

Implementation and evaluation of recovery-oriented practice interventions for people with mental illness in Asia: An integrative review

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ABSTRACT

Background: Recovery is a process involving empowering individuals to take control of their lives and develop meaningful and purposeful life, regardless of whether their mental health symptoms persist. Recovery-oriented practice has been widely implemented, particularly in Anglophone countries, during the past two decades. Mental health recovery in Asia is also moving towards recovery-oriented practice. Little is known about how recovery-oriented interventions originating in the West have been implemented and evaluated in Asian contexts.

Objective: This review aimed to identify 1) types of recovery-oriented practice interventions that have been implemented in Asia, 2) how they have been culturally adapted, 3) barriers and facilitators to implementation, and 4) how the interventions have been evaluated.

Design: This is an integrative review.

Methods: This integrative review followed Whittemore and Knaf's five-stage framework. Six electronic databases (e.g., PsycINFO, MEDLINE, Embase, CINAHL, Web of Science, and the Cochrane Library) were systematically searched from their inception to January 2022 to identify eligible studies published in English language. The key search terms included "mental illness", "recovery-oriented intervention", and "Asia". Studies reporting on implementation and evaluation of recovery-focused interventions in Asian settings were eligible. Quality assessment and narrative synthesis were subsequently undertaken.

Results: Thirty-eight studies were included. Seven main types of recovery-oriented intervention were identified: (1) peer programmes; (2) illness management and recovery; (3) individual placement and support; (4) strength model case management; (5) clubhouse model; (6) wellness recovery action plan and (7) psychiatric advance directive, alongside several novel recovery programmes. Studies reported cultural adaptations for language, content, cultural norms, religious beliefs, family, and local context. Barriers to implementation included a poor understanding of recovery concepts and inadequate organisational resources. A range of clinical and personal recovery outcome measures were reported.

Conclusions: Recovery-oriented interventions are increasing in Asia, with nearly half of reviewed studies featuring cultural adaptations. However, research is geographically skewed, and more rigorously conducted studies are needed across a wider range of Asian countries.

Registration: This review was registered with the PROSPERO International prospective register of systematic reviews (CRD42022310049).

Tweetable abstract: Recovery-oriented practice interventions for people with mental illness are on the rise in Asia @chonmananNN.

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What is already known

- There is a health policy impetus for mental health services to shift away from a more traditional bio-medical model/clinical recovery focus to a personal recovery-oriented practice focus.

- People's cultural backgrounds, values, beliefs and lifestyles can have an impact on their mental health recovery process.
- There is limited understanding of the development, adaptation, implementation and evaluation of recovery-oriented interventions originating in the West in Asian contexts.

What this paper adds

- This review found that there has been a growing trend in developing, modifying, and implementing various types of recovery-oriented practice interventions in Asia.
- Inadequate cultural fit, lower literacy levels, and limited organisational resources hinder the implementation of recovery-oriented practice interventions.
- Modifying the interventions to the local culture, such as including culturally relevant content, addressing unfamiliarity with recovery concepts, as well as promoting appropriate levels of family involvement, is likely to increase their acceptability and relevance to the Asian population.

1. Introduction

According to Anthony (1993), "recovery" is a process by which people living with mental illness regain their identity, and create hopeful and purposeful lives despite the limitations imposed by their illness. Recovery has been conceptualised both as clinical recovery and personal recovery (Slade, 2009). Clinical recovery is often viewed as an outcome with its emphasis on symptom amelioration (Davidson and Roe, 2007; Jacob, 2015). Personal recovery, the focus of this study, is a process that extends beyond symptom management to empower people to rebuild their identities and take charge of their own lives, regardless of whether their mental health symptoms persist (Anthony, 1993; Davidson and Roe, 2007; Slade, 2009).

Recovery-oriented practice primarily aims to provide individuals living with mental illness with effective and culturally sensitive interventions that they may select to support their recovery journey (Davidson et al., 2008). The concept of recovery as a person-centred holistic approach has become central to mental health practice and policy in the United Kingdom (UK), the United States (US), and Australia over the last two decades (Slade et al., 2012). Nevertheless, it is relatively new in Asia, despite growing research on mental health reforms towards recovery-oriented practice in Asia (Tse et al., 2013a; Yoshida and Ito, 2012) and calls to promote personal recovery-oriented practice (Kuek et al., 2021; Pathare et al., 2018).

Since recovery is a unique, subjective and personal experience, it can be challenging for mental health services to "operationalise" recovery in practice (Meehan et al., 2008). A systematic review (Leamy et al., 2011) of personal recovery models in 97 studies across 13 countries enabled the development of the "CHIME" conceptual framework. This framework identifies five key recovery processes: Connectedness, Hope and optimism about the future, Identity, Meaning and purpose in life, and Empowerment. CHIME has now been adopted by the UK mental health services as a framework to develop interventions and deliver services. The studies included in the review by Leamy et al. (2011) were predominantly from English-speaking countries, particularly within the US and the UK. Indeed, the authors note the limitations of this monocultural understanding of recovery and suggest that future recovery-focused research from non-Western regions should be investigated (Leamy et al., 2011; Slade et al., 2012).

Acknowledging peoples' cultural worlds is important, as their values, beliefs, lifestyles, and traditions will have a significant impact on how they recover from illness (Castro et al., 2010). A recent scoping review found diverse perspectives of personal recovery in Asian

communities, with the biomedical orientation most dominant in how people viewed mental illness (Kuek et al., 2020). In Asian culture, family needs are often prioritised over individual ones (Kramer et al., 2002; McLaughlin and Braun, 1998), which may not align with the concept of a person-centred recovery process. It has been proposed that recovery interventions originating from individualistic cultures should also be adjusted to accommodate people who may favour a more collectivistic culture (Kuek et al., 2020; Van Weeghel et al., 2019). Indeed, a review of the impact of mental health interventions among Asian-Americans highlighted the importance of implementing programmes with cultural responsiveness to improve treatment effects (Huey and Tilley, 2018).

Previous reviews of recovery-oriented practice interventions (Canacott et al., 2019; Lloyd-Evans et al., 2014; Lorien et al., 2020; McGuire et al., 2014; Wallstroem et al., 2021) to date have predominantly originated from Anglophone countries. The reviews have tended to focus on specific recovery interventions developed in the West such as wellness recovery action plans (Cook et al., 2012), peer support interventions, illness management and recovery interventions (Mueser et al., 2002) and individual placement and support programmes (Bond et al., 2012). A recent integrative review of 40 studies on recovery services for severe mental illness included only six studies conducted in Asia (Badu et al., 2021). Thus, little is known about how recovery-oriented practice interventions have been developed, adapted, implemented, and evaluated in Asia. This study aims to identify and synthesise the evidence on recovery-oriented interventions in Asian populations guided by the following research questions:

1. What types of recovery-oriented practice interventions have been implemented in Asia?
2. How have recovery-oriented practice interventions been culturally adapted for use in mental health services in Asia?
3. What are the barriers and facilitators of implementing recovery-oriented practice interventions in Asia?
4. How have recovery-oriented interventions been evaluated in Asia?

2. Methods

The study was reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021). The review protocol was registered on PROSPERO (CRD42022310049). A systematic integrative review approach was used to include qualitative, quantitative, mixed methods and review studies, in order to gain a comprehensive understanding of recovery-oriented practice interventions in Asia. The five-stage framework for conducting an integrative review by Whitemore and Knaf (2005) was utilised to ensure rigour. The five stages comprised: (1) problem identification, (2) literature search, (3) data evaluation, (4) data analysis, and (5) presentation.

2.1. Search strategy

A population, concept and context (PCC) framework was used to develop the selection of terms used in the search strategy (see Supplementary material file 1) (Peters et al., 2020). The framework facilitated the construction of the main search terms aligned with the intended scope of the review. An expert librarian was also consulted. The search terms included "mental illness", "recovery-oriented intervention", and "Asia". The term "mental illness" was chosen as a broad category to encompass a wide range of studies related to mental health, enabling a comprehensive exploration of recovery-oriented interventions across various aspects of mental illness. The search also incorporated a list of 48 countries and 3 territories based on the United Nations (Worldometers, 2020). Terms were combined using Boolean operators "OR" and "AND", and they were searched as keywords and Medical Subject Headings (MeSH). PsycINFO, MEDLINE, Embase, CINAHL, Web of Science, and the Cochrane Library were searched

from their inception to January 2022. The search was not restricted by date, language, or study type (full search strategy for each database in Supplementary material file 2). Searches were adapted for the six databases. Reference lists of included studies were also hand-searched to avoid missing potentially eligible studies.

2.2. Eligibility criteria

Studies were included if they: i) focused on the implementation of recovery-oriented interventions that aimed at improving personal recovery outcomes and processes as defined by the CHIME framework; ii) described interventions for individuals of any age with mental illness who resided in Asia; iii) conducted studies in Asia, including 48 countries and 3 territories according to the United Nations (Worldometers, 2020); iv) conducted studies in any mental health settings, community or home-based service in Asia; and v) were quantitative, qualitative, mixed-method designs or review studies published in English.

Studies were excluded if they: i) were non-interventional recovery studies (exclusively focused on recovery concepts, experiences or clinical recovery); ii) had a population of interest with comorbid mental and physical problems (e.g. postpartum depression); iii) focused on recovery from substance misuse and addictions only; iv) were conducted in non-Asian countries; and v) were unpublished or non-peer reviewed articles, dissertations, and expert opinions.

2.3. Study selection

All retrieved references from the search were exported into Covidence (www.covidence.org) for de-duplication, title/abstract, and full text screening. Titles and abstracts were screened by the lead author against eligibility criteria, with any uncertainties resolved through discussion with three authors (ML, VT, and AG). Full texts of potential studies and papers retrieved through handsearching were then assessed against the eligibility criteria. Any uncertainties regarding the eligibility criteria of individual studies were resolved through discussion with three authors (ML, VT, and AG).

2.4. Quality assessment

For the data evaluation stage, various quality assessment tools were used due to the diversity of research designs. The Cochrane Risk of Bias (ROB) assessment tool was used to appraise risk of bias in randomised controlled trials across six domains: selection, performance, detection, attrition, reporting and other biases (Higgins, 2011). Each domain was rated as low (results unlikely to be seriously affected), high (results likely to be seriously affected) or unclear risk of bias. The Mixed Method Appraisal tool (MMAT) version 2018 was used to appraise mixed method studies (Hong et al., 2018). Ratings were analysed across each criterion as recommended, instead of calculating an overall score. A range of Joanna Briggs Institute Critical Appraisal tools (JBI) (Joanna Briggs Institute, 2020) was used to assess the remaining studies according to their research method (i.e. quasi-experimental, qualitative, case-controlled, cross-sectional, and review studies). Each checklist comprised up to 11 questions, with a "Yes" response = 1, and "No" and "Unclear" responses = 0. The quality score was summed and converted to percentages after disregarding non-applicable questions. Two authors (CK and JH) independently assessed the methodological quality of studies. Disagreements between the two reviewers were discussed to reach consensus among three remaining authors (ML, VT, and AG).

2.5. Data extraction

The data extracted included key study characteristics, namely: author and year, country, aim, study design, sample size, diagnosis, participant characteristics, intervention, outcome measured, tool/data

collection method, and main findings. The Template for Intervention Description and Replication (TIDieR) checklist was used to extract data related to the key intervention characteristics (Hoffmann et al., 2014). The lead author performed the initial data extraction, whilst the accuracy of the data was reviewed and discussed with the other three authors (ML, VT, and AG).

2.6. Data analysis

The data analysis stage involved summarising and interpreting findings from included studies (Whittemore and Knaf, 2005). Due to methodological heterogeneity and the nature of the research questions, a narrative synthesis was conducted using a procedure outlined by Popay et al. (2006). Thus, after textual descriptions of the studies were extracted and read, studies were grouped and numerically classified according to type of study design and type of intervention, and their outcomes were tabulated (see Supplementary material file 3). The proposed research questions were consequently employed to direct the narrative synthesis (Popay et al., 2006). In this way, the synthesis noted both similarities and differences between studies. This enabled the identification of patterns or themes relevant to the research questions to determine the factors which might have influenced the findings reported.

3. Results

3.1. Search results

The database search initially yielded 9705 articles. Following title and abstract screening, 85 studies were retrieved for full-text screening. Thirty studies meeting eligibility criteria were included in the analysis. Handsearching reference lists of included studies and previous reviews yielded another 28 studies, and after full-text screening, eight studies were deemed eligible. In total, 38 studies were included in this review. The summary of the screening process is depicted in Fig. 1.

3.2. Study characteristics

Key study characteristics are presented in Table 1. All studies were published between 2004 and 2021. Studies were conducted across ten countries/regions in Asia: fourteen in Hong Kong, six in Japan, four in Taiwan and Israel, three in Mainland China, two in South Korea and India, and one each respectively in Singapore, Turkey, and Jordan. Most included studies had quantitative designs: randomised controlled trials ($n = 14$); quasi-experimental ($n = 12$); cohort ($n = 2$); cross-sectional ($n = 2$); and case-controlled ($n = 1$) designs. Two were qualitative studies using interviews and focus group designs, three were mixed method studies, one study was a meta-analytic review, and one was a literature review.

The included studies reported a combined total of 6988 participants with various mental health problems. Study sample sizes ranged from 6 to 1545 participants. Seventeen studies recruited participants with a range of mental health diagnoses, eleven recruited participants with severe mental illness, and ten studies recruited people with specific diagnoses of schizophrenia ($n = 8$), depressive symptoms ($n = 1$), and psycho-social disabilities ($n = 1$). Most studies ($n = 34$) focused on adults aged 18 and over, two recruited adolescents and young adults aged between 12 and 29 (Mathias et al., 2019; Young et al., 2019), and one sampled older adults aged between 50 and 80 (Wang et al., 2017). The mean age of participants, which was reported in 33 studies, ranged between 18 and 52 years old. Most studies ($n = 24$) delivered the recovery interventions in rehabilitation or community settings, with the remaining studies conducted in outpatient, clinic, or hospital settings.

With the exception of the five peer-led and the five programmes co-run by health professionals and peers, interventions were delivered by

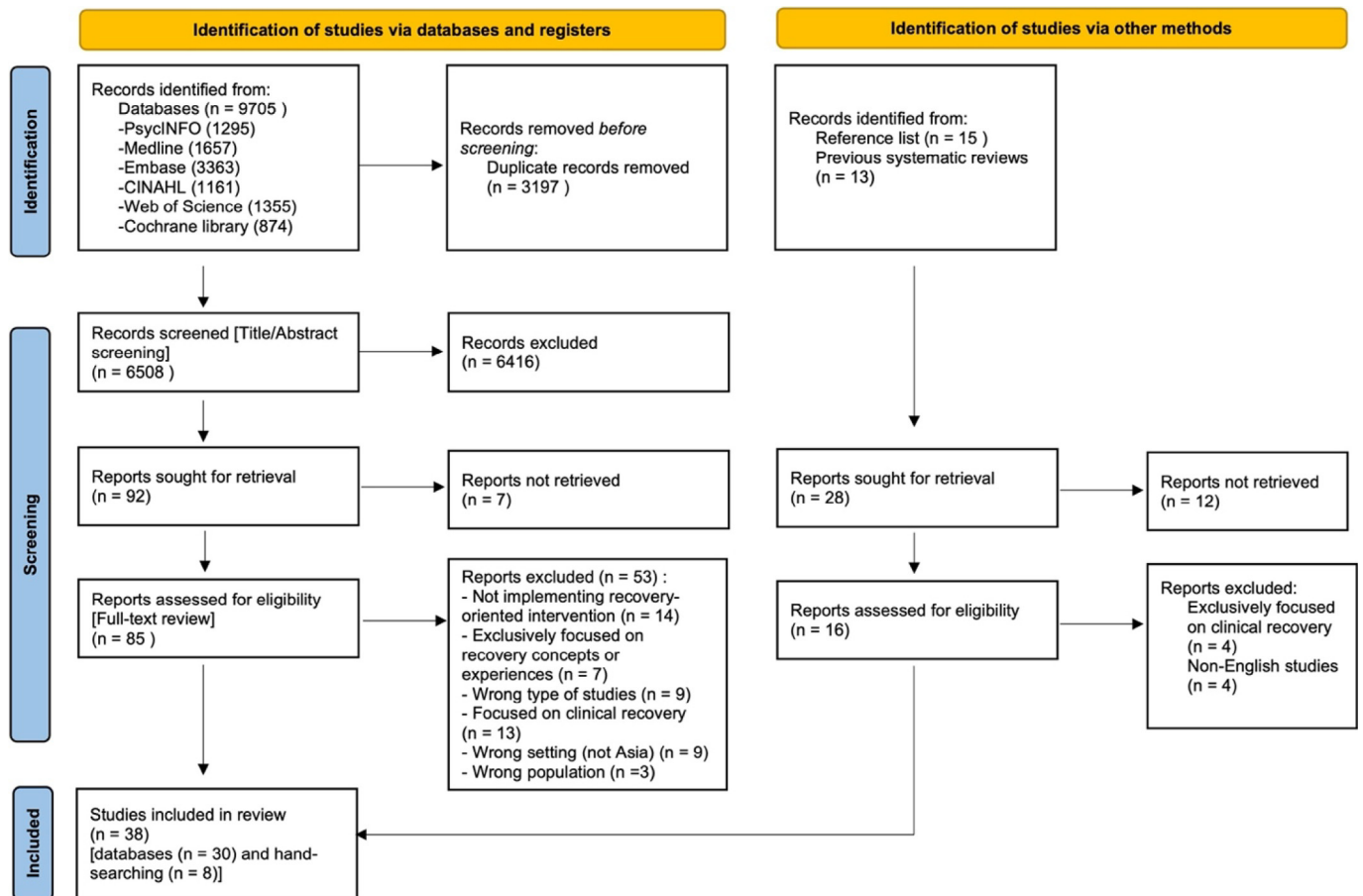


Fig. 1. PRISMA 2020 flowchart of the study selection process.

occupational therapists, psychiatric nurses and social workers. The majority of interventions (n = 19) were delivered in a group setting, nine were delivered to individuals, and eight were a hybrid of the two formats. All interventions were delivered face-to-face, with two integrated supported employment programmes offering the option of phone calls.

3.3. Methodological quality

The methodological quality of the 38 included studies was considered moderate using the JBI checklist for quasi-experimental, qualitative, cohort, cross-sectional, case-controlled, and review designs (JBI, 2020), MMAT tool for mixed-methods studies (Hong et al., 2018), and Cochrane risk of bias tool for the randomised controlled trial studies (Higgins, 2011) (see Supplementary material file 4). Fourteen studies were of good quality, achieving over 70 % of the JBI quality criteria, with the mixed-method studies (n = 3) rated as moderate quality. Only one study (Chang et al., 2020) met all five MMAT criteria, whilst the other two studies (Ha., 2016; Yam et al., 2018) met two or three criteria. Only one randomised controlled trial study was rated high methodological integrity on the Cochrane risk of bias tool except for blinding of participants and personnel (Hasan and Musleh, 2017). The other randomised controlled trials were rated moderate quality but had several areas of bias. Performance bias risk was rated as high in all the randomised controlled trials due to the nature of the interventions. Four randomised controlled trials used both random sequence generation and allocation concealment, indicating low risk of selection bias. The majority of randomised controlled trial studies (n = 11) were considered as having a low risk of attrition bias due to minimal missing data and intention-to-treat analyses.

3.4. What types of recovery-oriented practice interventions have been implemented in Asia?

In total, twenty papers reported evidence-based recovery-oriented interventions originating in Western countries which were transferred and implemented in Asian settings, with nine studies incorporating cultural adaptation. The details of peer programmes and these standardised interventions: illness management and recovery, individual placement and support, strengths model case management, the clubhouse model, wellness recovery and action plan and psychiatric advance directive are provided in Table 2. The remaining studies comprised two integrated supported employment and two empowerment programmes which originated in Asia, along with fourteen more studies evaluating novel recovery-oriented interventions also developed in Asia. Ten of these were still based on Western literature, materials or interventions, and three incorporated a recovery orientation into existing Western interventions. All interventions provided references to standardised interventions/models from which they were either adopted or adapted. The details of the programmes are provided below.

3.4.1. Peer programmes

Five studies examined “peer-led” interventions. One study (Yamaguchi et al., 2017b) incorporated peer specialists with a shared decision-making tool to help consumers identify their personal values and treatment preferences. Ha (2016) reported on the first peer-delivered recovery programme in South Korea which incorporated a US recovery workbook. One study (Mathias et al., 2019) evaluated a peer-led community-based intervention for young people with psycho-social disability using a local curriculum. Fan et al. (2018, 2019) evaluated a peer-led community service which focused on

Table 1
Characteristics of included studies according to study design (n = 38).

Authors (year)	Location	Aim	Study design	Sample size	Diagnosis	Participants' characteristics	Intervention	Outcome measured tool/data collection	Main findings
<i>Randomised controlled trial (RCT) design</i>									
Chiba et al. (2014)	Japan	To develop a programme for facilitating recovery and investigate its effectiveness with people with long-term mental health problems	RCT	54 (I: n = 26, TAU: n = 2)	Schizophrenia 30.8 %, depression 26.9 %, bipolar disorder 1.54 %, anxiety disorder 11.5 %, alcohol abuse 3.9 %, others & unknown 11.5 %	Age range = 24–64; mean age = 41.3; F = 38.5 %, M = 61.5 %	Peer-assisted programme	PO: Japanese versions of Recovery Assessment Scale (RAS) (α 0.89); Self-Identified Stage of Recovery Part B (SISR-B) (α 0.80)	No significant difference in RAS and SISR-B scores was found between the intervention and control groups.
Gelkopf et al. (2016)	Israel	To investigate the effectiveness of SMCMM service on client outcomes in Israel	RCT	1545 (I: n = 808, TAU: n = 737)	Serious mental illness (schizophrenia, schizoaffective and psychotic disorders 80.46 %, mood disorders 4.99 %, anxiety disorders 1.25 %, personality disorders 3.12 %, other 10.19 %)	Age range = N/R; mean age = 37; F = 37.2 %, M = 62.8 %	SMCM	CO: Colorado Symptom Index (CSI) (α 0.92) PO: Manchester Short Assessment of Quality of Life scale (MANSA) (α 0.68); 7 items based on MANSA (interpersonal relationships and the social domain) (α 0.75); unmet needs (α 0.64); self-efficacy (α 0.90); goal setting and attainment tool (α 0.61)	SMCM group had significant improvements in self-efficacy (p < 0.001), unmet needs (p < 0.05), and overall quality of life (p < 0.01), and in the quality of life domains of employment (p < 0.01), leisure (p < 0.001), housing (p < 0.05), physical health (p < 0.01), compared to TAU group. Moreover, they set and attained significantly more goals, consumed fewer services, less decline in participants' satisfaction (all p < 0.001).
Hasan and Musleh (2017)	Jordan	To assess how empowerment intervention can enhance recovery of people with schizophrenia	RCT	112 (I: n = 56, TAU: n = 56)	Schizophrenia	Age range = mostly 21–50; mean age = 37.6; F = 35.7 %, M = 64.2 %	Empowerment intervention	PO: Modified Learned Helplessness Scale (MLHS) (α 0.86)	Empowerment group had more improvement in helplessness score at post-intervention and 3-month follow-up (p < 0.0001) than TAU group.
Hasson-Ohayon et al. (2007)	Israel	To investigate the effectiveness of IMR programme in a group form	RCT	210 (I: n = 119, TAU: n = 91)	Severe mental illness (schizophrenia 80 %, unspecified psychosis 3 %, depression 5 %, bipolar disorder 3 %, anxiety disorder 3 %, eating disorder 3 %, personality disorder 3 %)	Age range = N/R; mean age = 33.92; F = 32 %, M = 68 %	IMR	PO: Clinician versions of IMR Scale (α 0.47–0.83); client versions of IMR Scale (α 0.50–0.74); Coping Efficacy Scale (test–retest reliability 0.44); Multidimensional Scale of Perceived Social Support (α 0.80–0.91)	IMR group had a significant increase in knowledge about their illness and in identification and attainment personal goal, and overall IMR outcome compared with TAU group (client's rating p < 0.01, clinician's rating p < 0.001). Coping efficacy significantly improved in both groups after the intervention (p < 0.001). SE group was more likely to work competitively (70 % vs 29 %, p < 0.001), hold more competitive jobs (p < 0.001), earn more income (p = 0.001), work more days (p = 0.002), and sustain longer competitive job tenure (p = 0.002), than TVR group over 18-month follow-up.
Kin Wong et al. (2008)	Hong Kong	To investigate the effectiveness and applicability of a SE programme among individuals with long-term mental illness in Hong Kong	RCT	92 (I: n = 46, TVR: n = 46)	Schizophrenia spectrum 70 %, affective disorder 20 %, other 11 %	Age between 18 and 55; mean age = 32.4; F = 46 %, M = 54 %	SE	PO: Competitive employment rate (primary outcome)	SE group was more likely to work competitively (70 % vs 29 %, p < 0.001), hold more competitive jobs (p < 0.001), earn more income (p = 0.001), work more days (p = 0.002), and sustain longer competitive job tenure (p = 0.002), than TVR group over 18-month follow-up.

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Table 1 (continued)

Authors (year)	Location	Aim	Study design	Sample size	Diagnosis	Participants' characteristics	Intervention	Outcome measured tool/data collection	Main findings
Lin et al. (2013a)	Taiwan	To investigate the feasibility and effects of an IMR programme adapted for persons with schizophrenia awaiting discharge into the community	RCT	97 (I: n = 48, TAU: n = 49)	Schizophrenia 93.75 %, schizoaffective disorder 6.25 %	Age range = N/R; mean age = 35.27; F = 37.5 %, M = 62.5 %	IMR	PO: Knowledge of Illness-Management (KI) Scale (α 0.70) CO: Drug Attitude Inventory-30 (DAI-30) (KR-20 0.88); Schedule for Assessment of Insight-Expanded Version (SAI-E) (α 0.89, IRR $r > 0.72$); Brief Psychiatric Rating Scale (BPRS) (IRR: $r > 0.8$)	IMR group had more significantly improved illness-management knowledge ($p = 0.003$), attitudes towards medication ($p = 0.006$), insight ($p < 0.000$), and the anergia subscale of BPRS (negative symptoms) ($p = 0.007$) than TAU group at post treatment and 1-month follow-up.
Oshima et al. (2014)	Japan	To assess whether IPS could be implemented in Japan and yield greater competitive employment outcomes compared with conventional vocational services.	RCT	37 (I: n = 18, TVR: n = 19)	Schizophrenia or mood disorders or neurotic disorders	Age between 18 and 59; mean age = 40.1; F = 16.7 %, M = 83.3 %	IPS	PO: Competitive employment rate, total days employed, total earnings, sheltered employment rates using self-report and cross-checked through chart records	IPS group was more likely to work competitively ($p = 0.022$), work more hours ($p = 0.002$), and work more weeks ($p = 0.003$) than TVR group. However, there were no significant differences in wages earned and sheltered jobs between the two groups.
Polat and Kutlu (2021)	Turkey	To assess the effect of the IMR programme in individuals with schizophrenia in Turkey	RCT (pretest-posttest and follow-up experimental design)	50 (I: n = 25, TAU: n = 25)	Schizophrenia	Age between 18 and 65; mean age = 38.5; F = 52 %, M = 48 %	IMR	PO: IMR Scale-Patient Form (IMRS-P) (α 0.76); Social Functioning Scale-Patient Form (SFS-P) (α 0.90)	IMR group had significant improvements in IMRS-P scores ($p < 0.001$) and pro-social activities' subscale of SFS-P ($p < 0.05$), compared with control group at post-test and 1-month follow-up. There was no significant difference in SFS-P total scores between groups.
Tan et al. (2017)	Singapore	To investigate the effectiveness of the IMR programme compared with current standard care among the individuals with mental illness living in Singapore	Repeated-measures, RCT	50 (I: n = 25, TAU: n = 25)	Schizophrenia 80 %, bipolar disorder 16 %, others 4 %	Age range = 19-63; mean age = 44.24; F = 72 %, M = 28 %	IMR	PO: IMR scale-Clinician's rating (IMRS-CR) (internal consistencies 0.85); IMR scale-Self-rating (IMRS-SR) (internal consistencies 0.85); global assessment scale (GAS) (good reliability and validity) PO: BPRS (internal reliability 0.79)	IMR group had significantly lower number of admissions ($p < 0.05$), shorter length of stay ($p = 0.01$), better symptoms ($p < 0.001$) than control group. The IMR group also reported significantly greater scores on IMRS ($p < 0.001$) and GAS scales ($p < 0.001$).
Tsang et al. (2009)	Hong Kong	To examine effectiveness of ISE as compared to IPS and TVR and to determine whether vocational interventions originally developed in the US could be culturally adapted in Hong Kong	RCT	163 (ISE: n = 52, IPS n = 56, TVR n = 55)	Severe mental illness (schizophrenia 78.8 %, others 21.2 %)	Age range = N/R; mean age = 33.52 (ISE); F = 50 %, M = 50 %	ISE	PO: Employment Outcome Checklist (EOC) (reliability test N/R); Chinese Job Stress Coping Scale (CJSC) (α N/R); Chinese Job Termination Checklist (CJTC) (good content validity)	ISE group had significantly higher competitive employment rates and longer job tenures than IPS and TVR groups ($p < 0.001$). No significant differences in the average number of unwanted job terminations and job stress coping were found between ISE and IPS groups. The standardised IPS service could be culturally adopted with few adaptations in Hong Kong.

H.W. Tsang et al. (2010)	Hong Kong	To investigate the long-term effectiveness of the ISE programme comprising IPS and work-related social skills training, compared with the IPS programme among persons with severe mental illness	RCT	189 (ISE: n = 58, IPS n = 65, TVR n = 66)	Severe mental illness (schizophrenia 77.6 %, others 22.4 %)	Age range = N/R; mean age = 34.12 (ISE); F = 55.2 %, M = 44.8 %	ISE	PO: Employment outcome checklist; Chinese Job Termination Checklist (α N/R) (primary outcome)	During the 39 months follow-ups, ISE group had significantly higher employment rate and longer job tenure than the IPS and TVR groups at the 7-month, 11-month and 15-month follow-up (p < 0.001). IPS group experienced significantly more workplace interpersonal difficulties than ISE participants which led to job termination (p < 0.001). At post intervention, the intervention group had a significant improvement in depressive symptom, sleep quality, and well-being (p < 0.001).
Wang et al. (2017)	Hong Kong	To investigate the effectiveness of a mutual recovery intervention for elderly community-dwelling adults with depressive symptom in China	Cluster randomised wait-list controlled design	237 (I: n = 105, wait-list control: n = 132)	Depressive symptoms	Age between 50 and 80; age range = 61–70 years (55 %; F = 75 %, M = 25 %)	Mutual recovery intervention	PO: WHO-5 Well-being Index (WHO-5) (α 0.81–0.91) CO: Geriatric Depression Scale-15 (GDS-15) (α 0.72–0.84); Self-reported Insomnia Questionnaire (α 0.79–0.83)	At post intervention, the intervention group had a significant improvement in depressive symptom, sleep quality, and well-being (p < 0.001).
Yamaguchi et al. (2017a)	Japan	To examine the cost-effectiveness of a CR + SE programme compared to traditional vocational services (TVS) among people with mental illness and low cognitive function	RCT	111 (CR + SE: n = 47, TVS: n = 54)	Schizophrenia 84.4 %, depression 8.9 %, bipolar disorder 6.7 %	Age between 20 and 45; mean age = 34.84; F = 40 %, M = 60 %	CR + SE	PO: Economic evaluation (perspective of a health care and social service system); monitoring worksheets & Client Service Receipt Inventory-Japanese version (CSRI-J) (reliability test N/R) (primary outcome)	CR + SE group had significantly better competitive employment rate (p < 0.001), work tenures improvement (p < 0.001) than TVS group. Although no significant difference in mean total costs was found, after covariate adjustment, the mean cost for medical services in CR + SE group was significantly lesser than that in the TVS group (p = 0.042). Intervention group had significantly higher scores on SDM-18 (p < 0.001), STAR-Patient subscale (positive views on relationship with doctor) (p = 0.05), positive clinician input (p = 0.03), and IPC (STAR-positive aspects of relationship and IPC-person-centred communication) (p = 0.01) than control group. The intervention group also had a significantly lower drug adverse effects than control group (p = 0.023). The intervention did not have a significant effect on most clinical and recovery-related outcomes such as quality of life, social functioning and doctors' perceptions of their relationship with participants.
Yamaguchi et al. (2017b)	Japan	To investigate the effects of a comprehensive shared decision-making system based on the CommonGround approach and integrating peer support and a computerised decision aid	RCT	53 (I: n = 26, TAU: n = 27)	Schizophrenia 69.23 %, bipolar disorder 13.39 %, depression 7.69 %, developmental disorder 7.69 %	Age = 20 or older; mean age = 39.4; F = 38.46 %, M = 61.54 %	Peer-led programme	PO: SDM-18; World Health Organization Quality of Life (WHOQOL26); Self-identified Stage of Recovery (SISR-A&B); Scale To Assess Therapeutic Relationships in Community Mental Health Care (STAR); Interpersonal Processes of Care Survey Short Form (IPC-SF); Japanese version of the Patient Activation Measure (PAM); Global Assessment of Functioning (GAF) (reliability test N/R) CO: BPRS; Morisky Medication Adherence Scale (MMAS); Drug-Induced Extrapyramidal Symptom Scale (DIEPSS) (reliability test N/R) SO: Client Satisfaction	Intervention group had significantly higher scores on SDM-18 (p < 0.001), STAR-Patient subscale (positive views on relationship with doctor) (p = 0.05), positive clinician input (p = 0.03), and IPC (STAR-positive aspects of relationship and IPC-person-centred communication) (p = 0.01) than control group. The intervention group also had a significantly lower drug adverse effects than control group (p = 0.023). The intervention did not have a significant effect on most clinical and recovery-related outcomes such as quality of life, social functioning and doctors' perceptions of their relationship with participants.

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Table 1 (continued)

Authors (year)	Location	Aim	Study design	Sample size	Diagnosis	Participants' characteristics	Intervention	Outcome measured tool/data collection	Main findings
Quasi-experimental design Bendel-Rozow (2021)	Israel	To assess the suitability of recovery-oriented DMT for recovery practice in comparison with control group receiving an alternative recovery programme in Israel	Non-randomised, controlled trial	52 (I: n = 29, IMR: n = 23)	Severe mental illness (schizophrenia/schizoaffective disorder 3 %, anxiety disorder 3 %, personality disorder 3 %, others 11 %)	Age range = N/R; adult; mean age = 52.48; F = 24 %, M = 76 %	Recovery-oriented DMT	Questionnaire-8 Japanese version (reliability test N/R) PO: client's and clinician's versions of IMR Scale (α 0.91); PAM (α 0.77); knowledge questionnaires on IMR (reliability test N/R)	There were no significant differences in recovery (IMRS), knowledge, and engagement between recovery-oriented DMT and IMR groups. As a result, it can be concluded that recovery-oriented DMT is appropriate for assisting participants' recovery process. At post intervention, service users had significant improvements in overall social support ($p = 0.01$) and friend-peer dimension subscale ($p < 0.001$). Social function scores measured by the GAF ($p = 0.001$) and the C-SFS ($p = 0.01$) also increased significantly. Moreover, the weekly wage earned from sheltered or supported employment increased significantly ($p = 0.01$). At post intervention, IMR group experienced significant improvements in the domains of recovery, illness management, hope, self-efficacy, and quality of life (all $p < 0.001$), when compared to control group. IMR group had significant improvement in symptoms ($p < 0.01$) and functioning (GAF ($p < 0.001$), activation in self-management ($p < 0.001$), quality of life (SF-36) ($p < 0.05$), satisfaction in community living ($p < 0.01$), and self-efficacy in daily living ($p < 0.05$) and social relationship ($p < 0.001$). Compared with wait-list group, eight participants in the first intervention group had an improved quality of life in social functioning (SF-36) ($p < 0.05$), satisfaction in
Cheng and Yen (2021)	Taiwan	To propose and assess a pilot programme of peer co-delivered vocational rehabilitation to support individuals with schizophrenia in Taiwan	Pretest-posttest intervention	54 (8 peer support workers, 46 service users)	Schizophrenia	Peers: N/R; service users: Age range = N/R; mean age = 49.1; F = 41.3 %, M = 58.7 %	Peer-assisted programme	PO: Social Support Scale (SSS) (α 0.86); GAF ($r = 0.72$); Chinese version of the Social Functioning Scale (C-SFS) (α 0.86); earned income from employment (users' records on file) CO: BPRS-18 (α 0.46-0.69); Chinese Health Questionnaire-12 (CHQ-12) (sensitivity 78 %, specificity 77 %)	
Daass-Iraqi et al. (2020)	Israel	To examine the effect of a culturally adapted Arabic version of IMR among Israeli Arabs with serious mental illness	Matched control group	150 (I: n = 86, C: n = 64)	Serious mental illness	Age range = 19-70; mean age = 40.91; F = N/R, M = N/R	IMR	PO: IMR Scale-clinician and client's ratings (α 0.77-0.83); self-report Hope Scale (α 0.80-0.89); Generalized Perceived Self-Efficacy Scale (0.92-0.93); MANSA (α 0.87-0.90) PO: GAF; Patient Activation Measure for Mental Health (PAM13-MH) (validated); Life Satisfaction Scale (LSS) (validated); Self-Efficacy for Community Life Scale for Schizophrenia (SECL) (validated); Short-Form 36-item Health Survey Acute Version (SF-36) (health-related quality of life) (validated) CO: BPRS (validated)	
Fujita et al. (2010)	Japan	To examine the feasibility and outcomes of implementing the IMR programme in Japan	Non-randomised and wait-list comparison groups, pretest-posttest	35 (I: n = 25, C: n = 10 (of these, 4 ppl waiting list))	Schizophrenia	Age range = N/R; mean age = 33.02; F = 56 %, M = 44 %	IMR		

Hui et al. (2015)	Hong Kong	To examine the applicability and effectiveness of the SMCM intervention among people with mental illness in Hong Kong.	Single group, pretest–posttest design	67	Various mental illness (mood disorder 55.6%, schizophrenia and other psychotic disorders 37.8%, adjustment disorder 4.4%, sleeping disorder 2.2%)	Age range = 18–74; mean age = 36.4; F = 57.78%, M = 42.22%	SMCM	PO: Stages of Recovery Scale (SRS) (α 0.96 for overall scale score); Chinese version of the Satisfaction with Life Scale (α 0.89) CO: Chinese version of the General Health Questionnaire (GHQ) (α 0.92)	With an effect size of small to medium, participants had significant improvement in overall score of recovery stages ($p = 0.01$) and subscale scores of autonomy ($p = 0.02$), hope ($p = 0.02$), overall well-being ($p = 0.02$) and satisfaction with life ($p = 0.02$) at post intervention. No significant improvements in the recovery components of disability management/taking responsibility, social functioning/role performance, helping others and psychological distress/symptoms were found.
Lin et al. (2013b)	Taiwan	To develop and investigate the effect of a culturally adapted and abbreviated version of the IMR on discharged patients with schizophrenia	Pretest–posttest design for a single group	26	Schizophrenia	Age range = N/R; mean age = 36.38; F = 30.8%, M = 69.2%	IMR	CO: KFI (α 0.70); DAI-30 (KD-20 0.88); SAI-E (α 0.89); 18-item BPRS (α 0.75)	At post intervention, participants showed significant improvement in treatment-related illness knowledge ($p = 0.015$), insight ($p = 0.014$), and affective-domain psychopathology ($p = 0.031$). WRAP participants had significant increase in perceived support at post intervention and 3 months follow-up ($p = 0.04$). No significant changes were found on empowerment, hope, self-stigma, social network size, symptom severity, and recovery. More than 90% of participants were satisfied with the programme arrangement and reported comprehension of the materials (mean score 3.18/4). Cultural adaptation and resources are needed for future WRAP implementation.
Mak et al. (2016)	Hong Kong	To examine the effectiveness of WRAP, comparing with matched controls, on psychosocial and recovery-related outcomes among people in recovery of mental illness in Hong Kong	Matched controlled design	118 (I: n = 59, C: n = 59)	Mental illness (schizophrenia 54.2%, depression 28.8%, bipolar disorder 11.9%, other 5.1%)	Age = 18 or older; mean age = 42.9; F = 57.6%, M = 42.4%	WRAP	PO: Youth Empowerment Scale (Internal consistency 0.89–0.93); State Hope Scale (Chinese version) (α 0.88–0.92); Stigma resistance subscale of the Internalised Stigma of Mental Illness (Chinese version) (α 0.89–0.93); Recovery Markers Questionnaire (Chinese version) (α 0.93–0.94); ENRICH Social Support Inventory (α 0.78–0.82) CO: Modified Colorado Symptom Index (Chinese version) (α 0.91–0.93)	WRAP participants had significant increase in perceived support at post intervention and 3 months follow-up ($p = 0.04$). No significant changes were found on empowerment, hope, self-stigma, social network size, symptom severity, and recovery. More than 90% of participants were satisfied with the programme arrangement and reported comprehension of the materials (mean score 3.18/4). Cultural adaptation and resources are needed for future WRAP implementation.
Park and Sung (2013)	South Korea	To evaluate an empowerment programme as a nursing intervention to enhance recovery from schizophrenia	Repeated-measure, controlled design	60 (I: n = 30, C: n = 30)	Schizophrenia	Age range = 24–60; mean age = 41.65; F = 52.2%, M = 47.8%	Empowerment programme	PO: Modified Learned Helplessness Scale (LHS) (α 0.89–0.91); RAS (α 0.97) CO: Nurses' Observation Scale of In-patient Evaluation-30-Korea	Empowerment group showed significant improvement in helplessness and recovery which included both subjective recovery as reported by patient and clinical recovery indicated by

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Table 1 (continued)

Authors (year)	Location	Aim	Study design	Sample size	Diagnosis	Participants' characteristics	Intervention	Outcome measured tool/data collection	Main findings
Tse et al. (2014)	Hong Kong	To describe the development of a curriculum-based PSW training programme in Hong Kong and to evaluate its outcomes from trainees and the Warmline telephone service users perspectives	Pretest-posttest incorporating both quantitative and qualitative methods (measures, written survey, questionnaire, and open-ended questions)	40 (22 service users, 18 peer workers)	Schizophrenia and mood related disorder	Peers: N/R; service users: Age range = N/R; mean age = 48; F = 27.27 %, M = 63.63 % non-disclosures = 9.1 %	Peer training programme	(NOSIE-30-K) (α 0.77–0.95) PO: Chinese versions of the Trait Hope Scale; RAS; Rosenberg Self-Esteem Scale (translated and validated instruments); brief questionnaire relating to the programme goals to evaluate their training experience	improved behaviour change according to nurse report, compared with control group (all $p < 0.001$) At post training, the trainees reported marginally higher on the hope, recovery and self-esteem from the baseline. They also described improved knowledge, being more hopeful about their own recovery, and developed mutually supportive relationships (with their supervisors). Service users of the Warmline service reported decreased isolation and increased hopes. Five themes from overall assessment findings included positive gains, factors that helped trainees to deal with their new role, challenging aspect of being a PSW, uniqueness of the programme, and expectations-envisioning a future career.
Tsoi et al. (2019)	Hong Kong	To investigate the effectiveness of SMC for people with mental illness in Hong Kong	Non-randomised, 12-month controlled trial	147 (I: n = 73, TAU: n = 74)	Severe mental illness (schizophrenia 87.67 %, bipolar disorder 4.1 %, schizophrenia or BP with comorbidities 8.22 %)	Age range = 21–76; mean age = 46.86; F = 46.58 %, M = 53.42 %	SMCM	PO: Maryland Assessment of Recovery in People with Serious Mental Illness (MARS) (α 0.95)	Recovery of individuals, hope, subjective well-being, work alliance, confidence, and self-efficacy in goal attainment did not change over time in both groups. Intervention group had better progress in goal achievement as rated by the caseworkers ($p < 0.05$) but their symptoms worsened than control group (moderate effect size). Intervention group had improved mental health recovery process in total score and domains of basic functioning, finding new potentials and spirituality, and a sense of hope (total score and planning in achieving goals) ($p < 0.05$), compared to control group. No significant differences in quality of life and RSA-R total score between two groups were found.
Wong et al. (2019)	Hong Kong	To investigate the effects of a recovery-oriented CBA approach in improving the mental health, hope, feelings of empowerment, and quality of life among people with severe mental illness in Hong Kong	Non-randomised matched-pair comparison design	52 (I: n = 27, TAU: n = 25)	Severe mental illness (schizophrenia 29.6 %, bipolar disorder 18.5 %, psychosis 22.2 %, delusional disorder 7.4 %, depression 29.6 %)	Age between 18 and 60; mean age = 39.11; F = 96.3 %, M = 14.8 %	Recovery-oriented CBA	PO: Mental Health Recovery Measure (MHRM) (internal consistency 0.91–0.96); RSA-R (internal consistency 0.70–0.93); World Health Organization Quality of Life Scale-Abbreviated Version –Chinese version (WHOQOL-BREF) (internal consistency 0.88–0.92); Trait Hope Scale (internal consistency 0.84–0.89)	Intervention group had improved mental health recovery process in total score and domains of basic functioning, finding new potentials and spirituality, and a sense of hope (total score and planning in achieving goals) ($p < 0.05$), compared to control group. No significant differences in quality of life and RSA-R total score between two groups were found.

<p>Young et al. (2019)</p>	<p>Hong Kong</p>	<p>To evaluate the effectiveness of newly developed vocational recovery model in enhancing vocational and personal recovery for young people with mental illness in Hong Kong</p>	<p>Pretest–posttest study, no control group</p>	<p>37</p>	<p>Schizophrenia and psychosis 45.95 %, depression 10.81 %, bipolar disorder 8.11 %, anxiety disorder 13.51 %, others 21.62 %</p>	<p>Age between 15 and 29; mean age = 22.49; F = 40.54 %, M = 59.46 %</p>	<p>Vocational recovery model</p>	<p>PO: Competitive employment; MHRM (α 0.92–0.96); Adult State Hope Scale (ASHS) (α 0.78); Multidimensional Scale of Perceived Social Support (MSPSS) (α 0.89–0.92)</p>	<p>Participants had a significant higher competitive employment rate at 6-month follow-up (p < 0.01), improved personal recovery at 3-month follow-up (p < 0.05), and improved social support at 3 and 6-month follow-ups (p < 0.05). No significant increase in sense of hope was found.</p>
<p>Cohort design</p>	<p>Lee et al. (2015)</p>	<p>Hong Kong</p>	<p>Flanking historical control design</p>	<p>210 (ACT: n = 70, 1st TAU: n = 70, 2nd TAU: n = 70)</p>	<p>Psychotic disorders 75.7 %, others 24.3 %</p>	<p>Age between 18 and 65; mean age = 40.34; F = 44.3 %, M = 55.7 %</p>	<p>Recovery-oriented ACT</p>	<p>PO: Hong Kong Chinese Version World Health Organization Quality of Life Measure abbreviated version (WHOQOL-BREF-HK) (reliability test N/R) CO: Episodes of psychiatric readmissions in Hong Kong per year (ReAdm), psychiatric bed-days occupied per year, bed days (LOS), number of attendances to any accident & emergency department in Hong Kong per year (AED), cumulative days missing the psychiatrists' appointments per year (NoFudays) data retrieved from Clinical Data Analysis and Reporting System (CDARS); BPRS (reliability test N/R)</p>	<p>Readmission rates, bed-days, emergency room visits and days of missing medical appointments of the intervention group improved over time. The intervention group had significantly better outcomes than TAU group except emergency room visits (all p < 0.01). Three out of 4 quality of life domains (physical, psychological and environmental domains) (p < 0.05) and BPRS scores (p < 0.001) among the intervention group improved over time. Moreover, they had significantly improved BPRS score, compared to TAU group (p < 0.001).</p>
<p>Wong et al. (2004)</p>	<p>Hong Kong</p>	<p>To report on the vocational outcomes of people with mental illness attending in an individualised SE programme in Hong Kong</p>	<p>Prospective cohort design</p>	<p>748</p>	<p>Schizophrenia 74.2 %, affective disorders 12.8 %, others 13 %</p>	<p>Age between 17 and 60; mean age = 36.5; F = 42.6 %, M = 57.4 %</p>	<p>SE</p>	<p>PO: Job Placement and Follow-up Record</p>	<p>61.2 % of participants obtained competitive employment. The mean job tenure was 166 and 137 days for the full-time and part-time jobs, respectively. Significant differences were found in sex and education level between participants who obtained job posts and those who did not. Male participants and those with more educated participants received significantly more job placement (all p < 0.001).</p>
<p>Case-controlled design</p>	<p>A.W. Tsang et al. (2010)</p>	<p>To examine the effects of the clubhouse rehabilitation model on the psychosocial functioning of Chinese people with</p>	<p>Longitudinal, case-controlled and naturalistic design</p>	<p>92 (I: n = 46, C: n = 46)</p>	<p>Schizophrenia</p>	<p>Age between 18 and 60; mean age = 40.5; F = 33 %, M = 67 %</p>	<p>Clubhouse model</p>	<p>PO: Chinese Version of the World Health Organization Quality of Life–Brief Version (α 0.7–0.8); Chinese version of the Rosenberg Self-esteem</p>	<p>After 6 months, intervention group had significant improvements in their negative, general, and total scales of psychopathology (p < 0.001), and employment</p>

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Table 1 (continued)

Authors (year)	Location	Aim	Study design	Sample size	Diagnosis	Participants' characteristics	Intervention	Outcome measured tool/data collection	Main findings
		schizophrenia living in the community						Scale (α 0.8); Chinese version of the Levenson Internality, Powerful Others and Chance Scale of locus of control (IPC) (α 0.6–0.8) CO: Positive and Negative Syndrome Scale (PANSS) (α 0.7–0.8); Chinese Version of the Beck Depression Inventory (α 0.9)	rate ($p < 0.01$), compared to control group. There were no significant differences on PANSS positive scales, depression and self-esteem, locus of control, and quality of life between two groups.
<i>Cross-sectional design</i>									
Fan et al. (2018)	China	To describe the implementation of a peer support service model and demonstrate the model's feasibility and sustainability in China	Cross-sectional study	77 (peer providers: n = 12, consumers: n = 50, caregivers: n = 15)	Severe mental illness (schizophrenia and bipolar disorder)	Peers: Mean age = 40.2; F = 33.3%, M = 66.7%. Consumers: Mean age = 48.3; F = 58%, M = 42%	Peer-led programme	PO, CO: service satisfaction and service perceived benefit using questionnaires and semi-structured face-to-face interviews	79% and 70% of consumers reported service satisfaction and strong desire to continue to attend in the service, respectively. 85.7% peers had improved working skills. 41.7% consumers reported better social communication skills. 93% and 40% of caregivers wanted the patients to continue to attend in the service and observed patients' improvement in social communication skills, respectively. 33.3% of them reported improved mood. High service satisfaction was reported. Almost all peer service providers were willing to continue in their roles. Peer service providers had distinct improvements in working skills (10 ppl), social communication skills (8 ppl), and mood and feelings (7 ppl). Consumers reported distinct improvements in mood and feeling, social communication skills, illness knowledge, and illness stability. Caregivers reported an improvement in their own mood, confidence in their family members' recovery, and decrease in caretaker burdens.
Fan et al. (2019)	China	To investigate the feasibility of community-based peer support services among people with severe mental illness in China	Cross-sectional study	86 (peer providers: n = 12, consumers: n = 42, caregivers: n = 32)	Severe mental illness (schizophrenia, bipolar disorder)	Peers: Age between 18 and 60; mean age = 38.92; F = 38.5%, M = 61.5%. Consumers: Age range = 18–60; mean age = 46.59; F = 57.4%, M = 42.6%	Peer-led programme	PO, CO: service satisfaction and perceived benefits using questionnaires and semi-structured face-to-face interviews	Participants described intermediate outcomes including formation of new peer friendship networks, increased community
<i>Qualitative design</i>									
Mathias et al. (2019)	India	To evaluate the effect of a peer-led, community-based, participatory group intervention on social	Qualitative interview	142 (PSD: n = 100, carer: n = 42)	Psycho-social disability	Age between 12 and 24; mean age = 18.9; F = 78.87%, M = 21.13%	Peer-led programme	In-depth interviews and focus group discussions using semi-structured guides	Participants described intermediate outcomes including formation of new peer friendship networks, increased community

inclusion and mental health among young people with psycho-social disability (PSD)	participation, improved mental health, increased self-efficacy, and improved public image which were likely to support primary outcomes of better (self-perceived) social inclusion and improved mental health.								
Shields et al. (2013)	India	To examine the feasibility and utility of PADs in India, with a focus on the need for individual control over decision making and barriers to implementation, by interviewing clients and carers	Severe mental illness	51 (client: n = 39, carer: n = 12)	Qualitative interview	Client: Age range = mostly 18–49 years; F = 53.85 %, M = 46.15 %; carer: Age range = mostly 60+ years; F = 50 %, M = 50 %	PAD	Semi-structured interview	Most clients and carers were unfamiliar with PADs. Some clients believed it is important to have a say in treatment preferences whilst carers had a negative view on service user's capacity to make decisions. Clients described increased desire to engage in treatment choices, and restoring perceived control over circumstances.
Mixed-method design Chang et al. (2020)	Taiwan	To evaluate the feasibility of a recovery group developed for people with mental illness in Taiwan	Mental illness (schizophrenia 54 %, bipolar disorder 42 %, other 4 %)	24 (1st group: n = 10, 2nd group: n = 14)	Mixed-methods: Pretest-posttest design, group discussion	Age range = 27–59; mean age = 43.2; F = 75 %, M = 25 %	Recovery programme	PO: SRS (α 0.80–0.95)	Participants had increase in scores on the social functioning/role performance subscale (medium to large effect size). They also described positive outcome on increased acceptance of the illness. Most participants were satisfied with the recovery programme and its implementation.
Ha (2016)	Korea	To investigate the benefits of recovery among volunteer peer providers who participated in The Companion Project—the first peer-delivered mental health services project in South Korea	Schizophrenia (80 %)	31	Mixed methods: Non-equivalent control group design & in-depth qualitative interviews	Age range = N/R; age = over 40 years (61.3 %); F = 51.61 %, M = 48.39 %	Peer-led programme	PO: Korean version of the Mental Health Recovery Scale (reliability test N/R) (α 0.96); Colorado Symptom Index (reliability test N/R) In-depth interviews with semi-structured and open-ended questions	Intervention group showed significant improvements in symptoms ($p < 0.05$) and recovery ($p < 0.01$), compared to control group. Participants also described increased self-awareness and acceptance, discovered new potential, gained hope for recovery, and growth through participation and roles-taking.
Yam et al. (2018)	Hong Kong	To report the development of a curriculum—mentorship-based, peer vocational support workers training in Hong Kong and preliminary findings from both quantitative and qualitative perspectives.	Mental illness	6	Qualitative and quantitative methods: repeated surveys and semi-structured interviews	Age = 18 or older; mean age = N/R; F = N/R, M = N/R	Peer training programme	PO: MHR—Chinese version (α 0.96); Chinese Self-stigma of Mental Illness Scale (CSSMIS) (α 0.82–0.90, test-retest reliability: ICC 0.71–0.81); Chinese Occupational Self-efficacy Scale (COSS) (α 0.69 and good test-retest reliability: α 0.94)	At post training, the trainees had an improved awareness of their own recovery progress, increased occupational competence and problem-solving skills. Their perceived self-stigma level was decreased. The trainees also described positive outcomes on perceived positive personal growth, discovering their own strengths, receiving mutual

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Table 1 (continued)

Authors (year)	Location	Aim	Study design	Sample size	Diagnosis	Participants' characteristics	Intervention	Outcome measured tool/data collection	Main findings
Review Hayashi et al. (2020)	Japan	To summarise the evidence regarding effects of IPS in Japan and to identify the structural and cultural barriers that are impeding the IPS implementation in Japan	Literature review (4 studies included: 3 RCTs, 1 non-RCT)	279 (I: n = 139, C: n = 140)	People with mental illness from inpatients, psychiatric day-care users, community employment service users, and psychiatric outpatients	Age range = N/R; mean age = N/R; gender = N/R	IPS	PO: Competitive employment outcome	support from other trainees and appreciated the assistance from their mentors. Some challenges such as feeling uneasy to share their own recovery stories were reported.
Yan et al. (2021)	China	To explore whether the clubhouse model of psychiatric rehabilitation is well-implemented in China and whether patients with schizophrenia successfully achieve symptom remission and functional recovery through engaging in the clubhouse	Systematic review and meta-analysis (14 studies included: 7 RCTs, 7 non-RCT)	1404 (I: n = 710, C: n = 694)	Schizophrenia	Mean age range 36.31–45.26, mean age = 40; F = 76.43 % M = 23.57 % (2 studies did not report detailed information)	Clubhouse model	PO: Social functioning (Activity of Daily Living Scale, Personal and Social Performance Scale, Social Disability Screening Schedule); Family Burden (Family Burden Scale (FBS)); quality of life (Schizophrenia Quality of Life Scale, life satisfaction index (LSI)); employment and relapse CO: PANSS; BPRS; Self-Rating Depression Scale and Hamilton Depression Scale; Self-Rating Anxiety Scale and Hamilton Anxiety Scale	The clubhouse model has a significant effect on promoting remission of psychiatric symptoms, particularly negative symptoms, promoting social functioning recovery, reducing the family burden, improving the quality of life ($p = 0.01$), and promoting the remission of depressive and anxiety symptoms ($p \leq 0.001$). It has no definite effect on improving positive symptoms. Employment and relapse data limited to one RCT, which reported that intervention group received more transitional employment and experienced less re-hospitalisation than control group.

Note: α = Cronbach's alpha, ACT = assertive community treatment, C = control group, CBA = cognitive-behaviour approach, CO = clinical recovery outcome, CR + SE = cognitive remediation and supported employment, DMT = dance movement therapy, F = female, I = intervention group, IMR = illness management and recovery, IPS = individual placement and support, IRR = interrater reliability, ISE = integrated supported employment, KR-20 = Kuder-Richardson 20, M = male, N/R = not reported, r = reliability coefficient, RCT = randomised controlled trial, PAD = psychiatric advance directive, PO = personal recovery outcome, SE = supported employment, SMC = strengths model case management, TAU = treatment as usual, TVR = traditional vocational rehabilitation, WRAP = wellness recovery action plan.

Table 2
The main ethos/frameworks behind the seven identified recovery-orientated programmes.

Intervention	Main ethos
Peer programmes	Peer programmes focus on using people with lived experience of mental illness to help each other (Davidson et al., 2006). Peers can take on role as support workers, specialists, or unpaid volunteers. The components across studies included differ; however, common elements include identifying personal values, illness self-management, and providing support for emotional concerns and daily life.
Illness management and recovery (IMR)	A standardised illness management and recovery programme originating in the US is designed to improve illness self-management among people with severe mental illness and promote their personal recovery (Mueser et al., 2002).
Individual placement support (IPS)	Interventions are based on an individual placement and support model from the US, which places individuals with mental illness in competitive employment settings that suit their needs and preferences. Following this, on-the-job training and ongoing support are provided for them (Becker and Drake, 2003).
Strengths model case management (SMCM)	Interventions are based on the principles of the strengths model proposed by Rapp and Goscha (2012), where the focus is on strengths, goal-directed activities, and a self-directed helping process to achieve stability using community resources.
Clubhouse model of psychosocial rehabilitation	The clubhouse provides social, educational and vocational training for people recovering from schizophrenia. Service users are treated as members rather than clients and also have equal power to operate the services as professionals (Beard et al., 1982).
Wellness recovery action plan (WRAP)	Interventions are based around a self-management programme designed to help people with mental illness develop self-directed care (Copeland, 2002).
Psychiatric advance directive (PAD)	The approach promotes service user autonomy by allowing them to state their care preferences ahead of crises, a concept largely adopted in high-income countries such as the US and UK (Swanson et al., 2006).

consumers' needs. Three more studies were "peer-assisted" interventions. In one study, peer-support workers co-led an existing vocational rehabilitation programme with occupational therapists in Taiwan (Cheng and Yen, 2021). A second peer-assisted programme incorporated a recovery workbook to promote benefit finding from adversity experience, personal meaning, and a sense of happiness (Chiba et al., 2014). The third intervention was based on a self-management handbook targeted for Chinese older adults (Wang et al., 2017). Two further studies evaluated curriculum-based "peer training" programmes. In one study, peers were trained and placed in the workplace as paid interns (Tse et al., 2014), whilst in the other study, peers were trained to provide a supported employment peer service (Yam et al., 2018).

3.4.2. Illness management and recovery and individual placement and support

Seven studies were standard US-based illness management and recovery programmes (Daass-Iraqi et al., 2020; Fujita et al., 2010; Hasson-Ohayon et al., 2007; Lin et al., 2013a; Lin et al., 2013b; Tan et al., 2017). Two of these were abbreviated for use in inpatient settings (Lin et al., 2013a; Lin et al., 2013b) whilst another study incorporated motivational interviewing (Tan et al., 2017). Six studies and one review described the individual placement and support model which focused on a "place then train" strategy from the US (Hayashi et al., 2020; Kin Wong et al., 2008; Oshima et al., 2014; Tsang et al., 2009; H.W. Tsang et al., 2010; Wong et al., 2004; Yamaguchi et al., 2017a). Two studies explored an integrated supported employment incorporating individual placement and support with work-related social skills training, which originated in Hong Kong, to enhance vocational outcome (Tsang et al., 2009; H.W. Tsang et al., 2010). One individual placement and support programme included a computerised cognitive programme to optimise employment outcomes (Yamaguchi et al., 2017a).

3.4.3. Strengths model case management, clubhouse model, wellness recovery action plan and psychiatric advance directive

Three studies evaluated US-based strengths model case management programmes (Gelkopf et al., 2016; Hui et al., 2015; Tsoi et al., 2019), with one intervention also including rehabilitation readiness and motivational interviewing (Gelkopf et al., 2016). One primary study and one systematic review explored the use of the clubhouse model with people diagnosed with schizophrenia in Hong Kong and China (A.W. Tsang et al., 2010; Yan et al., 2021). Similarly, only one study (Mak et al., 2016) evaluated a professionally-led wellness recovery action plan programme, and a single study in India evaluated the use of psychiatric advance directive with facilitator support (Shields et al., 2013).

3.4.4. Other recovery interventions

Two "empowerment programmes" which focused on hope and personal strengths were developed in South Korea as a nursing intervention (Hasan and Musleh, 2017; Park and Sung, 2013). Another novel recovery programme (Chang et al., 2020) in Taiwan was based on the pathway to recovery framework (Ridgeway et al., 2011). A second novel programme (Young et al., 2019) was designed to enhance personal and vocational recovery through psychoeducation and job-related training. Three more studies incorporated novel recovery approaches into existing psychological interventions from the US. One study in Hong Kong (Lee et al., 2015) developed "recovery-oriented assertive community treatment" to support the shift from institutional and deficit-focused models to community and recovery-oriented care. The second study evaluated a "recovery-oriented cognitive-behaviour approach" programme (Wong et al., 2019) which included a cognitive behavioural element to understand the challenges of the recovery journey. The third study evaluated "recovery-oriented dance movement therapy" which fused a recovery approach with dance therapy to physically engage individuals in personal and group processes (Bendel-Rozow, 2021).

3.5. How have recovery-oriented practice interventions been culturally adapted for use in mental health services in Asia?

Although the majority of studies evaluated interventions based on Western models, seventeen studies reported data on cultural adaptation. Characteristics of included interventions using items adapted from the Template for Intervention Description and Replication (TIDieR) checklist for the 36 studies which provided details were summarised in Supplementary material file 5. Two review articles that did not provide details on individual interventions were omitted from the table.

3.5.1. Language

Five studies of illness management and recovery (Daass-Iraqi et al., 2020; Fujita et al., 2010; Hasson-Ohayon et al., 2007; Lin et al., 2013b; Polat and Kutlu, 2021), one study of peer-led shared decision-making (Yamaguchi et al., 2017b), one study intervention based on pathways to recovery (Chang et al., 2020) and one study of a recovery-oriented cognitive-behaviour approach (Wong et al., 2019) reported conducting language translation from the original materials and/or interventions. Translations were into Chinese (Chang et al., 2020; Lin et al., 2013b; Wong et al., 2019), Japanese (Fujita et al., 2010; Yamaguchi et al., 2017b), Arabic (Daass-Iraqi et al., 2020), Hebrew (Hasson-Ohayon et al., 2007), and Turkish (Polat and Kutlu, 2021).

3.5.2. Literacy

In response to the participants' limited literacy level, one empowerment intervention used a booklet with images to support people's understanding of the information (Hasan and Musleh, 2017).

3.5.3. Content

A new peer-assisted programme for Chinese older adults with depressive symptoms used culturally relevant content such as Tai Chi, Zazen meditation, traditional Chinese medicine, Chinese classical music, and folk songs (Wang et al., 2017). One recovery programme (Chang et al., 2020) added recovery stories and role exploration to an existing pathways to recovery workbook to help participants better understand recovery concepts. Additionally, a peer-led shared decision-making programme (Yamaguchi et al., 2017b) modified a US tool (SHARE) to develop recovery goals and personal strengths more consistent with work, community and home-life in Japan, although no adaptation details were provided.

3.5.4. Cultural norms

The strengths model and recovery-oriented cognitive-behaviour approach programme were considered less appropriate for Chinese culture where participants tended to be humble, submissive, and underestimate their own personal strengths (Hui et al., 2015; Wong et al., 2019). The intervention, therefore, used attributes of modesty and patience and more appropriate delivery methods, such as self-exploration and using facilitative questions. One peer-led programme for young people with psycho-social disability in India (Mathias et al., 2019) considered culturally specific issues such as gender inequality and poor health literacy. Another adapted illness management and recovery programme addressed the concept of mental health stigma through sharing personal experiences and helping participants to develop self-management skills (Lin et al., 2013b).

3.5.5. Religious beliefs

Religious beliefs were considered in one culturally adapted illness management and recovery programme (Daass-Iraqi et al., 2020). This emphasised that their illness was not caused by loss of faith and thus treating symptoms should not be based solely on faith strengthening. Showing films of religious sermons and referring to relevant Quran verses were all used to aid this process.

3.5.6. Family

One illness management and recovery programme was modified to emphasise the importance of the family in collectivistic culture in Israel (Daass-Iraqi et al., 2020). Although the original illness management and recovery programme emphasised the importance of family involvement, it would have been difficult to achieve in this context (Daass-Iraqi et al., 2020). A new illness management and recovery component was developed which encouraged participants to invite their families to attend the intervention and provided them with a family manual. Other studies reported peer-led services aligned with Chinese culture, with care for people with health problems being placed firmly within family and social structures (Fan et al., 2018; Fan et al., 2019). Culturally relevant contents including sharing childhood stories, building relationships with families, and social communication skills were also used in the intervention.

3.5.7. Fitting national/service contexts

Seven studies reported some modifications to achieve feasibility in particular service contexts. The duration of illness management and recovery was reduced from a standardised 9-month toolkit to just three weeks to accommodate the delivery of illness management and recovery in acute care settings (Lin et al., 2013a; Lin et al., 2013b). Similarly, two empowerment interventions were adapted from a Korean rehabilitation intervention of empowerment programme for schizophrenia for use in an inpatient and outpatient setting (Hasan and Musleh, 2017;

Park and Sung, 2013). However, the study did not specify which components of the original intervention were modified. One illness management and recovery study removed two modules on the Mental Health USA system from the original illness management and recovery to improve contextual relevance in Singapore (Tan et al., 2017). In another study, adaptation of the standard individual placement and support model was made to better match Japanese employment laws and practices (Yamaguchi et al., 2017a). In a strengths model case management programme, the roles of case managers were also adapted to better suit organisational contexts within Israel (Gelpopf et al., 2016).

3.6. What are the barriers and facilitators of implementing recovery-oriented practice interventions in Asia?

Eight papers, including qualitative findings from group discussion, interviews, written survey and open-ended questions, as well as review findings (Chang et al., 2020; Hayashi et al., 2020; Kin Wong et al., 2008; Mak et al., 2016; Mathias et al., 2019; Shields et al., 2013; Tse et al., 2014; Yam et al., 2018), reported barriers and facilitators of implementing recovery-oriented interventions. Whilst most identified several issues, at least half of the studies specifically identified cultural factors as significant to their implementation outcomes.

3.6.1. Barriers: poor cultural fit, lower literacy, and organisational limitations

In a wellness recovery action plan study in Hong Kong, people were perceived as being less active in developing their wellness plans which might have been the result of more culturally submissive participants (Mak et al., 2016). In India, the hierarchical structure of doctor-patient relationships and the overdominance of family members sometimes impeded participants' capacities to make clear decisions on their psychiatric advance directives (Shields et al., 2013). Additionally, the stigma of mental illness among some Japanese people hindered the successful implementation of individual placement and support in Japan (Hayashi et al., 2020). Sharing personal stories in a peer training programme was also impeded when peer trainees had had past experiences of discrimination or when their stories involved issues with their family (Yam et al., 2018). Limited literacy skills were identified in two studies, as participants struggled to complete wellness recovery action plan programme worksheets (Mak et al., 2016) and further clarification was required by young people to understand novel concepts in peer-led programmes (Mathias et al., 2019).

Less well-known recovery programmes, such as individual placement and support and peer-training, were challenging to implement (Hayashi et al., 2020; Kin Wong et al., 2008; Yam et al., 2018). Hayashi et al. (2020) revealed that the negative attitudes of staff towards the idea of recovery and employment for people with mental illness could adversely impact individual placement and support implementations. In Japan, lack of prioritisation for individual support over group-based services due to the cost and structure of healthcare services hindered implementation (Hayashi et al., 2020). Lack of adequately trained staff in supported employment (Kin Wong et al., 2008), a long intervention which discouraged participants from attending (Mak et al., 2016), and the amount of paperwork required in a peer training programme (Tse et al., 2014) were all cited as barriers to achieving successful implementation and positive outcomes.

3.6.2. Facilitators: cultural relevance, positive provider characteristics, and family engagement

Most wellness recovery action plan providers suggested that elements of the worksheets should be revised for cultural relevance (Mak et al., 2016). Providing psychoeducational sessions on recovery and the purpose of programmes, incorporating visual aids, and other approaches were proposed to facilitate better comprehension, engagement, and group discussion (Mak et al., 2016). Similarly, in Taiwan, the addition of supplementary material and content was found to help

participants to understand the concepts of recovery and self-definition better (Chang et al., 2020). Three studies found that peer provider characteristics such as kindness, genuineness and respect, alongside strong peer/supervisor support, improved participant engagement and the implementation of peer programmes (Mathias et al., 2019; Tse et al., 2014; Yam et al., 2018). Family support and parental permission to attend the intervention in peer-led and peer training programmes were also found to foster positive outcomes for participants (Mathias et al., 2019; Tse et al., 2014).

3.7. How have recovery-oriented interventions been evaluated in Asia?

Due to the huge range of different outcomes measured, only primary outcomes related to clinical and personal recovery are reported in this narrative summary. Seventeen studies evaluated clinical outcomes, and thirty-four evaluated personal recovery outcomes. Fifteen studies evaluated both. There were 35 distinct outcomes measured under the two dimensions of recovery outcomes. Table 3 shows the instruments used in the included studies to assess clinical and personal recovery outcomes, alongside wider outcomes not discussed in this paper (e.g., doctor–patient communication and stigma).

3.7.1. Clinical recovery outcomes

Eighteen studies using quantitative designs, such as randomised controlled trial and pretest–posttest designs ($n = 16$), qualitative interview ($n = 1$) and systematic review ($n = 1$), reported findings on a variety of clinical recovery outcomes. Most studies measured psychiatric symptoms ($n = 13$), followed by mental health ($n = 4$), depression ($n = 3$), anxiety ($n = 1$), and other clinically related outcomes such as knowledge of illness-management ($n = 2$), insight ($n = 2$), and attitudes to medication ($n = 2$). Psychiatric symptoms were the most frequently evaluated outcome and were measured using four different tools, however the most commonly used scale ($n = 8$) was the Brief Psychiatric Rating Scale (BPRS). The majority of studies ($n = 15$) used established and validated tools, with ten studies reporting reliability tests. Two studies (Fan et al., 2018; Fan et al., 2019) used a self-designed questionnaire to assess perceived benefit related to mood among Chinese peers, users and caregivers but did not report validity and reliability tests. Eight studies reported the use of translated versions of measurement tools such as a Chinese version of Beck Depression Inventory (BDI-II), a Japanese version of Brief Psychiatric Rating Scale (BPRS), and a Korean version of Nurses' Observation Scale of Inpatient Evaluation-30-Korea (NOSIE-30-K).

3.7.2. Personal recovery outcomes

Thirty-six studies reported quantitative, qualitative and review findings on various outcomes related to personal recovery. Among the twenty-one different recovery outcomes measured, most studies measured personal recovery ($n = 17$), followed by quality of life ($n = 9$), social functioning ($n = 9$), employment status ($n = 9$), hope ($n = 5$) and self-efficacy ($n = 5$). Illness management and recovery scales were the most frequently used tools to assess self-management and personal recovery ($n = 5$). These scales had clinician- and client-rating versions and were translated into Arabic, Hebrew and Turkish languages (Bendel-Rozow, 2021; Daass-Iraqi et al., 2020; Hasson-Ohayon et al., 2007; Polat and Kutlu, 2021). The Mental Health Recovery Measure (MHRM) was also commonly used to assess personal recovery in four studies, and of these, three reported using the Chinese version (Wong et al., 2019; Yam et al., 2018; Young et al., 2019). Other personal recovery outcomes such as patient activation in treatment, family burden, self-esteem and empowerment were assessed in three studies or less. Most studies used established personal recovery outcome measures ($n = 29$) but only twenty studies reported the reliability tests of the tools for their population. Twenty-four studies reported the use of translated versions of measures in Chinese, Japanese, Hebrew, Arabic, Korean and Turkish languages. Three studies (Fan et al., 2018; Fan

et al., 2019; Gelkopf et al., 2016) developed study-specific tools. Of these, Gelkopf et al. (2016) reported acceptable to excellent reliability in goal setting, attainment, unmet needs, and self-efficacy measurement tools. However, Fan et al. (2018, 2019) did not report validity and reliability scores in a study-specific questionnaire in the Chinese language for assessing social functioning and family burden.

4. Discussion

This is the first known review to systematically identify and synthesise existing evidence relating to recovery-oriented interventions for people with mental illness within Asian countries. This review identified at least seven types of recovery-oriented interventions which had been implemented: peer programmes, illness management and recovery, individual placement and support, strengths model case management, clubhouse model, wellness recovery action plan, and psychiatric advance directive, alongside several more novel recovery interventions. Whilst over half of the studies have been transferred from Western settings, particularly from the US, several new interventions have been developed in Asia (e.g., empowerment intervention), with many of them incorporating existing Western materials/models (e.g., integrated supported employment). Overall, however, this review suggests that peer programmes, illness management and recovery, and individual placement and support have been the most widely implemented recovery-orientated programmes across Asia.

The number of studies reporting novel recovery-based approaches in Asia has increased over the last ten years, suggesting that the development and implementation of such interventions are becoming more prominent. However, it is noteworthy that more than half of studies in this review were from high-income countries, such as Hong Kong, Japan, Israel, Taiwan, Korea and Singapore (The World Bank, 2021). It is likely that the infrastructure and promotion of mental health services towards recovery-oriented practice, and the shift from hospital to community-based care, can be more easily supported in these comparatively affluent countries (Matsuoka, 2021; Tse et al., 2013b). This may be in contrast to low- and middle-income countries where resources and budgets for even basic mental health care are often limited (Pathare et al., 2018).

Nearly half of the 38 studies in this review had incorporated adaptations to language, literacy, content, cultural norms, religious beliefs, family, and national or local service contexts. However, it was difficult to assess whether the adaptations were conducted appropriately due to the lack of sufficient detail reported in these studies. Although some non-adapted interventions yielded favourable results, the poor cultural fit of the wellness recovery action plan intervention led to minimal improvements in terms of outcomes (Mak et al., 2016). This supports Castro et al. (2010) who suggest that mental health interventions that do not address cultural needs and preferences may be ineffective or even cause adverse effects. The implementation of recovery-oriented interventions in Asia may indeed differ from Anglophone countries, where the concept of recovery-oriented care originated, with a key difference being the emphasis on family and cultural norms. In this review, adaptations which acknowledged the importance of the family to many Asian cultures were commonly acknowledged and incorporated into interventions (Daass-Iraqi et al., 2020; Fan et al., 2018; Fan et al., 2019). This was achieved by incorporating relevant content to strengthen family relationships and the development of intervention manuals for family members (Daass-Iraqi et al., 2020; Fan et al., 2018; Fan et al., 2019). This is in line with cultural adaptations made for other psychosocial interventions for schizophrenia in Asia which recognise the importance of family (Degnan et al., 2018). In addition, several studies have acknowledged the important values of passivity and humility in Chinese culture, where individuals may be less likely to express their feelings and thoughts and underestimate their own strengths and abilities (Hui et al., 2015; Tse et al., 2016; Wong et al., 2019). These values may not align with the strength-based or person-centred focus of Western

Table 3
Outcome measured and measurement tools.

Tools used to measure each outcome in the study	Number of studies measuring each outcome
<i>Clinical recovery outcome (14 outcomes)</i>	
Psychiatric symptoms	13
• Brief Psychiatric Rating Scale (BPRS) (Cheng and Yen, 2021; Fujita et al., 2010; Lee et al., 2015; Lin et al., 2013a; Lin et al., 2013b; Tan et al., 2017; Yamaguchi et al., 2017b; Yan et al., 2021)	
• Brief Psychiatric Rating Scale (BPRS) (Japanese version) (Fujita et al., 2010)	
• Colorado Symptom Index (CSI) (Gelkopf et al., 2016; Ha., 2016)	
• Modified Colorado Symptom Index (Chinese version) (Mak et al., 2016)	
• Positive and Negative Syndrome Scale (PANSS) (A.W. Tsang et al., 2010; Yan et al., 2021)	
• Nurses' Observation Scale of In-patient Evaluation-30-Korea (NOSIE-30-K) (Park and Sung, 2013)	
Mental health	4
• Chinese Health Questionnaire-12 (CHQ-12)-Taiwan (Cheng and Yen, 2021)	
• Chinese version of the General Health Questionnaire (C-GHQ-12) -Hong Kong (Hui et al., 2015)	
• Chinese questionnaire on perceived benefit-brief structured face to face interviews (self-designed tool) (Fan et al., 2018; Fan et al., 2019)	
Depression	3
• Beck Depression Inventory (BDI-II) (Chinese version) (A.W. Tsang et al., 2010)	
• Geriatric Depression Scale-15 (GDS-15) (Wang et al., 2017)	
• Self-Rating Depression Scale (Yan et al., 2021)	
• Hamilton Depression Scale (Yan et al., 2021)	
Anxiety	1
• Self-Rating Anxiety Scale (Yan et al., 2021)	
• Hamilton Anxiety Scale (Yan et al., 2021)	
Knowledge of illness-management	2
• Knowledge of Illness-Management (KI) Scale (Chinese version) (Lin et al., 2013a; Lin et al., 2013b)	
Insight	2
• Schedule for Assessment of Insight-Expanded Version (SAI-E) (Chinese version) (Lin et al., 2013a; Lin et al., 2013b)	
Drug attitude	2
• Drug Attitude Inventory-30 (DAI-30) (Chinese version) (Lin et al., 2013a; Lin et al., 2013b)	
Drug adverse effect	1
• Drug-Induced Extrapyrimal Symptom Scale (DIEPSS) (Yamaguchi et al., 2017b)	
Drug adherence	1
• Morisky Medication Adherence Scale (MMAS) (Yamaguchi et al., 2017b)	
Number of attendances to emergency department, days missing psychiatric appointments (NoFUdays), length of stay, rehospitalisation rate	1
• Clinical Data Analysis and Reporting System (CDARS) (Lee et al., 2015)	
Insomnia	1
• Self-administered Insomnia Questionnaire (Wang et al., 2017)	
<i>Personal recovery outcomes (21 outcomes)</i>	
Personal recovery	17
• Illness Management and Recovery (IMR) Scale-clinician version (Hebrew version) (Bendel-Rozow, 2021; Hasson-Ohayon et al., 2007)	
• IMR Scale-client version (Hebrew version) (Bendel-Rozow, 2021; Hasson-Ohayon et al., 2007)	
• IMR Scale-Patient Form (IMRS-P) (Turkish version) (Polat and Kutlu, 2021)	
• IMR scale-Clinician's rating (IMRS-CR) (Tan et al., 2017)	
• IMR-Self-rating (IMRS-SR) (Tan et al., 2017)	
• IMR scale-Clinician's rating (Arabic version) (Daass-Iraqi et al., 2020)	
• IMR scale-Participant's rating (Arabic version) (Daass-Iraqi et al., 2020)	
• Mental Health Recovery Measure (MHRM) (Chinese version) (Wong et al., 2019; Yam et al., 2018; Young et al., 2019)	
• Mental Health Recovery Measure (MHRM) (Korean version) (Ha., 2016)	
• Recovery Assessment Scale (RAS) (Japanese version) (Chiba et al., 2014)	
• Recovery Assessment Scale (RAS) (Chinese version) (Tse et al., 2014)	
• Subjective Recovery Assessment Scale (RAS) (Korean version) (Park and Sung, 2013)	
• Self-Identified Stage of Recovery Part B (SISR-B) (Japanese version) (Chiba et al., 2014)	
• Self-Identified Stage of Recovery (SISR-A&B) (Yamaguchi et al., 2017b)	
• Stages of Recovery Scale (SRS) (Chinese version) (Chang et al., 2020; Hui et al., 2015)	
• Recovery Markers Questionnaire (RMQ) (Chinese version) (Mak et al., 2016)	
• Maryland Assessment of Recovery in People with Serious Mental Illness (MARS) (Chinese version) (Tsoi et al., 2019)	
• Recovery Self-Assessment-Revised (RSA-R) (Chinese version) (Wong et al., 2019)	
Quality of life	9
• Manchester Short Assessment of Quality of Life scale (MANSA) (Arabic version) (Daass-Iraqi et al., 2020)	
• Manchester Short Assessment of Quality of Life scale (MANSA) (Gelkopf et al., 2016)	
• WHO-5 Well-being Index (WHO-5) (Chinese version) (Wang et al., 2017)	
• World Health Organization Quality of Life (WHOQOL26) (Yamaguchi et al., 2017b)	
• Short- Form 36-item Health Survey Acute Version (SF-36) (health-related quality of life) (Japanese version) (Fujita et al., 2010)	
• World Health Organization Quality of Life Scale-Abbreviated Version-Chinese version (WHOQOL-BREF) (A.W. Tsang et al., 2010; Wong et al., 2019)	
• Hong Kong Chinese Version World Health Organization Quality of Life Measure abbreviated version (WHOQOL- BREF-HK) (Lee et al., 2015)	
• Schizophrenia Quality of Life Scale (Yan et al., 2021)	
• Life satisfaction index (LSI) (Yan et al., 2021)	
Social functioning	9
• Social Functioning Scale-Patient Form (SFS-P) (Turkish version) (Polat and Kutlu, 2021)	
• Global Assessment of Functioning (GAF) (Cheng and Yen, 2021; Yamaguchi et al., 2017b)	
• Chinese version of the Social Functioning Scale (C-SFS) (Cheng and Yen, 2021)	
• Global Assessment of Functioning (GAF) (Fujita et al., 2010)	
• Activity of Daily Living Scale (Yan et al., 2021)	
• Personal and Social Performance Scale (Yan et al., 2021)	

Table 3 (continued)

Tools used to measure each outcome in the study	Number of studies measuring each outcome
<ul style="list-style-type: none"> Social Disability Screening Schedule (Yan et al., 2021) Global assessment scale (GAS) (good reliability and validity) (Tan et al., 2017) 7 items based on the Manchester Short Assessment of Quality of Life scale (MANSA) (interpersonal relationships and the social domain) (Gelkopf et al., 2016) Questionnaire on perceived benefit-brief structured face to face interviews (self-designed tool) (Fan et al., 2018; Fan et al., 2019) 	
Employment	9
<ul style="list-style-type: none"> Self-report and cross-checked through chart records (Oshima et al., 2014) Employment Outcome Checklist (EOC) (Tsang et al., 2009; H.W. Tsang et al., 2010) Number of competitive employment (a job paid at the market rate) (Kin Wong et al., 2008) Job Placement and Follow-up Record (employment status of the participants including job retention rate, job tenure, nature of job placement, and earnings) (Wong et al., 2004) Number of competitive employment (Young et al., 2019) Number of competitive employment (Hayashi et al., 2020) Users' records on file (earned income from employment) (Cheng and Yen, 2021) Monitoring worksheet & Client Service Receipt Inventory-Japanese version (CSRI-J) (employment status & work tenures) (Yamaguchi et al., 2017a) 	
Hope	5
<ul style="list-style-type: none"> Self-report Hope Scale (Arabic version) (Daass-Iraqi et al., 2020) State Hope Scale (Chinese version) (Mak et al., 2016) Trait Hope Scale (Chinese version) (Wong et al., 2019) Adult State Hope Scale (ASHS) (Chinese version) (Young et al., 2019) Chinese versions of the Trait Hope Scale (Tse et al., 2014) 	
Self-efficacy	5
<ul style="list-style-type: none"> A 12-item scale designed by the research team (Gelkopf et al., 2016) Coping Efficacy Scale (Hebrew version) (Hasson-Ohayon et al., 2007) Generalized Perceived Self-Efficacy Scale (Arabic version) (Daass-Iraqi et al., 2020) Self-Efficacy for Community Life Scale for Schizophrenia (SECL) (Japanese version) (Fujita et al., 2010) Chinese Occupational Self-efficacy Scale (COSS) (Yam et al., 2018) 	
Social support	4
<ul style="list-style-type: none"> Multidimensional Scale of Perceived Social Support (MSPSS) (Hebrew version) (Hasson-Ohayon et al., 2007) Social Support Scale (SSS) (Chinese version) (Cheng and Yen, 2021) ENRICH Social Support Inventory (Mak et al., 2016) Multidimensional Scale of Perceived Social Support (MSPSS) (Chinese version) (Young et al., 2019) 	
Participant activation in treatment	3
<ul style="list-style-type: none"> Patient Activation Measure (PAM) (Hebrew version) (Bendel-Rozow, 2021) Patient Activation Measure for Mental Health (PAM13-MH) (Japanese version) (Fujita et al., 2010; Yamaguchi et al., 2017b) 	
Family burden	2
<ul style="list-style-type: none"> Family Burden Scale (FBS) (Yan et al., 2021) Questionnaire on the effects of peer support service-brief structured face to face interviews (self-designed tool) (Fan et al., 2019) 	
Self-esteem	2
<ul style="list-style-type: none"> Chinese version of the Rosenberg Self-esteem Scale (A.W. Tsang et al., 2010) Rosenberg Self-Esteem Scale (Chinese version) (Tse et al., 2014) 	
Life satisfaction	2
<ul style="list-style-type: none"> Life Satisfaction Scale (LSS) (Japanese version) (Fujita et al., 2010) Satisfaction with Life Scale (Chinese version) (Hui et al., 2015) 	
Helplessness level	2
<ul style="list-style-type: none"> Modified Learned Helplessness Scale (MLHS) (Arabic version) (Hasan and Musleh, 2017) Modified Learned Helplessness Scale (LHS) (Korean version) (Park and Sung, 2013) 	
Stigma	2
<ul style="list-style-type: none"> Stigma resistance subscale of the Internalized Stigma of Mental Illness (Chinese version) (Mak et al., 2016) Chinese Self-stigma of Mental Illness Scale (CSSMIS) (Yam et al., 2018) 	
Job termination	2
<ul style="list-style-type: none"> Chinese Job Termination Checklist (CJTC) (Tsang et al., 2009; H.W. Tsang et al., 2010) 	
Job stress coping	1
<ul style="list-style-type: none"> Chinese Job Stress Coping Scale (CJSC) (Tsang et al., 2009) 	
Empowerment	1
<ul style="list-style-type: none"> Youth Empowerment Scale-Mental Health (Chinese version) (Mak et al., 2016) 	
Locus of control	1
<ul style="list-style-type: none"> Chinese version of the Levenson Internality, Powerful Others and Chance Scale of locus of control (IPC) (A.W. Tsang et al., 2010) 	
Goal setting and attainment	1
<ul style="list-style-type: none"> A tool containing three items created especially for this study (Gelkopf et al., 2016) 	
Unmet needs	1
<ul style="list-style-type: none"> A tool constructed by the research team based on recent literature (Gelkopf et al., 2016) 	
Shared decision-making	1
<ul style="list-style-type: none"> Shared decision-making-18 (Yamaguchi et al., 2017b) 	
Patient-doctor relationship and communication	1
<ul style="list-style-type: none"> Scale To Assess Therapeutic Relationships in Community Mental Health Care (STAR) (Yamaguchi et al., 2017b) Interpersonal Processes of Care Survey Short Form (IPC-SF) (Yamaguchi et al., 2017b) 	

recovery interventions. Therefore, adaptations have been made to accommodate these cultural nuances by employing elements of modesty and patience, along with the use of self-exploration and facilitative questioning techniques (Hui et al., 2015; Wong et al., 2019).

This review identified facilitators and barriers to implementing recovery-oriented interventions in Asia. Data suggests that family involvement can be complex, with positive engagement from family and peers enhancing participants' experiences (Mathias et al., 2019; Tse

et al., 2014) but excessive involvement of family members can be unhelpful (Shields et al., 2013). Other cultural barriers, including power imbalances within the doctor–patient relationship, mental health stigma, limited literacy, and insufficient resources and specialised training were all highlighted in this review. A study in Taiwan (Chang et al., 2021) reported similar issues when implementing a recovery programme, including inadequate organisational support, poor staff understanding of recovery concepts, and overprotective family members. Indeed, findings from this review suggest that recovery concepts are often unfamiliar to Asian healthcare providers, service users and families. Therefore, providing additional sessions and appropriate training on recovery to increase understanding of these new concepts may be beneficial (Chang et al., 2020; Mak et al., 2016).

This review identified the primary outcomes evaluated by studies of recovery-oriented interventions in Asia. Personal recovery was reported more commonly than clinical recovery outcomes, with measures of specific personal recovery, quality of life, social functioning and employment most frequently reported. Due to the subjective definition of personal recovery, associated measures may vary based on individual experiences and the conceptual frameworks used (Shanks et al., 2013). Nevertheless, the outcomes reported from this review strongly aligned with the main categories and sub-categories proposed by the CHIME framework (Leamy et al., 2011). Interestingly, whilst the role of the family is clearly an important element of recovery to many Asian people, only two studies evaluated aspects of family burden as an intervention outcome (Fan et al., 2019; Yan et al., 2021).

Shanks et al.'s (2013) review of personal recovery measures identified the Recovery Assessment Scale (RAS) as the most widely used instrument. The Recovery Assessment Scale was also commonly utilised in studies included in this review, although the clinician and client versions of illness management and recovery scales were the most frequently reported tools. Given that recovery is a somewhat subjective and personal experience, more studies should consider employing a mixed methods approach to evaluation, using qualitative methods alongside quantitative methods, to gain greater insight into the impact of recovery programmes. For clinical recovery, psychiatric symptoms were most frequently evaluated, and with the standardised Brief Psychiatric Rating Scale (BPRS) being the most commonly employed tool. Ensuring cross-cultural validity and reliability of assessment tools is essential. Many studies in this review did use established, validated, and translated tools. However, several studies lacked a detailed description of the translation processes or of any local validity tests which, if performed inappropriately, could potentially affect data accuracy (Kimberlin and Winterstein, 2008).

4.1. Implications for research and practice

This review highlights cultural aspects that can be targeted by future recovery-oriented practice. Using frameworks for culturally adapting interventions in future research will help to improve the rigour and maximise transferability and effectiveness of interventions from different cultures (Bernal and Sáez-Santiago, 2006). Furthermore, cultural influences, organisational support, mental health systems, and economic considerations must be better understood in order to facilitate better implementation of recovery-oriented interventions across Asia. Around 75% of the studies in this review originated in East Asia, including Hong Kong, Japan, Taiwan, China, and Korea. The predominance of research from East Asia and other high-income countries also highlights the need to conduct more recovery-focused research across a broader range of countries to ascertain their effectiveness in diverse populations. Cost-effectiveness studies in particular will also be important to support the wider introduction of interventions in low- to middle-income Asian countries. Finally, the quality of research included in this review was moderate. Methodological issues included small sample sizes, heterogeneous samples, lack of equivalent control groups,

the short duration of most follow-ups, and the use of unvalidated measurement tools. Future research utilising randomised controlled trial designs and dismantling studies is required to validate the different components of programmes and to establish more robust evidence on the effectiveness of recovery-oriented practice interventions in Asian populations.

4.2. Strengths and limitations

This review adhered to a recommended review framework (Whittemore and Knafl, 2005) and employed a comprehensive search strategy. However, limitations should be considered when interpreting the findings. Firstly, this review is geographically skewed due to a dominance of research from specific parts of Asia, namely Hong Kong and Japan. Thus, the generalisability of the review findings may be limited to countries that are culturally similar. Secondly, this review is limited to studies published in English and therefore recovery-oriented practices in Asia which have been published in other languages may have been omitted. Thirdly, despite attempts to obtain all relevant studies using multiple databases and handsearching, variations in search terms for “recovery-oriented” interventions may have resulted in a failure to retrieve relevant articles. Lastly, the omission of specific diagnoses within the search strategy, by not breaking down the term “mental illness”, may have limited the inclusion of potentially important studies.

5. Conclusion

This integrative review highlights that the development, adaptation and implementation of recovery-oriented interventions in Asia are growing. Although the quality of studies was moderate, the review suggests that the implementation of recovery-based interventions in Asia is feasible. Cultural adaptation is likely to increase acceptability and relevance to these populations. However, given the cultural, linguistic and economic diversity of the continent of Asia, future research needs to consider the application of recovery-orientated practice across a much wider range of Asian countries.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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