Barriers and facilitators for the implementation of mental health programmes in primary care in low- and middle-income countries: a systematic review

Georgina Miguel Esponda, MSc
Faculty of Epidemiology & Population Health, London School of Hygiene & Tropical Medicine, London, UK
georgina.miguel-esponda@lshtm.ac.uk

Sarah Hartman, MSc
Clinical Psychology Department, Clark University, Worcester, Massachusetts, United States
shartman@clarku.edu

Onaiza Qureshi, MSc
Faculty of Epidemiology & Population Health, London School of Hygiene & Tropical Medicine, London, UK
onaiza.qureshi@lshtm.ac.uk

Euan Sadler, PhD
Health Service & Population Research Department, King's Improvement Science and Centre for Implementation Science, King's College London, London, UK and the Faculty of Environmental and Life Sciences, University of Southampton, Southampton, UK
euan.sadler@kcl.ac.uk

Alex Cohen, PhD
Faculty of Epidemiology & Population Health, London School of Hygiene & Tropical Medicine, London, UK
alex.cohen@lshtm.ac.uk

Ritsuko Kakuma, PhD
Faculty of Epidemiology & Population Health, London School of Hygiene & Tropical Medicine, London, UK
ritsuko.kakuma@lshtm.ac.uk

*Corresponding author
Georgina Miguel Esponda, Centre for Global Mental Health, Department of Population Health, Faculty of Epidemiology & Population Health, London School of Hygiene and Tropical Medicine, Keppel Street, London, WC1E 7HT, UK. Phone number: 07597885560; Email: georgina.miguel-esponda@lshtm.ac.uk

Summary

Integration of services into primary health care for people with common mental disorders is considered a key strategy to improve access to mental health care in low- and middle-income countries, yet services at the primary care level remain largely unavailable. We conducted a

systematic review to understand previously experienced barriers and facilitators in the implementation of mental health programmes. We searched five databases (MEDLINE, EMBASE, PsycINFO, Global Health, and LILACS), and included studies published between January 1, 1990 until September 1, 2017 that used qualitative methods to assess the implementation of programmes for adults with common mental disorders at primary health care settings in low- and middle-income countries. The CASP Qualitative Checklist was used to assess the quality of eligible papers. We used the "best fit" framework approach to synthesise findings according to the Consolidated Framework for Implementation Research (CFIR). We identified 24 papers for inclusion. These described the implementation of nine programmes in 11 countries. Key factors included the extent to which an organisation is ready for implementation; the attributes, knowledge and beliefs of providers; complex service user needs; adaptability and perceived advantage of interventions; and the processes of planning and evaluating the implementation. Evidence on implementation of mental health programmes in low- and middle-income countries remains limited. Synthesizing results according to the CFIR helped to identify key areas for future action, including investment on primary health care strengthening, capacity building for health providers and increased support to address the social needs of service users.

Key words

Common mental disorders, depression, anxiety, programmes for mental health, implementation, barriers, facilitators, primary health care, Consolidated Framework for Implementation Research, systematic review

Background

Common mental disorders such as depression and anxiety are among the leading causes of years lived with disability globally.[1] In low- and-middle income countries estimates indicate that 79-93% of people with depression and 85-95% of people with anxiety do not have access to treatment.[2] Low availability of human resources for mental health and limited implementation of mental health programmes at scale contribute to this large unmet need for mental health care.[3, 4] The WHO promotes the integration of mental health services into primary health care as a feasible strategy to tackle these resource shortages.[5, 6] Many countries have endorsed this strategy, including the 97% of WHO member states that promote the delivery of mental health services in community-level or primary health care.[7]

Yet mental health services remain unavailable at the primary care level in a large majority of countries.[8] Compared to integrated care for other conditions, mental health has been under

prioritized due to difficulties in establishing the impact of mental disorders on premature mortality, the historic reliance on psychologists and psychiatrists to deliver care, and stigma towards mental disorders.[9-11] Difficulties in implementation also pose significant barriers to the provision of integrated services at scale.[12] Large workloads, limited specialist support and shortages of psychotropic medication have previously been identified as some of the key challenges.[12] However, many other factors play a role in this intricate process as implementation in primary care generally involves complex interventions, coordination and engagement of a range of stakeholders, and implementation into dynamic health systems and contexts[13, 14].

Factors that hinder or enable the adoption of a new practice and influence outcomes of the implementation of an intervention have been defined as implementation determinants.[15] Multiple frameworks of implementation determinants have been developed with the aim of providing a comprehensive understanding of the variety of elements (e.g. health professionals, interventions, service users, organisation, resources, context) involved in the implementation of interventions and their complex relationships.[16]

Given that integration into primary care is a key priority to address the disease burden of common mental disorders,[5] this study aims to improve the understanding of the barriers previously faced by implementers and the facilitators that have enabled implementation through a review and synthesis of peer-reviewed qualitative literature of the determinants for the implementation of mental health programmes in primary health care for common mental disorders in low- and-middle income countries. Our objectives are to identify barriers and facilitators to implementation, and to adopt a pre-existing framework for understanding implementation determinants to synthesize available evidence and identify research gaps.

Methods

This systematic review is reported according to the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) criteria.[17] The protocol for this review was not registered.

Data collection and analysis

To identify relevant literature we combined search terms related to (a) implementation determinants, (b) primary health care settings, and (c) common mental disorders to perform searches in five bibliographic databases (MEDLINE, EMBASE, PsycINFO, Global Health, and LILACS). Additionally, we conducted searches in Google and Google Scholar and hand searched reference lists of included articles.

After removing duplicates, GME screened all titles and abstracts, and SH and OQ independently double-screened a 10% random sample of the titles and abstracts. The inter-rater reliability between first and second screeners was calculated at 96%. All full-texts papers were then assessed for eligibility by GME and SH who independently double-screened a sample of 20%. Both authors discussed all disagreements, and, if necessary, a third author (RK) mediated agreement.

Eligibility criteria

We included peer-reviewed studies that used qualitative methodologies to explore barriers or facilitators to the implementation of programmes for common mental disorders in primary health care settings within low- and-middle income countries. Studies published from January 1, 1990 onwards in English or Spanish and meeting the criteria detailed in Table 1 were eligible for inclusion. We focused on determinants to implementation since our primary focus was on the factors that influence the process of implementation. We only included studies of programmes that delivered services at primary care settings by non-specialist health workers (e.g. medical doctors, nurses or social workers) or lay workers given that models of integration in primary care in low- and-middle income countries often utilise these cadres due to resource shortages.[4, 18] We focused on common mental disorders due to their high prevalence and comorbidity with other health conditions.[19] Young populations and other vulnerable groups were excluded since implementation requirements for interventions targeting these population groups are likely to differ. We excluded studies from high income countries given that human and technical resources available as well as health system characteristics are significantly different.

Table 1. Eligibility criteria for variables of interest

	Variable definition	Inclusion criteria	Exclusion criteria
Implementation determinants	Barriers or facilitators for the implementation of an intervention.[15]	Studies that assessed the determinants for the implementation of programmes at the design (e.g. formative or pilot studies) or evaluation phases.	Studies that only examined factors related to service access or only evaluated the process or clinical outcomes of a programme.
Programmes at primary health care settings	Programmes refers to services that are delivered or developed for delivery as part of routine care. Primary health care settings are health	Studies of programmes delivered at primary health care settings by non-specialist health workers or lay workers.	Studies of programmes designed to be entirely provided by mental health specialists or at secondary or tertiary platforms of care.

	facilities located in close proximity to where people live and work and where basic health services are provided.[20]		
Adults with common mental disorders	CMDs refers to depressive and anxiety disorders included in two ICD-10[21] classifications: neurotic, stress-related and somatoform disorders (codes F40-48) and mood disorders (codes F30-39).[22]	Studies of programmes targeting general adult populations (above 18 years old) with common mental disorders exclusively or as part of wider programmes.	Studies of programmes that focused in young populations (children or adolescents) or specific subgroups (e.g. refugees, veterans, or populations affected by conflicts or disasters).
Low- and-middle income countries	Countries who economies were classified as low-income, lower-middle income, middle-income or upper-middle income by the World Bank[23] at the date of publication	Low- and-middle income countries	High income countries

Quality appraisal and data extraction

We only assessed qualitative methods, hence for included mixed-methods studies our classifications do not reflect the overall study quality. We used the Critical Appraisal Skills Programme (CASP) Qualitative Checklist[24] to appraise study quality. Broadly, this checklist assesses the aims of the research, methods used to generate the data, methods for analysis and its implications. We classified studies into three categories according to the number of criteria met or reported on: good (8 or more items), fair (5-7 items) and poor (less than 5 items). We used an Excel spreadsheet to tabulate all extracted information (i.e. type of study, type of mental health services, and results).

Data synthesis

We used the "best fit" framework synthesis approach. This method involves: (a) identifying an existing framework or logic model; (b) coding data against this framework; (c) identifying emerging themes and; (d) synthesizing results in a new revised framework.[25, 26] For the first step, we identified the Consolidated Framework for Implementation Research (CFIR), an existing meta-framework which includes more than 20 constructs grouped in five domains: characteristics of the intervention,

inner and outer settings, characteristics of the individuals involved and aspects of the implementation process (Figure 1).[27] The CFIR was selected as it represents a comprehensive categorization of implementation determinants informed by both empirical findings and theory, and has been extensively used in related research.[27, 28]

GME extracted data from the results section of all included studies and assigned codes deductively according to the domains and constructs of the CFIR. Subsequently, data coded under each CFIR category was recoded into barriers and facilitators. Lastly, emerging themes were identified and synthesized. We did not find any data that did not fit in the framework. Data coding was undertaken using NVivo (Version 11).

Findings

We identified 12,661 records through the database, internet and hand searches. 284 papers were eligible for full-text screening. Figure 2 describes the number of papers excluded at each stage. Twenty-four publications which report the findings of 21 studies related to 9 mental health care programmes were included in the review (table 2).

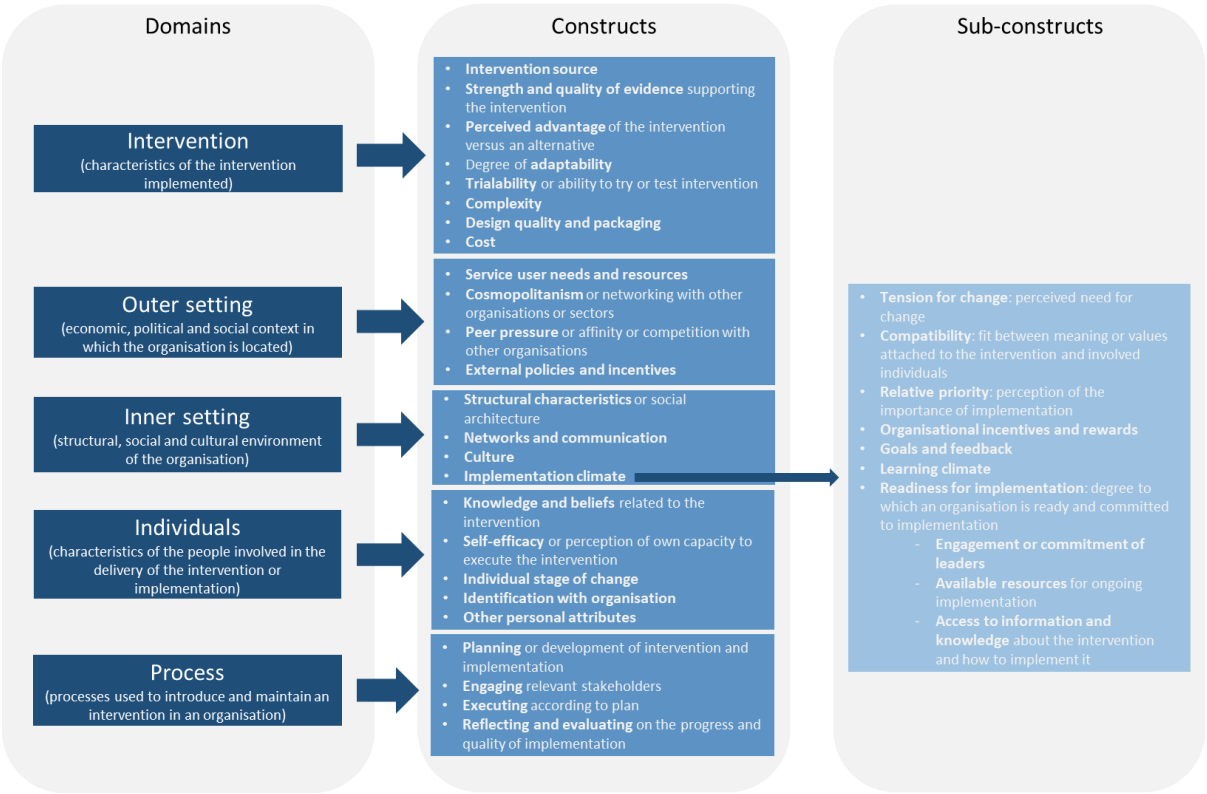

Figure 1. Diagram of the Consolidated Framework for Implementation Research[27]

These programmes were in two low income countries,[29-33] four lower-middle income countries,[34-39] and one upper-middle income country.[40, 41] Two related programmes, the Programme for Improving Mental Health Care (PRIME) and Emerging mental health systems in low- and middle-income countries (EMERALD), were in multiple sites including three low-, two lower-middle, and one upper-middle income country.[42-51] At the time of assessment, all programme countries except for Lebanon and Jordan had a mental health policy or strategy that promoted the integration of mental health services in primary care.[32, 36, 39, 48, 52-58] Since the included studies were published, policies that promote integration in both Lebanon and Jordan have been introduced.[58, 59]

All programmes used qualitative or mixed-methods study designs. Common qualitative methods for data collection included in-depth interviews, focus groups and document review. Sample sizes ranged from 10 to 429 participants and included a variety of stakeholders such as policy makers, government officials, service managers, service providers, community members, service users and family members. Common themes explored included perspectives and experiences with training, service delivery and service access.

Ten studies were rated as being of good quality,[29-31, 33, 38, 39, 43-45, 50, 51, 60] 11 studies were rated as being of fair quality,[32, 34-37, 40-42, 47-49] and one study was rated as being of poor quality.[46] Detailed quality ratings for included studies can be found in Appendix 2.

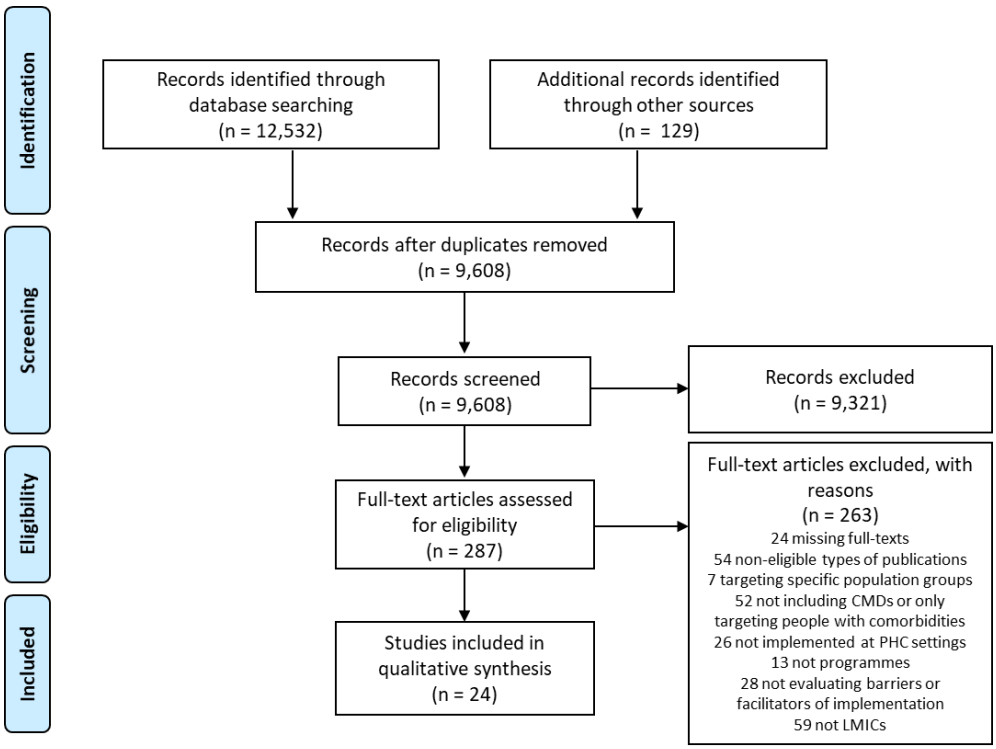

Figure 2. PRISMA flow diagram of search results

1

Table 2. Mental health programmes included in the review

Programme	Setting	Study design(s)	Participants and sample size	Data collection methods	Platform of care	Target population	Type of provider	Programme / intervention	CFIR[27] domains and constructs
Brazilian national mental health programme[40, 41]	Brazil (Rio de Janeiro and Florianopolis), Latin America	Mixed-methods cross-sectional study and a qualitative study	Personnel involved in primary care and mental health services in Rio de Janeiro: 18 health managers and 24 service providers including general practitioners, psychologists and psychiatrists In Florianopolis: 2 physicians, 2 nurses, 2 managers, 1 primary health care district manager, 1 mental health district manager, 3 psychiatrists and 3 psychologists	Semi-structured interviews (n=42) and in-depth interviews (n=14)	National level/ primary health care	General population/ Includes depression but targeted to all disorders	Team of professionals based in primary health clinic and collaborating with medical doctors but can include psychologists, nutritionists, social workers, or others	Matrix approach- the generalist professional talks to a specialist about the cases. Service users that cannot be managed by generalists are referred. Includes pharmacological treatment and psychosocial interventions	Intervention (evidence strength and quality, perceived advantage and complexity), outer setting (service user needs & resources), inner setting (implementation readiness & climate, networks & communication), individuals (knowledge & beliefs, self-efficacy), process (planning)
EMERALD (linked to PRIME) – multisite[44]	Ethiopia, India, Nepal, South Africa, Uganda and Nigeria, Sub-Saharan	Qualitative study	141 stakeholders including policy makers at the national level and Ministry of Health, managers at the	In-depth interviews (n=141)	District level/ primary health care and community	General adult population/ Psychoses, alcohol use disorders,	Variations by country. Different cadres of primary health	Collaborative stepped care[a] Treatments and services vary by country. Generally	Intervention (complexity), outer setting (service user needs & resources, cosmopolitanism,

	Africa and South Asia		province and district level of primary care and mental health services			depression and epilepsy (in Ethiopia, Nepal and Uganda)	care staff and lay health workers	include assessment, pharmacological treatment and some form of psychosocial or psychoeducation support	external policies & incentives), inner setting (implementation readiness & climate), individuals (knowledge & beliefs), process (engaging)
Friendship Bench project[29]	Zimbabwe, Sub-Saharan Africa	Qualitative study	Around 55 lay health workers, 6 service users and 1 supervisor	In-depth interviews (n=12) and focus groups (n=5)	District level/ primary health care and community	General population/ Depression and other CMDs	Lay health workers (female, literate, with primary education, 62 years old on average)	Collaborative stepped care[a] Services include clinical assessment, problem solving therapy and referrals to specialised services if needed	Intervention (perceived advantage, adaptability), outer setting (service user needs & resources), inner setting (implementation readiness & climate), individuals (knowledge & beliefs, other personal attributes), process (planning)
Jordanian national mental health programme[37]	Jordan, Middle East	Qualitative study	24 physicians, 9 nurse assistants and 17 midwives	Focus groups (n=5)	National level/ primary health care	General population (age not	Primary health care providers (physicians	Not specified but using task-shifting[b] Services and	Outer setting (service user needs & resources), inner setting (readiness

						specified)/ Depression	and non-physicians)	treatments not specified	for implementation), individuals (knowledge & beliefs, self-efficacy)
Kenyan province mental health programme[30-33]	Kenya, Sub-Saharan Africa	Qualitative study[30, 31, 33] and a situational analysis[32]	35 health workers from primary health care clinics, 20 service users and stakeholders from various sectors, professionals, clients, families, and service providers	Focus groups (n=4); situational analysis included document reviews, consultations, site visits, interviews, stakeholder workshops, focus groups and results from other studies	Province level/ primary health care	General population (including children and adolescents)/ Depression and anxiety, psychoses, child and adolescent mental disorders and learning disabilities	Primary health care providers	Not specified- primary health care providers are trained to assess, diagnose, and manage treatment. Includes pharmacological treatment and counselling (psychosocial interventions)	Intervention (evidence strength & quality, perceived advantage, complexity), outer setting (service user needs & resources, cosmopolitanism, external policies & incentives), inner setting (implementation readiness & climate, networks & communication), individuals (knowledge & beliefs, other personal attributes), process (reflecting & evaluating)

Lebanese national mental health programme[36]	Lebanon, Middle East	Qualitative study	46 participants including general practitioners, mid-level staff, paediatricians, and gynaecologists	Focus groups (n=8)	National level/ primary health care	General population including refugees/ Depression and anxiety, medically unexplained complaints, sleep problems and maternal and child mental health	Primary health care nurses, social workers, GPs (certified, with two years of experience and willing to attend the required days of training), gynaecologists and paediatricians	Task-shifting$_b$ Services include prescription and management of pharmacological treatment and psychoeducation	Outer setting (service user needs & resources), inner setting (readiness for implementation), individuals (knowledge & beliefs, self-efficacy), process (reflecting & evaluating)
MANAS project[35, 38]	India (Goa), South Asia	Consultation phase, formative study, pilot study [35] and qualitative study[38]	Consultation phase included 145 doctors, primary care staff and international collaborators; formative study included 10 doctors, 50 service users, 17 PHC staff and 12 members of the intervention team; pilot study included a random sample of 77 service users; qualitative study included 31 PHC	Consultation meetings (n=14), in-depth semi-structured interviews (n=89) for the formative study, semi-structured interviews (n=77) for the pilot study, and in-depth interviews for	Selected facilities in the state/ primary health care	General adult population/ Depression and anxiety	Primary health care physicians, psychiatrists and Lay Health Counsellors (female college graduates who have received training)	Collaborative stepped care$_a$ Includes pharmacological treatment, psychoeducation, interpersonal therapy, referrals, adherence support, and case management	Intervention (perceived advantage, adaptability, cost), outer setting (service user needs & resources), inner setting (readiness for implementation, networks & communication), individuals (knowledge & beliefs, self-efficacy, other personal

			doctors and general practitioners, 17 health counsellors, 28 health assistants, 2 clinical specialists and 41 additional primary care staff	the qualitative study (n=119)					attributes), process (planning, reflecting & evaluating)
MHaPP – South Africa[34, 39, 60]	South Africa, Sub-Saharan Africa	Mixed-methods situational analysis[34, 39] and a qualitative study[60]	District managers, district hospital personnel, primary care personnel, community level workers, traditional healers, private health care providers and service users. Key informants from other sectors (e.g. welfare and education)	Document review, semi-structured interviews (n=56) and focus groups (n=18)	Sub-district level/ primary health care	General adult population/ Includes mood and anxiety disorders	Not specified	Not specified	Intervention (evidence strength & quality, perceived advantage, complexity), outer setting (cosmopolitanism, external policies & incentives), inner setting (implementation readiness & climate, networks & communication), individuals (knowledge & beliefs) and process (planning, engaging, reflecting & evaluating)

PRIME – [42, 43]all sites[42, 43]	Ethiopia, India, Nepal, South Africa and Uganda, Sub-Saharan Africa and South Asia	Cross-sectional situational analysis[42] and a qualitative study[43]	429 stakeholders that represented community members, service users and their families, community health workers, primary care staff and specialists and policy makers	Data obtained from health information systems, surveillance data, relevant research publications, governmental and non-governmental reports and in-depth interviews (n=164) and focus groups (n=36)	District level/ primary health care and community	General adult population/ Psychoses, alcohol use disorders, depression and epilepsy (in Ethiopia, Nepal and Uganda)	Variations by country. Different cadres of primary health care staff and lay health workers	Collaborative stepped care[a] Treatments and services vary per country. Generally include assessment, pharmacological treatment and some form of psychosocial or psychoeducation support	Intervention (evidence strength & quality, perceived advantage), outer setting (service user needs & resources, cosmopolitanism, external policies & incentives), inner setting (readiness for implementation, implementation climate & networks communication), individuals (knowledge & beliefs), process (planning)
PRIME – India[50, 51]	India (Madhya Pradesh), South Asia	Mixed-methods situational analysis[50] and formative research and pilot study[51]	4 policy makers, 3 members of the Department of Health Services, 4 service providers and managers, 8 paramedical staff in primary health care facilities, 8 front-line workers, 8 community	Direct observation, in-depth interviews (n=33) and focus groups (n=5)	District level/ primary health care and community	General adult population/ Depression, psychoses and alcohol use disorders	Mental health case manager, medical officers and paramedical workers and front-line workers at the community	Collaborative stepped care[a] Includes pharmacological treatment, brief interventions, psychoeducation, first aid interventions with	Outer setting (service user needs & resources, external policies & incentives), inner setting (implementation readiness & climate), individuals (knowledge &

			workers, 8 community members, 3 district mental health managers, 3 medical officers, 6 front line workers, 18 service users and carers					emphasis in self-care, and referrals	beliefs), process (planning, reflecting & evaluating)
PRIME – Nepal[45, 46, 48]	Nepal, South Asia	Mixed-methods formative study[45], pilot study[46] and a situational analysis[48]	117 key stakeholders representing the health organisation (national and district level), facility and community for the formative study and 73 service users and 11 service providers from PHC clinics for the pilot study	Key informant interviews (n=33) and focus groups (n=9) for the formative study and semi-structured interviews (n=84) for the pilot study	District level/ primary health care and community	General adult population/ Psychoses, alcohol use disorders, depression and epilepsy	Prescribing and non-prescribing primary health care providers, other health staff and community health workers	Collaborative stepped care[a] Includes pharmacological treatment, psychoeducation and other psychosocial support, case management, follow-up and referrals; case identification and psychosocial interventions at the community	Intervention (cost), outer setting (service user needs & resources, cosmopolitanism, external policies & incentives), inner setting (implementation readiness & climate), individuals (knowledge & beliefs, self-efficacy, other personal attributes), process (planning, reflecting & evaluating)
PRIME – South Africa[49]	South Africa, Sub-Saharan Africa	Mixed-methods situational analysis	4 primary care nurses, 4 lay counsellors, 2 social workers, 12	In-depth interviews (n=26)	District level/ primary health care and community	General adult population/ Depression, alcohol use	Primary health care providers (medical doctors,	Collaborative stepped care[a] Includes psychoeducation,	Outer setting (service user needs & resources), inner setting (readiness

			service users and 4 caregivers			disorders and schizophrenia	nurses, lay counsellors and community health worker outreach team	pharmacological treatment, individual and group counselling	for implementation), individuals (self-efficacy, other personal attributes), process (planning)
PRIME – Uganda[47]	Uganda, Sub-Saharan Africa	Mixed-methods situational analysis and qualitative study	2 clinical officers, 2 nurses and unknown number of primary healthcare nurses	In-depth interview (n=4) and focus group (n=1)	District level/ primary health care and community	General adult population/ Psychoses, alcohol use disorders, depression and epilepsy	Primary health care nurses, midwives and medical clinical officers (physician assistants)	Collaborative stepped care[a] Includes pharmacological treatment, basic psychosocial support and follow-up. Recovery services delivered at the community	Outer setting (service user needs & resources, external policies & incentives), inner setting (readiness for implementation), individual (knowledge & beliefs), process (planning)

[a] Collaborative stepped care: service model that makes use of multidisciplinary teams which deliver different treatments for mental health according to illness severity

[b] Task-shifting: service model in which treatments for mental health are delivered by trained and supervised general health workers

Barriers and facilitators for the implementation of mental health programmes

Table 3 presents findings according to the CFIR,[27] and key findings are discussed below.

Characteristics of the intervention

Strength of evidence, complexity, and cost were reported as barriers. Facilitators included the capacity to adapt the interventions to fit local needs and perceived advantages of using the intervention. No programmes reported information related to the intervention source, trialability, and design quality.

A common implementation challenge was the complexity of interventions for mental health, which require lengthy consultations,[44, 60] more frequent home visits[33] and considerable coordination between service providers.[41] In order to provide services that required more time or technical capacity (e.g. screenings or counselling), the MANAS programme and PRIME-Nepal reported the need to recruit new cadres of health providers,[35, 46] which can be a barrier due additional intervention costs.

Perceived advantages of interventions were the most common facilitators reported by health providers across seven studies. These advantages were identified in comparison to not previously having any interventions for mental health available, and included improved diagnostic and treatment skills[38] and capacity to provide better care for service users with low adherence and comorbidities.[31, 40 29, 35, 38]Positive impacts on service users also triggered positive attitudes from clinicians, further improving their engagement with interventions.[29, 31, 38]

Outer setting

Service user related facilitators included perceived benefits of the intervention. Service user needs, low help-seeking and adherence to treatment were mostly discussed as barriers. Different aspects related to external policies and incentives and cosmopolitanism (i.e. collaboration with other sectors or organisations) were discussed as both barriers and facilitators. Peer pressure from other programmes or organisations was not reported by any of the programmes.

Service users of the MANAS and Friendship Bench programme reported that the interventions helped them feel better, relaxed or empowered,[29, 35, 38] which facilitated implementation. Most programmes reported challenges arising from the service user needs and characteristics. For example, service users with common mental disorders commonly experienced comorbid conditions, requiring more time and attention that are difficult to allocate given existing workloads,[29, 30] and those with high symptom severity were perceived as needing specialist care,[31] not easily accessible through the primary health care level. Exposure to social risk factors such as domestic violence,[29] family issues,[37] drug related violence,[41] poverty,[29, 30, 32, 37, 50] low literacy,[42] and poor household

infrastructure[42] were perceived to be difficult to address within the primary care system, given resource and expertise constraints. Providers of the Brazilian programme expressed the need to differentiate distress caused by social or contextual circumstances and to tackle this at the community level or through targeted non-pharmacological interventions.[40] Conversely, in the MANAS programme, providers identified that many service users expected or preferred pharmacological treatment over talking-based interventions.[38]

Low levels of help-seeking at health care facilities were attributed to poor mental health literacy in the PRIME-Uganda, PRIME-South Africa, EMERALD, and the Kenyan national programme.[31, 42, 44, 47, 49] Furthermore, poor adherence to care was identified as a barrier in the Lebanese and Kenyan national mental health programme, PRIME-Nepal and the MANAS programme.[30, 35, 36, 45] Other factors hindering implementation included the unavailability of medication, medication side-effects and service user perceptions of chronic treatment as being harmful, unhelpful or unnecessary.[30, 45, 46] Service users found attending appointments difficult due to the cost of treatment and transportation, lengthy travelling and waiting times, and loss of wages.[35, 43-46, 50] Concerns about confidentiality among service users also hindered attendance to group interventions in India [35] and compliance with referrals to psychiatric institutions in Jordan.[37]

The programmes in Nepal, Kenya and South Africa highlighted the importance of mental health plans and programmes in prioritizing mental health care in the country.[32, 34, 48] Recognizing the lack of a mental health policy as being an implementation barrier in India is consistent with these findings.[50]

Primary care providers from PRIME-Uganda identified that regulations limit their capacity to diagnose or prescribe treatment to service users with mental illnesses.[47] Furthermore, primary care providers in PRIME-Nepal and EMERALD reported that provision of mental health services is rarely part of their official mandate, which hinders their capacity to deliver services.[44, 46] In terms of incentives, barriers to implementation reported by primary care providers from PRIME-all sites include the lack of official recognition of mental health trainings and the absence of financial compensation.[43, 45, 46]

Inner setting

Inner setting factors discussed included constructs related to the climate within which the implementation took place (i.e. compatibility between individuals and intervention, the establishment of goals and feedback mechanisms, learning climate and readiness for implementation) and networks and communication, all of which were reported as both barriers and

facilitators. Structural characteristics, culture, tension for change and relative priority were not reported by any programme.

Issues around compatibility emerged in the Brazilian national programme when health managers and providers did not share views considered essential to the design of programmes in primary care settings, such as the relevance of continuity of care[40] or the use of task-sharing.[41] In contrast, shared beliefs about the need for task-shifting facilitated commitment of providers in the Mental Health and Poverty Project (MHaPP) in South Africa and PRIME-all sites.[43, 60] Supportive and collaborative learning climates were also reported by providers as a positive influence on implementation by the Friendship Bench, MHaPP-South Africa and the Lebanese and Brazilian national programmes, since these promoted knowledge exchange and a sense of mutual assistance.[29, 36, 41, 60]

Regarding goals and feedback, the lack or poor quality of information systems were reported as barriers. In many systems, data collection for mental health indicators is still limited or absent.[30, 44, 48, 50] The lack of monitoring systems to follow-up service users was also perceived to hinder providers' capacity to treat mental disorders.[29, 50]

Strong leadership was found necessary at different levels. All sites in the PRIME programme reported the absence of a mental health manager at district, state or national level as a barrier.[42, 48] At the facility level, Hijazi (2011) reported that clinic managers in Lebanon needed to support organisational changes for staff to be able to deliver mental health services, for example by allocating more time to the mental health service users' consultations.[36] However, PRIME-India reported that managers could not show support and commitment when mental health is not a priority in the health system and competing targets need to be achieved.[50]

With regards to resources, the main barriers include human resources challenges (n=9), limited medication supply (n=5), insufficient budgets for mental health (n=4), limited private spaces (n=3) at primary care settings and constrained referral systems (n=3).

Poor access to knowledge and information was perceived as a barrier by providers in the presence of inadequately coordinated efforts to provide training[29, 34, 40, 45, 50] or the lack of refresher training sessions[47] since these leave non-specialists ill equipped to attend to the needs of mental health service users. In contrast, health professionals from two programmes reported that efforts to incentivise professional development facilitated implementation.[41, 60]

The Friendship Bench, MHaPP-South Africa, PRIME-all sites and national programmes at Kenya and Lebanon identified ongoing supervision and professional support as a necessary resource for successful implementation.[29, 30, 36, 43, 60] However, the capacity to supervise primary care providers

and refer service users is hampered by the limited availability of specialists in the public health system.[32, 39, 43, 48] Referral systems were reported sometimes to be lacking[42] and when available were perceived to be challenging to access due to the limited number of facilities, their capacity,[29, 45] and distance from primary health care clinics.[30, 48, 50]

Poor communication between primary care and specialist services through referral networks was reported as a barrier by PRIME-all sites, MHaPP-South Africa and national programmes in Kenya and Brazil when communication was limited to paper referrals,[42] or when specialists failed to share clinical decisions when back referring service users.[30, 39] According to managers in the Brazilian national programme, issues emerge when information on the organisation of systems and structures is not appropriately shared, since this has an impact on the workflow between systems.[40]

Characteristics of individuals

Individual characteristics discussed included knowledge and beliefs about the intervention, self-efficacy and other personal attributes. Barriers and facilitators were reported under all factors. Individual stage of change and identification with the organisation were not reported.

Providers who believed the treatment of mental disorders was relevant or beneficial were more engaged and cooperative in implementing interventions.[29, 37, 38, 60] In the MANAS programme providers reporting positive attitudes towards the intervention also motivated service user commitment.[38] However, there were instances when implementation was hindered by resistance to collaborative stepped-care by providers from MANAS,[38] or task shifting, by front line providers and specialists from PRIME-Uganda, EMERALD and the Brazil national programme.[41, 44, 47]

Personal attributes of providers were considered important facilitating factors in the Friendship Bench, PRIME-South Africa, PRIME-Nepal, MANAS and Kenyan national programmes. Being respectful, receptive, discreet, cooperative, and committed were considered key aspects in those providing counselling as these characteristics were appreciated by service users and also facilitated their inclusion within teams of primary care providers.[29, 33, 38, 45] In contrast, acceptability and adherence by service users were hindered when they perceived a provider had poor communication skills or did not safeguard their confidentiality.[33] Collaboration between cadres was affected when others, e.g. supervisors, were perceived as under qualified.[45, 49]

Process

Factors related to planning were discussed as both barriers and facilitators to implementation. The evaluation of programme implementation was deemed a facilitator. Absence of engagement with important stakeholders such as traditional healers[39] and service users[44] was reported as a barrier.

The role of implementation leaders within engagement and implementation execution was not discussed by any programmes.

Within planning, the development or adaptation of training materials, guidelines or interventions has shown to improve the cultural acceptability and appropriateness of interventions in Zimbabwe and India.[29, 35] In contrast, in Brazil, providers believed that a lack of planning about referral processes prevented services users from receiving specialised care.[40]

Finally, piloting of programmes served to test initial models of care to allow any necessary changes to be implemented, including the need to increase human resources,[35, 46] adjust training content[36] or other logistical aspects of intervention delivery.[35] Implementers in Kenya and India also perceived preliminary evaluations as useful in identifying existing levels of community needs, such as mental health literacy to decrease stigma and improve treatment seeking behaviours.[30, 51]

Table 3. Barriers and facilitators to the implementation of programmes for common mental disorders at primary health care in low- and-middle income countries by CFIR domains and constructs			
Domains and constructs	**Barriers**	**Facilitators**	**Strength of evidence**
Characteristics of the intervention			
Evidence strength and quality	- Lack of standardised training or guidelines[34] - Perceived low quality of capacity building activities[30, 40]	None reported	1 good quality and 2 fair quality studies
Perceived advantage	None reported	- Perceptions that integration can increase help-seeking behaviours[60], improve access to care and attitudes toward mental illnesses[43] - Perceived impact of training on health providers diagnostic and treatment skills[38] - Perceived capacity to deliver better care to service users with low adherence and comorbidities[31, 40] - Presence of mental health screenings[31, 35, 38] - Service users perceived usefulness of treatment[29, 35, 38]	5 good and 2 fair quality studies
Adaptability	None reported	- Use of locally validated tools[29, 38] - Use of local idioms in training manuals[29] - Integration of culturally accepted treatments (e.g. yoga or behavioural activation)[29, 35] - Capacity to tailor to service user needs (e.g. number or location of mental health consultations) and provider's schedules[29]	2 good and 1 fair quality studies

Complexity	- Need for lengthy consultations[44, 60] or more frequent home visits[33] - More coordination and communication between health provider cadres required[41]	None reported	3 good and 1 fair quality studies
Cost	- Cost of recruiting new cadres of health providers[35, 46]	None reported	1 fair and 1 poor quality studies
Outer setting			
Service user needs and resources	- Presence of comorbid conditions[29, 30] - High severity of symptoms[31] - High exposure to social risk factors[29, 30, 32, 37, 41, 42, 50] - Low mental health literacy[31, 42, 44, 47, 49] - High levels of stigma[44, 45, 50] - Poor adherence to care[30, 35, 36, 45] - Poor attendance to consultations due to financial and time constraints[35, 43-46, 50] - Perception that chronic treatment is harmful, unhelpful or unnecessary[30, 45, 46] - Concerns about confidentiality[35, 37] - Low involvement of service users in service organisation[44]	- Family support for detection of mental disorders, treatment seeking and adherence[35, 45]	7 good, 8 fair and 1 poor quality studies
Cosmopolitanism	- Lack of collaborations with other government departments or sectors (e.g. police, prison, education, social welfare and sports departments)[39, 44, 48]	- Presence of non-governmental or private organisations providing mental health care[32, 42]Presence of collaborations with other government departments (e.g. police, prison, education, social welfare and sports departments)[32]	2 good and 3 fair quality studies
External policies and incentives	- Lack of national mental health policy or plan[45, 50] - Regulations that do not allow primary care providers to prescribe or treat mental disorders[42, 47]	- Presence of national plans or programmes for mental health[32, 34, 42, 48] - Inclusion of psychotropic medications in essential medication lists[32, 50]	4 good, 5 fair and 1 poor quality studies

	- Mental health service delivery not part of role description of PHC providers[44, 46] - Lack of official recognition of mental health trainings and financial compensations for primary care providers[45, 46]		
Inner setting			
Implementation climate	***Compatibility*** - Providers' perceived lack of importance of continuity of care[40] - Providers' disagreement with use of task-sharing[41]	***Compatibility*** - Providers' support of programme design[43, 45, 60]	3 good and 2 fair quality studies
	Goals and feedback - Limited routine data collection for mental health indicators[30, 44, 48, 50] - Absence of monitoring systems[29, 50]	***Goals and feedback*** None reported	4 good and 1 fair quality studies
	Learning climate - Climate is different in each clinic as it depends on relationships between team members[41] - Negative or abusive supervision experiences by health workers[45]	***Learning climate*** - Supportive and collaborative relationships between team members[29, 36, 41, 60]	3 good and 2 fair quality studies
	Readiness for implementation ***Leadership engagement*** - Absence of a mental health manager[42, 48] - Lack of priority of mental health within the health system[50] ***Available resources*** *Financial resources* - Low budgets for mental health care provision[32, 36, 44, 48] - Mental health budget allocated to psychiatric hospitals[50] *Human resources*	***Readiness for implementation*** ***Leadership engagement*** - Positive support from clinic managers to treat mental disorders, e.g. by allocating more time for these consultations[36] ***Available resources*** *Financial resources* None reported *Human resources*	1 good and 3 fair quality studies 10 good, 10 fair and 1 poor quality studies

	- Shortage of health providers[34, 36, 40, 43, 45] - High turnover of health providers[39, 40, 44, 45] - Heavy workloads[30, 41, 49, 50, 60] - Limited availability of specialists in public health system[32, 39, 43, 48] *Infrastructure and supplies* - Lack of private spaces[31, 35, 46, 49] - Poor supply of psychotropic medications[29, 30, 37, 42, 44, 46, 51] - Limited number of specialist services and distance from PHC clinics[29, 30, 45, 48, 50] *Managerial resources* - Absence of appropriate supervisory mechanisms[30, 39, 45] - Absence of referral mechanisms[42] ***Access to information and knowledge*** - Lack of standardised training manuals or clinical guidelines[30, 48] - Poor planning of trainings[29, 34, 40, 45, 50] - Lack of refresher sessions[47]	None reported *Infrastructure and supplies* - Availability of psychotropic medications[34] *Managerial resources* - Presence of supervisory mechanisms[29, 30, 36, 60] - Presence of referral systems[60] ***Access to information and knowledge*** - Presence of training or other activities for professional development[41, 60]	5 good and 5 fair quality studies
Networks and communication	- Limited communication between specialists and PHC providers[30, 39, 42] - Lack of communication of knowledge related to the organisation of systems and structures[40]	- Presence of specialists at the PHC clinics[35, 60]	3 good and 3 fair quality studies
Characteristics of the individuals			
Knowledge and beliefs about the intervention	- Resistance of providers to stepped-care or task shifting[38, 41, 44, 47] - Providers' stigma towards mental disorders[43, 45] - Providers' belief that depression is not an illness[37]	- Providers' perception that treatment of mental disorders within PHC is relevant or beneficial[29, 37, 38, 60] - Positive attitudes from providers and managers towards intervention[38]	8 good and 4 fair quality studies

	- Inconsistent beliefs between providers lead to inconsistencies in implementation[38, 41] - Providers' lack of knowledge about clinical guidelines and poor communication skills[36, 37, 51] - Providers' limited knowledge on how to deal with complex cases[29, 47]	- Impact of training on knowledge and attitudes towards mental health[31, 36, 38, 60]	
Self-efficacy	- Providers' uneasiness when diagnosing and prescribing treatment[36, 37] or providing counselling[49] - Providers' perceive difficulties dealing with mental health problems caused by social circumstances[41] - Distress felt by providers when providing mental health treatment[46]	- Providers' perceived confidence when prescribing pharmacological treatments[38]	1 good, 4 fair and 1 poor quality studies
Other personal attributes	- Poor communication skills[33] - Lack of respect for confidentiality[33] - Perception that specialist supervisors or community health workers are underqualified[46, 49]	- Providers' perceived to be respectful, willing to listen, discreet, cooperative, and committed[29, 33, 38, 45] - Recruiting providers at the community[29] - Providers' willingness to accept feedback[38]	4 good, 1 fair and 1 poor quality studies
Process			
Planning	- Poorly planned interventions[43] - Lack of planned systems or processes to make referrals[40]	- Use of formative research[34, 35, 39, 42, 43, 45, 47-50] - Development or adaptation of training materials, guidelines or interventions[29, 35]	5 good and 7 fair quality studies
Engaging	- Limited engagement of traditional healers[39] and service users[44]	None reported	2 good quality studies
Reflecting and evaluating	None reported	- Use of pilots to test programmes[30, 31, 33, 36, 46, 51, 60] - Use evaluations to test feasibility of interventions and make necessary changes[35, 36, 46] and identify further community needs[30, 51]	5 good, 2 fair and 1 poor quality studies

Discussion

This study synthesises stakeholders' perceptions of factors acting as barriers and facilitators to the implementation of programmes for common mental disorders in primary health care in low- and middle-income countries. To the best of our knowledge, this is the first systematic review on this topic. Most frequently discussed CFIR domains related to contextual factors of the inner and outer setting and characteristics of individuals. Within the inner setting, availability of resources and access to training and supervision were deemed necessary to enable the uptake of programmes for common mental disorders at primary care settings. The complexity of service user health and social needs were the most commonly discussed barriers within outer setting. Finally, provider's lack of knowledge and negative beliefs about the intervention were common barriers to the uptake of interventions, while positive personal and communications skills were common facilitators to the delivery of services. Although less frequently discussed, characteristics of the intervention in particular its adaptability and perceived advantages were mostly reported among providers as factors enabling implementation. Implementers also largely perceived incorporating planning and evaluation phases into the implementation process as facilitators.

Our findings concur with other reviews which examined the implementation of collaborative models for depression and chronic care models in primary health care in high income countries.[61, 62] Previous reviews identified resource availability[61, 62] and the quality and nature of networks and communication structures as key factors influencing implementation.[61] Perceived knowledge and beliefs among providers about the intervention, particularly resistance to proposed interventions,[61, 62] and the high complexity of the intervention[61, 62] were also identified as main barriers to implementation. Challenges arising due to service user characteristics and the key role of capacity building as an enabling factor were more frequently discussed in this review, both of which may be due to contextual characteristics in low- and-middle income countries. A review of factors affecting the implementation of mental health services in humanitarian settings also identified the shortage of qualified human resources as a key barrier and the perceived advantages of interventions as a facilitator.[63] Engagement with governments and the community was the most commonly reported facilitator,[63] but was rarely discussed by the programmes in this review.

Resource constraints have been consistently highlighted as barriers for the improvement of mental health service delivery in low- and-middle income countries.[4, 12] Low budgets, limited human resources, medication supply and support from specialists often mean that health systems where these services are nested are ill-prepared to integrate and implement effective mental health

services.[65] Other important health system challenges such as lack of strong leadership, poor governance, and mismanaged information systems have also been reported to affect integrated care.[11, 66] Maeseneer and colleagues have pointed out the need for funding agencies to invest in system wide improvements (horizontal investment) rather than only disease specific interventions (vertical investment)[67] to strengthen the health system. However, a systems thinking approach that takes into account the many dynamic and complex elements of health systems is also necessary to design strategies that more effectively address remaining challenges.[68] A systems approach should also integrate investment and coordination with secondary and tertiary level services as specialist services and professionals are also essential to support non-specialists[69] and treat service users with severe symptomatology[70] in order to ensure good quality care. [69,70]

Capacity building activities within supportive learning environments can support health providers to develop sufficient knowledge and skills to provide services for people with common mental disorders and foster buy-in. However, given high turnover among primary care providers[4] it appears that these need to be long-term interventions. Whereas the presence of interventions for mental health was seen as useful and having a positive impact among providers in this review, it was often perceived as insufficient to address the complex needs of mental health service users in low resource settings. Limited effectiveness of clinical interventions and needs arising due to social problems, such as poverty and violence, may hinder the impact of primary care based models. Intersectoral collaboration and psychosocial interventions outside of the clinical settings are necessary to meet service user needs.[71]

The present review has several strengths. We used a broad search strategy informed by guidance created for the investigation of barriers to research uptake.[72] Not including country related terms in the search strategy ensured that we did not miss studies that did not include country names in their titles or abstracts and hence maximised our likelihood of including all relevant studies. Double screenings were performed at all stages and the synthesis approach adopted was especially developed for synthesising qualitative data.[73] We also used a widely recognised implementation framework to analyse our findings.[27, 28] The quality of studies was assessed through a tool previously used by a similar review[62], but we did not restrict the inclusion of studies based on quality to capture as much literature as possible. We took a wider scope compared to previous reviews which focused on programmes for depression[62, 74] or utilised collaborative care.[62] Even though our eligibility criteria aimed to be as unrestrictive as possible, we had to exclude many studies of programmes that did not explicitly state targeting any common mental disorders.[75-80]

We acknowledge some limitations of this study. Grey literature may have also been missed since this was not searched systematically. While the overall quality of included studies was considered good, the majority of authors did not discuss their relationship with research participants or its impact on study findings. Moreover, included studies recruited a wide range of stakeholders and it was not always possible to disentangle which barriers or facilitators were reported by each type of stakeholder. This is relevant since the views of government officials, implementers, service providers and service users are likely to differ significantly. Finally, the CFIR is comprehensive framework, but certain constructs are not considered in sufficient depth, such as the characteristics and role of external implementation leaders or teams, and the social, political, and legal characteristics of contexts.[16, 81]

Four research gaps have been identified through this review. First is the limited number of studies examining the factors that influence mental health programme implementation in low- and-middle income countries. We only identified nine programmes that assessed barriers or facilitators to implementation, and in many cases this was not the primary objective of included studies. Research in more low- and-middle income countries is needed given the importance of contextual factors for successful implementation. Second, the lack of implementation studies might explain why enablers such as champions and support teams for implementation, which have been previously identified as relevant,[82, 83] were not discussed. Research with a specific implementation focus that uses comprehensive frameworks is also necessary. Third there is a lack of evidence related to challenges for long-term implementation of programmes. The majority of studies included in this review covered only initial stages of implementation. It is likely that different factors will be relevant to achieve long term implementation and sustainability of such programmes, especially given that in many cases these initial stages of implementation were supported by research teams.[35, 46, 51] The fourth gap is related to the unequal inclusion of service users in the process of evaluating the implementation of programmes. Other authors have similarly found limited participation of service users in the evaluation of services.[84] This gap needs to be addressed given the key role of barriers such as low treatment seeking and adherence.

Panel: Recommendations for the implementation of mental health programmes in low- and-middle income countries

- Strategies to integrate programmes for mental health in primary care should include components that aim to strengthen health systems (e.g. improved financing, ensure adequate

staff numbers, continuous capacity building, and strengthening of specialist services and referral systems).

- Interventions and treatments should follow a process of contextual adaptation, and both their complexity and resource requirements (e.g. time and skills) should be taken into account.
- The presence of social support interventions is necessary to address the social needs of service users, especially in settings with high levels of poverty.
- Implementation should take place within supportive and collaborative learning climates. Communication skills are key and should be a central aspect of competency based trainings for non-specialist health workers.
- Careful planning and monitoring and evaluation are necessary to ensure programmes fit contexts where they are introduced and quality assurance.

Search strategy and selection criteria

We used Boolean operators to combine subject headings and relevant search terms related to (1) implementation determinants, (2) primary health care settings and (3) common mental disorders to perform searches in MEDLINE, EMBASE, PsycINFO, Global Health, and LILACS. We included peer-reviewed qualitative studies published between January 1, 1990 and September 1, 2017 in English or Spanish. The complete list of search terms can be found in Appendix 1. Relevant literature was also identified through searches in Google and Google Scholar and hand searching reference lists of included articles. We only included studies that assessed barriers or facilitators to the implementation because we aimed to examine the process rather than the outcomes of the implementation of programmes for common mental disorders. We focused on programmes being developed to be delivered or being delivered as part of routine care in primary health care settings, since this is a promoted policy in low- and middle-income countries. Services needed to be delivered primarily by non-specialists as this has been advocated as the most feasible strategy in the majority of low- and middle-income countries and we wanted to improve the generalisability of findings. We restricted to programmes for populations with common mental disorders given that these cause the greatest health burden among all mental disorders. Finally, we focused on low- and middle-income countries as this is where the need to improve access to mental health care is the greatest.

Contributors

GME was the lead researcher and was responsible for the study design, screenings, quality appraisals, data extraction, synthesis of results, and the writing of the manuscript. SH provided input to the development of the eligibility criteria, conducted title/abstract screening, conducted full text

screening, and provided comments on earlier drafts of the manuscript. OQ conducted title/abstract screening, and provided comments on earlier drafts of the manuscript. ES advised on the eligibility criteria, data analysis and synthesis, and provided comments and feedback on several drafts of the manuscript. AC advised on the design of the study and provided comments and feedback on all drafts of the manuscript. RK provided extensive guidance in the process of screening, data extraction, synthesis and writing, and also gave detailed comments and feedback on all drafts.

Declaration of interests

We declare no competing interests.

Acknowledgements

There was no funding source for this study, but it was carried out as part of the doctoral studies of GME, which are funded by the Mexican Council of Science and Technology.

ES is supported by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care South London (CLAHRC South London) at King's College Hospital NHS Foundation Trust. The views expressed in this paper are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care. ES is funded by King's Improvement Science, which is a part of the NIHR CLAHRC South London and comprises a specialist team of improvement scientists and senior researchers based at King's College London.

We would like to thank Grace K Ryan for her comments and feedback on earlier drafts of this paper.

Supplementary material:

Appendix 1. Complete list of search terms

Appendix 2. Quality appraisal ratings

References

1. GBD 2016 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. The Lancet. 2017;390(10100):1211-59

2. Chisholm D, Sweeny K, Sheehan P, Rasmussen B, Smit F, Cuijpers P, et al. Scaling-up treatment of depression and anxiety: a global return on investment analysis. The Lancet Psychiatry. 2016;3(5):415-24

3. Eaton J, McCay L, Semrau M, Chatterjee S, Baingana F, Araya R, et al. Scale up of services for mental health in low-income and middle-income countries. The Lancet. 2011;378:1592-603

4. Kakuma R, Minas H, van Ginneken N, Dal Poz MR, Desiraju K, Morris JE, et al. Human resources for mental health care: current situation and strategies for action. The Lancet. 2011;378(9803):1654-63

5. Collins PY, Patel V, Joestl SS, March D, Insel TR, Daar AS, et al. Grand challenges in global mental health. Nature. 2011;475(7354):27

6. WHO. Integrating mental health into primary care: a global perspective. Geneva: World Health Organization, 2008.

7. WHO. Mental health atlas 2017. Geneva: World Health Organization, 2018.

8. WHO. Mental health atlas 2014. Geneva: World Health Organization, 2015.

9. Henderson C, Noblett J, Parke H, Clement S, Caffrey A, Gale-Grant O, et al. Mental health-related stigma in health care and mental health-care settings. The Lancet Psychiatry. 2014;1(6):467-82

10. Patel V, Chisholm D, Dua T, Laxminarayan R, Medina-Mora ME. Mental, Neurological, and Substance Use Disorders: Disease Control Priorities, (Volume 4): The International Bank for Reconstruction and Development/The World Bank; 2016.

11. Thornicroft G, Ahuja S, Barber S, Chisholm D, Collins PY, Docrat S, et al. Integrated care for people with long-term mental and physical health conditions in low-income and middle-income countries. The Lancet Psychiatry 2019;6: 174–86

12. Saraceno B, van Ommeren M, Batniji R, Cohen A, Gureje O, Mahoney J, et al. Barriers to improvement of mental health services in low-income and middle-income countries. The Lancet. 2007;370:1164-74

13. Adam T, de Savigny D. Systems thinking for strengthening health systems in LMICs: need for a paradigm shift. Health Policy and Planning. 2012;27(suppl_4):iv1-iv3

14. Luig T, Asselin J, Sharma AM, Campbell-Scherer DL. Understanding implementation of complex interventions in primary care teams. The Journal of the American Board of Family Medicine. 2018;31(3):431-44

15. Nilsen P. Making sense of implementation theories, models and frameworks. Implementation Science. 2015;10(1):53

16. Flottorp SA, Oxman AD, Krause J, Musila NR, Wensing M, Godycki-Cwirko M, et al. A checklist for identifying determinants of practice: a systematic review and synthesis of frameworks and taxonomies of factors that prevent or enable improvements in healthcare professional practice. Implementation Science. 2013;8(1):35

17. Moher D, Liberati A, Tetzlaff J, Altman DG, Group P. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. PLoS medicine. 2009;6(7):e1000097

18. Patel V, Araya R, Chatterjee S, Chisholm D, Cohen A, De Silva M, et al. Treatment and prevention of mental disorders in low-income and middle-income countries. The Lancet. 2007;370(9591):991-1005

19. Prince M, Patel V, Saxena S, Maj M, Maselko J, Phillips MR, et al. No health without mental health. The Lancet. 2007;370(9590):859-77

20. WHO. What is primary care mental health?: WHO and Wonca Working Party on Mental Health. Mental Health in Family Medicine. 2008;5(1):9-13

21. WHO. The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines: World Health Organization; 1992.

22. Patel V, Kleinman A. Poverty and common mental disorders in developing countries. Bulletin of the World Health Organization. 2003;81:609-15

23. World Bank. World Bank Country and Lending Groups: World Bank; 2018 [22/05/2018]. Available from: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.

24. Critical Appraisal Skills Programme. CASP Qualitative Checklist2018 22/05/2018. Available from: https://casp-uk.net/wp-content/uploads/2018/03/CASP-Qualitative-Checklist-Download.pdf.

25. Carroll C, Booth A, Leaviss J, Rick J. “Best fit” framework synthesis: refining the method. BMC Medical Research Methodology. 2013;13(1):37

26. Booth A, Carroll C. How to build up the actionable knowledge base: the role of ‘best fit’ framework synthesis for studies of improvement in healthcare. BMJ Qual Saf. 2015;24(11):700-8

27. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implementation Science. 2009;4(1):50

28. Kirk MA, Kelley C, Yankey N, Birken SA, Abadie B, Damschroder L. A systematic review of the use of the consolidated framework for implementation research. Implementation Science. 2015;11(1):72

29. Abas M, Bowers T, Manda E, Cooper S, Machando D, Verhey R, et al. 'Opening up the mind': Problem-solving therapy delivered by female lay health workers to improve access to evidence-

based care for depression and other common mental disorders through the Friendship Bench Project in Zimbabwe. International Journal of Mental Health Systems. 2016;10:39

30. Jenkins R, Othieno C, Okeyo S, Aruwa J, Kingora J, Jenkins B. Health system challenges to integration of mental health delivery in primary care in Kenya-perspectives of primary care health workers. BMC Health Services Research. 2013;13(1):368

31. Jenkins R, Othieno C, Okeyo S, Aruwa J, Wallcraft J, Jenkins B. Exploring the perspectives and experiences of health workers at primary health facilities in Kenya following training. International Journal of Mental Health Systems. 2013;7(1):6

32. Kiima D, Jenkins R. Mental health policy in Kenya -an integrated approach to scaling up equitable care for poor populations. International Journal of Mental Health Systems. 2010;4:19

33. Othieno C, Jenkins R, Okeyo S, Aruwa J, Wallcraft J, Jenkins B. Perspectives and concerns of clients at primary health care facilities involved in evaluation of a national mental health training programme for primary care in Kenya. International Journal of Mental Health Systems. 2013;7:5

34. Bhana A, Petersen I, Baillie KL, Flisher AJ. Implementing the World Health Report 2001 recommendations for integrating mental health into primary health care: A situation analysis of three African countries: Ghana, South Africa and Uganda. International Review of Psychiatry. 2010;22:599-610

35. Chatterjee S, Chowdhary N, Pednekar S, Cohen A, Andrew G, Araya R, et al. Integrating evidence‐based treatments for common mental disorders in routine primary care: feasibility and acceptability of the MANAS intervention in Goa, India. World Psychiatry. 2008;7(1):39-46

36. Hijazi Z, Weissbecker I, Chammay R. The integration of mental health into primary health care in Lebanon. Special Issue: Integrating mental health care into existing systems of health care: during and after complex humanitarian emergencies. Intervention. 2011;9:265-78

37. Nasir LS, Al-Qutob R. Barriers to the diagnosis and treatment of depression in Jordan. A nationwide qualitative study. The Journal of the American Board of Family Practice / American Board of Family Practice. 2005;18:125-31

38. Pereira B, Andrew G, Pednekar S, Kirkwood BR, Patel V. The integration of the treatment for common mental disorders in primary care: experiences of health care providers in the MANAS trial in Goa, India. International Journal of Mental Health Systems. 2011;5(1):26

39. Petersen I, Bhana A, Campbell-Hall V, Mjadu S, Lund C, Kleintjies S, et al. Planning for district mental health services in South Africa: a situational analysis of a rural district site. Health Policy and Planning. 2009;24(2):140-50

40. Athié K, do Amaral Menezes AL, da Silva AM, Campos M, Delgado PG, Fortes S, et al. Perceptions of health managers and professionals about mental health and primary care integration in Rio de Janeiro: a mixed methods study. BMC Health Services Research. 2016;16(1):532
41. Soares S, de Oliveira WF. The matrix approach to mental health care: Experiences in Florianopolis, Brazil. Journal of Health Psychology. 2016;21:336-45
42. Hanlon C, Luitel NP, Kathree T, Murhar V, Shrivasta S, Medhin G, et al. Challenges and opportunities for implementing integrated mental health care: A district level situation analysis from five low- and middle-income countries. PLoS ONE. 2014;9:e88437
43. Mendenhall E, De Silva MJ, Hanlon C, Petersen I, Shidhaye R, Jordans M, et al. Acceptability and feasibility of using non-specialist health workers to deliver mental health care: Stakeholder perceptions from the PRIME district sites in Ethiopia, India, Nepal, South Africa, and Uganda. Social Science and Medicine. 2014;118:33-42
44. Petersen I, Marais D, Abdulmalik J, Ahuja S, Alem A, Chisholm D, et al. Strengthening mental health system governance in six low- and middle-income countries in Africa and South Asia: challenges, needs and potential strategies. Health Policy and Planning. 2017;32:699-709
45. Jordans MJ, Luitel NP, Tomlinson M, Komproe IH. Setting priorities for mental health care in Nepal: a formative study. BMC Psychiatry. 2013;13(1):332
46. Jordans MJD, Luitel NP, Pokhrel P, Patel V. Development and pilot testing of a mental healthcare plan in Nepal. British Journal of Psychiatry. 2016;208:s21-s8
47. Kigozi FN, Kizza D, Nakku J, Ssebunnya J, Ndyanabangi S, Nakiganda B, et al. Development of a district mental healthcare plan in Uganda. Special Issue: Mental health plans in five low- and middle-income countries: PRogramme for Improving Mental health carE (PRIME). The British Journal of Psychiatry. 2016;208:s40-s6
48. Luitel NP, Jordans MJD, Adhikari A, Upadhaya N, Hanlon C, Lund C, et al. Mental health care in Nepal: current situation and challenges for development of a district mental health care plan. Conflict and Health. 2015;9
49. Petersen I, Fairall L, Bhana A, Kathree T, Selohilwe O, Brooke-Sumner C, et al. Integrating mental health into chronic care in South Africa: The development of a district mental healthcare plan. British Journal of Psychiatry. 2016;208:s29-s39
50. Shidhaye R, Raja A, Shrivastava S, Murhar V, Ramaswamy R, Patel V. Challenges for Transformation: A Situational Analysis of Mental Health Care Services in Sehore District, Madhya Pradesh. Community Mental Health Journal. 2015;51:903-12
51. Shidhaye R, Shrivastava S, Murhar V, Samudre S, Ahuja S, Ramaswamy R, et al. Development and piloting of a plan for integrating mental health in primary care in Sehore district, Madhya

Pradesh, India. Special Issue: Mental health plans in five low- and middle-income countries: PRogramme for Improving Mental health carE (PRIME). The British Journal of Psychiatry. 2016;208:s13-s20

52. Abdulmalik J, Kola L, Gureje O. Mental health system governance in Nigeria: challenges, opportunities and strategies for improvement. Global Mental Health. 2016;3

53. Federal Democratic Republic of Ethiopia Ministry of Health. National Mental Health Strategy 2012/13—2015/16. Ethiopia: Federal Democratic Republic of Ethiopia Ministry of Health, 2012.

54. Khandelwal SK, Jhingan HP, Ramesh S, Gupta RK, Srivastava VKJIrop. India mental health country profile. International Review of Psychiatry. 2004;16(1-2):126-41

55. Mateus MD, Mari JJ, Delgado PG, Almeida-Filho N, Barrett T, Gerolin J, et al. The mental health system in Brazil: policies and future challenges. International Journal of Mental Health Systems. 2008;2(1):12

56. Ministry of Health and Child Welfare. Mental Health Policy Zimbabwe, Harare: Ministry of Health and Child Welfare, 2004.

57. Ssebunnya J, Kigozi F, Ndyanabangi SJPm. Developing a national mental health policy: a case study from Uganda. PLOS Medicine. 2012;9(10):e1001319

58. WHO and Ministry of Health. WHO-AIMS Report on Mental Health System in Jordan. Amman, Jordan,: World Health Organization and Ministry of Health, 2011.

59. Ministry of Public Health. Mental Health and Substance Use- Prevention, Promotion, and Treatment- Situation Analysis and Strategy for Lebanon 2015-2020. Beirut, Lebanon Ministry of Public Health, 2015.

60. Petersen I, Ssebunnya J, Bhana A, Baillie K. Lessons from case studies of integrating mental health into primary health care in South Africa and Uganda. International Journal of Mental Health Systems. 2011;5:8

61. Kadu MK, Stolee P. Facilitators and barriers of implementing the chronic care model in primary care: a systematic review. BMC Family Practice. 2015;16(1):12

62. Wood E, Ohlsen S, Ricketts T. What are the barriers and facilitators to implementing Collaborative Care for depression? A systematic review. Journal of Affective Disorders. 2017;214:26-43

63. Mukdarut B, Chiumento A, Dickson K, Felix L. The impact of mental health and psychosocial support interventions on people affected by humanitarian emergencies: a systematic review. Humanitarian Evidence Programme. Oxford: Oxfam GB, 2017

64. Davies T, Lund C. Integrating mental health care into primary care systems in low-and middle-income countries: lessons from PRIME and AFFIRM. Global Mental Health. 2017;4

65. Saxena S, Thornicroft G, Knapp M, Whiteford H. Resources for mental health: scarcity, inequity, and inefficiency. The Lancet. 2007;370(9590):878-89

66. Marais DL, Petersen IJIjomhs. Health system governance to support integrated mental health care in South Africa: challenges and opportunities. International Journal of Mental Health Systems. 2015;9(1):14

67. De Maeseneer J, Van Weel C, Egilman D, Mfenyana K, Kaufman A, Sewankambo N. Strengthening primary care: addressing the disparity between vertical and horizontal investment. British Journal of General Practice. 2008

68. Atun R. Health systems, systems thinking and innovation. Health Policy and Planning. 2012;27(suppl_4):iv4-iv8

69. Patel V. The future of psychiatry in low-and middle-income countries. Psychological Medicine. 2009;39(11):1759-62

70. Thornicroft G, Tansella M. Components of a modern mental health service: a pragmatic balance of community and hospital care: overview of systematic evidence. The British Journal of Psychiatry. 2004;185(4):283-90

71. Diminic S, Carstensen G, Harris M, Reavley N, Pirkis J, Meurk C, et al. Intersectoral policy for severe and persistent mental illness: review of approaches in a sample of high-income countries. Global Mental Health. 2015;2

72. Rainbird K, Sanson-Fisher RW, Buchan H, Studies NIoC. Identifying Barriers to Evidence Uptake. National Institute of Clinical Studies; 2006.

73. Carroll C, Booth A, Cooper K. A worked example of" best fit" framework synthesis: A systematic review of views concerning the taking of some potential chemopreventive agents. BMC Medical Research Methodology. 2011;11(1):29

74. Schumann I, Schneider A, Kantert C, Lowe B, Linde K. Physicians' attitudes, diagnostic process and barriers regarding depression diagnosis in primary care: A systematic review of qualitative studies. Family Practice. 2012;29:255-63

75. Camacho-Arce C, Caballero-Baldivieso D, Venegas-Arzabe F.Situacion de la atencion primaria de salud mental en servicios publicos de El Alto, La Paz, Bolivia.. [The state of mental health primary care in the social services of El Alto, La Paz, Bolivia] Revista Panamericana de Salud Pública. 2009;25:511-7

76. Dimenstein M, Neves R, Paulon S, Nardi H, Bravo OA, de Medeiros Galvao VAB, et al. La difícil y necesaria integracion entre la atencion basica y la salud mental en Brasil. [The difficult and necessary integration between primary care and mental health in Brazil.] Psicología desde el Caribe. 2010;26:178-97

77. Gerber O. Practitioners' experience of the integration of mental health into primary health care in the West Rand District, South Africa. Journal of Mental Health. 2017:1-7
78. Kumar A. District mental health programmme in India: A case study. Journal of Health and Development. 2009
79. Lavhelani RN, Khoza LB, Shilubane HN. Challenges affecting the implementation of the integrated approach to mental healthcare at PHC clinics. Studies on Ethno-Medicine. 2015;9:435-41
80. Ma Z, Huang H, Chen Q, Chen F, Abdullah AS, Nie G, et al. Mental Health Services in Rural China: A Qualitative Study of Primary Health Care Providers. BioMed Research International. 2015;2015:151053
81. Kitson AL, Rycroft-Malone J, Harvey G, McCormack B, Seers K, Titchen A. Evaluating the successful implementation of evidence into practice using the PARiHS framework: theoretical and practical challenges. Implementation Science. 2008;3(1):1
82. Whitebird RR, Solberg LI, Jaeckels NA, Pietruszewski PB, Hadzic S, Unützer J, et al. Effective Implementation of collaborative care for depression: what is needed? American Journal of Managed Care. 2014;20(9):699
83. Wozniak L, Soprovich A, Rees S, Al Sayah F, Majumdar SR, Johnson JAJCjod. Contextualizing the effectiveness of a collaborative care model for primary care patients with diabetes and depression (TeamCare): a qualitative assessment using RE-AIM. Canadian Journal of Diabetes. 2015;39:S83-S91
84. Semrau M, Lempp H, Keynejad R, Evans-Lacko S, Mugisha J, Raja S, et al. Service user and caregiver involvement in mental health system strengthening in low-and middle-income countries: systematic review. BMC Health Services Research. 2016;16(1):79

Appendix 1. Search terms

Domain 1: Enablers and barriers to implementation	
1	Implementation.ab,ti.
2	For Embase: health care quality/ or practice guideline/ or "organization and management"/ or health service/ For Medline: Quality Assurance, Health Care/ or Health Plan Implementation/ or Practice Guidelines as Topic/ For PsychINFO: exp Intervention/ or exp Evidence Based Practice/ or exp Program Evaluation/ For Global Health: mapping subject heading yielded no results but Embase search terms were used For LILACS: none
3	(Enabler* or facilitator* or barrier* or hinder* or challenge*).ab,ti.
Domain 2: Common mental disorders	
4	exp Mental disorders/
5	(mental* adj2 (health or ill* or disorder*)).ab,ti.
6	((mood or affective or obsessive?compulsive or panic or stress or common mental) adj2 disorder*).ab,ti.
7	(psychiatric or psychiatry or psycholog* or neurotic or neurosis or neuroses or depress* or anxiet* or anxious or OCD or phobia* or phobic or somatic or somatoform).ab,ti.
Domain 3: Service provision at primary care or community settings	
8	exp Primary health care/
9	(Primary adj3 (health or care)).ab,ti.
10	Community.ab,ti. or outpatient.ab,ti. or ambulatory.ab,ti. or program*.ab,ti.
11	(general adj2 (service* or practice*)).ab,ti.
Domain 4: Combined searches	
12	1 or 2
13	3 and 12
14	4 or 5 or 6 or 7
15	8 or 9 or 10 or 11
16	13 and 14 and 15

Supplementary table 2. Quality appraisal ratings by publication											
Study reference	**CASP Qualitative Checklist Categories (Critical Appraisal Skills Programme, 2018)**										**Final rating**
	Aims of research stated	**Qualitative methods appropriate**	**Research design appropriate**	**Recruitment strategy appropriate**	**Data collection appropriate**	**Relationship between researcher and participants considered**	**Ethical issues discussed**	**Data analysis sufficiently rigorous**	**Findings clearly stated**	**Value of the research discussed**	
Abas et al., 2016	Yes	Yes	Yes	No	Yes	Not discussed	Yes	Yes	Yes	Yes	Good
Athié et al., 2016	Yes	Yes	No	Yes	Yes	Not discussed	Yes	Yes	Partially discussed	Partially discussed	Fair
Bhana et al., 2010	Yes	Yes	Yes	Partially discussed	No	Not discussed	Partially discussed	Partially discussed	Yes	Yes	Fair
Chatterjee et al., 2008	Yes	Yes	Yes	Yes	Partially discussed	Not discussed	Not discussed	Partially discussed	Yes	Yes	Fair
Hanlon et al., 2014	Yes	Yes	Yes	Yes	Partially discussed	Not discussed	Yes	Not discussed	Yes	Yes	Fair
Hijazi et al., 2011	Yes	Yes	Yes	Not discussed	Yes	Not discussed	Not discussed	No	Yes	Yes	Fair
Jenkins et al., 2013a	Yes	Yes	Yes	Partially discussed	Yes	Not discussed	Yes	Yes	Yes	Yes	Good
Jenkins et al., 2013b	Yes	Yes	Yes	Partially discussed	Yes	Not discussed	Yes	Yes	Yes	Yes	Good
Jordans et al., 2016	Yes	Yes	Not discussed	Yes	Yes	Not discussed	Partially discussed	No	No	No	Poor
Jordans et al., 2013	Yes	Yes	Yes	Yes	No	Not discussed	Yes	Yes	Yes	Yes	Good
Kigozi et al., 2016	Yes	Yes	Yes	Yes	Yes	Not discussed	Not discussed	Partially discussed	No	Partially discussed	Fair
Kiima and Jenkins, 2010	Yes	Yes	Yes	Partially discussed	Partially discussed	Not discussed	Not discussed	Not discussed	Yes	Yes	Fair
Luitel et al., 2015	Yes	Yes	Yes	Partially discussed	Yes	Not discussed	Not discussed	Yes	Yes	Yes	Fair
Mendenhall et al., 2014	Yes	Yes	Yes	Yes	Yes	Not discussed	Partially discussed	Yes	Yes	Yes	Good

Nasir and Al-Qutob, 2005	No	Yes	Not discussed	Yes	Yes	Not discussed	Yes	Yes	Yes	Yes	Fair
Othieno et al., 2013	Yes	Yes	Yes	Yes	Yes	Not discussed	Yes	Yes	Partially discussed	Yes	Good
Pereira et al., 2011	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Good
Petersen et al., 2009	Yes	Yes	Yes	Yes	Yes	Not discussed	Yes	Yes	Yes	Partially discussed	Good
Petersen et al., 2016	Yes	Yes	Yes	Yes	Partially discussed	Not discussed	Yes	Yes	Partially discussed	Yes	Fair
Petersen et al., 2011	Yes	Yes	Yes	Yes	Partially discussed	Not discussed	Yes	Yes	Yes	Yes	Good
Petersen et al., 2017	Yes	Yes	Yes	Yes	Yes	Not discussed	Yes	Yes	Yes	Yes	Good
Shidhaye et al., 2016	Yes	Yes	Yes	Yes	Yes	Not discussed	Yes	Yes	Yes	Yes	Good
Shidhaye et al., 2015	Yes	Yes	Yes	Yes	Yes	Not discussed	Yes	Yes	Yes	Yes	Good
Soares and de Oliveira, 2016	Yes	Yes	No	Yes	Yes	Not discussed	Yes	Yes	Partially discussed	Partially discussed	Fair