Interventions that are broadly generalizable to the variety of treatment and living decisions that service users with serious mental illnesses encounter (86, 87) are a priority for future development. Given that family members of people with serious mental illnesses are an important source of support and want to be more meaningfully involved in making treatment decisions (88), additional interventions to facilitate triadic decision-making between service users, mental health providers, and other supporters are needed. Finally, recent advancements in integrated care and digital mental health technologies for people with serious mental illnesses (89–92) support the use of SDM interventions outside of traditional mental health settings, but this will likely require specialized training of both healthcare providers and service users in order to promote their implementation and usability. For instance, primary care providers, pharmacists, and other providers with relatively little mental health training may especially need instruction in communication skills needed to effectively engage individuals with cognitive challenges in decision-making (93). Some service users may need additional support to build computer and mobile phone literacy in order to readily use digital SDM interventions (94). A combination of high and low tech strategies may maximize reach.

Third, given the diversity of outcomes assessed and range of measures used across studies, an important step in more definitively determining the impact of SDM interventions among service users with serious mental illnesses is the establishment of consensus measures that can be routinely used in outcome studies (20). Based on this review, candidate measures might include (but should not be limited to) the Decisional Conflict Scale (95), Client Satisfaction Questionnaire (96), Autonomy Preference Index (97), Shared Decision Making Questionnaire – 9 (98), Observed Patient Involvement in Decision Making (OPTION) scale (99), Brief Psychiatric Rating Scale (100), and Medication Adherence Questionnaire (101). The constructs being measured by this list are diverse, which indicates that the field has yet to identify which outcomes are primary targets of SDM interventions for this population. In addition, most of these listed measures are self-report by design. While the service user perspective is perhaps the most important to assess, objective measurement (especially of service user involvement in decision-making) is needed to supplement and corroborate service user perceptions.

Finally, the SDM definition spans widely, and several studies use the terms SDM, Decision Aids, or Decision Support Tools, to describe the actual use of Clinical Decision-Making Tools (or Clinical Decision Support Tools). Although some similarity to SDM in providing information may exist, it is important to emphasize the difference; whereas SDM-related tools focus on facilitating discussion to achieve a mutual decision, Clinical Decision-Making

Tools focus on providing information to support decisions, mostly made by providers or service users alone (102, 103).

To conclude, this review reflects a global interest in SDM interventions for service users with serious mental illnesses. By identifying trends and gaps across study samples, interventions, methodology, and outcomes we hope to inspire future research that will advance science and practice in this vitally important area.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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### Highlights

- Shared decision making interventions are associated with a number of positive outcomes in the general healthcare literature, and are increasingly being studied among service users with serious mental illnesses.
- This systematic review identified current trends and gaps in the delivery and analysis of shared decision making interventions for service users with serious mental illnesses.
- Understanding what is needed to advance the science and practice of shared decision making within this population is critical for promoting person-centered mental healthcare.

Table 1.

and Intervention Characteristics of Reviewed Studies

Methods	Participants				Interventions						Intended user(s)/			
	Study design <sup>a</sup>	Total N <sup>b</sup>	Age		Sex (male)		Race/ethnicity (White)	Name <sup>c</sup>	Components	Format		Duration/Frequency	Type of Interventionist <sup>d</sup>	Setting <sup>e</sup>
			M	SD	n	%								
RCT	225	NR (range = 18-60; 73% of sample > 30 years)	NR	100	45	NR	NR	SDM	decision aid	unclear	2 sessions (15 min & 10 min)	O	O	SU
QE	29	Experimental: 34.6 Control: 34.8	Unclear	6	21	Unclear	Unclear	eDA for depression	decision aid	paper	1 session	O (internal medicine clinicians and medical assistants)	Primary care	Primary care patients
RCT	108	Experimental: 47.4 Control: 44.8	NR	39	39	NR	NR	QPS	decision support tool	paper	1 session	research assistant	O	SU
RCT	298	Experimental: 43.2 Control: 43.9	71	97	33	210	71	DMC	decision aid	paper	1 session	O (primary care clinician)	Primary care	SU & O
RCT+QUAL	60	Experimental: 45 Control: 39	77	43	72	46	77	Medication Review Tool	decision aid	electronic + paper	1 session	MHP	O	SU & MHP
<b>Interventions Involving Decision Support Tools</b>														
RCT	88	Experimental: 21.8 Control: 22.1	NR	48	55	NR	NR	7-day SDM program	decision support tool; decision coaching	face-to-face + paper	3 meetings over 7 days	MHP+O (public health nurses)	O	Students & MHP
RCT	84	Experimental: 44.26 Control: 43.85	33	45	54	28	33	CommonGround	decision support tool; decision coaching; eliciting shared care planning	face-to-face + electronic	4-5 months	B	O	SU & MHP
QE	3379	45.1	55	1521	45	1858	55	decision support and academic detailing with feedback	decision support tool; facilitating patient motivation preference elicitation	face-to-face, + paper	unclear	MHP	O	SU & MHP

Methods	Participants				Interventions								
	Study design <sup>a</sup>	Total N <sup>b</sup>	Age	Sex (male)	Race/ethnicity (White)	Name <sup>c</sup>	Components	Format	Duration/Frequency	Type of Interventionist <sup>d</sup>	Setting <sup>e</sup>	Intended user(s) <sup>f</sup>	
			M	n	%	n	%	n	%				
N+QUAL	189	NR (but 59% of sample was treated by a "general adult" team)	NR	112	59	74	39	CommonGround					SU & MHP
QUAL	27	NR	NR	NR	NR	NR	NR	CommonGround (power statements)					SU & MHP
QE	146	Experimental: 43.8 Control: 44	Experimental: 12.3 Control: 12.3	622	44	549	39	MyCHOISCommonGround					SU & MHP
N+QUAL	54	NR	NR	NR	NR	NR	NR	MyCHOISCommonGround					SU & MHP
QUAL	148	21.6	NR	4	29	11	79	PTD					SU & MHP
QUAL	12	45	NR	7	58	4	33	CommonGround					SU & MHP
RCT	107	38	11.4	56	52	NR	NR	Decision aid re: antipsychotic medications					SU & MHP



Methods	Participants		Interventions												
	Study design <sup>a</sup>	Total N <sup>b</sup>	Age		Sex (male)		Race/ethnicity (White)		Name <sup>c</sup>	Components	Format	Duration/ Frequency	Type of Interventionist <sup>d</sup>	Setting <sup>e</sup>	Intended user(s) <sup>f</sup>
			M	SD	n	%	n	%							
RCT		239	54.3	8.3	213	89	113	47	Educational program on metabolic side effects of antipsychotic medications	decision support tool; decision guidance; eliciting shared care planning	electronic	1 year, up to 3 times, but no more frequently than every 4 months	MHP	O	SU & MHP
RCT		40	Experimental: 50.4 Control: 40.8	Experimental: 16.3 Control: 13.2	NR	Experimental: 22 Control: 31	NR	NR	SDM	decision aid; communication skills training	face-to-face + paper	1 session	O (primary care physician)	Primary care	SU & O
RCT		200	38.3	10.2	68	34	NR	NR	SDM-DI	decision support tool; decision guidance; decision coaching	face-to-face + electronic	1 60-90 minute session	B	O	SU & SUPP & MHP
RCT		189	47.2	18.0	75	40	NR	NR	SDMR	decision support tool; decision guidance; decision coaching	face-to-face + electronic	NR	MHP	O	SU & MHP
QE+QUAL		47	48	NR	25	53	42	89	ShiMME training intervention	decision aid; communication skills training	face-to-face + electronic	4 2-hour sessions held biweekly	MHP	O	SU & MHP
RCT		209	72	5.5	38	19	111	55	SDM	decision aid; decision coaching; eliciting patient preference facilitating patient motivation	face-to-face + telephone + paper	3 meetings held weekly	O (nurses)	O	SU
RCT		404	23	NR	293	73	218	54	RAISENAVIGATE (COMPASS)	decision support tool; decision guidance; eliciting shared care planning; preference elicitation	electronic	2 years	MHP	O	SU & MHP

Methods	Participants			Interventions				Interventions								
	Study design <sup>a</sup>	Total N <sup>b</sup>	Age	Sex (male)	Race/ethnicity (White)	Name <sup>c</sup>	Components	Format	Duration/Frequency	Type of Interventionist <sup>d</sup>	Setting <sup>e</sup>	Intended user(s) <sup>f</sup>				
			M	n	%	n	%	n	%							
QE	167	NR	NR	95	57	NR	NR	NR	NR	CommonGround	decision support tool; decision coaching; eliciting shared care planning	face-to-face + electronic	at least 3 sessions over 18 months	B	O	SU & MHP
QE	225	18	NR	88 (some data missing)	38	NR	NR	NR	NR	CHOICE	decision support tool; decision coaching; preference elicitation	face-to-face + electronic	NR	B	O	SU & MHP
QE	112	NR (range = 18-64; 81% of sample > 29 years)	NR	397	35	855	76	NR	NR	CommonGround	decision support tool; decision coaching; eliciting shared care planning	face-to-face + electronic	180 days, 2 or more times	B	O	SU & MHP
QE + QUAL	166	NR	NR	NR	NR	NR	NR	NR	NR	TREAT	decision support tool; eliciting shared care planning	face-to-face + electronic	1 session	MHP	O	SU & MHP
RCT+QUAL	73	NR	NR	39	53	NR	NR	NR	NR	WEGWEIS	decision support tool; decision guidance; preference elicitation; eliciting shared care planning	electronic	6 weeks	MHP	O	SU & MHP
QE	106	Experimental: 34.84 Control: 38.28	Experimental: 11.76 Control: 10.53	58	57	NR	NR	NR	NR	SDM	decision aid; preference elicitation; eliciting shared care planning; facilitating patient motivation	face-to-face + electronic	several appointments	MHP	I	SU & MHP
<b>Interventions Not Involving Decision Support Tools</b>																
QE	238	38		120	50	220	92	IPR		eliciting shared care planning; facilitating patient motivation	face-to-face	at least 18 months	MHP	O	SU & MHP	

Methods	Participants			Interventions							Intended user(s) <sup>f</sup>			
	Study design <sup>a</sup>	Total N <sup>b</sup>	Age	Sex (male)		Race/ethnicity (White)		Name <sup>c</sup>	Components	Format		Duration/ Frequency	Type of Interventionist <sup>d</sup>	Setting <sup>e</sup>
			M	n	%	n	%							
QUAL	16	53.3	11.04	12	75	NR	NR	PARTNERS	preference elicitation, eliciting shared care planning, facilitating motivation	face-to-face	at least 2 sessions over 810 months	MHP	Primary care	SU & O
RCT	30	46.6	10.1	278	91	235	77	BDP	decision coaching, eliciting shared care planning	face-to-face	up to 3 years	MHP	O	SU
RCT	30	46.6	10.1	278	91	235	77	BDP	decision coaching, eliciting shared care planning	face-to-face	up to 3 years	MHP	O	SU
RCT	56	39.8	11.9	285	50	NR	NR	JCP	decision coaching, eliciting shared care planning; preference elicitation	face-to-face	NR	MHP	O	SU & SUPP & MHP
QUAL	41	35.6	11	7	17	32	78	JCP	decision coaching, eliciting shared care planning; preference elicitation	face-to-face + paper/electronic	1 session	MHP	O	SU & SUPP & MHP
RCT	22	51.5	9.1	190	84	82	36	REORDER	decision coaching, eliciting shared care planning; preference elicitation	face-to-face	6 50-minute sessions over 3-4 months	O (trained clinician)	O	SU & SUPP
RCT	469	42	10.7	NR	40	NR	39	F-PAD	decision coaching, preference elicitation	face-to-face + paper	1 2-hour session	O (research assistant)	O	SU
RCT+QUAL	125	44.8	10.1	NR	NR	NR	NR	F-PAD	decision coaching, preference elicitation	face-to-face + paper	1 2-hour session	O (research assistant)	O	SU
QUAL	221	40.4	1.44	NR	51	NR	64	JCP	decision coaching, eliciting shared	face-to-face + paper	18 months, updated	MHP	O	SU & MHP

Methods	Participants				Interventions							Intended user(s) <sup>f</sup>			
	Study design <sup>a</sup>	Total N <sup>b</sup>	Age		Sex (male)		Race/ethnicity (White)		Name <sup>c</sup>	Components	Format		Duration/ Frequency	Type of Interventionist <sup>d</sup>	Setting <sup>e</sup>
			M	SD	n	%	n	%							
QUAL	Unclear (50 or 51)		39	NR	NR	NR	NR	64	JCP	decision coaching; eliciting shared care planning; preference elicitation	face-to-face + paper	18 months, updated every 9 months	MHP	O	SU & MHP (SUP P optional)
RCT	61		40.7	11.7	23	38	NR	NR	SDM Training for Inpatients with Schizophrenia	facilitating patient motivation communication skills training	face-to-face	5 1-hour sessions	MHP	I	SU
RCT	21		Experimental: 36.4 Control: 38.2	Experimental: 12.6 Control: 12.2	119	55	NR	NR	SDM Training for Inpatients with Schizophrenia	facilitating patient motivation communication skills training	face-to-face	5 1-hour sessions	MHP	I	SU
RCT	33		Experimental: 46.35 Control: 46.60	Experimental: 10.62 Control: 11.02	NR	NR	NR	NR	TBHC	eliciting shared care planning; facilitating patient motivation	telephone	1-2 years, every 6 weeks	MHP	O	SU
QE	65		22.2	4.2	41	63	25	38	RAISE Connection Program (Antipsychotic Schedule)	decision guidance; preference elicitation	face-to-face	2 years	MHP	O	SU & MHP
N + QUAL	31		Males: 39 Females: 46	NR	13	42	NR	NR	Chronic condition self-management via the Flinders Model and the Stanford Model	eliciting shared care planning; facilitating patient motivation	face-to-face + paper	NR	B	O	SU & MHP
QE	14		"most of the participants were in the age range of 45-65"	NR	7	50	NR	NR	Brien shared Decision Making Model	decision coaching; facilitating patient motivation preference elicitation; eliciting shared care planning	face-to-face	12 weekly 50-minute sessions	B	O	SU & MHP

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Methods	Participants				Interventions						Intended user(s) <sup>f</sup>					
	Study design <sup>a</sup>	Total N <sup>b</sup>	Age		Sex (male)		Race/ethnicity (White)		Name <sup>c</sup>	Components		Format	Duration/ Frequency	Type of Interventionist <sup>d</sup>	Setting <sup>e</sup>	
			M	SD	n	%	n	%								
QE		305	39	10	20	7	0	0	DEI	decision coaching; eliciting patient preferences	face-to-face + paper	1 session	MHP	Primary care	SU	
QE		40	NR	NR	NR	NR	NR	NR	Crisis cards & JCP	decision guidance; eliciting shared care planning; preference elicitation	face-to-face + paper	NR	MHP	O	SU, MHP (SUP P optional)	
RCT+QUAL		569	39.8	11.9	285	50	353	62	JCP	decision coaching; eliciting shared care planning; preference elicitation	face-to-face + paper	18 months, updated every 9 months	MHP	O	SU & MHP (SUP P optional)	
QE		21	48	12.51	10	48	15	71	CDST	communication skills training; preference elicitation; decision coaching	face-to-face	2x/week for 4 weeks	MHP	O	SU	
<b>Preference Elicitation Interventions</b>																
N		346	35	11	213	62	171	50	FOCUS	preference elicitation	face-to-face + electronic	6 months	MHP	O	SU	
RCT		408	23	NR	293	73	218	54	RAISENAVIGATE	eliciting shared care planning	face-to-face; electronic	2 years	MHP	O	SU & MHP	
N+QUAL		14	34.7	0.50	4	29	NR	NR	OPeNS	preference elicitation; eliciting shared care planning	face-to-face	1 session	MHP	I	SU & MHP	
RCT		22	39.1	11.7	15	68	NR	NR	SDM	eliciting shared care planning	face-to-face	duration of inpatient stay (1520 minutes per session), weekly	O ("Independent supervisor")	I	SU & MHP	
QE+QUAL		14	22.67	4.99	11	79	13	93	OD	eliciting shared care planning	face-to-face	1 year	MHP	O	SU & SUPP	

Methods	Participants				Interventions							Intended user(s) <sup>f</sup>		
	Study design <sup>a</sup>	Total N <sup>b</sup>	Age	Sex (male)	Race/ethnicity (White)	Name <sup>c</sup>	Components	Format	Duration/Frequency	Type of Interventionist <sup>d</sup>	Setting <sup>e</sup>			
		M	SD	n	%	n	%							
RCT	604	Range: 18–65+; most participants were 45–64	NR	234	39	527	87	EQUIP	eliciting shared care planning	face-to-face	6 months	MHP	O	SU & MHP
QUAL	32	NR	NR	21	66	10	31	RAISE Connection Program	eliciting shared care planning	face-to-face	2 years	MHP	O	SU & MHP
RCT	507	Experimental: 42.5 Control: 41.8	Experimental: 11.3 Control: 11.6	336	66	NR	NR	DIALOG	eliciting shared care planning; preference elicitation	face-to-face + electronic	Every 2 months for 12 months	MHP	O	SU & MHP
QE+QUAL	75	27	NR	32	40	NR	NR	OD	eliciting shared care planning	face-to-face	NR	MHP	O	SU & SUPP
RCT	80	Experimental: 47 Control: 46	Experimental: 9 Control: 11	53	66	27	34	EDSS	eliciting shared care planning; preference elicitation	face-to-face + electronic	At least 3 months	MHP	O	SU & MHP

Randomized Controlled Trial; QE = Quasi-experimental; N = Naturalistic; QUAL = Qualitative

included in the study analyses

Shared Decision Making; eDA = Encounter Decision Aid; QPS = Question Prompt Sheet; DMC = Depression Medication Choice; SDM-DI = SDM-Digital Intake; CHOICE = Choices About Healthcare Options Informed by Client Decision; WEGWEIS = Web Environment for Empowerment and Individual Advice; IPR = Intensive Psychiatric Rehabilitation; PARTNERS = Personalized Recovery for Patients with Serious Mental Illness; BPD = Bipolar Disorders Program; JCP = Joint Crisis Planning; REORDER = Recovery-Oriented Decisions for Relatives' Psychiatric Advanced Directive; PID = Pluralistic psychotherapy for Depression; TBHC = Telephone-based Health Coaching; DEI = Depression Education Intervention; Open Skills Training; OpenNS = Options, Preferences, Negotiation, and Summarize intervention; OD = Open Dialogue; EDSS = Electronic Decision Support System

mental Health Provider; P = Peer; B = Both mental health provider and peer; O = Other provider (e.g., pharmacist, primary care physician)

implemented: I = Inpatient; O = Outpatient; B = Both inpatient and outpatient

User; SUPP = Personal Supporter (family, friends etc), MHP = Mental Health Provider; O = Other provider (e.g., pharmacist, primary care physician)

is from the RAISE Early Treatment Program study

is from the Collaborative Care for Bipolar Disorder study



Denotes two separate reports from the RAISE Connection Program study NR Denotes missing data

Denotes three separate reports from the CRIMSON trial

Denotes two separate reports from the F-PAD study

NR Denotes missing data

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Table 2.

Outcomes by Intervention Type

Citation	Intervention Name <sup>a</sup>	SDM Antecedents <sup>b</sup>	SDM Process <sup>c</sup>	SDM Outcomes <sup>d</sup>	Service User/ Provider Relationships <sup>e</sup>	Treatment Engagement/ Adherence <sup>f</sup>	Mental Health Outcomes <sup>g</sup>	Functional Outcomes <sup>h</sup>	Other <sup>i</sup>	Time Points
<b>Decision Support Tools Only</b>										
Aljumah 2015 (23)	SDM		+			+	-	-	+	baseline, 3 months, 6 months
Barr 2019 (24)	eDA for depression		-						+	baseline, 2 days after consultation
Hamann 2014 (25)	QPS	-	-						-	pre and post intervention
LeBlanc 2015 (15)	DMC			+						post-clinical encounter
Moncrieff 2016 (26)	Medication Review Tool									baseline, 2-4 weeks after clinical encounter
<b>Multi-Component Interventions Involving Decision Support Tools</b>										
Aoki 2019 (27)	7-day SDM program			+						baseline, 3 months, 6 months
Campbell 2014 (28)	CommonGround		-							baseline, 4-5 months
Chen 2018 (29)	decision support and academic detailing with feedback								+	baseline, 2 years
Finnerty 2018 (31)	MyCHOIS-CommonGround					+				baseline, 1 year
Hamann 2007 (35)	Decision aid re: antipsychotic medications									baseline, 6 and 18 months post-discharge
Kreyenbuhl 2017 (36)	Educational program on metabolic side effects of antipsychotic medications									baseline, 365-days post first exposure to intervention
Loh 2007 (37)	SDM		+			-			-	baseline, 6-8 weeks
Metz 2018 (38)	SDM-DI									baseline, 2 weeks, 2 months
Metz 2019 (39)	SDMR									baseline, 6 months

Citation	Intervention Name <sup>a</sup>	SDM Antecedents <sup>b</sup>	SDM Process <sup>c</sup>	SDM Outcomes <sup>d</sup>	Service User/ Provider Relationships <sup>e</sup>	Treatment Engagement/ Adherence <sup>f</sup>	Mental Health Outcomes <sup>g</sup>	Functional Outcomes <sup>h</sup>	Other <sup>i</sup>	Time Points
Ramon 2017 (40)	ShiMME training intervention		+	+	-				+/-	baseline, 12 months
Raue 2019 (41)	SDM									baseline, 1 week following in-person SDM, and 4-, 8-, and 12-week follow-up
Robinson 2018 (42)	RAISE NAVIGATE (COMPASS)					+			+	baseline, three, six, 12, 18, and 24 months
Salyers 2017 (43)	CommonGround	-	+				+		-	baseline, 12 months, 18 months
Simmons 2017 (44)	CHOICE		+	-						before and after clinical encounter
Stein 2013 (45)	CommonGround									12-months before CommonGround implementation, 180 days since CommonGround implementation
van der Krieke 2013 (47)	WEGWEIS									baseline, 3 months, 6 months
Zisman-Iliani 2018(48)	SDM	+	+	+		+	+/-			baseline, post-intervention, 6-12 months later
<b>Multi-Component Interventions Not Involving Decision Support Tools</b>										
Anthony 2014 (49)	IPR									baseline, every 6 months until 18 months or due to termination/ graduation
Bauer 2006b (52)	BDP		+				+/-	+	-	every 8-24 weeks
Barrett 2013 (53)	JCP						-			baseline, 18 months
Dixon 2014 (16)	REORDER						+		+	baseline, 6 months
Elbogen 2007a <sup>k</sup> (55)	F-PAD	+								baseline, 1 month
Elbogen 2007b <sup>k</sup> (56)	F-PAD		+							baseline, 1 year

Citation	Intervention Name <sup>a</sup>	SDM Antecedents <sup>b</sup>	SDM Process <sup>c</sup>	SDM Outcomes <sup>d</sup>	Service User/ Provider Relationships <sup>e</sup>	Treatment Engagement/ Adherence <sup>f</sup>	Mental Health Outcomes <sup>g</sup>	Functional Outcomes <sup>h</sup>	Other <sup>i</sup>	Time Points
Hamann 2011 (59)	SDM Training for Inpatients with Schizophrenia	+/-	+/-							baseline, post-intervention, 6 months
Hamann 2017 (60)	SDM Training for Inpatients with Schizophrenia									baseline, post-intervention, 6 months, 12 months
Harter 2016 (61)	TBHC						-			ongoing throughout study period
Lawn 2007 (63)	Chronic condition self-management via the Flinders Model and the Stanford Model						+	+	+	monthly to every 6 months
Paukel 2018 (64)	Brien Shared Decision Making Model		+	+						baseline, 12 weeks
Sanchez 2019 (65)	DEI			+			+		+/-	baseline, post-intervention, 1 month follow-up
Thornicroft 2013 (67)	JCP						-			baseline, 18 months
Treichler 2018 (68)	CDST	+	-	+/-			+/-		+/-	baseline, after sessions 4 and 8, 4 weeks
<b>Shared Care Planning/Preference Elicitation Interventions</b>										
Browne 2017 <sup>j</sup> (70)	RAISE NAVIGATE		+							baseline, three, six, 12, 18, and 24 months
Ishii 2017 (72)	SDM		-							at discharge
Gordon 2016 (73)	OD	-					+	+		baseline, 3, 6, and 12 months
Lovell 2018 (74)	EQUIP		-							baseline, 6 months
Priebe 2007 (76)	DIALOG		-					+		baseline, 12 months
Seikkula 2006 (77)	OD									baseline, 2 years, 5 years
Woltmann 2011 (78)	EDSS		-	+						post-clinical encounter, 2-4 days post-clinical encounter

<sup>a</sup>Name of intervention: SDM = Shared Decision Making; eDA = Encounter Decision Aid; QPS = Question Prompt Sheet; DMC = Depression Medication Choice; SDM-DI = SDM-Digital Intake; SDMR = Shared Decision Making using Routine Outcome Monitoring; RAISE = Recovery After an Initial Schizophrenia Episode; CHOICE = Choices About Healthcare Options Informed by Client Experiences and Expectations; WEGWEIS = Web Environment for Empowerment and Individual Advice; IPR = Intensive Psychiatric Rehabilitation; BPD = Bipolar Disorders Program; JCP = Joint Crisis Planning; REORDER = Recovery-Oriented Decisions for Relatives' Support; F-PAD = Facilitated Psychiatric Advanced Directive; TBHC = Telephone-based Health Coaching; DEI = Depression Education Intervention; CDST = Collaborative Decision Skills Training; OD = Open Dialogue; EDSS = Electronic Decision Support System

<sup>b</sup>SDM Antecedents: Includes measures of service users' preferences for decision-making (e.g., Control Preference Scale, Autonomy Preference Index), decision self-efficacy (e.g., Decision Self-Efficacy Scale), and decision-making competence.

<sup>c</sup>SDM Process: Includes measures of service users' involvement in decision-making (e.g., OPTTON, SDM-Q-9), treatment/service satisfaction (e.g., CSQ), and patient-centered communication.

<sup>d</sup>SDM Outcomes: Includes measures of knowledge about mental health condition/treatment options, decisional conflict (e.g., Decisional Conflict Scale), feelings toward the decision (e.g., satisfaction or regret as assessed by the Decision Satisfaction Scale and the Decision Regret Scale).

<sup>e</sup>Service User/Provider Relationships: Includes measures of working alliance (e.g., Working Alliance Inventory), trust, and perceptions of the service user/provider relationship (e.g., Doctor-Patient Relationship Questionnaire-9).

<sup>f</sup>Treatment engagement/adherence: Includes measures of medication/treatment adherence (e.g., Medication Adherence Questionnaire), and treatment engagement (e.g., Service Engagement Scale).

<sup>g</sup>Mental Health Outcomes: Includes measures of psychiatric symptoms (e.g., PHQ-9, PAINSS), perceived recovery (e.g., RAS), and psychiatric hospitalizations.

<sup>h</sup>Functional Outcomes: Includes measures of engagement in major life areas, such as social relationships, education and employment, and quality of life (e.g., Manchester Short Assessment of Quality of Life (MANSA)).

<sup>i</sup>Other: Includes all other outcomes (beliefs about medications; treatment choice; receipt of smoking cessation medication; adherence to clinical practice guidelines; implementation factors such as length of consultation, therapist fidelity, and service costs; side effects; cardiometabolic outcomes; patient activation; unmet needs and problems and goals; duration of untreated psychosis; family involvement in treatment; treatment motivation; health locus of control; self-management; stigma beliefs).

<sup>j</sup>Denotes two separate reports from the RAISE Early Treatment Program study

<sup>k</sup>Denotes two separate reports from the F-PAD study

<sup>†</sup>Statistically significant difference in all outcomes favoring the intervention group (if an RCT or QE study) OR statistically significant within-group change in all outcomes (if a single group, repeated measures study). Change is in the expected direction.

<sup>‡</sup>Lack of statistically significant difference in all outcomes between groups (if an RCT or QE study) OR lack of statistically significant within-group change in all outcomes (if a single group, repeated measures study) OR statistically significant change in the unexpected direction.

<sup>†/‡</sup>Statistically significant difference in some, but not all, outcomes favoring the intervention group (if an RCT or QE study) OR statistically significant within-group change in some, but not all, outcomes (if a single group, repeated measures study). Change is in the expected direction.