Illness Management and Recovery: A Review of the Literature

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Abstract

Objective: Illness management and recovery (IMR) is a standardized psychosocial intervention designed to help people with severe mental illness manage their illness and achieve personal recovery goals. This article summarizes the research on consumer-level effects of IMR and the literature on implementing IMR.

Methods: A literature search in EMBASE, MEDLINE, PsycINFO, CINAHL, and the Cochrane Library was conducted using keywords "illness management and recovery," "wellness management and recovery" or ["IMR" AND ("schizophrenia" OR "bipolar" OR "depression" OR "recovery" OR "mental health")]. Publications citing two seminal IMR articles also guided further exploration of sources. Articles were excluded if they did not deal explicitly with IMR or a direct adaptation.

Results: Three randomized-controlled trials (RCTs), three quasi-controlled, and three pre-post trials have been conducted. Outcomes from the RCTs were strong for improved self-reported and clinician-reported IMR Scale scores and independent assessor rated symptoms. Implementation studies identified several important barriers and facilitators of IMR, including IMR supervision and agency support. Implementation outcomes (e.g., participation rates and fidelity) varied widely.

Conclusions: IMR shows promise for improving some consumer-level outcomes. Important issues regarding implementation require additional study. Future research is needed comparing IMR to active controls and/or that provide more detailed descriptions of other services utilized by participants.

Key words: schizophrenia; self-management; severe mental illness; implementation

The Illness management and recovery (IMR) program is a standardized psychosocial intervention designed to help people with severe mental illness better manage their illness and achieve personally meaningful goals (1, 2). IMR was created in conjunction with the National Implementing Evidence-Based Practices Project (3), with the aim of incorporating empirically supported illness self-management strategies into a single program.

IMR is organized into topical modules, each of which requires several sessions to teach, using a combination of motivation-based, educational, and cognitive-behavioral strategies. The modules are premised on the stress-vulnerability model (2, 4) and therefore include information on mitigating biological vulnerabilities and psychosocial stressors, as well as developing "recovery strategies" such as relapse prevention plans. The Third edition of IMR includes the following 11 modules: recovery, practical facts about mental illness, the stress-vulnerability model, building social support, drugs and alcohol, reducing relapses, coping with stress, coping with persistent symptoms, getting your needs met in the mental health system, and living a healthy lifestyle. IMR can be delivered in a group or individual format.

Resource materials have been developed to facilitate the implementation of IMR, including a practitioner's guide, the IMR Workbook (including educational handouts for each topic), the IMR fidelity scale, outcome measures, informational brochures for different stakeholders (e.g., consumers, family members, clinicians, policy makers), and introductory and demonstration videos.

Although the IMR program has strong empirical foundations by incorporating evidence-based strategies for improving illness self-management, unlike other practices in the National Implementing Evidence-Based Practices Project, IMR as a package had not been previously evaluated. Since the IMR program and resource materials became publically available for free on a SAMHSA website, IMR has been increasingly implemented throughout the U.S. and internationally, and has been the focus of growing research. This paper provides a systematic review of research on the IMR program including the effects of IMR on consumer outcomes and service utilization, implementation of IMR, and modifications to the program.

Methods

In June 2011 we searched EMBASE, MEDLINE, PsycINFO, CINAHL, and the Cochrane Library (i.e. CCTR, DARE, HTA), using the keywords "illness management and recovery," "wellness management and recovery" or "IMR" AND [("schizophrenia" OR "bipolar" OR "depression" OR "recovery" OR "mental health")] generating 37 references after duplicates were removed. We also searched for publications citing two seminal IMR articles (1, 2) resulting in 223 publications after removing duplicates. The inclusion criteria for our review included publications that dealt explicitly with IMR or described the program of study as an adaptation of IMR. Publications that simply described of the creation of the IMR program were excluded. We also excluded reports not published in

peer-reviewed journals to ensure the highest scientific rigor. Twenty-six studies met inclusion criteria, including ten studies measuring consumer outcomes and sixteen studies examining implementation and/or adaptations of IMR. One study (Roe and colleagues; 5) was a qualitative follow-up of a prior study (6) and did not report unique quantitative consumer outcomes; however, because it provided implementation outcomes (completion rates) we included it in the review of implementation studies.

Results

Consumer Outcomes and Service Utilization

Randomized-Controlled Trials (RCTs). Three RCTs compared IMR to treatment as usual (6-8) (Table 1). Hasson-Ohayon and colleagues (6) examined IMR in thirteen community agencies in Israel offering IMR for 8 months. Levitt and colleagues (7) examined IMR implemented within residential programming in New York City; follow-up was conducted post-treatment and six months later. Finally, Färdig and colleagues (8) examined IMR in six Swedish psychosocial rehabilitation centers at post-treatment and 21-month follow-up. Treatment as usual varied considerably both within and between studies, but generally included outpatient case management, pharmacological treatment, and access to other rehabilitation services.

The Illness Management and Recovery scales (IMRSs) were created in conjunction with the IMR Implementation Toolkit (9) in order to provide a practical

measure of the progress of a consumer participating in IMR. Questions reflect specific IMR program targets, such as progress towards goals, knowledge of mental illness, having a relapse prevention plan, and substance use. Consumer-reported IMRS scores improved more in IMR in both Färdig (8) and Levitt (7) (both medium effect sizes); overall, IMRS scores in Hasson-Ohayon (6) did not favor IMR until analyses were narrowed to sites with high IMR fidelity—at which point the IMR group showed better improvement (Table 2).

Consumers in IMR reported significant differences on four subscales of the Ways of Coping Scale in one RCT (8), but did not show any differences in coping in another (6). However, consumers in IMR did not report greater improvement than controls on symptoms (Modified Colorado Symptom Index (7, 10)), recovery (Recovery Assessment Scale (8, 11)), quality of life (Manchester short assessment of quality of life (8, 12)), or social support (Multidimensional Scale of Perceived Social Support (6, 13)). Notably, there were no time effects for either IMR or control clients on these outcomes.

Independent assessor evaluated outcomes were generally more encouraging. Consumers in IMR were rated as having greater symptom reduction than controls in both RCTs that examined this variable (7, 8); small and medium effect sizes, respectively), as well as better psychosocial functioning on an abbreviated version of Heinrich's Quality of Life Scale (7).

There were no significant differences between groups in hospitalization, as measured by self-report (7), record review (8), and an unreported method (6). No study found improvements in employment (7) rate or changes in medication

dosage (8). Finally, clinicians in all three RCTs (6-8) rated consumers in IMR as improving more on the IMRS than those receiving usual care (effect sizes small and medium). Notably, though, clinicians were not blind to condition.

Quasi-Controlled and Pre-Post Trials. Three studies compared IMR to a non-randomized control group. Fujita and colleagues (14) compared an IMR group within a day treatment program in Japan to a convenience control group at another location. In two separate analyses (using partially overlapping samples) Salyers and colleagues (15, 16) compared consumers on assertive community treatment (ACT) teams in Indiana receiving IMR to consumers on ACT not receiving IMR. In both studies, ACT team members determined who would receive IMR based on their own clinical judgment. Three studies examined change over time in consumers receiving IMR (2, 17, 18).

Results from quasi-controlled and pre-post studies are reported when they differ from RCTs. These trials showed improvement over time for IMR on consumer-reported recovery (2, 17, 18), generally measured by the RAS, whereas Färdig's RCT found no improvement for IMR consumers on this same scale. Consumer-reported psychiatric symptoms decreased in two quasi-controlled studies (2, 14); whereas Levitt (7) found no improvement. In short, the effects of IMR on consumer reported recovery and symptoms remains promising, but require further exploration.

Although satisfaction with services was not measured in any of the RCTs, three quasi-controlled studies (2, 15, 17) measured satisfaction, with only one (2) reporting significantly greater increases in satisfaction over time.

Salyers and colleagues (15, 16) examination of ACT consumers is notable in two regards. First, they found no advantage for IMR on consumer or clinician-rated outcomes, with both IMR and control groups improving over time on the clinician IMRS, and neither improving over time on the consumer IMRS. Second, they reported an advantage for consumers who received IMR on hospitalization rates compared to those who received usual ACT services.

In summary, extant research suggests an advantage for IMR over treatment as usual for the consumer and clinician-rated IMRS and interviewer-rated symptoms. Evidence from quasi-controlled trials indicates that consumers participating in IMR improve in their self-rated recovery, but this was not confirmed in the one RCT evaluating this hypothesis. Evidence is lacking for IMR's effects on more distal outcomes such as quality of life, social support, and community integration and role functioning. Additional research is necessary to determine the differential effects of treatment setting and consumer population.

Implementation and Adaptation of IMR

Sixteen studies reported on the implementation and/or the modification of IMR. These studies included results from the National Implementing Evidence-Based Practices Project (19-23); other publications included thorough descriptions of IMR implementation efforts at a psychiatric rehabilitation center (24), a state psychiatric hospital (25), and community mental health centers in the US and Israel (26). Other publications focused on the adaptation of the IMR model, either for a novel setting or purpose (27-29) or to overcome perceived

barriers to implementation (30, 31). Finally, several studies examined staff

perceptions of IMR training (32-34). We will first describe the results of the

National Implementing Evidence-Based Practices Project and then summarize

research on the implementation and adaptation of IMR, guided by the

Consolidated Framework for Advancing Implementation Research (35).

The National Implementing Evidence-Based Practices Project was the

first large-scale study to examine the implementation of IMR (19, 21). This

project included the implementation of IMR and other evidence-based practices

using comprehensive implementation support (i.e., a site implementation

coordinator, training, and fidelity monitoring) (22). Evaluation focused on fidelity

and qualitative data on the implementation process. Fifty percent of sites

participating in the National Implementing Evidence-Based Practices project

reached average fidelity of four or greater, which is considered "successful

implementation" (21) during the two-year study period; in general, scores

progressed over time, with the largest gain realized in the first six months, with

continued improvement for the remainder of the first year and sustained scores

for the next year. Some authors (19, 21) emphasized the difference between the

IMR Fidelity Scale, which relies heavily on clinical techniques (e.g., motivational,

cognitive-behavioral, and educational teaching techniques), and other fidelity

scales that are defined more in structural terms (e.g., team composition, location

where services are provided), such as assertive community treatment and

supported employment. Investigators suggested this difference in emphasis

leads to lower fidelity ratings for IMR, similar to other the fidelity scales of other

practices that rely on clinical techniques, such as integrated dual-disorder treatment and family psychoeducation (19, 21). However, these results must be considered in context—the IMR fidelity scale has had little psychometric validation and the cut-off for "successful implementation" is based on expert opinion rather than empirical validation.

   Adaptations of IMR. Several groups have developed programs based on IMR. Bullock and colleagues (31) adapted IMR and combined it with another program—the Ohio Medication Algorithm Project -- in order to create *wellness management and recovery (WMR).* WMR covers similar topics as IMR and focuses on consumer empowerment and goal setting. Reported differences from IMR include: 1) a 10-week curriculum (delivered in two-hour groups, once per week), 2) a requirement for a peer co-facilitator, 3) an emphasis on cultural competence. In a longitudinal, mixed-methods program evaluation, WMR graduates showed significant improvement on self-reported recovery and reduction in symptoms between baseline and following treatment (31). These changes were maintained at a follow-up assessment conducted between 3-6 months following discharge.

   Wellness Self-Management (WSM). Salerno and colleagues' (30) adaption of IMR departs from traditional IMR in three key ways. Most significantly, consumers in WSM do not set long-term recovery goals. In addition, a greater emphasis was placed on "wellness action steps" rather than homework assignments within the program curriculum. WSM is currently offered in over 100 mental health agencies in New York. The published evaluation reports

improvement in goal progress; however, not enough information was provided to include this as an outcome study in our review above(30).

Factors Affecting Implementation

The Consolidated Framework for Implementation Research (35) outlines five domains that influence implementation of a practice: intervention characteristics, outer setting, inner setting, characteristics of individuals providing the practice, and the implementation process.

Intervention characteristics. IMR is a complex intervention, involving the integrated use of high-level clinical skills such as motivation-based and cognitive-behavioral strategies used to teach the IMR curriculum. The manual was generally considered a strength of IMR—surveyed trainees often appreciated the structured, manualized approach (32). While providing structure, the IMR curriculum allows a fair degree of flexibility in pace and usage of techniques, with guidelines (rather than prescriptions) of suggested activities within sessions and for homework. Some IMR modifications have increased the prescriptive nature of the curriculum (30, 31), with substantially briefer time frames for program completion. Others have added topics to the curriculum, including an increased emphasis on medications (31), physical health (29, 30), and anger management (27).

Inner Setting. In general, factors involving the inner setting of the agency and/or program implementing IMR were highlighted as the most important facilitators of implementation in a number of studies. In empirical examinations of

IMR trainees (32), and as reported by the National Implementing Evidence-Based Practices Project (20), agency-level factors were mentioned most often. In particular, agency culture (36) such as policies and procedures were highlighted. Supervision specific to IMR, which provides a format for continued learning and reinforcement of the clinical techniques, was emphasized by several authors (19, 20, 24, 25, 32). Several sources also highlighted the importance of adapting clinical documentation to support IMR (24, 25, 32). Bartholomew (25) emphasized the importance of communicating the work being done in IMR-such as setting clearly defined recovery goals and delineating skills to be learned-to other members of the treatment team.

Agency philosophy, particularly an agency's embrace of recovery, may affect IMR implementation. Because IMR may require a fundamental shift in an agency toward recovery-oriented practice, Isett recommended agency-wide training in IMR (23) and also noted the importance of fit of IMR with other programs within a setting. Importantly, in studies of recovery-related staff training, including IMR training, training was positively associated with staff optimism regarding consumers and perceived recovery orientation (33, 34).

Outer Setting. Factors external to the agency implementing IMR have also been identified as important. State-wide consensus building was considered key in the National Implementing Evidence-Based Practices Project (22). Similarly, state technical assistance has been associated with increased reports of full implementation (32). Funding is also crucial. Rychener and colleagues (24) described that high expectations for productivity in terms of billable services

make participation in non-billable activities that support IMR (e.g., supervision, steering committees, training) difficult. However, they reported this cost was partly offset by increased productivity due to IMR; clinicians who were previously providing brief case-management were able to deliver IMR services for longer periods of time.

Implementation Process. All published accounts of IMR implementation used a multifaceted implementation strategy involving training, IMR-specific supervision, technical assistance, and fidelity monitoring. Implementation support was generally very robust and spanned across domains of implementation. Implementation across studies generally included some form of external facilitation, including academic detailing (24, 25, 37) or technical assistance (15, 17, 19, 30, 31). Efforts in New York differ in the use of a learning collaborative (30) that served many of the same functions of a state technical assistance center, but was funded in part by financial commitments from participating agencies.

Individuals providing IMR. IMR has been generally provided by professional clinicians, though some treatment settings utilize consumer providers (15, 18, 31). Many implementation efforts began with a pilot group, generally with the most willing and enthusiastic clinicians, and expanded to additional programs and clinicians (24, 25, 30, 38). Because IMR is a manualized program, clinicians must be willing to adapt to a more structured intervention (24). Additionally, clinicians with paternalistic or medical-model philosophies may not be well-suited for IMR. For example, in the Rychener (24) implementation,

the agency placed new emphasis on clinical supervision and fidelity monitoring that was difficult for clinicians unaccustomed to such a level of oversight. However, despite a given clinician's preconceptions, IMR may provide a platform for paternalistic practitioners to challenge their beliefs and increase their recovery orientation (33, 34).

Implementation Outcomes

IMR studies reported three types of implementation outcomes: feasibility, fidelity, and penetration (see Table 3). *Feasibility*-- the extent to which a practice can be used or carried out within a setting (39)-- is often measured by recruitment, retention, and participation rates (40). One factor relevant to feasibility is the program length. Although initially conceptualized as a three to six month program, more recent literature (17) has suggested IMR takes longer (9-12 months).

The median *dropout rate* across nine studies reporting (2, 6, 8, 14-17, 25, 41) was 24% and dropout rates were rather consistently within the 20%-30% range (2, 6, 15, 17, 18, 41). In terms of lower dropout rates, Fujita and colleagues' (14) and Färdig and colleagues (8) found particularly low dropout rates (14% and 5%, respectively). Participants in Färdig's sample were selected based on consistent attendance, and training and consultation focused heavily on consumer engagement (Färdig, personal communication, 12/19/12). Despite cross-study consistency in dropout rates, substantial variability exists between sites within some studies (e.g., 10%-50% (17), 24%-40% (2)).

Program completion was generally defined as having received all 10 modules; seven studies (2, 14-16, 18, 26, 41) reported completion rates, with a median rate of 63%. Unlike dropout rate, completion rates varied substantially between studies (range = 15%-86%). Salyers and colleagues (15) found a particularly low completion rate in their two year examination of ACT teams (15%); this rate only increased to 47% when retrospectively examining the full set of ACT-IMR programs within the state over a five year span (16). A trend does appear between sites providing group versus individual format; all studies providing IMR in a group format were at or above the median completion rate.

Three studies (7, 8, 14) reported the *percentage of sessions* attended. Average percent of sessions were 75% (8) and 82% (14). Levitt (7) reported 54% of participants attended at least 21 out of 41 sessions of sessions.

Fidelity, or the level of adherence to the program model, was examined in seven studies. In the National Implementing Evidence-Based Practices Project (19) 50% of sites reached average scores meeting the criterion for "successful implementation" (i.e., greater than 4.0) (21) with an addition 25% obtaining "moderate implementation" (i.e., greater than 3.0). Hasson-Ohayon and colleagues' (6) multi-site RCT found cross-site variability in fidelity, ranging from 2.7 to 4.8, with eight out of eleven programs reaching "moderate" fidelity (42). Importantly, Hasson-Ohayon found consumer IMR scale outcomes were stronger at high-fidelity sites than at low fidelity sites. All sites in four out of five subsequent studies (7, 14, 15, 17) reached fidelity greater than 4.

Penetration, or "the integration of a practice within a service setting,"(40) can be measured in terms of the number of eligible consumers receiving a service or number of clinicians adopting the practice. Only two related studies examined penetration at the consumer level (15, 16) and found that only 26% and 29% of consumers on ACT teams received IMR.

In summary, IMR appears to be feasible to implement, with consumer acceptability within the range found in other evidence-based practices. Completion rates were better for group IMR than for individual IMR. Nonetheless, both median dropout (about 24%) and completion rates (63%) leave much room for improvement. Acceptable rates of fidelity were found in later trials, but earlier, more geographically spread-out trials found substantial variability. Penetration was infrequently reported, but was poor in the few trials that did.

Discussion

This review yielded a substantial amount of research on IMR. Ten studies of client outcomes and 16 implementation studies have been published since the creation of the program. Research has spanned numerous treatment settings across several continents. Outcomes research examined changes in consumer outcomes before and after participating in IMR, with three RCTs comparing IMR to treatment as usual. The most consistently positive findings were improvements in the IMR Scales, which were specifically designed to assess IMR outcomes and objectively-rated symptoms. Other evaluations of consumer-reported

recovery were generally (but not uniformly) positive. Other subjective and objective outcomes varied considerably between studies.

Although the current research is promising, modifications to future studies could greatly enrich the information gleaned about IMR and its potential applications. First, the three RCTs did not compare IMR to an active control group; therefore, results cannot disentangle specific effects of IMR from common factors. Moreover, "treatment as usual" was often poorly delineated; therefore, it is unclear within what treatment regimens IMR can be added with positive effects. Other services utilized by participants should be tracked and taken into account. Regarding reporting, few studies reported effect sizes; therefore it is difficult to assess its impact on results.

Second, IMR is a complex and multi-faceted intervention, with potential effects on multiple consumer domains, through various mechanisms of action. The studies generally included multiple outcomes, but without a clear linkage between the relevant element of IMR and its putative outcomes. Future research should include analyses informed by the theoretical foundations of IMR (i.e., the modified stress-vulnerability model(2, 43)).

Regarding the reduction in hospitalization, two explanations seem plausible. Either IMR and ACT work synergistically to reduce risk of hospitalization or ACT-IMR clinicians chose to provide IMR to consumers (either intentionally or unintentionally) with the least risk for re-hospitalization The low rates of hospitalization in the 3 RCTs suggests that well stabilized outpatients were included, reducing the likelihood of finding reductions in hospital use. Also,

no study has looked at the effects of IMR on reducing relapses/hospitalizations in people with a recent hospitalization, who are more vulnerable to rehospitalizations. In addition, studies generally did not report on the effects of potential consumer-level (e.g., illness severity, intellectual capability, other services received) and agency-level (e.g., climate and culture, client-to-staff ratio) moderating variables that could affect consumer outcomes.

Although implementation outcomes suggest that IMR can be successfully implemented and has been accepted by consumers reasonably well, implementation success and acceptance merit further exploration. Dropout rates were generally consistent (between 20-30%) and within the range found in studies of CBT for psychosis (where the dropout rate generally ranges between 35%-55% (44)) and general outpatient services (45). Extant studies did not examine predictors of dropout; studies examining predictors of dropout of consumer with severe mental illness more generally have found little consensus regarding predictors of dropout (however, see (46)). Completion rates varied more than dropout rates, with the lowest rates found in two studies of IMR on ACT teams. Due to the severity of illness experienced by consumers on ACT teams, it is reasonable that these consumers may require a longer period to complete the IMR curriculum. These studies also found a lower hospitalization rate for ACT consumers receiving IMR, so it would be premature to determine that IMR is not useful for ACT consumers. It is also unclear what effects socio-economic factors may have on acceptability (e.g., literacy, multiple role pressures) of IMR.

Fidelity was considered acceptable in all outcome studies in which it was measured, except in Hasson-Ohayon and colleagues (6), where it varied across sites (consistent with fidelity results in the National Implementing Evidence-Based Practices project). Low fidelity was found in studies that spanned across state lines and one trial that was conducted in an inpatient setting. Geographical dispersion may be a limitation for consistently rigorous training and technical assistance.

Although fidelity is considered an important implementation outcome, the IMR fidelity scale has several limitations. First, the cut-point for "success" implementation has not been scientifically validated. Second, the scale focuses on program-level fidelity, which does not take into account variation between clinicians on IMR competence. To this end, a group is currently validating a IMR competence tool—the IMR Treatment Integrity Scale (IT-IS; 47). In addition to fidelity outcomes, costs are also critical. No study reported costs of implementation—an important practical consideration for implementation.

Implementation studies identified several important barriers and facilitators of IMR; however, methodologies preclude drawing conclusions regarding the effect of particular factors on specific implementation outcomes. The most consistent results were the importance of agency factors, in particular regular supervision, and contact with outside training and consultation. Future studies should examine the interplay between various implementation domains.

Clinical implications. IMR appears to be a successful and well-tolerated intervention for people with severe mental illness. As of yet, no population has

emerged that does not generally benefit from the program, although clinical correlates of success have been largely ignored. More work is necessary to adapt IMR to special populations (e.g., criminal justice involved).

Conclusions

IMR was initially called an evidence-based practice based on research on its components; research on IMR as a package is promising, displaying positive effects on consumers' perceptions of recovery including improved coping and illness management. Methodological issues do not allow for firm conclusions regarding IMR's effectiveness in comparison to other services. IMR programs can achieve acceptable fidelity, but this may require substantial and comprehensive implementation support. Agency support (including supervision) and external consultation appear to be key facilitators of implementation. Future research should include active control groups, more psychometrically rigorous outcome measures, and examine key moderators of participation and outcomes.

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Table 1: Description of Illness Management and Recovery Outcomes Studies

Citation	Design	Follow-up	N[6]	Program Setting	Format[2]	IMR Length	Clinicians	Training
Hasson et al., 2007	RCT[1]	Graduation	210	13 Israeli Psychiatric rehabilitation centers		8-11 months	13 "Interested" clinicians	48 Hours
Levitt et al., 2009	RCT[1]	5 Months; 12 Months	104	3 Multiunit Supportive Housing Programs	2/Week	41 sessions	?	?
Färdig et al., 2011	RCT[1]	9 Months; 21 Months	41	6 Psychiatric Outpatient Rehab. Centers; Sweden;		9 Months (Mean = 30 Sessions)	12 "Interested" clinicians	5 Days
Fujita et al., 2010	Non-Randomized Control[4]	Graduation	N = 25	Outpatient clinic at 2 hospitals in Japan	Weekly/Bi weekly[4]	Mean = 28 Sessions	Various Professions	2 Days
Salyers, McGuire, et al., 2010	Non-Randomized Control[3]	24 Months	N = 324	4 ACT teams	Individual	?	Peer specialist + ACT case managers	2 Days
Salyers, Rollins, et al., 2011	Non-Randomized Control	5 Years	n = 498 (144 IMR)	5 ACT Teams	Individual	Median = 9 Months	Peer specialist + ACT CM	2 Days
Mueser et al., 2006	Pre-Post	3 Months Post-IMR	N = 31	CMHCs in US and Australia	Group/Individual	8 Months[5]	Various Professions	2 Days
Salyers, Godfrey, et al., 2009	Pre-Post	12 Months	n = 324 (BL);	6 CMHC in IN; various programs	Group/Individual	?	Varied by Site	2 Days + Supplemental
Salyers, Hicks, et al., 2009	Pre-Post	9 Months	N = 14	ACT Team, CMHC	Individual	?	Peer specialist	40 hours

Notes: All studies focused on consumers with severe mental illness.
[1]Randomized controlled trial comparing IMR to "treatment as usual."
[2]IMR was provided in weekly groups, unless otherwise noted.
[3]Two ACT teams randomly assigned to receive IMR training and peer support, two maintained treatment as usual.
[4]Fujita et al. included a small wait-list control. Two consumers opted for individual IMR rather than group.
[5]Based on weighted mean of time to program completion across sites.
[6]Ns are total number of participants enrolled in the study.

Table 2: Results of Illness Management and Recovery Studies

Variable	Randomized Control			Non-Randomized Control[b]		Pre-Post		
	Hasson-Ohayon et al., 2007	Levitt et al., 2009	Fardig et al., 2011	Fujita et al., 2010	Salyers et al., 2010, 2011	Mueser et al., 2006	Salyers, Godfrey, et al., 2009	Salyers, Hicks, et al., 2009
Consumer Reported								
IMR Scale[b]	NS	Y	Y		NS	Y	Y	
Recovery-related scales			NS	NS	NS	Y	Y	Y
Coping	NS		Y[c]			NS		
Knowledge About Mental Illness	Y[d]					Y		NS
Psychiatric Symptoms		NS				Y		
Satisfaction with Services					NS		NS	
Quality of Life/ Community Functioning	NS		NS	Y				
Clinician Reported								
IMR Scale	Y	Y	Y		NS		Y	
Quality of Life/ Community Functioning		Y		NS				
Symptoms				NS				
Substance Abuse		NS			Y			
Observer-Rated								
Psychiatric Symptoms		Y	Y					
Objective Outcomes								
Hospitalizations/ER	NS	NS	NS		NS/Y			
Employment		NS			NS			
Medication Dosage			NS					
Incarceration/ Homelessness					NS			

Note: Significance reported for total scale scores, analyzed from baseline to the longest follow-up period. Only one scale measured in each category. Y = significant (<.05) finding in that category; NS = no significant finding; Blank = not measured.
[a]IMR vs. control
[b]IMR scale scores were total scale scores; other reported variables were never derived from IMR scale items.
[c]The Ways of Coping Scale does not produce a total score: 4/8 subscales were significant.
[d]Although no specific knowledge measure was administered, there was a significant change in the "Knowledge and Goals" subscale of the IMR Scale- Client Version.

Table 3: Implementation Studies of Illness Management and Recovery

Citation	Dropout Rate	% Sessions Attended	Graduation/ Completion Rate	Fidelity (M±SD)[5]
Hasson-Ohayon et al., 2007(6)	18%[1]	NR	NR	2.66 to 4.77
Levitt et al., 2009 (7)	NR ("low exposure rate")	54% attended 50% sessions	NR	4.38±1.19
Färdig et al., 2011(8)	5%	75%	NR	NR
Fujita et al., 2010 (14)	14%	82%	86%	4.90±.17
Mueser et al., 2006 (2)	27%	NR[4]	73%	NR
Salyers, Godfrey et al., 2009 (17)	31%[2]	NR	NR	4.5±.3
Salyers, Hicks et al., 2009 (18)	21%[a]	NR	65%[a]	NR
Salyers, et al., 2010(15)	26%	NR	15%	4.40±.28
Salyers, et al., 2011(16)	25%	NR	47%	≥4.0
Rychener et al., 2009(41)	22%	NR	17%	NR
Bartholomew et al., 2010(25)	NR	NR	NR	3.62
Roe et al., 2007(26)	NR[3]	NR	63%[6]	NR
NIEBP[7] studies(19, 42, 48)	NR	NR	NR	3.58±1.07

Notes: NR = Not Reported
[1]Rate reported for IMR and control participants combined.
[2]Rate reported across sites. Individual sites ranged from 10%-50%.
[3]Dropout rate was reported for the Israeli sample (3/8), but not the US sample.
[4] U.S.: 8 of 9 attended ≥ 50% of sessions; 6 of 9 attended 100% of sessions.
Australia: Six of 10 attended 100% of sessions.
[5]Average across study sites. When measured at several time-points, the last time-point is reported.
[6]Reported for Israeli sample only.
[7]National Implementing Evidence-Based Practices Project