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**What enables and hinders implementation? A mixed-methods
case study of a mental health programme implemented in
primary care clinics in rural Mexico**

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Declaration of work

I, Georgina Miguel Esponda, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

I have read and understood the School's definition of plagiarism and cheating given in the Research Degrees Handbook. I have acknowledged all results and quotations from the published or unpublished work of other people.

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Abstract

Background

The integration of mental health services into primary health care (PHC) is considered a key strategy to improve access to care for people with common mental disorders (CMDs) in low- and middle-income countries (LMICs), yet mental health services remain largely unavailable at the PHC level. In Mexico, mental health services are only available at 30% of PHC clinics. Difficulties in translating research findings into routine health service delivery represent a major obstacle to integration of mental health care in PHC. This project investigated the barriers and facilitators to the implementation of mental health programmes integrated in PHC platforms in low-resource settings.

Methods

I conducted a systematic review of the barriers and facilitators to the implementation of programmes for CMDs in primary care in LMICs. Then I conducted a mixed-methods case study of a mental health programme integrated in PHC clinics located in rural Mexico to examine implementation process and outcomes, and elicit potential barriers and facilitators to the programme implementation. First, I used mixed-methods to describe the programme implementation and examine outcomes. Subsequently, I used mixed-methods to explore factors related to non-attendance to mental health follow-up consultations. Finally, I used qualitative methods to elicit barriers and facilitators to implementation from the perspectives of service providers and service users.

Results

Factors influencing programme implementation were identified through the systematic review including the organisation's readiness for implementation, the attributes, knowledge and beliefs of service providers, complex service user needs, adaptability and perceived advantage of interventions, and the processes of planning and evaluating the implementation.

The case study showed that implementation outcomes included: programme integration, and high levels of acceptability and feasibility enabled through support from the implementing organisation. Fidelity was limited due to the low provision of talk-based interventions. Providers identified that delivering talk-based interventions was unfeasible due to time constraints and limited specialist support to develop the skills needed to provide them.

Non-attendance to mental health consultations was an important challenge to implementation fidelity. Main barriers to attendance included, long distance to the clinics, type of treatment, and

waiting times; facilitators were the presence of a comorbidity, and perceived need of treatment. Experiences with providers or treatments were identified as both facilitators and barriers.

Key facilitators to the programme implementation were the cultural adaptation and perceived advantage of interventions to deliver mental health care, the commitment of health providers, the availability of key resources, an organisational culture that promoted health care as a human right, and the presence of a strong programme leadership. Key barriers included the complexity of mental health interventions, low self-efficacy from health providers, insufficient availability of mentorship from specialists, and the complex needs and expectations of service users.

Conclusions

Strengthening the health system is a necessary first step to implement mental health programmes in PHC to ensure ongoing capacity building mechanisms, essential resources, and specialist support are available. Moreover, to adequately address the health and social needs of service users in low-resource settings, locally relevant social interventions and intersectoral collaboration are essential.

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List of abbreviations

CASP – Critical Appraisal Skills Programme

CES – Compañeros En Salud

CFIR – Consolidated Framework for Implementation Research

CHW – community health worker

CMD – common mental disorder

EBPs – evidence-based practices

EMERALD – Emerging mental health systems in low- and middle-income countries

GAD-7 – 7-item Generalized Anxiety Disorder scale

HICs – high-income countries

HIS – health information system

ICD-10 - International Statistical Classification of Diseases and Related Health Problems 10th Revision

IPV – intimate partner violence

LMICs – low- and middle-income countries

MD – medical doctor

MHaPP – The Mental Health and Poverty Project

MNS disorders – mental neurological and substance use disorders

MoH – Ministry of Health

NGO – non-governmental organisation

PHC – primary health care

MRC – Medical Research Council

PHQ-9 – 9-item Patient Health Questionnaire

PRIME – Programme for Improving Mental Health Care

PRISMA – Preferred Reporting Items for Systematic Reviews and Meta-Analyses

SRQR – Standards for reporting qualitative research

WHO – World Health Organization

WHOQOL-BREF – WHO Quality of Life-BREF

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Chapter 1. Introduction

In this chapter I introduce the burden of disease associated with common mental disorders (CMDs), as well as estimates of the proportion of people with these conditions who do not have access to mental health services. I then explain the role of mental health service integration in primary health care (PHC) in increasing the availability of quality mental health services for people with CMDs. I introduce the concept of the “translational gap”, as well as its impact on the limited availability of mental health services at the PHC level. I explain the key role of implementation science to address the “translational gap”, introduce three main elements in the study of programme implementation (i.e. implementation strategies, determinants and outcomes), and highlight relevant research gaps. I then describe the setting, policy context, organisation and programme used to explore the project’s research questions followed by the rationale, aims and objectives of the project along with a brief introduction of the methods, which are explained in detail in Chapter 3. Finally, I describe my role in the work presented in this thesis and the ethical clearance granted for the execution of the research.

1.1 Background

1.1.1 Global burden of disease associated to CMDs and treatment gap

Mental neurological and substance use (MNS) disorders account for 7.4% of the global burden of disease.¹ Forty percent of the burden caused by mental disorders is attributable to depressive disorders, and 15% to anxiety disorders.¹ Depressive disorders are also among the leading cause of years lived with disability worldwide,² and it is estimated that by the year 2030 unipolar depression will cause more disability-adjusted life-years (DALYs) than any other health condition.³ However, recent estimates suggest that 72-93% of people with depression and 60-80% of people with anxiety are not accessing treatment.⁴ Furthermore, there is a higher proportion of people not accessing treatment in low- and middle-income countries (LMICs), where resources for mental health are scarce.⁵

1.1.2 Integration of mental health services in primary care

Calls have been mounting to scale up evidence-based care for MNS disorders over more than a decade.⁶⁻⁸ The World Health Organisation (WHO) advocates for the integration of MNS services into primary care in order to increase access to quality mental health services by larger proportions of the population in need.^{8,9} Supported strategies to increase access to mental health services often make use of the PHC platform (i.e. its infrastructure, pharmaceutical and human resources) due to the scarcity of specialist mental health care in most LMICs.¹⁰ However, the argument for integration in PHC goes beyond the shortage of resources. It has a key role in

decreasing stigmatising attitudes and behaviors around mental illness, such as low help-seeking behavior due to self-stigma, discrimination from general health providers and exclusion from general health services.^{11, 12} It also has a role in facilitating access to treatments that respond to mental health needs arising from other health conditions (i.e. maternal health, and infectious or chronic diseases).^{13, 14} Finally, services closer to the community can be easier to access, decrease the use of institutionalised care and, therefore, the violation of the human rights of service users.^{15, 16}

There is evidence showing successful integration of mental health services (for diagnosis, management and referral) in PHC settings in LMICs through training of non-specialist health providers, collaborative care, task-sharing and use of guidelines.^{10, 17-19} Nonetheless, the execution of these models is still constrained by the heavily centralised service organisation, difficulties with implementation, under-resourced and understaffed PHC platforms, low budget allocation to mental health and a general lack of political will to change these circumstances.²⁰

1.1.3 The “translational gap”

Difficulties in translating research findings into routine health service delivery present a major obstacle to integration and scale-up.^{21, 22} The WHO mental health Gap Action Programme (mhGAP) has produced evidence-based guidelines for the management of MNS disorders in non-specialist health settings—a critical first step.²³⁻²⁵ Nonetheless, there remain many unanswered questions around how best to implement these guidelines in order to ensure their adoption and sustain quality of care.²⁴

Multiple systematic reviews and guidelines provide a synthesis of the best practices for mental health treatment according to the available evidence. However, our understanding about how to best implement these practices in real world settings remains limited resulting in a “translational gap”.²² The “translational gap” refers to the limited knowledge of how to translate available evidence into practice.²² The challenge of how to introduce and maintain good quality care in complex health systems set in unique contexts has been central to research fields such as implementation science,²⁶ quality improvement,²⁷ and integrated care.^{28, 29} In mental health, after the call for action to scale up services,⁷ implementation science became essential to answer questions such as: how to train health providers; keep them motivated and engaged to continue delivering services for a long-term; how to facilitate necessary communication between different levels of care; and what resources or engagement need to be in place for a system to adopt a new intervention or package of care. Nonetheless, implementation research remains an important need in the global mental health field, especially in LMICs.³⁰

Implementation science has addressed this “how to” question through different theories, models and frameworks with the aim of closing the translational gap.³¹ The field has emphasised the importance of considering a number of different aspects and complex relationships, the importance of describing the process or strategy of implementation, the existing evidence-base from which these are drawn, and adequate consideration of the context and other determinants of change as well as measuring outcomes.³²⁻³⁵ In summary, implementation research aims to answer these questions by studying the following:

- **Implementation strategies:** Techniques by which a new practice is introduced and sustained³⁶
- **Implementation outcomes:** Indicators of the effects or impact of implementation³⁴
- **Implementation determinants:** Factors that enable or hinder the adoption or sustainability of a new practice³²

1.1.3.1 Implementation strategies

Implementation strategy has been defined as the “systematic intervention or process to adopt and integrate evidence-based health innovations into usual care”.³⁶ Existing strategies to plan, educate, finance, restructure, manage quality and attend to policy have been identified (Figure 1.1). A systematic review of strategies to improve the health provider practice in LMICs found that most strategies seem to have moderate effects, with the most effective ones being the ones including infrastructure, supervision management and training components, or group problem solving combined with training.³⁷ This review also highlighted that some strategies (e.g. group problem solving training and supervision) are more effective in settings with a higher availability of resources.³⁷ A few of the included studies tested strategies for the improvement of mental health care.³⁷

Several systematic reviews have synthesised evidence on the effectiveness of mental health guideline dissemination or implementation strategies on provider performance or patient outcomes, but most of the evidence is from high-income countries.³⁸⁻⁴¹ In general, the available data has been considered of low quality and findings indicate that the effects of strategies are moderate at best. ³⁸⁻⁴¹ Bauer reported that only 67% of clinical trials achieved adherence to mental health guidelines and in a significant proportion of these adherence returned to baseline after withdrawal of implementation strategies,⁴⁰ which is compatible with the short-term effects on performance and patient outcomes reported by Weinmann.³⁹ High complexity of guidelines, lack of knowledge of their existence or disagreement with their content, time and resource

constraints and absence of support from colleagues or supervisors were factors found to be associated with unsuccessful implementation.⁴²

Plan	Educate	Finance	Restructure	Quality management	Attend to Policy
<ul style="list-style-type: none"> • Gather information to assess needs/context • Select strategies • Build buy-in with stakeholders • Initiate leadership • Develop relationships or collaborations 	<ul style="list-style-type: none"> • Develop materials • Educate/train • Educate through peers • Inform and influence stakeholders 	<ul style="list-style-type: none"> • Modify incentives • Facilitate financial support 	<ul style="list-style-type: none"> • Revise or create new roles/teams • Change sites/physical structure/equipment • Change records system/data access • Start a purveyor organisation 	<ul style="list-style-type: none"> • Develop systems/tools for quality monitoring • Audit/monitor and feedback • Reminders • Advisory boards/use of experts • Provide technical assistance/ clinical supervision • Incentivate patients • Pilot change • Capture and share local knowledge • Team meetings 	<ul style="list-style-type: none"> • Change accreditation mechanisms • Change liability laws • Create or change credentialing and/or licensure standrads

Figure 1.1. Strategies for implementation in health and mental health (Adapted from Powell, et al. 2012)

1.1.3.2 Implementation outcomes

Proctor and colleagues defined implementation outcomes as “the effects of deliberate and purposive actions to implement new treatments, practices and services”.³⁴ Implementation outcomes are distinct from clinical outcomes, as the former indicate the process and extent of success of implementing a service or intervention, and the latter indicate the clinical effects of a service or intervention.³⁴ As figure 1.2 indicates, implementation outcomes are preconditions of clinical outcomes assuming that an intervention or service needs to be successfully implemented to achieve a health impact.³⁴ In this sense, measuring implementation outcomes can improve our understanding of the mechanisms by which an intervention produces certain clinical outcomes.

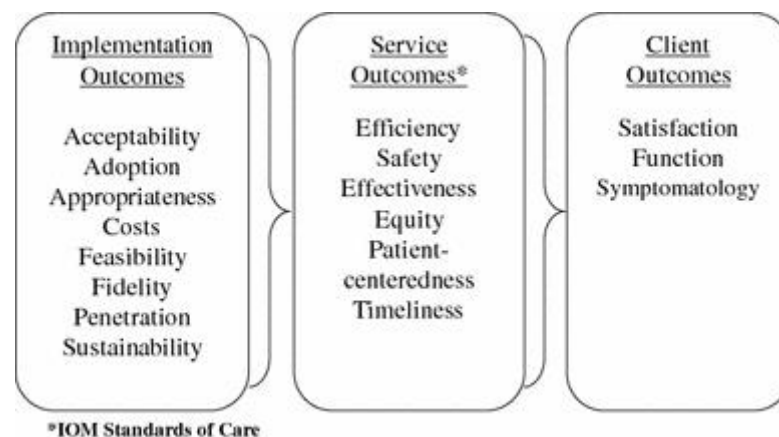


Figure 1.2. Types of outcomes in implementation research (from Proctor, et al., 2011)³⁴

1.1.3.3 Implementation determinants

Grimshaw highlighted that different strategies will be appropriate for different contexts, providers or systems and, therefore, there is a need to define and investigate implementation determinants to aid in the process of selecting the best implementation strategy.⁴¹

Implementation determinants have been defined as the different factors that influence the adoption of a new practice and that have a role in ensuring this new practice has a positive impact in care provision.^{31, 32} A systematic review of frameworks of implementation factors identified 57 determinants belonging to seven domains, and evidenced the wide variety of elements involved, as well as their complex relationships.⁴³ One frequently used framework is the Consolidated Framework for Implementation Research (CFIR).⁴⁴ This framework was created through a review of frameworks and aimed to identify domains and constructs which conceptually or empirically influenced implementation, as well as to standardise an implementation terminology.³² According to this framework there are five elements or domains that have an impact on implementation: the individuals involved, the guideline or intervention being implemented, the organisation or setting where the implementation occurs, the wider context where the organisation is set, and the process by which implementation takes place.³² The specific domains and constructs within each domain can be found in figure 1.3.

In high income settings, determinants of implementation have been assessed through different frameworks.⁴³ Whilst determinants (mostly barriers) of mental health programme implementation have been explored in LMICs,⁴⁵⁻⁴⁷ frameworks including comprehensive factors have not been utilized where these might be the most relevant due to the complex nature and significant resource-constraints of the systems where integration is sought.

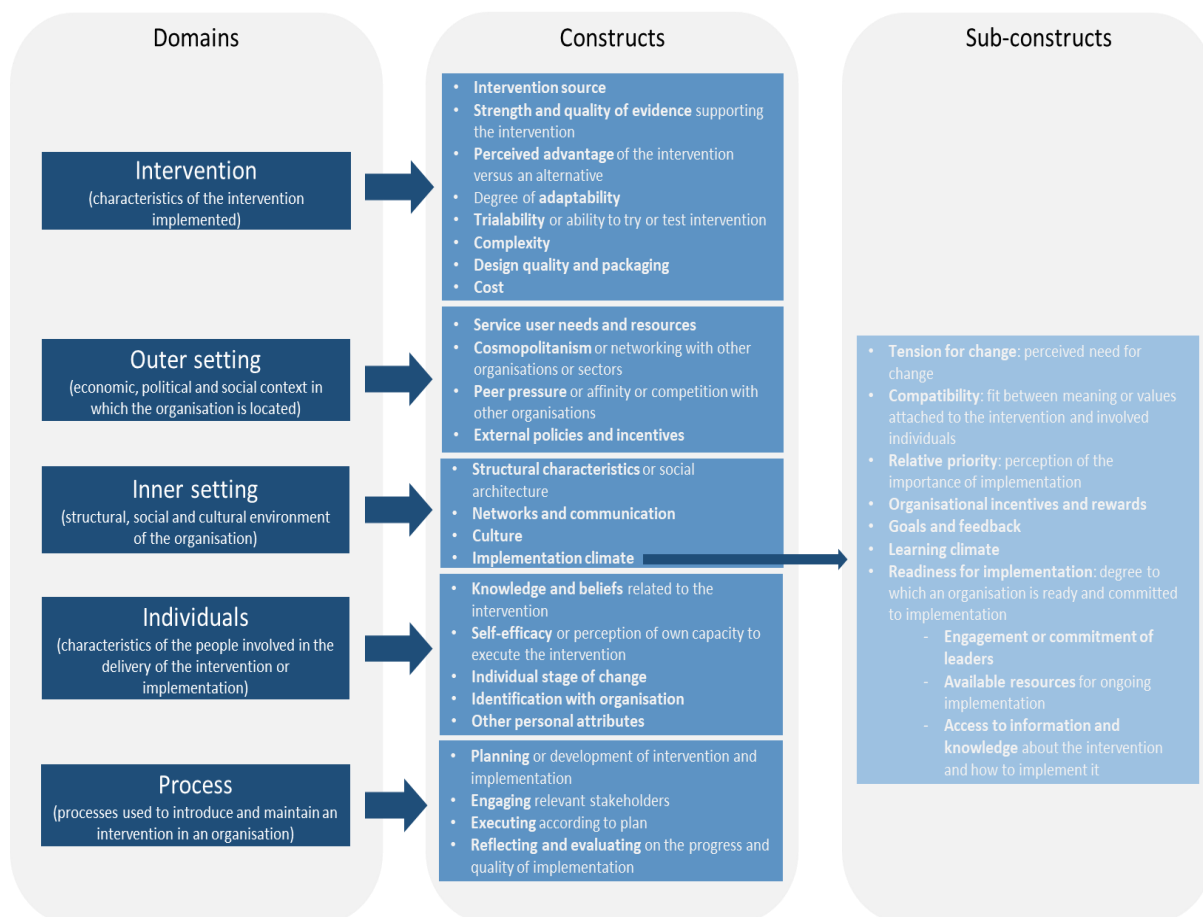


Figure 1.3. Diagram of the Consolidated Framework for Implementation Research (adapted from Damschroder, et al., 2009)³²

1.2 Setting

1.2.1 Mental health policy context in Latin America

Integration of mental health services in primary care has been promoted in Latin America for the past three decades. In November 1990, a conference to discuss the restructuring of psychiatric care in the Latin American region was held in Caracas, Venezuela.⁴⁸ This conference culminated with the signature of the Caracas Declaration by 14 countries, including Mexico.⁴⁸ The Declaration emerged as a response to the dominance of psychiatric institutions in the delivery of mental health care and the problems associated with this.⁴⁸⁻⁵⁰ Mainly, psychiatric institutions or hospitals were considered an obstacle to the delivery of decentralised, participatory, holistic, continued and preventive psychiatric care.⁴⁸ Psychiatric hospitals led to an increased number of human rights abuses, to the isolation of patients which resulted in increased social disability, to the use treatments that assume psychiatric conditions are chronic and fail to consider the possibility of recovery, and to the creation of unequal relationships between carers and inpatients.⁴⁸⁻⁵⁰ Finally, the care delivered at psychiatric hospitals has low

cost-effectiveness given that several specialist human resources are needed to provide care for a few people.⁴⁹

The Caracas Declaration established that psychiatric care needed to be restructured and primarily delivered through the primary care platform and at the community.⁴⁸ It called for (a) the adequate allocation of resources to ensure the safety and dignity of people with psychiatric conditions, (b) for the development of policies that ensured the human rights of people with psychiatric conditions and promoted the delivery of community-based services and (c) for the training of mental health human resources to enable the integration of mental health services in general health care platforms.⁴⁸ Finally, the Declaration asked for the commitment of participating delegates and organisations to develop programmes to implement the restructuring of psychiatric care and defend the human rights of people with psychiatric conditions.⁴⁸

Since the Declaration was signed, 70.6% of Latin American countries developed and approved a mental health policy.⁵¹ Even though in the majority of countries these policies have not been fully implemented and less than 25% of the population has access to mental health care through the primary care platform,⁵¹ there are multiple small scale examples of mental health programmes delivered at the community or within general health services.⁵² Allocation of adequate resources as well as improved implementation are remaining challenges to improve access to needed treatments in the region, especially amongst the most vulnerable population groups.^{53 51 51}

1.2.2 Mental health in Mexico

In Mexico, depressive and anxiety disorders have been reported to affect 4.2% and 3.6% of the population, respectively.⁵⁴ Depressive and anxiety disorders are among the ten greatest causes of disability adjusted life years in Mexico.⁵⁵ It is estimated that only 20% of people with depression and 12% of people with anxiety seek care and only 50% of these receive good quality treatment.⁵⁶ Since the late 1990s, efforts have been underway to shift Mexico's mental health care from a heavily centralised system to a community-based model, in order to increase access to services.⁵⁷ However, even in states like Chiapas where 51% of the population lives in rural areas, most services are still delivered at psychiatric hospitals located in large cities.⁵⁸

1.2.2.1 Mental health policy and plans in Mexico

Since the 19th century when the first psychiatric hospitals were opened in Mexico by the Catholic church, psychiatric care has been centralised in large hospitals located in the outskirts of the capital cities of the 32 states in the country.⁵⁷ However, ⁵⁷the earliest attempts to adopt a

community-based model of care can be traced back to the early 1900s.⁵⁷ In 1983 the mental health policy and legislation in the country introduced for the first time the need for a holistic care approach that included promotion, prevention, treatment and rehabilitation.⁵⁹ Policies in the country also promote the following: (a) integration of mental health services within general health services, (b) the increase of resources available for mental health in the country as well as the improvement of the quality of care, and (c) increased promotion of mental health and advocacy to protect the human rights of people with mental disorders.⁶⁰

In the late 1990s, Mexico developed its first successful community-based mental health care model which was called the “Hidalgo Experience” and consisted of a group of programmes or services delivered at the community and across a range of facilities.⁵⁷ Programmes or services included prevention, primary care services, hospitalization and psychosocial rehabilitation.⁵⁷ The “Hidalgo Experience” led to the closure of the psychiatric hospital in the state of Hidalgo and was particularly successful at achieving improved access to care (particularly through the primary care component) and continuity of care through a six-stage rehabilitation model.⁵⁷ These stages started with observation of the behaviour of a patient in daily life activities and continued with structured steps and activities to help patients return home.⁵⁷ Throughout the different stages, the “Hidalgo Experience” ensured patients remained socially and economically active.^{57 57}

^{59, 60}The “Hidalgo Experience” has had a key role shaping the Mental Health Action Programmes in the country, which are established every presidential term and outline key objectives to achieve regarding mental health care, along with activities and indicators. ⁶¹ The main objectives of the Mexican Mental Health Action Programme (2013-2018) were: to increase promotion and prevention, improve coverage and quality of mental health services, design and implement mental health specific programmes across the whole health system, establish training priorities and protect service users’ human rights.⁶¹ Strategies to improve coverage include integration, redistribution and training in PHC and the community. The aim was to achieve a 30% increase of general hospitals with at least one psychiatric bed available and a 30% increase in the PHC personnel trained to implement the mhGAP-IGⁱ, a set of clinical guidelines developed by WHO and widely promoted,^{25, 62} to increase mental health treatment availability by 2018.⁶¹

Anecdotal evidence suggests that in many states of the country the objectives of the last Mental Health Action Programme still remain to be achieved. Services for mental health are still

ⁱ The guidelines include eleven modules, one for each of the following conditions: depression, psychosis, bipolar disorders, epilepsy, developmental and behavioral disorders in children and adolescents, dementia, alcohol use disorders, drug use disorders, self-harm/suicide and other significant emotional or medically unexplained complaints. For each one of these conditions, the guidelines include a set of protocols for clinical decision-making and referral or treatment delivery.

primarily delivered at specialist services and are not available at the majority of PHC facilities. A previous study exploring the perspectives of health personnel in Mexico City about the integration of mental health services in primary care, found that existing mental health-related programmes (i.e. for women who experience the mental health impacts of domestic violence or people with alcohol and other substance abuse disorders) are not considered priorities and therefore little time and resources are allocated to improving them.⁶³ The main barriers identified by the health personnel were the lack of human resources and facilities to treat mental health within PHC services.⁶³

1.2.2.2 Mexican health system organisation

The Mexican health system is characterised by its complexity and segmentation. Before 2003, services were administered, financed and delivered by three different entities: the social security institutions, the Ministry of Health, and the private sector.⁶⁴ There are two social security institutions which provide services for the insured Mexican population: the Mexican Institute of Social Security (IMSS, for its initials in Spanish) and the Institute of Social Security and Services for Civil Servants (ISSSTE, for its initials in Spanish). Insurance from both social security institutions is financed through contributions from three different sources: the beneficiary, the employer and the government.⁶⁴ In the case of IMSS, employers belong to the private sector and in the case of ISSSTE employers belong to the public sector.

Services available to the uninsured Mexican population were provided by the Ministry of Health or the private sector.⁶⁴ Services from the Ministry of Health were financed through public funds and user fees, which were determined on a case-by-case basis depending on the income of the user.⁶⁴ Services from the Ministry of Health have been characterised by resource shortages and low-quality of care.^{64,65} Finally, within the private sector there are a range of services available, both in terms of cost and quality, and all are financed through out-of-pocket expenses.⁶⁵ ⁶⁴Under the organisation prior to 2003, 50% of the Mexican population (mainly the poorest families) was uninsured and did not have guaranteed access to health care.⁶⁴

In 2003, a health reform introduced the System of Social Protection in Health. The main feature of this system was the introduction of the Popular Insurance (Seguro Popular in Spanish).⁶⁴ This insurance was introduced to provide coverage for the unemployed or self-employed population and was financed by contributions from three sources: the beneficiaries, state funds and federal funds.⁶⁴ Most services for the population protected by the Seguro Popular were delivered by the Ministry of Health facilities. ⁶⁴The Popular Insurance provided coverage for 294 interventions.⁶⁶ For mental health, included interventions were emergency services, hospitalization, talk-based interventions and pharmacological treatment for psychotic, affective, anxiety, alimentary and hyperactivity and attention deficit disorders.⁶⁶

By 2012, as a result of the 2003 reform, 52.6 million were enrolled in the Popular Insurance and 98% of the Mexican population was covered by an insurance scheme.⁶⁷ The architects of the Popular Insurance see this as an important milestone in achieving Universal Health Coverage (UHC).⁶⁷ An evaluation of the Popular Insurance found this has been successful at reducing catastrophic financial health expenditure, however almost 50% of the total health expenditure is still financed by out-of-pocket expenses.⁶⁷ An analysis of the ENSANUT or National Health and Nutrition Survey in 2012 showed that about 25% of people who sought care in the two weeks before the survey consulted a private provider.⁶⁸ Between 26% and 39% of users of private services had public insurance coverage (either from the Popular Insurance or from social security institutions).⁶⁸ Improving the quality of services among the public sector as well as engaging and regulating the private sector are remaining challenges to achieve UHC.^{65, 67}

⁶³In 2019, with the start of a new presidential term, the Seguro Popular scheme was replaced by a new financing mechanism, which is potentially an important step back in the achievement of UHC.^{69 69}

1.2.3 Chiapas

1.2.3.1 Sociodemographic characteristics of the state

Located in Southern Mexico, the state of Chiapas has a large (4.7 million) and multi-ethnic population (27% speak indigenous languages), largely living in rural areas (51%) and in poverty (75%).^{70, 71} Even though all the Mexican population has the right to universal health coverage, 42% of people in the state do not have access to any kind of public or private insurance.⁷¹

1.2.3.2 Mental health services in the public sector

Mental health services are primarily accessed through one psychiatric hospital and one ambulatory unit located in the capital city. According to the WHO-AIMS Report of Mental Health Services in Mexico, there are eight psychiatrist, nine medical doctors (MD), eighteen nurses, seventeen psychologists and three social workers available specifically for mental health services in the state.⁶⁰ The government of Chiapas started training PHC personnel in the use of the mhGAP-IG in 2012. However, based on observations conducted during field visits, mental health services are still not available at the PHC level.

1.2.3.3 Rural communities in the Sierra Madre of Chiapas

In Mexico, a community is classified as rural if it has less than 2,500 inhabitants.⁷¹ Some communities have as little as 500 inhabitants. In Chiapas, about 50% of the population live in rural communities, many of which are located in the Sierra Madre of Chiapas, a mountainous range that crosses the state from the northwest to the southeast. The highest point of the Sierra Madre has an elevation of 4,220 meters. In Chiapas many of the communities I visited are at 2,000 meters. These communities are characterised for their remoteness and poverty. It seems



***Figure 1-4. View of rural communities scattered on the mountains of the Sierra Madre of Chiapas
(Photo credit: Georgina Miguel Esponda)***

the more isolated, the poorer a community is. Here I describe the communities where I conducted the PhD study described in this thesis. Many of the things here described apply to other rural, remote and poor communities in Mexico.

Getting to the communities

From the capital city of the state, Tuxtla Gutierrez, the fastest way to reach the communities is through Jaltenango de la Paz, a town between 3 to 4 hours away from the state capital that can be reached through a (badly) paved road. Jaltenango de la Paz is one of the largest towns in that region. It has about 15,000 inhabitants, a couple of banks, a large supermarket, and the closest general hospital to the communities I visited.

In order to reach all communities from Jaltenango de la Paz, it is necessary to travel several hours through largely unpaved roads that are in poor condition. Journeys through these windy roads can be very uncomfortable, especially since they last at least 2 hours and up to 6 hours.

During the rainy season, all these roads get very muddy and there can also be a significant number of landslides. Other barriers, such as fallen trees are also common.



Figure 1-5. A road between two communities damaged as a result of the rainy season (left) and photo of a fallen tree across a road (right) (Photo credit: Georgina Miguel Esponda)

Inhabitants of these communities travel in their private cars or in “rutas”, the only type of public transportation available at the communities. “Rutas” are pick-up trucks which have benches in the back to accommodate people. These “rutas” can get quite busy which result in people travelling standing up in crowded conditions. “Ruta” drivers can go at high speed which can be very dangerous considering the conditions of roads and the lack of seats and seat belts to protect passengers.



Figure 1-6. Two “ruta” pick-up trucks taken from a private car (Photo credit: Georgina Miguel Esponda)

Life in the communities

Communities are mountainous and are built on steep slopes. Most communities have one main paved road that goes through the settlement, but most houses are connected by unpaved roads or paths. The only way of moving around these communities is by foot which is often difficult and exhausting due to the extreme weather conditions- extremely hot most of the year except during the rainy season. The rainy season starts around May, peaks in July-August and can last until September. During this season, heavy rains



Figure 1-7. View of a community from the top of a hill (Photo credit: Georgina Miguel Esponda)

often start around 3-4 pm and last for the whole night. People often stay at home while it rains. People report this is because driving or walking on steep, muddy roads can be very difficult and dangerous. As a side note, this has important implication for health services since people can only attend clinics while it is not raining. Also, home visits can only be done while it is not raining.

Materials with which houses are built vary in different communities. In those where people have higher incomes, there are only houses with brick and cement walls. In poorer communities there is a higher variability and some adobe or wood houses can still be found. Often houses also have rooms made of different materials. Roofs are generally made of galvanized steel sheets even in communities that are considered to have high incomes. Floors are sometimes made of cement. It is quite common that only certain rooms have cement floors. Most houses have a toilet, but access to running water is still not available in the vast majority of households. Now a lot of communities have water purification centers, although many of these are not reliable. In other communities with no purification centers, the water quality is still a significant issue.

People live close to each other. Houses often consist of two or more rooms on a single floor. A family (parents and children) usually share a room and many houses are shared by multiple families. The chores of the household are shared by all people who live in a house. A further description of this can be found in the “Economic activities” section below.

- Education

Most communities have at least one preschool and one primary school (school years 1-6), some also have secondary schools (school years 7-9) and a few have a “COBACH” (school years 10-12). When a community does not have a secondary or “COBACH” school, young people from 12 to 17 years old usually travel between 30 minutes and a couple of hours to get to school. In the state, inhabitants study an average of 7.3 years (2 years less than the national average) which means most people only study until the first year of secondary school.⁷¹ Whilst there is no quantitative data regarding educational levels in these communities, conversations with the inhabitants suggest that most people (especially the older generations) did not complete primary education. It is not uncommon to find adults who cannot read or write. Even when people can read and write, literacy levels are often quite low. In addition to poor access to education, the quality of the education available in the schools in the communities is known to be low. Previous research on educational performance in Chiapas has found most students have low grades and that students from poorer households have lower grades.⁷²

- Economic activities

Following discussion with inhabitants, the average annual income per household is estimated to be 20,000 MXN (approximately 680 GBP). The main economic activity in the communities is coffee production. It can be classified in three types according to the number of sacks of coffee produced per year: (1) large scale producers collect at least 20 sacks and owners often hire workers to collect and sell the coffee, (2) medium scale producers collect more than 5 but less than 20 sacks and do all labour themselves or with the help of family members, and (3) small-scale producers who only grow and collect coffee for personal use (maximum about 2 sacks). Other important economic activities are carpentry, bee keeping and the selling of commercial goods. However, the two main sources of income are the financial resources that families receive from the remittances (money that is sent from family members that are living and working in the United States of America) and PROSPERA programme (government aid- described below).



Figure 1-8. Medical doctors and women from the community sitting around a stove
(Photo credit: Georgina Miguel Esponda)

The men and women from the communities have different roles in these economic activities which are defined by gender and dictate their everyday lives. Activities start early in the morning, around 4 am. Women begin their days making the tortillas- most make about 100 tortillas every morning (10 for each member of the household). Women need to get up early to prepare breakfast and a packed lunch for the men, who must leave the house for the coffee plantations before the sun rises. Coffee plantations are up in the hills, often about an hour or two away from people's homes by foot. The early start is needed as temperatures increase significantly throughout the day impacting the ability to perform manual labour. The men usually come back in the afternoon before the sun sets, eat dinner, socialise with their families and sleep around 8 pm.

While men are in the fields, women do the housework. Due to the low income of families and limited access to electricity, housework can be lengthy and laborious. For example, not all people have stoves, so they must chop wood and make a fire for cooking. Very few people have washing machines, so clothes need to be handwashed. Women spend most of their days doing housework or tending to their children, e.g. preparing them to go to school, feeding them or helping them with their homework. Women also spend a good amount of their times getting

involved in PROSPERA activities. This programme is explained further in the following section, but essentially women receive financial support for their families in exchange of complying with certain activities, e.g. attending health promotion sessions, helping with the cleaning of schools, helping with rubbish collection at the communities and attending medical check-ups among others. PROSPERA activities are mandatory and given the importance of this financial support for the poor families, attending activities is a priority.

During the coffee picking season, women usually join men in the plantations. Sometimes whole families move to little cabins in the plantations. The role of women is usually to cook for all the male workers. Sometimes women also help cleaning and drying the coffee seeds.

- Government aid

PROSPERA is a government conditional cash transfer programme which provides a bimonthly stipend to families who live in extreme poverty. Money is paid to women, as they are responsible for its administration. Women receive variable amounts of money, depending on the number of children they have and the age of their children. The conditions of the programme include continuous attendance to school by children, participation in health promotion activities at the community and attendance to health check-ups at the clinics. This programme was introduced in 1997 and has supported families in the communities until the present.⁷³

People in the communities have received other types of support from the government, for example cement donations and televisions. These other types of support have been distributed as part of official and unofficial government programmes (i.e. sometimes as part of social development programmes which are rolled out at the national level, and sometimes as unofficial activities during electoral campaigns).

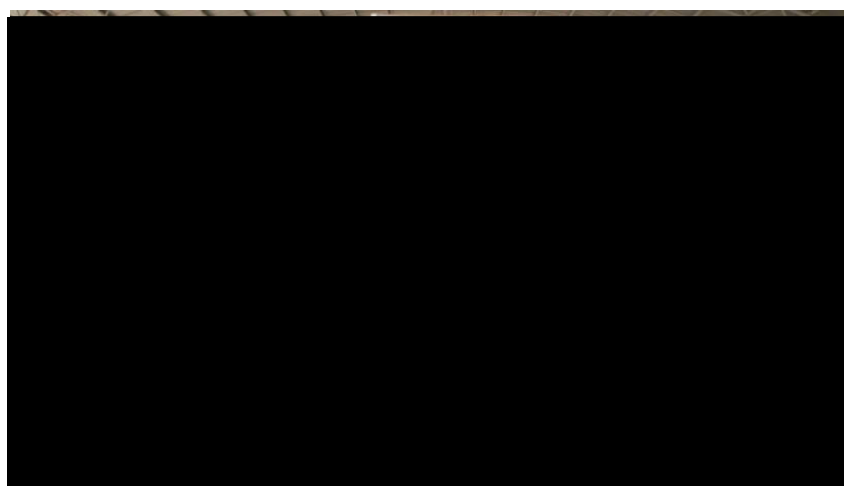


Figure 1-9. People attending monthly mandatory check-ups at a mobile clinic (Photo credit: Georgina Miguel Esponda)

- Leisure activities and religion

All communities have a sports court and a field to play football, which young people usually use during the afternoons. However, a major source of entertainment comes from watching television shows. The basic materials with which many homes are built are in stark contrast with the satellite dishes. All communities have at least one church, and often there are multiple denominations represented in a single community. There are at least a couple of local shops in each community which sell a limited range of groceries usually for high prices (people usually buy produce in Jaltenango and then increase the prices to re-sell in communities). Other services that are occasionally available are internet cafes (which sometimes sell little tickets with passwords to use wireless internet), stationary shops and in large communities there are also diners and bakeries.



Figure 1-10. Photo of the street of a community where TV antennas can be seen (Photo credit: Georgina Miguel Esponda)

- Political environment

The communities have their own laws, which are overseen by three different groups, the rural committee, rural agent and rural police. These groups are made up from members of the community. Originally, only people who owned land in the community were entitled to be part of the committee and attend meetings. Recently, all inhabitants can attend meetings, but only members (i.e. land owners) can vote. Most of the land is owned by men, therefore meetings are mainly attended by men. In some communities I have seen groups of women who are there to represent the rest of women in the community and are often a minority at the meeting. Leader committees are appointed, and these change every few years, sometimes on a yearly basis.

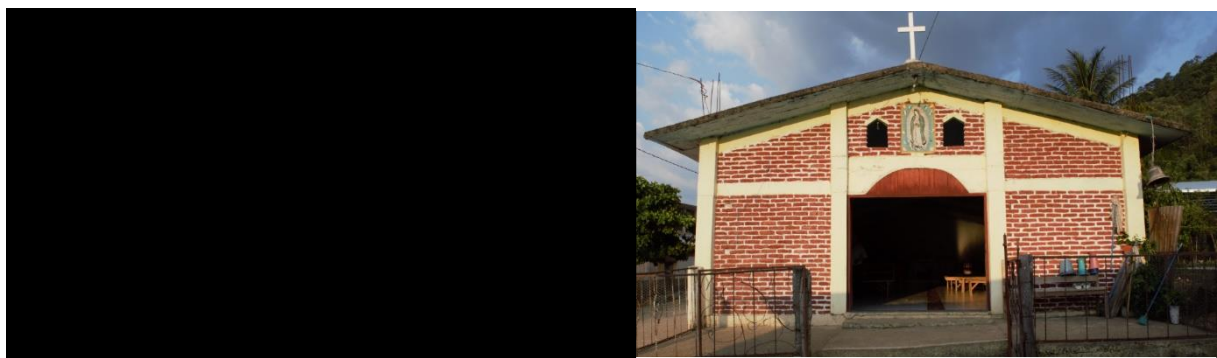


Figure 1-11. Photo of young people playing at a football court (left) and photo of a church (right) (Photo credit: Georgina Miguel Esponda)

All issues related to the community are discussed in these meetings which can last up to several hours. Every decision is voted by all land owners which is a lengthy process. Votes happen as a show of hands. Some examples of items that are discussed are people who break local laws, road works, and land sales, but there are also more minor issues that are discussed and voted on in these meetings, for example if the medical doctors want to use one of the town halls they have to ask the whole committee, explain why they want to use it and then have a vote.

1.3 Compañeros En Salud (CES)

1.3.1 History

CES is a sister organisation of Partners in Health, a non-governmental organisation (NGO) that works in global health worldwide. Since 2011, CES has worked in collaboration with the Ministry of Health in Chiapas to strengthen the delivery of health care services (including mental health) in a general hospital and 10 PHC clinics. The organisation uses the following implementation strategies: (1) programme financing, (2) capacity building of medical doctors (MDs) through high-intensity training and on-site supervision, (3) printed materials for clinical decision-making, (4) monitoring through a health information system (HIS), (5) ensuring medication supply, (6) “community-based accompaniment” by community health workers (CHWs), which consists in medication and appointment reminders, psychoeducation, and psychosocial support⁷⁴ and (7) support for referrals to specialist services. Community health workers (CHW) also provide “community-based accompaniment” through home visits

The general hospital is located in the town of Jaltenango de la Paz, where the organisation’s headquarters are also located. In this hospital, the organisation primarily supports the delivery of maternal health care through a Birthing Center attached to the hospital. Recently, the organisation also re-equipped the operating theater in the hospital and recruited a surgeon and anesthesiologist to be able to perform general surgeries. Before this, the operating theater was used sporadically.

The PHC clinics are located in 10 rural communities in the Sierra Madre of Chiapas. Communities have an average population of approximately 1,000 inhabitants and are 2-3 hours away from Jaltenango de la Paz, which is 3-4 hours away from the capital city of the state. The majority of roads that reach the communities are unpaved and for this reason they cannot be accessed at certain times of the year due to bad weather conditions.



Figure 1-10. Clinics in the communities (Photo credit: Georgina Miguel Esponda)

1.3.2 Human resources and organisation of services

The clinics are staffed with one medical doctor (MD) and, occasionally, one nurse or an auxiliary health worker. All MDs staff the clinics while completing their compulsory social service year, which is a requirement for obtaining a professional degree in Mexico. This compulsory social service takes place once all professional education is completed, i.e. when taught courses and practical training have been completed. For this reason, there is a yearly rotation of MDs. There is a one-month overlap in which the transition of MDs occurs, and there are two intakes of five MDs every year.

MDs staff the clinics for three weeks (Monday to Saturday) a month and receive training and days off during the remaining week. During one of the three weeks, MDs receive a visit from a clinical supervisor. Clinical supervisors are also MDs, many of whom have spent a year staffing the clinics themselves. Most clinical supervisors have no specialist training of any type. MDs are expected to deliver medical services and engage in the additional programmes that are run by the organisation, the maternal health, nutrition, referrals, community health worker (CHW) and

mental health programmes. All of these usually require different activities such as holding meetings, providing follow ups to programme coordinators, CHWs or patients and updating information systems. Supervisors are recently graduated MDs in charge of providing support to both the clinical and administrative work. Programme coordinators, who also have completed medical training, have been appointed for each programme, including one for mental health.

1.3.3 Mental health programme

Mental health services are integrated in the general health care that is provided through the PHC clinics. All mental health services are delivered by MDs in the clinics, and CHWs in the community. Services are designed according to mhGAP (Version 2.0)²⁵ adapted clinical guidelines and include case identification, pharmacological treatments, individual and group talk-based interventions, and home visits. A coordinator oversees the delivery of mental health services and capacity building activities, and provides support for the management of complex cases. A full description of the mental health programme can be found in figure 1.4.

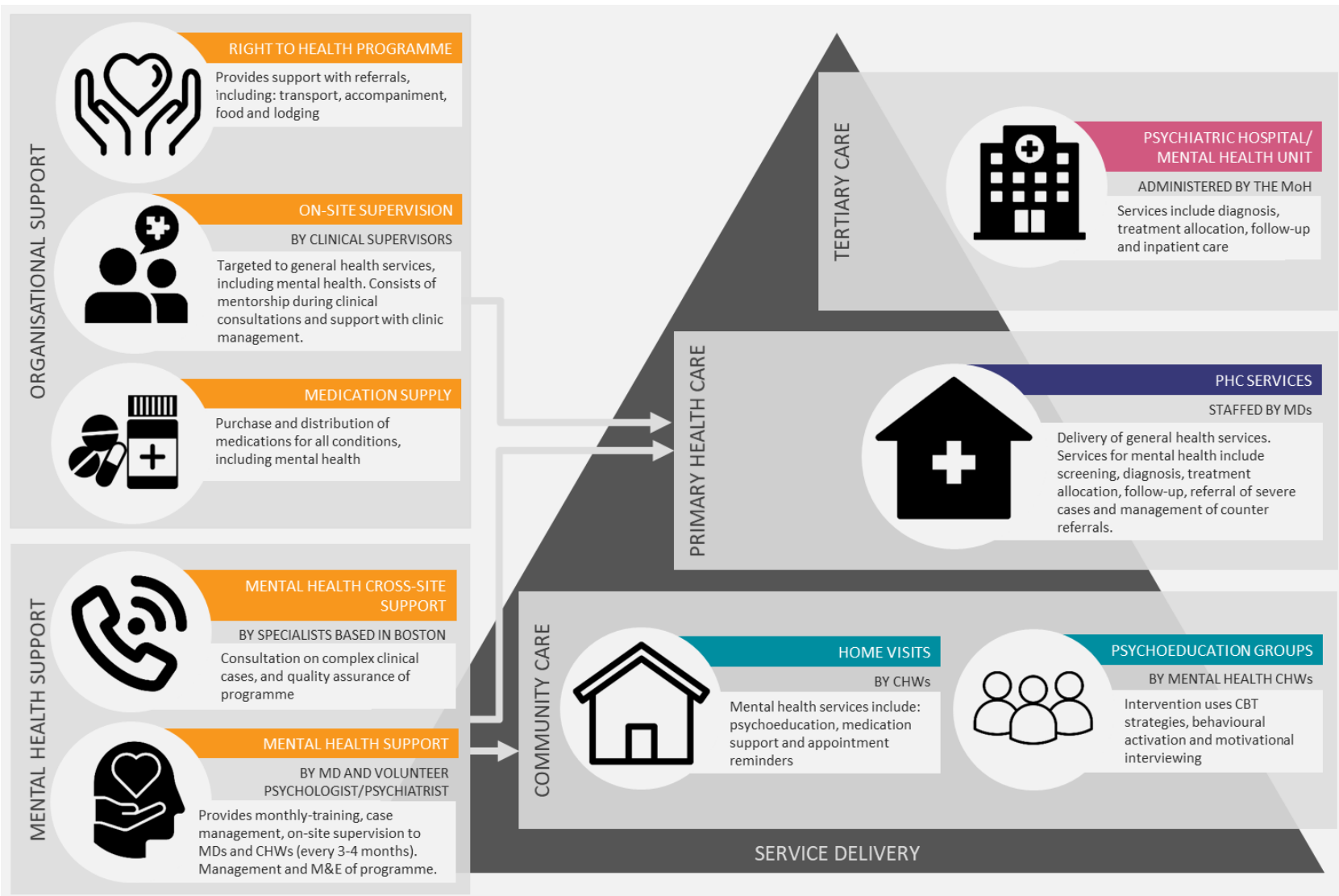


Figure 1.11. CES mental health programme: organisational support and service delivery

1.4 Project rationale

Implementation research remains an important need in the global mental health field, especially in LMICs where there is an urgent need to increase access to quality mental health care and the “translational gap” has impeded the translation of available evidence into practice.^{22,30} There are also important challenges specifically related to the integration of mental health care in PHC that an implementation research approach can help address, e.g. systems for capacity building, the provision of resources, or the redistribution of roles to deliver mental health services.³⁰

In order to formulate effective strategies to improve the implementation of mental health programmes in PHC, an important first step is to understand the factors that are playing a role in facilitating or hindering implementation.⁴¹ Implementation related studies are scarce in LMICs, and this is an important research gap given the key role of context to the understanding of implementation.^{30,75}

This project sought to contribute to the understanding of facilitators and barriers to implementation by investigating the available evidence in LMICs, and then by conducting a case study of the CES mental health programme. This project aimed to use a theory driven approach, as the lack of this has been a previously identified as a shortcoming in implementation related studies.⁴⁴

The current project is of relevance as it provides insights into the use of implementation frameworks to assess the implementation of a real world mental health programme in a low-resource setting and provides evidence on best implementation practices for the future development and implementation of programmes that aim to increase coverage of mental health services in rural Mexico and other similar settings.

1.5 Aims, objectives and overview of methods

The current mixed-methods explanatory case study sought to understand the processes and factors related to the implementation of a mental health programme delivered by CES at 10 PHC clinics in rural Mexico, to inform the future development and implementation of programmes or services for mental health integrated in PHC in similar settings.

Table 1.1 summarises the aims and objectives of this project. First, I conducted a systematic review to assess previous evidence related to the facilitators and barriers to the implementation of programmes for CMDs in PHC in LMICs, to assess and synthesize available evidence and identify research gaps. Then, in order to understand what was

implemented as part of the CES mental health programme and how this was done, I conducted a mixed-methods study using a convergent design. This examined the programme's implementation process and outcomes using process indicators drawn from the MRC framework for the evaluation of complex interventions⁷⁶ and the typology of implementation outcomes developed by Proctor and colleagues.³⁴ Low attendance to mental health consultations was identified as an important remaining challenge to implementation, therefore I then described factors associated with non-attendance by employing a mixed-methods study using an explanatory sequential design, i.e. I first assessed quantitative correlates to non-attendance and then sought to explain quantitative findings using qualitative data from service users. Finally, I used a qualitative study to identify facilitators and barriers related to the implementation of the CES mental health programme, and explain how these had an impact on the programme.

Table 1.1. Aims and objectives of the thesis project

Aims	Objectives
1. To review available qualitative evidence related to the facilitators and barriers to the implementation of mental health programmes for CMDs in PHC settings in LMICs	1.1 To identify facilitators and barriers to implementation of mental health programmes for CMDs in PHC settings in LMICs
	1.2 To adopt a pre-existing framework for understanding implementation determinants to synthesise available evidence and identify research gaps
2. To examine the implementation process and outcomes of the CES mental health programme integrated in 10 PHC clinics in rural Mexico	2.1 To examine the extent to which the programme was delivered as intended
	2.2. To describe the perspectives of health providers and managers regarding the programme's implementation outcomes
	2.3 To identify key strengths and remaining challenges to the implementation of the programme
3. To understand why service users do not attend mental health follow-up consultations delivered by the CES programme	3.1 To seek correlations between two primary attendance outcomes, i.e. non-attendance and low attendance to mental health follow-up consultations, and socio-demographic, health and treatment characteristics of service users
	3.2 To explore barriers and facilitators related to attendance to mental health follow-up consultations from the perspectives of service users
4. To elicit the factors that enabled and hindered the implementation of the CES mental health programme	4.1 To identify and describe facilitators and barriers to the implementation of the CES mental health programme from the perspectives of health providers, managers, and service users

1.6 Role of candidate

1.6.1 Overall project

I developed the overall aim of the project, objectives, outlined the specific research questions and designed all the research studies presented in this thesis, with technical support from my supervisors and members of my advisory committee. I completed the ethics applications submitted for the approval of this research project to both committees in London, UK and Chiapas, Mexico. Chapters 2, 4, 5 and 6 were written as manuscripts for journal publications, which involved the participation of co-authors. Activities performed by each co-author are explained in detail in the following subsections. I was the main person responsible for the design of these studies, data collection, data analysis, and writing up of the manuscripts.

1.6.2 Systematic review

I 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 of the systematic review presented in Chapter 2. Sarah Hartman 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. Onaiza Qureshi conducted title/abstract screening, and provided comments on earlier drafts of the manuscript. Euan Sadler advised on the eligibility criteria, data analysis and synthesis, and provided comments and feedback on several drafts of the manuscript. Alex Cohen advised on the design of the study and provided comments and feedback on all drafts of the manuscript. Ritsuko Kakuma provided extensive guidance in the process of screening, data extraction, synthesis and writing, and also gave detailed comments and feedback on all drafts.

1.6.3 Case study

1.6.3.1 Mixed-methods study of the implementation process and outcomes of the CES mental health programme

For the mixed-methods study of the implementation process and outcomes presented in Chapter 4, I was the lead researcher and was responsible for the study design, data collection, data analysis, and the writing of the manuscript. Nathaniel Bohm-Levine contributed to quantitative data extraction, coding of clinical notes, contributed to the discussion and provided comments on earlier drafts of the manuscript. Fátima Rodríguez advised on the study design and data collection, contributed to the data

analysis and discussion, and provided comments earlier drafts of the manuscript. Alex Cohen provided advice during the design of study and data collection, and also provided comments in earlier drafts of this manuscript. Ritsuko Kakuma provided extensive guidance in the process of data analysis and in the presentation of results, and also gave detailed comments and feedback on all drafts.

1.6.3.2 Mixed-methods study of factors related to non-attendance to mental health follow-up consultations

For the mixed-methods study of the factors related to non-attendance presented in Chapter 5, I was the lead researcher and I was responsible for the study design, data collection, data analysis, and the writing of the manuscript. Sarah Hartman contributed to the qualitative data collection, was the second coder of the qualitative data, provided input for the identification of themes during the qualitative data analysis, and provided comments on earlier drafts of the manuscript. Fátima Rodríguez advised on the study design and data collection, contributed to the data analysis and discussion, and provided comments earlier drafts of the manuscript. Ritsuko Kakuma provided extensive guidance in the process of data analysis and in the presentation of results, and also gave detailed comments and feedback on all drafts.

1.6.3.3 Qualitative study of the barriers and facilitators to the implementation of the mental health programmes

For the qualitative study of the factors affecting implementation presented in Chapter 6, I was the lead researcher and I was responsible for the study design, data collection, data analysis, and the writing of the manuscript. Fátima Rodríguez advised on the study design and data collection, contributed to the data analysis and discussion, and provided comments earlier drafts of the manuscript. Hugo Flores contributed to the presentation of results, discussion, and provided comments on earlier drafts of this manuscript. Alex Cohen provided advice during the design of study and data collection, and also provided comments in earlier drafts of this manuscript. Ritsuko Kakuma provided extensive guidance in the process of data analysis and in the presentation of results, and also gave detailed comments and feedback on all drafts.

1.7 Ethics approval

I received ethics approval to conduct the research included in this thesis from the London School of Hygiene & Tropical Medicine Observational Ethics Committee

(11955/11955-1), and the Chiapas State Ministry of Health (5033/1800). Ethics approval letters can be found in appendix 1.1.

Chapter 2. Systematic review of the barriers and facilitators to the implementation of mental health programmes in primary care in low- and middle-income countries

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2.1 Abstract

2.1.1 Background

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 partially due to implementation related challenges.

2.1.2 Methods

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).

2.1.3 Results

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.

2.1.4 Conclusions

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.

RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

SECTION A – Student Details

Student ID Number	375159	Title	Ms
First Name(s)	Georgina		
Surname/Family Name	Miguel Esponda		
Thesis Title	What enables and hinders implementation? A mixed-methods case study of a mental health programme implemented in primary care clinics in rural Mexico		
Primary Supervisor	Ritsuko Kakuma		

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

SECTION B – Paper already published

Where was the work published?	The Lancet Psychiatry		
When was the work published?	August 29, 2019		
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion	NA		
Have you retained the copyright for the work?*	No	Was the work subject to academic peer review?	Yes

*If yes, please attach evidence of retention. If no, or if the work is being included in its published format, please attach evidence of permission from the copyright holder (publisher or other author) to include this work.

SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	
Please list the paper's authors in the intended authorship order:	

Stage of publication	Choose an item.
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SECTION D – Multi-authored work

<p>For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)</p>	<p>I 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 of the systematic review presented in Chapter 2. Sarah Hartman 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. Onaiza Qureshi conducted title/abstract screening, and provided comments on earlier drafts of the manuscript. Euan Sadler advised on the eligibility criteria, data analysis and synthesis, and provided comments and feedback on several drafts of the manuscript. Alex Cohen advised on the design of the study and provided comments and feedback on all drafts of the manuscript. Ritsuko Kakuma provided extensive guidance in the process of screening, data extraction, synthesis and writing, and also gave detailed comments and feedback on all drafts.</p>
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SECTION E

Student Signature	[Redacted]
Date	10/04/2020

Supervisor Signature	[Redacted]
Date	10/04/2020

2.2 Background

Common mental disorders (CMDs) such as depression and anxiety are among the leading causes of years lived with disability globally.⁷⁷ In low- and-middle income countries (LMICs) estimates indicate that 79-93% of people with depression and 85-95% of people with anxiety do not have access to treatment.⁴ 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.^{9, 78} The WHO promotes the integration of mental health services into primary health care as a feasible strategy to tackle these resource shortages.^{79, 80} 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.⁸¹

Yet mental health services remain unavailable at the PHC level in a large majority of countries.⁸² 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.⁸³⁻⁸⁵ Difficulties in implementation also pose significant barriers to the provision of integrated services at scale.²⁰ Large workloads, limited specialist support and shortages of psychotropic medication have previously been identified as some of the key challenges.²⁰ 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.^{86, 87}

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.³¹ 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.⁴³

Given that integration into primary care is a key priority to address the disease burden of CMDs,⁷⁹ 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 PHC for CMDs in LMICs. 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.

2.3 Methods

This systematic review is reported according to the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) criteria.⁸⁸ The protocol for this review was not registered.

2.3.1 Search strategy

We used Boolean operators to combine subject headings and relevant search terms related to (1) implementation determinants, (2) PHC settings and (3) CMDs 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 2.1. Relevant literature was also identified through searches in Google and Google Scholar and hand searching reference lists of included articles.

2.3.2 Data collection

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-text 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.

2.3.3 Eligibility criteria

We included peer-reviewed studies that used qualitative methodologies to explore barriers or facilitators to the implementation of programmes for CMDs in PHC settings within LMICs. We focused on peer-reviewed studies for two reasons. Firstly, we aimed to explore and identify gaps in the scientific literature. Secondly, we wanted to ensure scientific rigour and capture high quality studies. Studies published from January 1, 1990 onwards in English or Spanish and meeting the criteria detailed in Table 2.1 were eligible for inclusion. 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 CMDs. We focused on programmes being developed to be delivered or being delivered as part of routine care in PHC settings, since this is a promoted policy in LMICs. We only included studies of programmes that

delivered services by non-specialist health workers (e.g. medical doctors, nurses or social workers) or lay workers given that models of integration in PHC in LMICs often utilise these cadres due to resource shortages.^{78,89} This has been advocated as the most feasible strategy to integrate mental health services in PHC in the majority of LMICs and we wanted to improve the generalisability of findings. We focused on CMDs due to their high prevalence and comorbidity with other health conditions.⁹⁰ Young populations and other vulnerable groups were excluded since implementation requirements for interventions targeting these population groups are likely to differ. Finally, we focused on LMICs as this is where the need to improve access to mental health care is the greatest. We excluded studies from high income countries (HICs) given that human and technical resources available as well as health system characteristics are significantly different.

Table 2.1. Eligibility criteria for variables of interest

	Variable definition	Inclusion criteria	Exclusion criteria
Implementation determinants	Barriers or facilitators for the implementation of an intervention. ³¹	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 PHC settings	Programmes refers to services that are delivered or developed for delivery as part of routine care. PHC settings are health facilities located in close proximity to where people live and work and where basic health services are provided. ⁹¹	Studies of programmes delivered at PHC 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.
Adults with CMDs	CMDs refers to depressive and anxiety disorders included in two International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) ⁹² classifications: neurotic, stress-related and somatoform disorders (codes F40-48) and mood	Studies of programmes targeting general adult populations (above 18 years old) with CMDs 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).

	disorders (codes F30-39). ⁹³		
LMICs	Countries who economies were classified as low-income, lower-middle income, middle-income or upper-middle income by the World Bank ⁹⁴ at the date of publication	LMICs	HICs

2.3.4 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 Checklist⁹⁵ 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).

2.3.5 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.^{96, 97} 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 1.3).³² 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.^{32, 44}

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).

2.4 Findings

We identified 12,661 records through the database, internet and hand searches. 284 papers were eligible for full-text screening. Figure 2.1 describes the number of papers excluded at each stage. Twenty-four publications which report the findings of 21 studies related to nine mental health care programmes were included in the review (table 2.2).

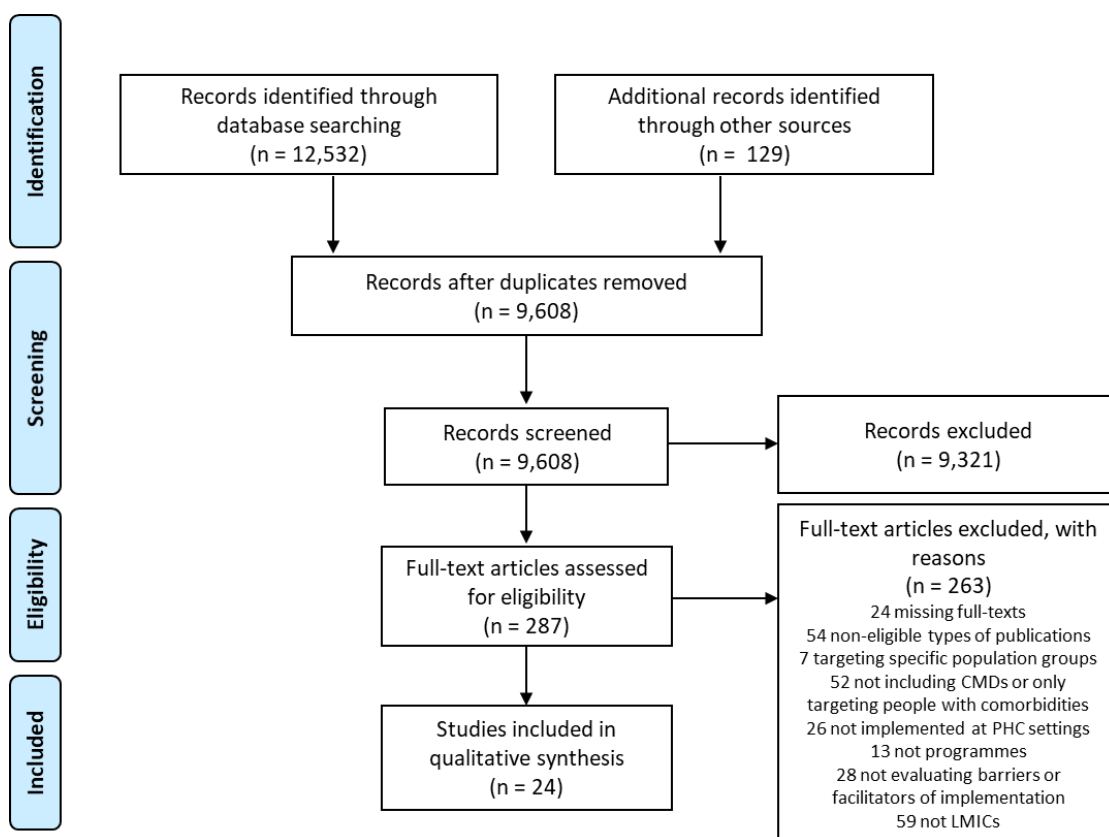


Figure 2.1. PRISMA flow diagram of search results

These programmes were in two low income countries,⁹⁸⁻¹⁰² four lower-middle income countries,¹⁰³⁻¹⁰⁸ and one upper-middle income country.^{109, 110} 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.^{47, 111-119} 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.^{101, 105, 108, 114, 120-126} Since the included studies were published, policies that promote integration in both Lebanon and Jordan have been introduced.^{126, 127}

All programmes used qualitative or mixed-methods study designs. Common methods for qualitative 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,^{98-100, 102, 107, 108, 111, 115, 117-119, 128} 11 studies were rated as being of fair quality,^{47, 101, 103-106, 109, 110, 113, 114, 116} and one study was rated as being of poor quality.¹¹²

The most common omission was a lack of discussion related to the implications of the relationship between the researchers and participants on the data collection and analysis, which was only included in one study.¹⁰⁷ Other omissions were a partial or complete absence of discussion related to the ethics procedures or implications,^{101, 103-105, 112-115} recruitment strategy,^{99-101, 103, 105, 114} methods for data collection,^{47, 101, 104, 116, 128} or data analysis,^{47, 101, 103, 104, 113} statement of research findings,^{102, 109, 110, 116} value of the research,^{108-110, 113} and research design.^{106, 112}

In a few instances either the research design,^{109, 110} recruitment strategy,⁹⁸ data collection,^{103, 111} data analyses,^{105, 112} or both the statement and discussion of findings¹¹² were considered inappropriate. In single instances, the aims¹⁰⁶ and findings¹¹³ were unclearly stated. Detailed quality ratings for included studies can be found in Appendix 2.2.

Table 2.2. Mental health programmes included in the review

Programme	Setting	Study design(s)	Participants and sample size	Data collection methods	Scale/ Platform of care	Target population	Type of provider	Programme / intervention	CFIR ³² domains and constructs
Brazilian national mental health programme ^{109, 110}	Brazil (Rio de Janeiro and Florianopolis), Latin America	Mixed-methods cross-sectional study and a qualitative study	Personnel involved in PHC 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 PHC 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/ PHC	General population/ Includes depression but targeted to all disorders	Team of professionals based in PHC clinics 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 ¹¹⁷	Ethiopia, India, Nepal, South Africa, Uganda and Nigeria, Sub-	Qualitative study	141 stakeholders including policy makers at the national level	In-depth interviews (n=141)	District level/ PHC and community	General adult population/ Psychoses, alcohol use disorders,	Variations by country. Different cadres of PHC	Collaborative stepped care _a . Treatments and services vary by country.	Intervention (complexity), outer setting (service user needs & resources,

	Saharan Africa and South Asia		and Ministry of Health, managers at the province and district level of PHC and mental health services			depression and epilepsy (in Ethiopia, Nepal and Uganda)	staff and lay health workers	Generally include assessment, pharmacological treatment and some form of psychosocial or psychoeducation support	cosmopolitanism, external policies & incentives), inner setting (implementation readiness & climate), individuals (knowledge & beliefs), process (engaging)
Friendship Bench project ⁹⁸	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/ PHC 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 ¹⁰⁶	Jordan, Middle East	Qualitative study	24 physicians, 9 nurse assistants and 17 midwives	Focus groups (n=5)	National level/ PHC	General population (age not specified)/ Depression	PHC providers (physicians and non-physicians)	Not specified but using task-shifting ^b Services and treatments not specified	Outer setting (service user needs & resources), inner setting (readiness for implementation), individuals (knowledge & beliefs, self-efficacy)

Kenyan province mental health programme ⁹⁹⁻¹⁰²	Kenya, Sub-Saharan Africa	Qualitative study ^{99,100,102} and a situational analysis ¹⁰¹	35 health workers from PHC 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/ PHC	General population (including children and adolescents)/ Depression and anxiety, psychoses, child and adolescent mental disorders and learning disabilities	PHC providers	Not specified- PHC 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 ¹⁰⁵	Lebanon, Middle East	Qualitative study	46 participants including general practitioners, mid-level staff, paediatricians, and gynaecologists	Focus groups (n=8)	National level/ PHC	General population including refugees/ Depression and anxiety, medically unexplained complaints, sleep problems and maternal and child mental health	PHC nurses, social workers, GPs (certified, with two years of experience and willing to attend the required days of training), gynaecologists and paediatricians	Task-shifting, 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 ^{104, 107}	India (Goa), South Asia	Consultation phase, formative study, pilot study ¹⁰⁴ and qualitative study ¹⁰⁷	Consultation phase included 145 doctors, PHC 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 doctors and general practitioners, 17 health counsellors, 28 health assistants, 2 clinical specialists and 41 additional PHC staff	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 the qualitative study (n=119)	Selected facilities in the state/ PHC	General adult population/ Depression and anxiety	PHC 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 attributes), process (planning, reflecting & evaluating)
MHaPP – South Africa ^{103, 108, 128}	South Africa, Sub-Saharan Africa	Mixed-methods situational analysis ^{103, 108} and a qualitative study ¹²⁸	District managers, district hospital personnel, primary care personnel, community level workers,	Document review, semi-structured interviews (n=56) and focus groups (n=18)	Sub-district level/ PHC	General adult population/ Includes mood and anxiety disorders	Not specified	Not specified	Intervention (evidence strength & quality, perceived advantage, complexity), outer setting (cosmopolitanism,

			traditional healers, private health care providers and service users. Key informants from other sectors (e.g. welfare and education)						external policies & incentives), inner setting (implementation readiness & climate, networks & communication), individuals (knowledge & beliefs) and process (planning, engaging, reflecting & evaluating)
PRIME – all sites ^{47, 115}	Ethiopia, India, Nepal, South Africa and Uganda, Sub-Saharan Africa and South Asia	Cross-sectional situational analysis ⁴⁷ and a qualitative study ¹¹⁵	429 stakeholders that represented community members, service users and their families, community health workers, PHC 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/ PHC and community	General adult population/ Psychoses, alcohol use disorders, depression and epilepsy (in Ethiopia, Nepal and Uganda)	Variations by country. Different cadres of PHC 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 ^{118, 119}	India (Madhya Pradesh), South Asia	Mixed-methods situational analysis ¹¹⁸ and	4 policy makers, 3 members of the Department of Health Services,	Direct observation, in-depth interviews (n=33) and	District level/ PHC and community	General adult population/ Depression, psychoses and	Mental health case manager, medical officers and paramedical	Collaborative stepped care ^a . Includes pharmacological treatment, brief	Outer setting (service user needs & resources, external policies & incentives), inner

		formative research and pilot study ¹¹⁹	4 service providers and managers, 8 paramedical staff in PHC facilities, 8 front-line workers, 8 community workers, 8 community members, 3 district mental health managers, 3 medical officers, 6 front line workers, 18 service users and carers	focus groups (n=5)		alcohol use disorders	workers and front-line workers at the community	interventions, psychoeducation, first aid interventions with emphasis in self-care, and referrals	setting (implementation readiness & climate), individuals (knowledge & beliefs), process (planning, reflecting & evaluating)
PRIME – Nepal ^{111, 112, 114}	Nepal, South Asia	Mixed-methods formative study ¹¹¹ , pilot study ¹¹² and a situational analysis ¹¹⁴	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/ PHC and community	General adult population/ Psychoses, alcohol use disorders, depression and epilepsy	Prescribing and non-prescribing PHC providers, 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 ¹¹⁶	South Africa, Sub-Saharan Africa	Mixed-methods situational analysis	4 PHC nurses, 4 lay counsellors, 2 social workers, 12 service users and 4 caregivers	In-depth interviews (n=26)	District level/ PHC and community	General adult population/ Depression, alcohol use disorders and schizophrenia	PHC providers (medical doctors, nurses, lay counsellors and community health worker outreach team)	Collaborative stepped care ^a Includes psychoeducation, pharmacological treatment, individual and group counselling	Outer setting (service user needs & resources), inner setting (readiness for implementation), individuals (self-efficacy, other personal attributes), process (planning)
PRIME – Uganda ¹¹³	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/ PHC and community	General adult population/ Psychoses, alcohol use disorders, depression and epilepsy	PHC 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

2.4.1 Barriers and facilitators for the implementation of mental health programmes

Table 2.3 presents findings according to the CFIR,³² and key findings are discussed below.

2.4.1.1 *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,^{107, 117} more frequent home visits¹⁰² and considerable coordination between service providers.¹¹⁰ In order to provide services that required more time or technical capacity (e.g. screenings or counselling), the MANAS programme and PRIME-Nepal reported it was essential to recruit new cadres of health providers,^{104, 112} which can be a barrier due to the added costs of interventions.

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 skills¹⁰⁷ and capacity to provide better care for service users with low adherence and comorbidities.^{99, 109 98, 104, 107} Positive impacts on service users also triggered positive attitudes from clinicians, further improving their engagement with interventions.^{98, 99, 107}

2.4.1.2 *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,^{98, 104, 107} which facilitated implementation. Most programmes reported challenges arising from the service user needs and characteristics. For example, service users with CMDs commonly experienced comorbid conditions, requiring more time and attention that are difficult to allocate

given existing workloads,^{98, 100} and those with high symptom severity were perceived as needing specialist care,⁹⁹ which is not easily accessible through the PHC level. Exposure to social risk factors such as domestic violence,⁹⁸ family issues,¹⁰⁶ drug related violence,¹¹⁰ poverty,^{98, 100, 101, 106, 118} low literacy,⁴⁷ and poor household infrastructure⁴⁷ were perceived to be difficult to address within the PHC system, given resource and expertise constraints. Providers of the Brazilian programme expressed the need to differentiate distress caused by social or contextual circumstances and the need to tackle this at the community level or through targeted non-pharmacological interventions.¹⁰⁹ Conversely, in the MANAS programme providers identified that many service users expected or preferred pharmacological treatment over talking-based interventions.¹⁰⁷

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.^{47, 99, 113, 116, 117} 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.^{100, 104, 105, 111} 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.^{100, 111, 112} Service users found attending appointments difficult due to the cost of treatment and transportation, lengthy travelling and waiting times and loss of wages.^{104, 111, 112, 115, 117, 118} Concerns about confidentiality among service users also hindered attendance to group interventions in India¹⁰⁴ and compliance with referrals to psychiatric institutions in Jordan.¹⁰⁶

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.^{101, 103, 114} Recognizing the lack of a mental health policy as being a barrier to implementation in India is consistent with these findings.¹¹⁸

PHC providers from PRIME-Uganda identified that regulations limit their capacity to diagnose or prescribe treatment to service users with mental illnesses.¹¹³ Furthermore, PHC 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.^{112, 117} In terms of incentives, barriers to implementation reported by PHC providers from PRIME-all sites include the lack of official recognition of mental health trainings and the absence of financial compensation.^{111, 112, 115}

2.4.1.3 *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 PHC settings, such as the relevance of continuity of care¹⁰⁹ or the use of task-sharing.¹¹⁰ 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.^{115, 128} Supportive and collaborative learning climates were also reported by providers as a positive influence for 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.^{98, 105, 110, 128}

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.^{100, 114, 117, 118} The lack of monitoring systems to follow-up service users was also perceived to hinder providers' capacity to treat mental disorders.^{98, 118}

Strong leadership was found necessary at different levels. All sites in the PRIME programme reported the absence of a mental health manager at the district, state or national level as a barrier.^{47, 114} At the facility level, Hijazi (2011) reported 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.¹⁰⁵ 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.¹¹⁸

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 PHC 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^{98, 103, 109, 111, 118} or the lack of refresher training sessions¹¹³ 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.^{110, 128}

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.^{98, 100, 105, 115, 128} However, the capacity to supervise PHC providers and refer service users is hampered by the limited availability of specialists in the public health system.^{101, 108, 114, 115} Referral systems were reported sometimes to be lacking⁴⁷ and when available were perceived to be challenging to access due to the limited number of facilities, their capacity,^{98, 111} and distance from PHC clinics.^{100, 114, 118}

Poor communication between PHC 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,⁴⁷ or when specialists failed to share clinical decisions when back referring service users.^{100, 108} According 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.¹⁰⁹

2.4.1.4 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.^{98, 106, 107, 128} In the MANAS programme providers reporting positive attitudes towards the intervention also motivated service user commitment.¹⁰⁷ However, there were instances when implementation was hindered by resistance to collaborative stepped-care by providers from MANAS,¹⁰⁷ or task shifting, by front line providers and specialists from PRIME-Uganda, EMERALD and the Brazil national programme.^{110, 113, 117}

Personal attributes of providers were considered important in the Friendship Bench, PRIME-South Africa, PRIME-Nepal, MANAS and Kenyan national programmes. Being respectful, willing to listen, 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 PHC providers.^{98, 102, 107, 111} 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.¹⁰² Collaboration between cadres was affected when others, e.g. supervisors, were perceived as under qualified.^{111, 116}

2.4.1.5 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 healers¹⁰⁸ and service users¹¹⁷ 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.^{98, 104} In contrast, in Brazil, providers believed that a lack of planning about referral processes prevented services users from receiving specialised care.¹⁰⁹

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,^{104, 112} adjust training content¹⁰⁵ or other logistical aspects of intervention delivery.¹⁰⁴ 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.^{100, 119}

Table 2.3. 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 ¹⁰³ - Perceived low quality of capacity building activities ^{100, 109}	None reported	1 good quality and 2 fair quality studies
Perceived advantage	None reported	- Perceptions that integration can increase help-seeking behaviours ¹²⁸ , improve access to care and attitudes toward mental illnesses ¹¹⁵ - Perceived impact of training on health providers diagnostic and treatment skills ¹⁰⁷ - Perceived capacity to deliver better care to service users with low adherence and comorbidities ^{99, 109} - Presence of mental health screenings ^{99, 104, 107} - Service users perceived usefulness of treatment ^{98, 104, 107}	5 good and 2 fair quality studies
Adaptability	None reported	- Use of locally validated tools ^{98, 107} - Use of local idioms in training manuals ⁹⁸ - Integration of culturally accepted treatments (e.g. yoga or behavioral activation) ^{98, 104} - Capacity to tailor to service user needs (e.g. number or location of mental health consultations) and provider's schedules ⁹⁸	2 good and 1 fair quality studies
Complexity	- Need for lengthy consultations ^{117, 128} or more frequent home visits ¹⁰² - More coordination and communication between health provider cadres required ¹¹⁰	None reported	3 good and 1 fair quality studies
Cost	- Cost of recruiting new cadres of health providers ^{104, 112}	None reported	1 fair and 1 poor quality studies
Outer setting			
Service user needs and resources	- Presence of comorbid conditions ^{98, 100} - High severity of symptoms ⁹⁹ - High exposure to social risk factors ^{47, 98, 100, 101, 106, 110, 118}	- Family support for detection of mental disorders, treatment seeking and adherence ^{104, 111}	7 good, 8 fair and 1 poor quality studies

	<ul style="list-style-type: none"> - Low mental health literacy^{47, 99, 113, 116, 117} - High levels of stigma^{111, 117, 118} - Poor adherence to care^{100, 104, 105, 111} - Poor attendance to consultations due to financial and time constraints^{104, 111, 112, 115, 117, 118} - Perception that chronic treatment is harmful, unhelpful or unnecessary^{100, 111, 112} - Concerns about confidentiality^{104, 106} - Low involvement of service users in service organisation¹¹⁷ 		
Cosmopolitanism	- Lack of collaborations with other government departments or sectors (e.g. police, prison, education, social welfare and sports departments) ^{108, 114, 117}	<ul style="list-style-type: none"> - Presence of non-governmental or private organisations providing mental health care^{47, 101} - Presence of collaborations with other government departments (e.g. police, prison, education, social welfare and sports departments)¹⁰¹ 	2 good and 3 fair quality studies
External policies and incentives	<ul style="list-style-type: none"> - Lack of national mental health policy or plan^{111, 118} - Regulations that do not allow PHC providers to prescribe or treat mental disorders^{47, 113} - Mental health service delivery not part of role description of PHC providers^{112, 117} - Lack of official recognition of mental health trainings and financial compensations for PHC providers^{111, 112} 	<ul style="list-style-type: none"> - Presence of national plans or programmes for mental health^{47, 101, 103, 114} - Inclusion of psychotropic medications in essential medication lists^{101, 118} 	4 good, 5 fair and 1 poor quality studies
Inner setting			
Implementation climate	<p>Compatibility</p> <ul style="list-style-type: none"> - Providers' perceived lack of importance of continuity of care¹⁰⁹ - Providers' disagreement with use of task-sharing¹¹⁰ <p>Goals and feedback</p> <ul style="list-style-type: none"> - Limited routine data collection for mental health indicators^{100, 114, 117, 118} - Absence of monitoring systems^{98, 118} <p>Learning climate</p> <ul style="list-style-type: none"> - Climate is different in each clinic as it depends on relationships between team members¹¹⁰ 	<p>Compatibility</p> <ul style="list-style-type: none"> - Providers' support of programme design^{111, 115, 128} <p>Goals and feedback</p> <p>None reported</p> <p>Learning climate</p> <ul style="list-style-type: none"> - Supportive and collaborative relationships between team members^{98, 105, 110, 128} 	3 good and 2 fair quality studies
			4 good and 1 fair quality studies
			3 good and 2 fair quality studies

- Negative or abusive supervision experiences by health workers¹¹¹

Readiness for implementation

Leadership engagement

- Absence of a mental health manager^{47, 114}
- Lack of priority of mental health within the health system¹¹⁸

Available resources

Financial resources

- Low budgets for mental health care provision^{101, 105, 114, 117}
- Mental health budget allocated to psychiatric hospitals¹¹⁸

Human resources

- Shortage of health providers^{103, 105, 109, 111, 115}
- High turnover of health providers^{108, 109, 111, 117}
- Heavy workloads^{100, 110, 116, 118, 128}
- Limited availability of specialists in public health system^{101, 108, 114, 115}

Infrastructure and supplies

- Lack of private spaces^{99, 104, 112, 116}
- Poor supply of psychotropic medications^{47, 98, 100, 106, 112, 117, 119}
- Limited number of specialist services and distance from PHC clinics^{98, 100, 111, 114, 118}

Managerial resources

- Absence of appropriate supervisory mechanisms^{100, 108, 111}
- Absence of referral mechanisms⁴⁷

Access to information and knowledge

- Lack of standardised training manuals or clinical guidelines^{100, 114}
- Poor planning of trainings^{98, 103, 109, 111, 118}
- Lack of refresher sessions¹¹³

Readiness for implementation

Leadership engagement

- Positive support from clinic managers to treat mental disorders, e.g. by allocating more time for these consultations¹⁰⁵

Available resources

Financial resources

None reported

Human resources

None reported

Infrastructure and supplies

- Availability of psychotropic medications¹⁰³

Managerial resources

- Presence of supervisory mechanisms^{98, 100, 105, 128}
- Presence of referral systems¹²⁸

Access to information and knowledge

- Presence of training or other activities for professional development^{110, 128}

1 good and 3 fair quality studies

10 good, 10 fair and 1 poor quality studies

5 good and 5 fair quality studies

Networks and communication	<ul style="list-style-type: none"> - Limited communication between specialists and PHC providers^{47, 100, 108} - Lack of communication of knowledge related to the organisation of systems and structures¹⁰⁹ 	- Presence of specialists at the PHC clinics ^{104, 128}	3 good and 3 fair quality studies
Characteristics of the individuals			
Knowledge and beliefs about the intervention	<ul style="list-style-type: none"> - Resistance of providers to stepped-care or task shifting^{107, 110, 113, 117} - Providers' stigma towards mental disorders^{111, 115} - Providers' belief that depression is not an illness¹⁰⁶ - Inconsistent beliefs between providers lead to inconsistencies in implementation^{107, 110} - Providers' lack of knowledge about clinical guidelines and poor communication skills^{105, 106, 119} - Providers' limited knowledge on how to deal with complex cases^{98, 113} 	<ul style="list-style-type: none"> - Providers' perception that treatment of mental disorders within PHC is relevant or beneficial^{98, 106, 107, 128} - Positive attitudes from providers and managers towards intervention¹⁰⁷ - Impact of training on knowledge and attitudes towards mental health^{99, 105, 107, 128} 	8 good and 4 fair quality studies
Self-efficacy	<ul style="list-style-type: none"> - Providers' uneasiness when diagnosing and prescribing treatment^{105, 106} or providing counselling¹¹⁶ - Providers' perceive difficulties dealing with mental health problems caused by social circumstances¹¹⁰ - Distress felt by providers when providing mental health treatment¹¹² 	- Providers' perceived confidence when prescribing pharmacological treatments ¹⁰⁷	1 good, 4 fair and 1 poor quality studies
Other personal attributes	<ul style="list-style-type: none"> - Poor communication skills¹⁰² - Lack of respect for confidentiality¹⁰² - Perception that specialist supervisors or community health workers are underqualified^{112, 116} 	<ul style="list-style-type: none"> - Providers' perceived to be respectful, willing to listen, discreet, cooperative, and committed^{98, 102, 107, 111} - Recruiting providers at the community⁹⁸ - Providers' willingness to accept feedback¹⁰⁷ 	4 good, 1 fair and 1 poor quality studies
Process			
Planning	<ul style="list-style-type: none"> - Poorly planned interventions¹¹⁵ - Lack of planned systems or processes to make referrals¹⁰⁹ 	<ul style="list-style-type: none"> - Use of formative research^{47, 103, 104, 108, 111, 113-116, 118} - Development or adaptation of training materials, guidelines or interventions^{98, 104} 	5 good and 7 fair quality studies
Engaging	- Limited engagement of traditional healers ¹⁰⁸ and service users ¹¹⁷	None reported	2 good quality studies
Reflecting and evaluating	None reported	<ul style="list-style-type: none"> - Use of pilots to test programmes^{99, 100, 102, 105, 112, 119, 128} - Use evaluations to test feasibility of interventions and make necessary changes^{104, 105, 112} and identify further community needs^{100, 119} 	5 good, 2 fair and 1 poor quality studies

2.5 Discussion

This study summarises stakeholders' perceptions of factors acting as barriers and facilitators to the implementation of programmes for CMDs in primary care in LMICs. Panel 2.1 presents a summary of recommendations drawn from the study findings. 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 reported as necessary to enable the uptake of programmes for CMDs at PHC 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 and their 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 PHC in HICs.^{129, 130} Previous reviews identified resource availability^{129, 130} and the quality and nature of networks and communication structures as key factors influencing implementation.¹²⁹ Perceived knowledge and beliefs among providers about the intervention, particularly resistance to proposed interventions,^{129, 130} and the high complexity of the intervention^{129, 130} were also identified as main barriers to implementation. Challenges arising because of service user characteristics and the key role of capacity building as an enabling factor were more frequently discussed in the current review, both of which might 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.¹³¹ Engagement with governments and the community was the most commonly reported facilitator,¹³¹ 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 LMICs.^{20, 78} Low budgets, limited human resources, medication supply and support from specialists often mean that the

health systems where these services are nested are ill-prepared to integrate and implement effective mental health services.⁵ Other important health system challenges such as lack of strong leadership, poor governance, mismanaged information systems have also been reported to affect integrated care.^{85, 132} 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)¹³³ 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.¹³⁴ 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-specialists¹³⁵ and treat service users with severe symptomatology¹³⁶ in order to ensure good quality care.

Capacity building activities within supportive learning environments can enable health providers to develop sufficient knowledge and skills to provide services for people with CMDs and foster buy-in. However, given high turnover among PHC providers⁷⁸ it appears that these need to be long-term interventions. Whereas the presence of interventions for mental health was seen as useful and as having a positive impact

Panel 2.1. 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.

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.¹³⁷

The present review has several strengths. We used a broad search strategy informed by guidance created for the investigation of barriers to research uptake.¹³⁸ Not including LMIC-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.¹³⁹ We also used a widely recognised implementation framework to analyse our findings.^{32, 44} The quality of studies was assessed through a tool previously used by a similar review,¹³⁰ 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^{130, 140} or that used collaborative care.¹³⁰ 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 CMDs.¹⁴¹⁻¹⁴⁶

We acknowledge some limitations of this study. Grey literature may have been missed since this was not searched systematically. This is an important limitation given the challenges that researchers and implementers from LMICs experience in publishing their work in academic journals.^{147, 148} However, the aim of this review was to explore peer-reviewed studies to identify gaps in the scientific literature. We also wanted to ensure the scientific rigour of the included studies, and whilst a broader search would have been desirable alongside rigorous quality appraisals, this was not feasible in the context of the current PhD project. 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.^{43, 149}

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 for CMDs in LMICs. 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 LMICs is needed given the importance of contextual factors for successful implementation. Second, the lack of implementation specific studies might explain why enablers such as champions and support teams for the implementation, which have been previously identified as relevant,^{150, 151} 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.^{104, 112, 119} 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.¹⁵² This gap needs to be addressed given the key role of barriers such as low treatment seeking and adherence.

Chapter 3. Methods

The systematic review of peer-reviewed published literature of the barriers and facilitators to the implementation of programmes for common mental disorders (CMDs) in primary care (PHC) in low- and middle-income countries (LMICs) presented in Chapter 2 helped identify key research gaps. These included the need: (1) to further investigate barriers and facilitators to implementation in different settings, (2) to use relevant frameworks in the assessment of determinants, (3) to explore programmes that have been implemented past initial stages of adoption, and (4) to include service users in this type of research.

The second and main study conducted as part of this PhD project, sought to address the research gaps identified by the systematic review. I conducted an explanatory case study using mixed-methods which aimed to assess the implementation of a mental health programme led by *Compañeros En Salud* (CES) in a collaboration with the Ministry of Health in Chiapas and delivered at 10 PHC clinics in rural Mexico. As a first step, the implementation process and outcomes of the programme were examined to then elicit potential barriers and facilitators to the programme implementation.

In the current chapter I describe and justify the methodological decisions made for the completion of this study, including the study design, sample, methods of data collection, and the three analysis that were conducted and which are presented in this thesis (Chapters 4-6).

3.1 Study design

An explanatory case study using mixed-methods was utilised. The case under study was the implementation of the CES mental health programme at PHC clinics, and this study aimed to both explain how the programme was implemented and gain an in-depth understanding of the factors (i.e. barriers and facilitators) that played a role in its implementation. According to Yin (2013) a case study allows capturing “complex social phenomena” and “holistic and meaningful characteristics of real-life events” as it is “an empirical inquiry that investigates a contemporary phenomenon in-depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”.¹⁵³

Previous research investigating the utilization of evidence-based practices (EBPs) in routine services has used qualitative methodologies to understand the factors or processes that influence their implementation. Ethnographic methods (i.e. participant

observation, interviews and document review) have been used to assess barriers and facilitators to the implementation of EBPs for child mental health,¹⁵⁴ dual disorders (i.e. alcohol use and other mental disorders)¹⁵⁵ and severe mental disorders.¹⁵⁶ Qualitative methods nested in case studies have been used to identify state-level barriers and facilitators for the implementation of different EBPs for the treatment of severe mental disorders,¹⁵⁷ and the treatment of common mental disorders in PHC.¹⁵⁸ Finally, the case study methodology developed by Cohen and colleagues has been used to identify challenges, strengths and weaknesses of community mental health programmes.¹⁵⁹ Specific methods used to collect data from different stakeholders (i.e. service providers and users) in the studies previously mentioned include quantitative questionnaires or surveys, document review, ethnographic observation, focus groups and in-depth interviews.

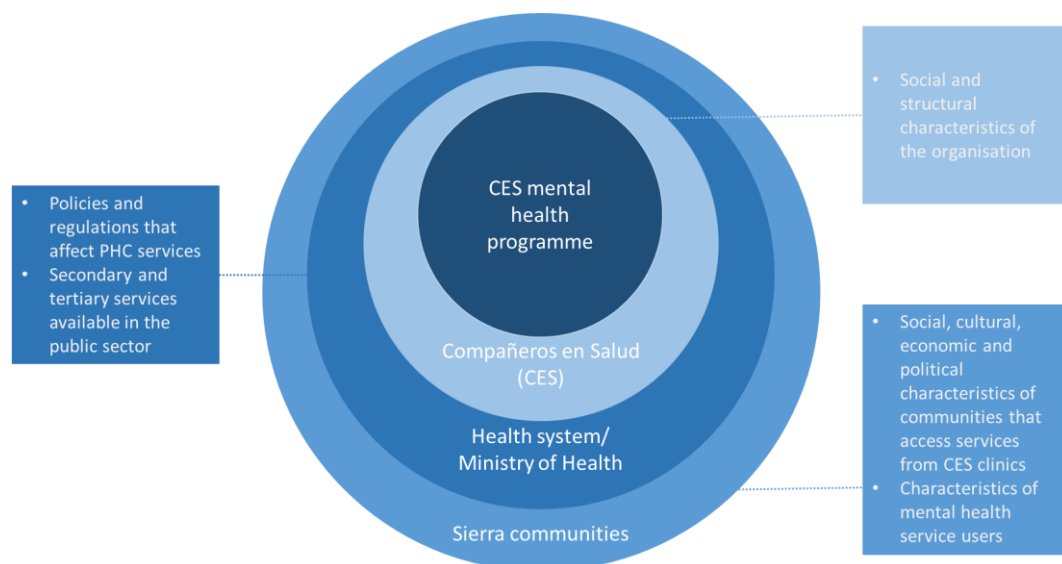


Figure 3.1. Relevant characteristics of the settings within which the CES mental health programme is nested

For this project, a case study design using quantitative and qualitative methods was chosen for three main reasons. First, the case under investigation is a “complex intervention”, as it involves multiple components and stakeholders with variable characteristics that interact in different ways, and requires the execution of complex behaviours from which multiple outcomes are expected.⁷⁶ Second, the context within which the case is nested is key to its investigation, and the boundaries between the case and the context are not easy to define. In this sense, the different contexts the programme is nested have to be considered (figure 3.1): (1) the mental health programme is nested within a larger organisation, CES, within which many other programmes and activities take place; (2) the organisation supports the service delivery

in clinics that are part of the larger public health system of the state; and (3) these clinics are located in communities with particular social, cultural, economic and political. Third, I aimed to explain how the programme implementation occurred and which factors led to it. As mentioned previously, similar research investigating the implementation of EBPs in routine services has used qualitative methods and case studies to understand the factors or processes that influence these,^{154, 155, 157, 160-162} as they are a preferred approach to address “why” or “how” type of questions.^{153, 154} Finally, different variables and information sources (i.e. qualitative and quantitative) had to be included to account for the complexity of the case under study and the perspectives of all involved stakeholders. According to Yin (2013), the case study method is particularly suitable for the in-depth study of multiple variables and the use of multiple information sources.¹⁵³

A mixed-methods case study methodology was chosen over a purely qualitative or ethnographic approach given that the inclusion of quantitative data was considered of relevance to assess the programme implementation. We used two mixed-methods study designs within the case study to best integrate the qualitative and quantitative data: a convergent design and an explanatory sequential design.¹⁶³ Quantitative data allowed us to assess the extent to which implementation guidelines were followed, as well as the attendance of service users at consultations. Qualitative methods were essential to make sense of the quantitative data. As Hammersley and Atkinson (2007)¹⁶⁴ say, “to understand people’s behaviour we must use an approach that gives us access to the meanings that guide their behaviour.” Therefore, whilst quantitative methods were necessary to record what was implemented, qualitative methods were essential to understand the mechanism of and rationale for implementation.

Ethnographic methods can contribute to evaluative work as they allow us to consider the context and structures within which an intervention takes place and can be used to capture the perspectives of the multiple actors involved.¹⁶⁵ Our mixed-methods case study methodology made use of semi-structured interviews and participant observation to consider both the context and the perspectives of multiple stakeholders.

3.1.1 Case definition and rationale for case selection

The case under study was the implementation of the CES mental health programme at PHC clinics. We focused on PHC services, given that integration of mental health services in PHC is a key strategy promoted by the WHO and endorsed by many countries to improve access to mental health care.^{80, 81} As it was described in the introduction of this thesis, CES supports the delivery of general health care, including mental health care, at 10 PHC clinics, the community and one local hospital. However, for this case study only

activities involved in the delivery of mental health services at PHC clinics were included under the programme definition. There were two main sets of activities undertaken by the programme, the first were capacity building activities, and the second were service delivery activities. Table 3.1 presents a description of the activities, as well as the health workers involved in their execution. The health providers involved in the delivery of the mental health programme and the service users receiving services from it were considered part of the case under study.

The CES mental health programme was selected because it is a unique example of integration of mental health care in PHC in Mexico, where services at PHC in the majority of the country are not available.⁵⁸ In both Mexico and globally, the CES mental health programme has features that make it of particular interest. First, this programme was not developed or is executed as part of a research project, therefore it can be considered a real-world programme. Implementation studies of real-world programmes are scarce (see Chapter 2). Second, the programme is being implemented within the public health system and aims to function only with resources that are supposed to be available within this system,¹⁶⁶ which means the findings from this study are more generalizable to other settings. Third, it is being implemented in a rural and remote area that is difficult to access due to geographic conditions, and with high levels of poverty,^{166, 167} therefore the CES mental health programme represents a rare example of an initiative delivering mental health services to a hard to reach population, with complex social and health circumstances. Understanding how this programme has overcome challenges and has been implemented can therefore provide useful lessons to the integration of mental health services in PHC.

Table 3.1. CES mental health programme activities for service delivery at PHC clinics

Activity	Description	Health workers involved
Capacity building		
Training	<p>Two-day monthly trainings take place at the main office of the organisation. All MDs participate, but nurses from PHC clinics are not involved.</p> <p>These trainings cover multiple topics relevant to the delivery of services at the clinics, including maternal health, management of chronic and infectious diseases, global health topics, and others. A one and a half hour mental health training session is included. The topics covered in the session vary according to identified needs by MDs or other members of the organisation, e.g. clinical supervisors.</p> <p>These sessions are interactive, and include role plays or other practical exercises.</p>	Mental health coordinator – session design and delivery
Clinical supervision	<p>Each MD receives a five-day on-site clinical supervision every month. Clinical supervisions are not mental health specific. During these five days, clinical supervisors deliver services alongside MDs, to help with clinical assessments, model the execution of certain procedures, and discuss cases with MDs to help them in the processes of diagnosing and allocating treatment.</p> <p>There are no guidelines as to what supervisions should include in general or for mental health specifically. Generally, clinical supervisors would provide support in the delivery of mental health services if a service user with a mental health complaint visits the clinic while the supervisor is on-site, or if the MD plans ahead and schedules follow-up consultations with mental health service users.</p> <p>Other activities performed during supervision weeks are: home visits to service users (usually for complex cases or those who cannot visit the clinic), review of the mental health service users registered in the health information system to discuss complex cases and decide on next steps (e.g. if a service user has not returned, the supervisor might suggest to make a home visit, or if there are difficulties with a diagnosis, the supervisor might suggest consulting the mental health coordinator), and others not related with the mental health programme.</p>	Clinical supervisors (medical doctors who have already spent one year working as MDs in one of the CES supported PHC clinics) – on-site supervision and communication with mental health coordinator, if needed
Mental health supervision visits	The mental health coordinator or another member of the mental health team (i.e. usually a psychologist or psychiatrist volunteering for a few months) occasionally visit the clinics to provide on-site mentoring for the delivery of mental health services and provide support with complex cases. Given that there are 10 PHC clinics and there are only 1 or 2 members of the mental health team, it is not possible to visit all MDs regularly. Usually visits take place when they are seen as necessary by either the MDs, clinical supervisors or the mental health coordinator.	Mental health coordinator or mental health volunteer (i.e. psychologist or psychiatrist)
Service delivery*		

Case identification	<p>There are four ways in which a person who potentially has a mental disorder can be identified:</p> <ol style="list-style-type: none"> 1. Service users can attend the clinics and request mental health services 2. MDs can identify symptoms while treating a service user for another health complaint 3. Nurses, who usually have close interaction with community members, can either advice a service user to schedule a consultation with the MD or advice the MD to visit a service user 4. Occasionally community screenings for chronic health conditions are organised by CES. People who screen positive for depression are referred to the PHC clinic 	MDs and nurses
Diagnosis	<p>For mood disorders: Diagnosis is based on the PHQ-9 score, which has been validated for this population, an exploration of relevant life events, and psychological/emotional and/or physical symptoms. Service users with a score of 5 or above and with no recent stressful life events receive a diagnosis of depression or another mood disorder (depending on symptoms). For service users who score between 5-9 points, the diagnosis is re-evaluated a month after the initial appointment.</p> <p>For anxiety disorders: Diagnosis is based in the GAD-7 score, an exploration of relevant life events, and psychological/emotional and/or physical symptoms. If a service user expresses feeling worried or anxious, providers have to discard that this may be due to other medical causes and then apply the GAD-7. A score of 5-9 means mild anxiety, 10-14 moderate anxiety and 15-21 severe anxiety.</p> <p>For complicated patients: Providers can ask for the support of clinical supervisors or the mental health team either via Whatsapp, or waiting until the monthly trainings to discuss this in person. Clinical supervisors or members of the mental health team are sometimes at the clinics and are able to provide support.</p>	MDs, and, if needed, clinical supervisors and/or the mental health coordinator
Treatment allocation	<p>For mood disorders: Based on the PHQ-9 score:</p> <ul style="list-style-type: none"> - 5-9: provide psychoeducation and re-evaluate a month later - 10-14: provide psychoeducation and evaluate the need of medication - +15: start 20mg of fluoxetine or sertraline if the emotional complaints are not due to a recent event. <p>For anxiety disorders: Based on GAD-7 score:</p> <ul style="list-style-type: none"> - 5-9: no indication 	MDs, and, if needed, clinical supervisors and/or the mental health coordinator

- 10-14: evaluate need of treatment on an individual basis/ provide psychoeducation
- 15-20: start 20mg of fluoxetine or sertraline if the patient has suffered anxiety symptoms for at least 6 months. Provide psychoeducation.

For complicated patients:

Providers can ask for the support of supervisors or the mental health team either via Whatsapp, or waiting until the monthly trainings to discuss this in person. Supervisors or members of the mental health team are sometimes at the clinics and are able to provide support.

<p>Follow-up (including clinical assessment, monitoring of pharmacological treatment and delivery of talking-based interventions)</p>	<p>Service users are scheduled monthly consultations to receive follow-ups. During these, MDs use the PHQ-9 or GAD-7 to assess progress, explore any relevant life events, emotional status, explore adherence to medication and any potential side effects, provide a talking-based intervention or recommendation based on the service user's needs and continue or change the pharmacological prescription according to the clinical assessment.</p> <p>Guidelines for pharmacological treatment follow-up:</p> <p>For mood disorders:</p> <ul style="list-style-type: none"> - If PHQ-9 reduces to 5 points or less after 4-6 weeks, book monthly appointments until remission. A service user is considered to be in remission when he has a score of 5 or less for 6 months in a row. After remission, service users have to be monitored every 3-6 months, and medication is given 6 to 12 months after remission. - If there is no symptom reduction, augment dosage of fluoxetine. There is no indication about how to do this, but it states that if the maximum dosage does not show results, then sertraline should be prescribed. <p>For anxiety disorders:</p> <ul style="list-style-type: none"> - Raise dosage by 20mg of fluoxetine every 4 to 6 weeks until desired effect is achieved. Book monthly appointments until remission. - If a service user does not tolerate fluoxetine or reaches maximum dosage without improvement, change to Sertraline 50 mg. - Raise 50 mg of Sertraline every 4-6 weeks until desired effect. - Keep treatment for 12 months after remission. <p>Guidelines for the delivery of talk-based interventions:</p> <p>MDs have printed cards which contain the instructions for the following talk-based interventions:</p> <ol style="list-style-type: none"> 1. Strengthening coping mechanisms in anticipation of difficult life events 	<p>MDs</p>
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2. Identifying triggers of dysfunctional thoughts, behaviors or feelings and formulating alternative and healthier responses
 3. Problem-solving exercise
 4. Challenging negative automatic thoughts
 5. Changing negative thoughts or feelings to positive or useful ones
 6. Behavioral activation
 7. Guided meditation
 8. Motivational interview
 9. Mobilization of support networks
 10. Listing positive things in life
 11. Listing personal qualities to strengthen self-esteem
 12. Guided yoga

These cards can be found in Appendix 3.1

*All service delivery activities are done following the organisation's clinical guidelines which have been adapted by CES for this context. These were adapted from the mhGAP guidelines and recommendations available in Up To Date.

3.1.2 Conceptual framework

Previous research investigating barriers and facilitators to the implementation of mental health EBPs has used pre-existing implementation frameworks, including the Child STEPS model,¹⁵⁴ the relational mode,¹⁶⁸ the Promoting Action on Research Implementation (PARIHS) framework,¹⁵⁸ the theory of planned behavior,¹⁶⁹ and the Consolidated Framework for Implementation Research (CFIR).¹⁷⁰

For this study, I used two pre-existing frameworks to guide the collection and analysis of data: (1) the CFIR, a framework for the study of implementation determinants, and (2) a taxonomy of implementation outcomes developed by Proctor and colleagues.³⁴

Implementation determinants have been defined as the different factors that influence the adoption, penetration or sustainability of a new practice and that have a role in ensuring this new practice has a positive impact in care provision.^{31, 32} On the other hand, implementation outcomes are the “effects of deliberate and purposive actions to implement new treatments, practices, and services.”³⁴ In this sense, this conceptual framework will allow to understand the results of the implementation of the programme, and the factors and processes that led to these results (figure 3.1).

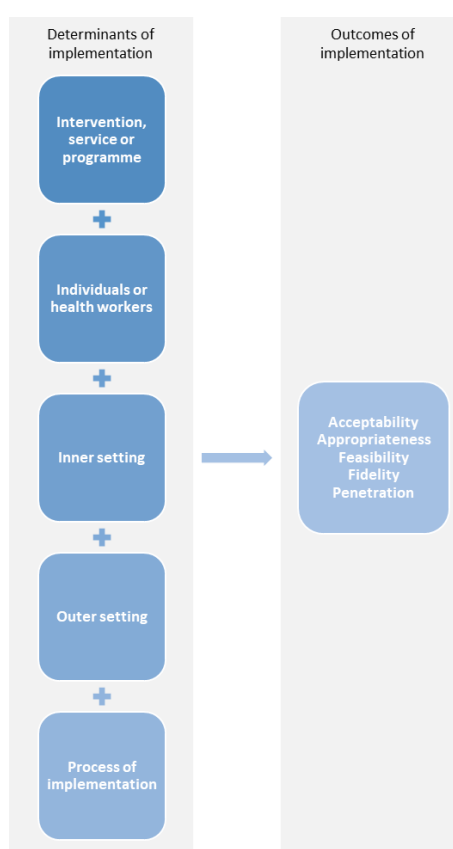


Figure 3.1. Conceptual framework for the case study

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.^{32, 44} The CFIR was developed by Damschroder and colleagues through a review of published implementation theories, i.e. theories developed to facilitate the translation of research findings into routine practice.³² The CFIR synthesized existing theories, and aimed to provide a taxonomy to guide implementation related research.³² Figure 3.1 depicts the five domains included in this framework. The CFIR provides a list of constructs that characterise each domain and allows to study the complex relationships between these domains.³² Table 3.2 summarises the definition of each of the 25 constructs and 7 sub-constructs included in this study.

Table 3.2. Definitions of implementation determinants

Implementation determinant	Definition
Intervention characteristics	
Intervention source	Perception of stakeholders about the source of the intervention, i.e. whether it was developed by the organisation which is implementing or an external group
Strength and quality of evidence	Perception of stakeholders of the validity of the evidence supporting the intervention
Advantage	Perception of stakeholders related to the advantages of using the intervention
Adaptability	Extent to which an intervention can be adapted to suit the needs or conditions of a particular setting
Trialability	Extent to which an intervention can be initially tested or tried by a health worker
Complexity	Perception of stakeholders related to how difficult or intricate is an intervention
Quality and design of packaging	Perception of stakeholders about how the intervention is presented
Cost	Financial costs associated with the implantation of the intervention
Individual characteristics	
Knowledge and beliefs about the intervention	Individual's attitudes towards and intervention, and the extent to which an individual has the required knowledge to implement an intervention
Self-efficacy	Individual's belief of their own capacity to implement an intervention, or own level of confidence to implement the intervention
Individual stage of change	Individual's level of use of the intervention
Identification with the organisation	Individual's perception of the mission and culture of the organisation and degree of identification with these
Other personal attributes	Broad construct including individual's motivation, values, competence or other relevant abilities (e.g. empathy)
Inner setting	

Structural characteristics	Social architecture of the organisation leading the implementation of the intervention
Networks and communication	The type and quality of communication channels between members of the organisation, both formal and informal
Culture	Mission, norms and values of an organisation, and extent to which these have an impact on the implementation
Implementation climate	<p>“Absorptive capacity for change”,³² characterised by the following sub-constructs:</p> <ul style="list-style-type: none"> • Tension for change: perception of the degree to which the use of the intervention is necessary • Compatibility: perception of the degree to which the implementation of the intervention fits with the norms and values of the organisation, as well as with the context within services are delivered • Relative priority: perception of the importance of the intervention • Organisational incentives and rewards: available rewards from the organisation for the implementation of the intervention • Goals and feedback: degree to which feedback is available • Learning climate: degree to which there is an opportunity to learn, attitude and response towards error or the request for further support • Readiness for implementation: preparedness and commitment from the organisation to implement the intervention, including available and supportive leadership, availability of necessary resources for implementation (e.g. time, medications and training) and timely access to information and knowledge (e.g. support from other staff in the form of supervision or access to printed information resources)
Outer setting	
Service user needs and resources	Perceived needs of service users and challenges to meet those needs by the intervention; resources of service users, and extent to which resource challenges affect access to the intervention
Cosmopolitanism	Extent to which the organisation collaborates with external organisations, in this case the relationship between the PHC level services and other levels of care is of particular interest
Peer pressure	Perceived pressure from other organisations to implement the intervention
External policies and incentives	Extent to which policies, plans or regulations impact the implementation of an intervention
Process of implementation	
Planning	Degree and process of planning prior to the implementation of the intervention
Engaging	Degree of engagement of relevant stakeholders both within and outside the organisation. Key actors include opinion leaders, implementation leaders or champions and external change agents (i.e. individuals external to the organisation who support the implementation)
Executing	Degree to which the implementation is executed according to the initial plan
Reflecting and evaluating	Degree to which the implementation efforts are evaluated, and the results of these evaluations are taken into account for the continuous improvement of the implementation

The taxonomy of implementation outcomes was developed by Proctor and colleagues through a literature review coupled with repeated working group discussions.³⁴ This taxonomy aimed to provide clear definitions of distinct implementation outcomes, including acceptability, adoption, appropriateness, costs, feasibility, fidelity, penetration and sustainability.³⁴ For the purposes of this study, I only utilised acceptability, appropriateness, feasibility, fidelity and penetration. The definitions of these outcomes provided by the used taxonomy can be found in table 3.3. Adoption was excluded given that this refers to the initial uptake or implementation of a practice.³⁴ At the time this study took place, the initial stages of implementation had already occurred, and the majority of health workers involved in this process were no longer working at the organisation. Since initial interactions with the programme staff, it became obvious that the programme was adopted, for which reason it was considered more appropriate to study the programmes' penetration. Due to the scope of the current project it was not possible to collect and meaningfully analyse data related to costs (e.g. through a cost-effectiveness analysis), however a detailed account of the required resources to implement the programme was assessed through qualitative data. The collection of these data was guided by the second framework used to guide this study. Finally, we also excluded sustainability given the relatively early stages of implementation of the programme.

Table 3.3. Definitions of included implementation outcomes

Implementation outcome	Definition
Acceptability	Extent to which a service or treatment is perceived as satisfactory based on a stakeholder's experience with the service or treatment.
Appropriateness	Extent to which a service or treatment is perceived to be compatible and relevant in the health setting where it is implemented, and for the service user needs of the particular population.
Feasibility	Extent to which a service or treatment can be used or implemented in a particular health setting based on the available resources (e.g. time, medications, space)
Fidelity	Extent to which a service or treatment is delivered as it was planned. Fidelity includes three dimensions: level of adherence to guidelines, quantity of services delivered (e.g. number of service users, or number of consultations), and quality of services delivered.
Penetration	Extent to which a service or treatment has been integrated or institutionalised within the delivery of services in a particular health setting.

3.2 Sample

In order to ensure a comprehensive understanding of the programme implementation, the health workers and mental health service users associated to the 10 PHCs clinics supported by CES were included in the study. All clinics were included as each one of them is located in a different community, and there is considerable variability in the contextual characteristics of the communities. Tables 3.4 and 3.5 present an overview of the relevant characteristics of the communities and clinics where these are located. Additionally, other members of CES such as the coordinators of programmes implemented by the organisation (i.e. maternal health, community health worker programme, and nutrition) and directors were also included in the study. Even though programme coordinators and directors do not have a direct involvement in the programme implementation, their role as managers and leaders of the organisation is relevant to understand the context in which the programme is nested. The inclusion of managers, service providers and service users was key for the purposes of this study, as previous research investigating implementation determinants has shown the importance of including multiple stakeholders to ensure the different perspectives and priorities of all involved groups are represented.¹⁶⁰

Figure 3.2 presents a summary of the participants who were part of the sample for the current study, as well as the methods for data collection employed. I collected quantitative data from service users and qualitative data from service users, MDs, nurses, clinical supervisors, programme coordinators and directors.

MDs are recruited to work in the PHC clinics by CES, but employed in clinics run by the Ministry of Health. MDs' salaries are paid by the Ministry of Health, and CES pays MDs an additional stipend. CES has agreements with different Mexican universities to recruit recently graduated MDs, so that they can complete their social service year working in the CES supported PHC clinics. In Mexico, all MDs are obliged to spend one year completing a social service once they finish all their medical education and training. For this reason, MDs can only spend one year working at the PHC clinics, and every year MDs are recruited to fill these positions. These MDs come from different private and public universities located in different large cities of the country, e.g. City of Mexico, Monterrey, and Cuernavaca. MDs are responsible of managing the resources at the clinics, ensuring all government related activities are conducted and delivering health services.

Nurses who staff the PHC clinics are recruited and employed by the Ministry of Health only. There are two different mechanisms by which they are employed. The first is

through permanent positions. Seven clinics which have nurses that have a permanent position at the clinics, and nurses have been working there for five or more years. The three other clinics have nurses recruited through the social service scheme, which means they only work at the PHC clinics for a year. Nurses have a key role in the management of the activities related to the Popular Insurance. The Popular Insurance requires that all registered families attend monthly check-ups. During this monthly check-ups, different physical measurements are taken to monitor the development of risk factors for non-communicable diseases (e.g. diabetes and cardiovascular diseases). Also, the growth of children under five years old is also monitored to identify children in or at risk of undernutrition. Nurses are also in charge of completing the monthly information reports that need to be submitted to the health jurisdictions. Resources are allocated to clinics based on these information reports. Lastly, nurses provide general support to MDs, for example managing agendas, taking the vital signs of patients upon their arrival for clinical consultations and assisting during simple surgical procedures.

Clinical supervisors are MDs who have spent a year delivering services in one of the CES supported PHC clinics and are employed by CES. Three clinical supervisors are also programme coordinators of the community health worker programme and mental health programme. This means that they support one of the 10 MDs at the clinics each, and additionally ensure programme activities (i.e. capacity building and service delivery) take place. At the time of the study, clinical supervisors had been working in these positions for at least 6 months and up to a year. Supervisors support the administrative activities in the clinics, help manage the relationship between MDs and community members, and provide clinical training and supervision related to all health conditions on-site. Supervisors do not receive any additional training to fulfil these positions.

Table 3.4. Characteristics of the communities where clinics supported by CES are located

Community, municipality and population size	Location and terrain	Transportation	General infrastructure	Main income sources	Social problems
Group 1	Low-income communities with poor infrastructure (compared to other communities in which CES works) which are located in the most remote areas (3 hours or more from cities or large towns).				
Letrero, Siltepec Around 1000 inhabitants (including catchment areas)	Distance to the community is at least 2-3 hours by car (from the closest city) and 4-5 hours from the headquarters of the organisation. Most roads to reach the community have no pavement. This community is located at the top of a hill and is surrounded by communities all around the bottom of the hill. Only a small fraction of the main road in the community is paved, which means that walking around during the rainy season is difficult due to slippery mud.	Public transportation is available to Motozintla (closest town) but does not seem to function regularly.	Most houses have wooden walls and many do not have cement floors in all rooms. There is a group of cement houses that seem to have been built by the government after a strong hurricane hit the area. These cement houses are small (only one room for the bedroom and sitting area and no kitchen or bathroom). There is no adequate sewage system or access to purified water. Electricity failures are common. The community has a church, schools to offer education for people up to high school level, a multi-purpose exercise court and one large meeting hall. There are two corner shops and one stationary shop. Free internet access is occasionally available from the clinic, and can also be bought in the corner shops.	Coffee production at small scale (farmers produce and process the coffee themselves).	Alcohol related problems and intimate partner violence are present but not publicly displayed.
Soledad, Siltepec 1,170 inhabitants (including Laguna)	The community is located 2-3 hours away by car from the headquarters of the organisation and around 2 hours away from the closest city. Most roads from the headquarters of the organisations are unpaved. Houses in the community are spread out on two hills which means many steep roads have to be travelled when moving around the community, but most of these are paved.	Two cars are available for public transportation per day. These cars can get quite full since Soledad is their third stop and several communities are served by this transport.	Around half of the houses are of large size and built out of cement (two rooms or more separated from the kitchen and living room). The remaining half are smaller in size, built out of wood and only have cement floors in some of the rooms. There is no adequate sewage system or access to purified water. Electricity failures are common. The community has three churches for different religions, a primary and a secondary school, one multi-purpose exercise court and one large meeting hall. A high-school is located outside of the community within walking distance. Other services include two corner	Coffee at medium scale (farmers hire others to produce and process the coffee). Construction, and financial resources from family members in the US.	Alcohol related problems and intimate partner violence are common.

			shops, one which offers internet services. Free internet is also available at the clinic.		
Monterrey, La Concordia Around 800 inhabitants	To reach this community, it is necessary to drive for 2-3 hours on unpaved roads. The soil of these roads is sandy which means that during the rainy season large ditches are formed. This small community is located at the top of a hill inside a nature reserve. A small fraction of the main road is paved. All smaller paths that are used to access people's homes are unpaved.	Public transportation is not available. Few people own a car which makes transportation in and out of the community difficult.	Most houses have wooden walls and cement floors in at least one room (which were mostly provided by a government programme). There is no adequate sewage system and electricity failures are common. There is a water purifier that refills water tanks at low cost. The community has churches for three different denominations, schools to offer education for people up to secondary school level and a multi-purpose exercise court. A couple of corner shops are available around the community. Free internet access is available from the clinic.	Coffee production at small scale (farmers produce and process the coffee themselves)..	Intimate partner violence is very common.
Matazano, Siltepec Around 500 inhabitants	The community is located 2-3 hours away by car from the headquarters of the organisation which is located in the closest city to the community. Most roads from the headquarters of the organisations are unpaved. The community is made up of two sections, one at the top and one at the bottom of a hill. These are separated by a 20 minute walk on a steep road. Both sections are fairly flat and most streets have pavement.	Two cars are available for public transportation per day. These cars get quite full since they come from Siltepec and pick up people from Honduras, Soledad and Matazano.	Most houses are built out of cement or adobe, and most houses also have cement floors. There is no adequate sewage system or access to purified water. Electricity failures are common. The community has one primary school and one secondary school, one multi-purpose exercise court, one football field and one meeting hall. Other services include three corner shops that have groceries and stationary available. Internet is only available if payed for and cannot be accessed from the clinic.	Coffee production at small scale (farmers produce and process the coffee themselves).	Intimate partner violence is present but not publicly displayed.
Group 2	Middle-income communities with poor to fair infrastructure (compared to other communities in which CES works) which are located up to 2 hours away from larger cities or towns				
Plan de la Libertad, La Concordia 1,723 inhabitants	The community is approximately 2-3 hours away from the headquarters of the organisation. The closest large town is around 2 hours away. Around half of the roads to the community remain unpaved. The community is made of two parts, one and the top	Public transportation is available once a day (except during weekends). However, non-official	Most houses are build out of cement, but do not have cement floors in all rooms. There is no adequate sewage system and electricity failures are common. A water purifier refills water tanks at low cost. The community has two primary schools, two secondary schools, one high-school, two multi-purpose exercise courts, two meeting halls and churches for	Coffee at medium scale (farmers hire others to produce and process the coffee). Corn	Adolescent pregnancy and partner violence common.

	(Plan Alta) and one at the bottom (Plan Baja) of a mountain. Distance between both sections is around one hour by foot (uphill). Roads around the communities are steep and mostly paved.	transportation is frequently available throughout the day.	different religions. Multiple corner shops are available around the community, where internet can also be accessed. Occasionally, free internet is also available through the clinic.	and beans are also cultivated at a smaller scale.	
Laguna del Cofre, Montecristo de Guerrero 1,819 inhabitants (including catchment areas)	The community is approximately 2 hours away from the headquarters of the organisation, which is located in the closest large town. Most of the roads to the community are paved. In order to reach the community, it is necessary to drive 15 minutes uphill on an unpaved road. Houses are scattered around 4 hills and only the two main roads inside the community have pavement.	One car available for public transportation from Monday to Friday. It is generally reliable, but it occasionally fails. Around half of the families in the community own a car.	Most houses are build out of cement or adobe, but do not have cement floors in all rooms. There is no adequate sewage system and electricity failures are common. A water purifier refills water tanks at low cost. The community three schools (primary, secondary and high-school), one multi-purpose exercise court, a large meeting hall and churches for different religions. Multiple corner shops are available around the community, and one stationary shop were internet can be payed for.	Coffee at medium scale (farmers hire others to produce and process the coffee). The remaining 10% of the male population who do not work in agriculture are merchants.	Gender based violence is very common (i.e. sexual abuse and partner violence).
Capitan, Siltepec 2,120 (including catchment areas)	The community is approximately 2-3 hours away from the headquarters of the organisation, which is located in the closest large town. Most of the roads to the community are paved. The community is made up of two roads: a long road that starts at the bottom of a steep hill and finishes close to the top, and a second road, which is shorter and runs parallel to the main road. Houses are located on both sides of these roads, both of which are paved.	Public transportation is available twice a day. Two different routes are available from the community.	Almost all houses are built out of cement and have cement floors in most rooms. There is no adequate sewage system or access to purified water. Electricity failures are common. The community three schools (primary, secondary and high-shool), one multi-purpose exercise court, a meeting hall and churches for different religions. Multiple corner shops, a stationary and a pharmacy are available around the community. Internet can be bought in the corner shops of the community or is occasionally available for free from the clinic.	Coffee and trading of goods are the main income sources.	Alcohol related problems are increasing and gender-based violence is common.

<p>Honduras, Siltepec</p> <p>Around 2,000 inhabitants</p>	<p>The community is located 2-3 hours away by car from the headquarters of the organisation and around 2 hours away from the closest city. Most roads from the headquarters of the organisations are unpaved. Houses in the community are spread out around the bottom of a mountain. Although there are some steep hills, the roads around the community are flat.</p>	<p>Two cars are available for public transportation per day. These can get very busy as they serve multiple communities. Non-official transportation is frequently available throughout the day.</p>	<p>Almost all houses are built out of cement and have cement floors in most rooms. There is no adequate sewage system and electricity failures are common. Purified water can be bought in the community. The community has three schools (primary, secondary and high-school), one multi-purpose exercise court, a meeting hall and churches for different religions. The community has multiple corner shops, a stationary shop, a pharmacy, two bakeries, and a couple of restaurants. Internet can be payed for in the corner shops of the community or is occasionally available for free from the clinic.</p>	<p>Coffee at medium scale (farmers hire others to produce and process the coffee). The trading of goods and local businesses are another common sources of income.</p>	<p>Alcohol related problems are increasing. Abuse of other substances has also been document ed. Use of violence between men is also common.</p>
<p>Group 3 Middle-income communities with fair infrastructure (compared to other communities in which CES works) which are located less than 1:30 hours away from larger cities or towns.</p>					
<p>Salvador Urbina, La Concordia</p> <p>3,000 inhabitants</p>	<p>The community is located less than an hour away from the headquarters of the organisation, which is also the closest large town. The majority of the road that reaches the community remains unpaved. Houses are spread on the plane space on top of a hill, which means that roads around the community are mostly flat.</p>	<p>Two cars available for public transportation per day.</p>	<p>Most houses are build out of adobe and there are a few made out of brick and cement. Most houses also have cement floors. There is no adequate sewage system and electricity failures are common. There is no access to purified water. The community has two schools (primary and secondary), a computer centre, one multi-purpose exercise court, a meeting hall and churches for different religions. The community has multiple corner shops. The only source of internet is the school, which often does not work.</p>	<p>Coffee at medium scale (farmers hire others to produce and process the coffee). Corn and beans are also cultivated at a smaller scale.</p>	<p>Alcohol related problems and partner violence.</p>

Reforma, La Concordia 1,100 inhabitants	The community is located less than an hour away from the main office of the organisation, which is also the closest large town. The majority of the road that reaches the community remains unpaved. Houses are spread on a small valley next to a large river.	Cars travelling to and from Jaltenango are available every hour.	Most houses are built out of brick and cement and have cement floors in the majority of rooms. There is no adequate sewage system, purified water is not available and electricity failures are common. The community has three schools (primary, secondary and high school), one multi-purpose exercise court, a meeting hall and churches for different religions. The community has multiple corner shops and a cyber cafe. Internet is available through the clinic as well.	Most people work in agriculture.	Alcohol related problems present but scarce.
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Table 3.5. Characteristics of the clinics supported by CES

Clinic	# Catchment areas and distance to clinic	# Additional areas served*	Distance from secondary health services	Human resources	Accessibility to the clinic
Letrero	4 catchment areas 60 to 180 minutes by foot	2 additional areas served	The hospital at Siltepec is the closest, which is around 3 hours away by car. The closest functional hospital is 5 hours away by car and is located at Motozintla.	1 MD 1 nurse 6 CHWs	Generally going to the clinic implies climbing up hill for at least 30 minutes under the heat or rain. During the rainy season roads become quite slippery. People living in catchment areas get together to share the petrol expenses to travel in large cars. This implies that many times several people arrive to the clinic at once which causes long waiting times. Heavy rains can make access to the clinic difficult during the rainy season.
Soledad	1 catchment area 30 minutes by car	15 additional areas served	The distance to the closest hospital is 1:15 minutes by car and is located in Siltepec. The closest functional hospital is 3 hours away by car and is located in Motozintla.	1 MD 1 nurse 10 CHWs	For residents, reaching the clinic takes up to 20 minutes by foot. Heavy rains prevent people from visiting the clinic during rainy seasons. A large amount of people from other communities access services at the clinic. They often get together and share transport expenses. This implies that many times several people arrive to the clinic at once which causes long waiting times. Heavy rains can make access to the clinic difficult during the rainy season.
Monterrey	2 catchment area 60 to 90	1 additional areas served	The closest hospital is located at Jaltenango which is around 3 hours away by car. Any difficult cases have to be attended at the Villaflores	1 MD 1 nurse 7 CHWs (due to different problem	All houses are scattered around the hills, therefore in order to go and come back from the clinic several paths up and down hill have to be travelled through. Some of these paths are quite steep and in the rainy season it is almost impossible to walk through them after it starts raining.

	minutes by foot		hospital which is 2 more hours away.	s only 5 are left)	
Matazano	3 catchment areas 1 to 2 hours by car	2 additional areas served	The closest hospital is located at Jaltenango which is around 2-3 hours away by car. Any difficult cases have to be attended at the Villaflores hospital which is 2 more hours away.	1 MD 2 nurses 2 CHWs	Community residents are only a short walking distance from the clinic. The longest distance has to be travelled by inhabitants from the downhill section of the community, which can be difficult with harsh weather conditions. However, the majority of the patients have to travel from the catchment areas which are hours away by car. The doctor and supervisor travel once a month to these catchment areas and provide services for around 60 patients in one day. Occasionally, they only visit the catchments areas every two months due to logistic constraints.
Plan de la Libertad	5 catchment areas 1 to 3 hours by foot	unknown	The closest hospital is located at Jaltenango which is around 2 hours away by car. Any difficult cases have to be attended at the Villaflores hospital which is 2 more hours away.	1 MD 1 nurse 2 health assistants 7 CHWs	Community residents are only a short walking distance from the clinic. The clinic in Plan Alta is opened on Tuesdays, Thursdays and Saturdays. The remaining days, the doctor sees patients in the clinic in Plan Baja. At times this situation makes complicated following up with patients. The majority of patients come from foreign communities, which have to travel large distances to access the clinic. These clinics are among the most busy and often have long waiting times and significantly longer days. Heavy rains can make access to the clinic difficult during the rainy season.
Laguna del Cofre	3 catchment areas 30 minutes and 2 hours by foot	32	1.5-2 hours away from the closest hospital located in Jaltenango, 4-6 hours away from the closest functional hospital located at Villaflores and 5-7 hours away from the capital city.	1 MD 1 nurse 1 health assistant 11 CHWs	Community residents have to walk up to 20 minutes to reach the clinics. Those who live in the catchment areas have to walk longer distances (around one hour) uphill. Due to the community's proximity to other larger towns, this clinic receives a large number of patients from foreign communities. For this reason, this clinic tends to have long waiting times. Heavy rains can make access to the clinic difficult during the rainy season.
Capitan	5 catchment areas 30 minutes	5	The closest hospital is located at Jaltenango which is around 2-3 hours away by car. Any difficult cases have to be attended at the Villaflores	1 MD 1 nurse 5 CHWs	Even though the community is relatively small, residents who live at the bottom of the hill can have a significantly harder time reaching the clinic. A difficult uphill walk of 20 minutes is necessary to reach the clinic for those who live the furthest away. Inhabitants of two of the catchment areas also have to do this walk to reach the clinic. Heavy rains can make access to the clinic difficult during the rainy season.

	to 3 hours by foot		hospital which is 2 more hours away.		
Honduras	2 catchment area 30 minutes to 2 hours by foot	unknown	The distance to the closest hospital is 1:15 minutes by car and is located in Siltepec. The closest functional hospital is 3 hours away by car and is located in Motozintla.	1 MD 1 nurse 10 CHWs	Access to the clinic is relatively easy for all community residents. Long travel times are common for those coming from outside communities, nonetheless the higher availability of privately owned transport often facilitates access to the clinic. Long waiting times are common and heavy rains can make travelling around the community difficult during the rainy season.
Salvador Urbina	3 catchment areas 20-30 minutes by foot	7 additional areas served	The closest hospital is less than an hour away. Complicated cases can only be seen in a larger hospital two hours away from the community.	1 MD 1 nurse 2 health assistant s 14 CHWs	Flat roads around the community make this clinic easy to access.
Reforma	6 catchment areas 45-120 minutes by foot	1 additional areas served	The closest hospital is less than an hour away. Complicated cases can only be seen in a larger hospital two hours away from the community.	1 MD 1 nurse 8 CHWs	Flat roads around the community make this clinic easy to access.
*Additional areas served refers to other communities that are being served by the clinic, even though the clinic is only legally obliged to provide services for the communities it is located in and certain catchment areas.					

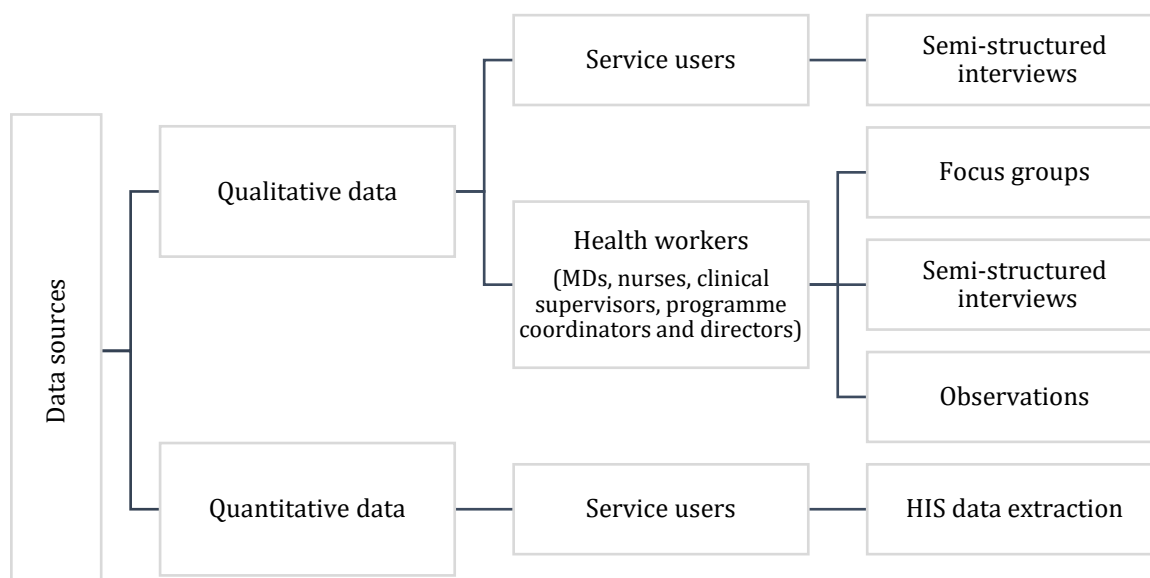


Figure 3.2. Study participants and data collection methods

3.2.1 Quantitative sample

I used service user data routinely collected through the health information system (HIS) of CES. I was granted access to this data by the organisation (appendix 3.2). A description of the HIS, as well as details regarding data extraction can be found in the data collection section.

3.2.1.1 Inclusion and exclusion criteria

I included all service users who received a consultation at any of the 10 PHC clinics where the CES programme is delivered and met with the following criteria: (1) 18 years of age or older, (2) diagnosed with a CMD, and (3) had attended the clinic at least once between December 2016 and December 2017 for a mental health complaint.

CMDs are depressive and anxiety related disorders included two ICD-10⁹² classifications: neurotic, stress-related and somatoform disorders and mood disorders.⁹³ The general disorder categories that are included in these classifications are depression, generalised anxiety disorder, panic disorder, phobias, obsessive compulsive disorder, reaction to severe stress, somatoform disorder, manic episodes, bipolar affective disorders, and other and unspecified mood disorders. We only included people diagnosed with a CMD given that mood or anxiety disorders cause the highest disability burden in the state.⁷⁷ Also, people diagnosed with these disorders represent 95% of the service users that receive mental health services from the programme. For this study, children, adolescents and those who were diagnosed with psychosis or had experienced psychotic symptoms

were excluded. This was due to the fact that these service user groups require significantly different services, for which implementation challenges are significantly different. However, these service user groups received services from the clinics, which usually consisted in referrals to psychiatric services.

3.2.2 Qualitative sample

I collected qualitative data from service users and health workers, including MDs, nurses, clinical supervisors, programme coordinators and directors.

3.2.2.1 *Service users*

I used a convenience sample, and aimed to interview a minimum of two and maximum of three service users from each clinic. Between 300 and 500 service users receive services from the CES mental health programme each year. However, many of these service users do not attend follow-up consultations regularly, and many travel long distances to reach the clinics. Since I only had two weeks to recruit participants from each clinic, three service users was the maximum number of participants that was feasible to recruit.

3.2.2.1.1 Inclusion and exclusion criteria

I included service users that were (1) 18 years of age or older, (2) diagnosed with a CMD, (3) had attended the clinic at least once between December 2016 and December 2017 for a mental health complaint, and (4) were available for an interview at the time when I visited the communities to conduct the data collection. In this instance, I also excluded service users (1) who were diagnosed with psychosis or had experienced psychotic symptoms since their treatment needs are significantly different compared to those of service users with CMDs, (2) who were known to have suffered from domestic or partner violence to protect the safety of both participants and interviewers, and (3) those who were not able to provide written consent due to a lack of understanding of the study purposes or other emotional or physical impediments.

3.2.2.1.2 Recruitment strategy

Service users were recruited during their visits to the clinics. After attending a mental health consultation, service users were invited to the study by MDs. MDs provided a broad explanation of the study purposes, and then asked service users if they would be interested to speak to a researcher to learn more information. Those who expressed an interest were introduced to a researcher. At this point, the researcher explained the purposes of the study as well as what participation in the study entailed, i.e. an approximately one-hour interview about the service user's experience with the services at the clinic in a private location. Those service users who were interested in

participating were given the option of being interviewed at that moment, or to choose a different time and location for the interview (e.g. at their homes). If the service user preferred to be interviewed at a different time, an appointment was arranged. At the point when the interviews took place, the service users were read all the information contained in the study's information sheet (Appendix 3.3), and asked to complete and sign the consent form (Appendix 3.5). Participants were reiterated that participation was voluntary, that their decision to participate or not would not have an impact on the services they received at the clinic, that participation could be stopped at any moment and that any information that they provided would remain confidential and would be fully anonymized for its analysis and dissemination. A total of 30 service users were included in the qualitative data collection.

3.2.2.2 Health workers

I used a convenience sample of health workers, and aimed to include as many health workers as possible. The total number of people working in the organisation for the delivery of services in the PHC clinics during the study period were five directors, six administration staff, five programme coordinators (three of which were also clinical supervisors), eight clinical supervisors, 14 MDs and 13 nurses.

3.2.2.2.1 Inclusion and exclusion criteria

I included health workers who: (1) were involved with the programme implementation, and (2) were available for a face-to-face interview or to participate in focus groups.

3.2.2.2.2 Recruitment strategy

Recruitment took place in the main office of the organisation or in the PHC clinics where services are provided. For the focus groups, programme directors, clinical supervisors, MDs and programme coordinators were individually approached at the main office of the organisation during the time when a monthly training took place. They were explained the purposes of the study as well as procedures (i.e. participation in a one-hour focus group). All of the participants approached agreed to participate but not all were available to attend the focus groups. Two focus groups were scheduled with those available, one with MDs and another one with the remaining health workers (i.e. directors, programme coordinators and clinical supervisors). Before the start of the focus groups, participants were read and explained the information contained in the information sheet available in Appendix 3.4 and asked to sign a consent form (Appendix 3.5). Two directors and two programme coordinators participated in the first focus group, and six MDs participated in the second focus group.

For individual interviews, clinical supervisors, MDs and nurses were recruited in the PHC clinics. The researcher visited the clinics and scheduled an appointment with the MDs and nurses separately. During this appointment the researcher explained the purposes of the study and procedures (i.e. two one-hour semi structured interview and two-week observations in the clinics). All of the participants approached agreed to participate. At this point, participants were read the information sheet available in Appendix 3.4 and asked to sign a consent form (Appendix 3.5). Interviews happened immediately after or at a different time agreed between both the participants and researcher. Observations started immediately after consent was sought.

During the consent process, all participants were reiterated that participation was voluntary, that their decision to participate or not would not have an impact in their relationship with the organisation, that participation could be stopped at any moment and that any information that they provided would remain confidential and would be fully anonymized for its analysis and dissemination. A total of 12 MDs, eight nurses, and four clinical supervisors participated in individual semi-structure interviews and observations took place in all 10 PHC clinics.

3.3 Data collection

All data collection took place between May, 2017 and February, 2018. Both quantitative and qualitative data were collected simultaneously by three researchers, myself and two research assistants. Details are presented in the following sub-sections.

3.3.1 Quantitative data collection

3.3.1.1 HIS description

The HIS is an electronic system managed through the software Access that contains all the routinely collected data by the 10 PHC clinics supported by the organisation. This software allows the creation of individual clinical files for each service user. Table 3.6 presents a summary of the data that is recorded in these clinical files. Every service user who visits the CES supported PHC clinics is registered in this system, and every time a service user attends a follow-up consultation details are registered in these files.

Table 3.6. Data collected through the CES HIS

Type of data	Access individual records
Identification information	Record number, name, availability of public medical insurance (IMSS/Prospera/Seguro Popular)

Sociodemographic indicators	Date of birth, age, community of residency, if the service user is a migrant or has an indigenous origin
Clinical indicators	PHQ-9 score, GAD-7 score, other diagnosis (diabetes, pregnant, epilepsy, hypertension, malnutrition, asthma) and clinical note of last consultation in which MDs provide a description of symptoms, relevant life events or other clinical information considered of relevance
Treatment/services	Pharmacological prescriptions and clinical note of last consultation, where MDs describe any non-pharmacological advice or intervention provided

3.3.1.2 Data extraction

De-identified service user data from the organisation's HIS for the period between December 2016 and December 2017 was extracted. Details of how the data was extracted can be found in appendix 3.6. Extracted data included sociodemographic indicators (sex, date of birth, and community of residence), clinical characteristics (diagnosis, PHQ-9 and GAD-7 scores, presence of comorbid conditions, treatment allocated, dates of attendance to the clinic, and medication prescriptions) and clinical notes (MDs records at diagnosis and follow-up consultations). Less than 1% of data was missing. A description of the variables calculated using extracted data is presented below:

3.3.1.2.1 Sociodemographic variables

Sociodemographic variables included sex, age (number of years of age at the beginning of the study, i.e. December 2016, calculated using the date of birth), if the service user lived more or less than 30 minutes away from the clinic (calculated by estimating the time of travel by foot based on the community of residence), and availability of government health insurance (if a service user was registered as having IMSS, Seguro Popular or both).

3.3.1.2.2 Health variables

Health variables included current diagnosis, severity of illness at diagnosis and if the patient receives concurrent care for other medical conditions. According to the organisation's guidelines, MDs are supposed to determine current diagnosis using clinical assessments and the score of either of two scales, the Patient Health Questionnaire (PHQ-9) for mood or mixed disorders and the Generalized Anxiety Disorder (GAD-7) for anxiety disorders. The PHQ-9 has been validated for the population

served by CES, and was demonstrated to have good internal reliability (Cronbach's alpha ≥ 0.8), and predictive validity (statistically significant inverse association with WHOQOL-BREF scores).¹⁷¹ Severity of illness at diagnosis is determined through the PHQ-9 or GAD-7 scores. We used the same cut-off points for both scales: 0-4 for minimal, 5-9 for mild, 10 to 14 for moderate and 15 or more for severe symptoms. Other medical conditions included diabetes, cardiovascular diseases, epilepsy, pregnancy, asthma.

3.3.1.2.3 Treatment variables

Treatment variables included type of treatment received at the clinic (i.e. pharmacological, talking-based or both), if a patient was assigned to a community health worker (CHW) and months in treatment since diagnosis (calculated using the date registered for the first consultation). Prescription of pharmacological treatment was identified by the clinical notes, or prescriptions. Delivery of a talk-based intervention was determined by the clinical notes. Commonly reported talk-based interventions were: psychoeducation, motivational interviewing, CBT-based exercises, life-style advice or another intervention delivered using the instructions in printed cards.

3.3.1.2.4 Process indicators

Dose and fidelity were selected as relevant process indicators based on the Medical Research Council (MRC) guidance on the evaluation of complex interventions.¹⁷² Both of these indicators intend to reflect the extent to which the programme was delivered as planned. Dose refers to the amount of services received by each service user compared to the amount of services the service user was meant to received. Fidelity refers to the extent to which the services provided through the programme were in accordance to the organisations guidelines. Specific indicators were developed using programme guidelines and can be found in Table 3.7. Each service user is programmed one mental health consultation a month, therefore dose was calculated using the dates of attendance to follow-up consultations. Fidelity was determined coding the clinical notes for each service user following the system detailed in table 3.8.

Table 3.7. CES programme guidelines for mental health service delivery and process indicators

Mental health service	Programme guidelines for the treatment of mood or anxiety disorders	Indicator and description	Data source for indicator
Diagnosis	Performed using (1) the score of the 9-item Patient Health Questionnaire (PHQ-9) ²¹ or the 7-item Generalized Anxiety Disorder scale (GAD-7) ²² and (2) a clinical assessment (i.e.	Fidelity to diagnosis guidelines: proportion of service users	Coded from content in clinical notes

	exploration of key symptoms, medical history, and relevant life events)	diagnosed according to guidelines	
Treatment allocation	Pharmacological treatment is allocated when PHQ-9 ²¹ or GAD-7 ²² score is 15 or above unless user rejects medication or clinician decides to reassess need in a second appointment; if 14 or less, medication is not prescribed until reassessment at second appointment; psychoeducation or other talk-based intervention is provided in all cases	Fidelity to treatment allocation guidelines: proportion of service users diagnosed according to guidelines	Coded from content in clinical notes
Follow-up	Follow-up provided until remission (at least six months with no symptoms)	Dose of mental health follow-up consultations: proportion of service users who attended more than 50% of programmed monthly consultations	Dates recorded on clinical notes
Clinical assessment at follow-up	Clinical assessment at follow-up done through: (1) the use of PHQ-9 ²¹ or GAD-7 ²² , (2) key symptom exploration, and (3) life event exploration	Fidelity to clinical assessment guidelines at follow-up: proportion of service users who receive a clinical assessment according to guidelines	Coded from content in clinical notes
Treatment allocation at follow-up	Proportion of service users who receive counsel or advice, or a talk-based intervention at follow-up	Fidelity to treatment allocation guidelines at follow-up: Proportion of service users who receive counsel or advice, or a talk-based intervention at follow-up	Coded from content in clinical notes

Table 3.8. Coding system for programme fidelity

Indicator	Description	
Fidelity to diagnostic guidelines	1: Record of key symptoms and/or relevant life events and scale score (i.e. PHQ-9 ¹⁷¹ or GAD-7 ¹⁷³) 2: Record of key symptoms and/or relevant life events, but scale score (i.e. PHQ-9 ¹⁷¹ or GAD-7 ¹⁷³) not available 3: Scale score (i.e. PHQ-9 ¹⁷¹ or GAD-7 ¹⁷³) available, but record of key symptoms and/or relevant life events missing	
Fidelity to treatment allocation guidelines	1: Pharmacological treatment allocated only when scale score (i.e. PHQ-9 ¹⁷¹ or GAD-7 ¹⁷³) is 15 or above unless service user rejects medication or medical doctor decides to reassess need in a second appointment; if 14 or less, medication not prescribed until reassessment at second appointment; talking-based intervention provided 2: Medication provided following algorithm, but talking-based intervention not provided 3: Talking-based intervention provided, but medication not prescribed following above algorithm 4: Neither talking-based intervention provided nor medication provided according to algorithm	
Fidelity to clinical assessment guidelines at follow-up	(1) Scale score	1: Scale score (i.e. PHQ-9 ¹⁷¹ or GAD-7 ¹⁷³) collected during follow-up consultations with medical doctors
	(2) Key symptom exploration	1: Any notes about relevant symptoms picked up during assessment or the emotional status of the patient during the last month
	(3) Life event exploration	1: Any notes about any relevant positive or negative events during the last month
Fidelity to treatment allocation guidelines at follow-up	(1) Psychoeducation	1: Any notes about talking-based intervention provided to service user during follow-up consultation, e.g. psychoeducation-based exercises or other advice

3.3.2 Qualitative data collection

We collected qualitative data through focus groups and semi-structured interviews with health providers and managers, and observations in the PHC clinics supported by CES to assess the implementation outcomes (penetration, fidelity, acceptability, appropriateness, and feasibility) selected according to the framework developed by Proctor and colleagues,³⁴ and implementation determinants according to the CFIR framework.³²

Two experienced Spanish-speaking qualitative researchers conducted all the qualitative data collection, including two focus groups (with two directors and two programme

coordinators, and six MDs), 53 semi-structured interviews (with 29 service users, 12 MDs, eight nurses, and four clinical supervisors), and observations in 10 PHC clinics. Procedures followed for each method are presented below.

3.3.2.1 Focus groups

Two groups were held to ensure participants belonging to different hierarchies felt comfortable and free to express their opinions, which is why “managers”, i.e. directors and programme coordinators, were separated from MDs. The focus group guide was based in the CFIR domains and constructs (appendix 3.7). Focus groups were used to conduct an initial exploration of relevant barriers and facilitators to implementation with the aim to narrow down the content of the interview guides that were later on used for the individual semi-structured interviews. The general elements that were explored included (1) identification of relevant barriers and facilitators in the execution of key programme activities, i.e. capacity building and service delivery, (2) rationale behind relevance, and (3) impact of these barriers or facilitators.

The focus groups were conducted in the main office of the organisation in a private space to protect the confidentiality of participants. Both focus groups were audio recorded, and audio recordings were transcribed verbatim by bilingual researches. GME checked the quality and accuracy of these transcriptions.

3.3.2.2 Semi-structured interviews

Data related to implementation determinants and outcomes of the CES mental health programme was collected through semi-structured interviews. Questions for the different participants varied depending on their role in the programme implementation. Questions for MDs explored their perceptions and experiences delivering services as well as participating in capacity building activities (appendix 3.8). Given that MDs rotate every year, and their experience delivering mental health services was likely to change throughout the year, those who were available were interviewed twice, at 3-4 months after the start of their placement, and 1-2 months before the end of their placement. Both initial and follow-up interviews were done following the same interview guide.

The rest of participants, were only interviewed once. For clinical supervisors, questions explored perceptions and experiences supporting the capacity building activities for MDs (appendix 3.9). Questions for nurses explored their perceptions and experiences in the delivery of services (appendix 3.10). Finally, questions for service users explored their perceived health and mental health needs, experiences with the services available at the clinics, and barriers to attendance to follow-up consultations (appendix 3.11).

Data collection took place in the clinics or residences of participants, according to their preference and depending on the availability of a private space. Interviews were audio recorded if participants consented. Two nurses and 15 service users did not consent to be audio recorded, detailed notes were therefore taken instead. All audio recordings were transcribed verbatim for analysis by bilingual researchers. GME checked the quality and accuracy of these transcriptions.

3.3.2.3 Observations

Data related to the general characteristics of the clinics and the communities was collected through observations and informal conversations with members of the communities. To guide observations, the case study methodology developed by Cohen and colleagues¹⁷⁴ was followed. This methodology contains the following domains:

1. Environment in which the programme functions
2. Health system in which the programme functions
3. History of the programme
4. Programme conceptual framework
5. Engagement with broader systems
6. Programme resources
7. Programme management
8. Client characteristics
9. Pathways to care
10. Clinical interventions
11. Medications
12. Psychosocial interventions
13. Accessibility of services
14. Information system

A full description of the domains contained in this case study methodology can be found in appendix 3.12.

Observations took place at the 10 clinics supported by CES. These were conducted by myself. I spent one to two weeks in each one of the clinics. Observations were conducted while the clinics were opened and MDs were providing services. Other clinic related activities were also observed, such as meetings of community health workers, group consultations with service users with chronic conditions, delivery of psychoeducation groups, and mentoring and supervision activities. During these visits to the clinics I stayed at the communities where the clinics are located, either at the homes of MDs or of members of the community. This also allowed to have a deeper understanding of the context within which services are delivered.

3.4 Data analysis

To address the different objectives of the current thesis project, I analysed the collected data through three different approaches, two using mixed-methods and one using qualitative methods. More details regarding specific methods and results are presented in Chapters 4, 5 and 6, however a brief summary of is presented in the following sub-sections.

3.4.1 Mixed-methods analysis of the implementation process and outcomes of the CES mental health programme

This first analysis was conducted as part of a mixed-methods convergent study design. The aim was to examine the implementation process and outcomes of the CES mental health programme to understand to what extent it has achieved the integration of mental health into PHC, and to then explore the strengths and limitations that determine the success or failure of integration in this context. To achieve this, I utilised quantitative service user routinely collected data and qualitative data collected from health workers through focus groups and semi-structured interviews.

Descriptive statistics were used to summarise the sociodemographic and clinical characteristics of the clinical sample. The clinical notes were coded using a pre-established system (see Chapter 4). One researcher coded all clinical notes and a second researcher independently coded a 20% random sample of these notes to maximise accuracy and reliability of the coding. The coding was in agreement in 87.4% of cases. We then calculated means and proportions to describe process indicators.

Framework analysis was utilised to analyse the qualitative data. A process of (1) data familiarisation, (2) coding, (3) development of an analytical framework, (4) framework application and (5) interpretation was followed.¹⁷⁵ We used pre-established definitions of implementation outcomes³⁴ to develop the analytical framework. The analysis was conducted in Spanish. Two bilingual researchers familiar with the context translated relevant quotes to English. The accuracy of these translations was assessed by a group of independent bilingual researchers, and changes were made if needed.

As a final step, I sought to integrate both sets of findings to produce a comprehensive understanding of the programme implementation. This was done by identifying common findings across data sets and comparing them to determine how these confirmed, disconfirmed or expanded each other.¹⁶³

3.4.2 Mixed-methods analysis of factors related to non-attendance to mental health follow-up consultations

The results of the first analysis highlighted non-attendance was an important barrier to the programme implementation. Therefore, the second analysis aimed to investigate factors contributing to attendance to mental health follow-up consultations delivered by CES using a mixed-methods explanatory sequential design. To this end, I utilised the quantitative service user routinely collected data, and qualitative data collected from service users through semi-structured interviews.

For the quantitative data, I used chi-square tests to assess the bivariate association between sociodemographic, health and treatment correlates and two primary outcomes: (1) non-attendance to mental health follow-up consultations, and (2) attendance to less than 50% of their scheduled mental health follow-up consultations. Subsequently, I conducted two multivariate logistic regression analyses to assess correlates to both non-attendance outcomes. Variables were included in the logistic regression model if they were bivariately associated with the primary outcome at $p < 0.05$, and if there was evidence of their role as potential confounders based on previous evidence (i.e. sex and age). We used stratification to identify interactions between all variables, and tested for significance in the model. Collinearity was assessed examining the Variance Inflation Factor, and the goodness-of-fit of the model was assessed using the likelihood ratio test.

Once I analysed the quantitative dataset, I sought to explain quantitative findings and further understand barriers and facilitators to attendance using the qualitative service user data. For this, I utilised a framework analysis approach (explained above).¹⁷⁵ Two researchers independently coded interviews, and engaged in discussions to develop the analytical framework and identify emerging themes. The analysis was conducted in Spanish. Both researchers involved in the coding also translated relevant quotes to English. A group of independent bilingual researchers assessed the accuracy of these translations, and changes were made when needed.

3.4.3 Qualitative analysis of the barriers and facilitators to the implementation of the mental health programmes

The final analysis was conducted as part of a qualitative study and aimed to elicit the factors that hindered and facilitated the implementation of the CES mental health programme to help inform the implementation of mental health services in PHC in Mexico and other similar settings. For this analysis, I utilised qualitative data collected from health providers, managers and service users from focus groups and semi-

structured interviews, as well as data gathered from observations in the PHC clinics where the mental health programme is delivered.

In this case, I also used a framework analysis approach (explained above).¹⁷⁵ To develop the analytical framework, I used the CFIR domains and constructs, and created new codes and sub-codes for all content that did not fit in the framework. Emerging themes within each CFIR construct were identified. The analysis was conducted in Spanish, and two bilingual researchers familiar with the context translated relevant quotes to English. A group of independent bilingual researchers assessed the accuracy of these translations, and changes were made if necessary.

Chapter 4. Implementation process and outcomes of a mental health programme integrated in primary care clinics in rural Mexico: a mixed-methods study

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4.1 Abstract

4.1.1 Background

Policies and programmes in Mexico promote the integration of mental health services into primary health care (PHC), however these services remain largely unavailable in the country. Since 2014 a non-governmental organisation has delivered a mental health programme at PHC clinics in the state of Chiapas, in partnership with the local Ministry of Health. The programme provides mental health services based on the mhGAP guidelines through multiple implementation strategies, including programme financing, infrastructure strengthening, high-intensity training, and supervision. This study aimed to examine the implementation process and outcomes of this mental health programme to understand the extent to which mental health care integration has been achieved and to identify the successes and remaining challenges in order to inform the development and implementation of similar programmes.

4.1.2 Methods

We used a mixed-methods convergent design. Quantitative data for the period between December 2016 and December 2017 were extracted from the organisation's health information system to capture process indicators, including the amount (dose) and quality (fidelity) of services delivered. We conducted two focus groups and 24 semi-structured interviews with health providers and managers to ascertain implementation outcome data: penetration, fidelity, acceptability, appropriateness and feasibility. Quantitative and qualitative data were analysed using descriptive and framework analyses, respectively.

4.1.3 Results

During the study period, health providers delivered mental health consultations to 486 adults diagnosed with a mood or anxiety disorder. Programme fidelity was limited given

that talk-based interventions, which are required in all consultations according to programme guidelines, were only provided in 24% of consultations. Only 42% of service users attended more than 50% of scheduled mental health follow-up consultations, which also hindered fidelity. Low attendance is partially attributed to limited programme appropriateness, given that interventions to address social risk factors are not available. High levels of acceptability and feasibility enabled through strong support from the organisation were key programme strengths.

4.1.4 Conclusions

Mental health programmes at PHC can be implemented when adequate support and supervision structures are in place, and key resources are available. There is an urgent need for health systems strengthening to support efforts to provide mental health care, and to link PHC with locally relevant social interventions.

RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

SECTION A – Student Details

Student ID Number	375159	Title	Ms
First Name(s)	Georgina		
Surname/Family Name	Miguel Esponda		
Thesis Title	What enables and hinders implementation? A mixed-methods case study of a mental health programme implemented in primary care clinics in rural Mexico		
Primary Supervisor	Ritsuko Kakuma		

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

SECTION B – Paper already published

Where was the work published?	International Journal of Mental Health Systems		
When was the work published?	March 16, 2020		
If the work was published prior to registration for your research degree, give a brief rationale for its inclusion	NA		
Have you retained the copyright for the work?*	No	Was the work subject to academic peer review?	Yes

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SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	
Please list the paper's authors in the intended authorship order:	

Stage of publication	Choose an item.
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SECTION D – Multi-authored work

<p>For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)</p>	<p>For the mixed-methods study of the implementation process and outcomes, which is presented in Chapter 4, I was the lead researcher and was responsible for the study design, data collection, data analysis, and the writing of the manuscript. Nathaniel Bohm-Levine contributed to quantitative data extraction, coding of clinical notes, contributed to the discussion and provided comments on earlier drafts of the manuscript. Fátima Rodríguez advised on the study design and data collection, contributed to the data analysis and discussion, and provided comments earlier drafts of the manuscript. Alex Cohen provided advice during the design of study and data collection, and also provided comments in earlier drafts of this manuscript. Ritsuko Kakuma provided extensive guidance in the process of data analysis and in the presentation of results, and also gave detailed comments and feedback on all drafts.</p>
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SECTION E

Student Signature	[Redacted]
Date	10/04/2020

Supervisor Signature	[Redacted]
Date	10/04/2020

4.2 Background

Since the late 1990s, Mexico has been working to shift from a heavily centralised and institutionalised mental health system to a community-based model, in order to increase access to quality services and to protect the human rights of people with mental disorders.^{57, 58, 61} The Mexican mental health policy promotes three main elements: (1) integrating mental health services in general health services, (2) increasing human resources, budgets and quality of mental health care, and (3) increasing health promotion and advocacy activities.⁶⁰ More recently, Mexico's Action Program in Mental Health (2013-2018) specifically aimed to improve the coverage and quality of mental health services through the integration of mental health care into primary health care (PHC).⁶¹ Despite having progressive policies and programmes supporting the integration of mental health into PHC, in Mexico mental health care is still mainly delivered at psychiatric institutions, and it is only available in 30% of PHC clinics in the country.⁵⁸ A national epidemiological study found that 20% of people diagnosed with a mood disorder and 10% of people diagnosed with an anxiety disorder accessed care, and only 50% of people who accessed specialist services received minimally adequate care.⁵⁶ Resource constraints are important barriers to the improvement of mental health care in Mexico, where only 2% of the health budget is allocated to mental health,⁵⁸ there are 0.67 psychiatrists per 100,000 people,¹⁷⁶ and the few services are hampered by staff and medication shortages.⁶⁰

Better understanding of the challenges surrounding translation of policy into practice is crucial to the improvement of mental health care. This study examines the implementation process and outcomes of a relatively young PHC mental health programme in Chiapas, a low-resource, rural state in southern Mexico. Since 2011, *Compañeros En Salud* (CES), a non-governmental organisation (NGO) and sister organisation of Partners in Health, has been supporting 10 PHC clinics in rural Chiapas in a partnership with the local Ministry of Health to improve the delivery of general health services.¹⁶⁶ In 2014, the mental health programme was introduced in these clinics. Prior to this, mental health services were only available more than 6 hours away in the state capital.^{60, 166}

Our study assesses the implementation of the CES programme in order to understand the extent to which it has achieved the integration of mental health into PHC as outlined in Mexico's mental health policies, and to then explore the strengths and limitations that determine the success or failure of integration in this context. Specific research questions include:

1. To what extent are mental health services from the CES programme delivered as intended?
2. What are the perspectives of programme managers and providers regarding its penetration, fidelity, acceptability, appropriateness, and feasibility?
3. What are the key strengths and remaining challenges to the implementation of the CES mental health programme?

4.3 Methods

4.3.1 Setting

Of the approximately 5 million inhabitants of Chiapas, 50% per cent live in rural areas¹⁷⁷ and 77% in poverty.⁷⁰ Depressive and anxiety disorders are among the top 10 causes of disability in the state.¹⁷⁸ Mental health services are mainly accessed through either the psychiatric hospital or an ambulatory clinic located in the state capital.⁶⁰ The 10 PHC clinics supported by CES are each staffed by one medical doctor (MD) and, when possible, one nurse. Each PHC is located in one of the 10 communities of the mountainous Sierra region, approximately 6-8 hours from the state capital. Each community has ~1,000 inhabitants, most of whom live in extreme poverty.⁷¹

4.3.2 CES mental health programme

CES aims to strengthen the PHC system to improve access to quality health care. The organisation facilitates the delivery of general health services (including mental health) in 10 PHC clinics through the following implementation strategies: (1) programme financing, (2) capacity building of medical doctors (MDs) through high-intensity training and on-site supervision, (3) printed materials for clinical decision-making, (4) monitoring through a health information system (HIS), (5) ensuring medication supply, (6) “community-based accompaniment”⁸ by community health workers (CHWs) and (7) support for referrals to specialist services. Previous studies have found these strategies to be effective for the provision of care for various health conditions in other low resource settings.³⁷

For mental health, a coordinator oversees the delivery of mental health services and capacity building activities, and provides support for the management of complex cases. All mental health services are delivered by MDs, who rotate every year, in the clinics, and CHWs in the community. Services are designed according to mhGAP (Version 2.0)²⁵ adapted clinical guidelines and include case identification, pharmacological treatments,

individual and group talk-based interventions, and home visits. A full description of the programme can be found in figure 1.4.

4.3.3 Study design

We employed a mixed-methods convergent study design. Between May 2017 and February 2018, we collected quantitative and qualitative data simultaneously and compared the complimentary data sets to more holistically understand the CES mental health programme implementation. To integrate the quantitative and qualitative data, we identified common findings across the data sets and compared them to determine how these confirmed, disconfirmed or enhanced understanding of each other.¹⁶³

4.3.4 Quantitative data

4.3.4.1 Sample

We included all service users registered in the HIS (i.e. electronic medical records stored in CES' Microsoft Access database) who received a consultation at any of the 10 CES supported clinics and met the following criteria: (1) 18 years of age or older, (2) diagnosed with a mood (i.e. depression, dysthymia or bipolar disorder), anxiety or mixed disorder, and (3) had attended the clinic at least once between December 2016 and December 2017 to receive services for a mental health complaint. We included people diagnosed with a mood or anxiety disorder as the CES programme specifically targeted this group, and 95% of the programme's service users received treatments for these disorders.¹⁶⁶ We excluded children, adolescents and those who were diagnosed with psychosis or had experienced psychotic symptoms given that these service user groups require significantly different services.

4.3.4.2 Quantitative data collection

We extracted de-identified routinely collected service user data from the organisation's HIS for the period between December 2016 and December 2017. Extracted data included sociodemographic indicators (sex, age, and community of residence), clinical characteristics (diagnosis, PHQ-9 and GAD-7 scores, presence of comorbid conditions, treatment allocated, medication prescriptions, and months in treatment) and clinical notes (MDs records at diagnosis and follow-up consultations). Less than 1% of data was missing. We selected dose and fidelity as relevant process indicators based on the Medical Research Council (MRC) guidance on the evaluation of complex interventions¹⁷² and developed indicators based on the programme's guidelines (Table 3.7).

4.3.4.3 *Quantitative data analysis*

We used descriptive statistics to summarise the sociodemographic and clinical characteristics of the clinical sample. The clinical notes were coded using a pre-established system developed using programme guidelines. The coding system can be found in table 3.8. One researcher coded all clinical notes and a second researcher independently coded a random sample of 20% of these notes to check the reliability of the coding. The coding was in agreement in 87.4% of cases. We then calculated means and proportions to describe process indicators. All analyses were conducted in RStudio (Version 1.1.453).

4.3.5 *Qualitative data*

4.3.5.1 *Sample*

For the qualitative data collection, we used a convenience sample. During the study period there were a total of 14 MDs, 13 nurses, 10 clinical supervisors, two programme coordinators, six administration staff and five organisation directors working in CES and in CES supported clinics. We included 28 members of staff who were involved with the programme implementation, and were available for a face-to-face interview.

4.3.5.2 *Qualitative data collection*

We collected qualitative data to assess the implementation outcomes (penetration, fidelity, acceptability, appropriateness, and feasibility) selected according to the framework developed by Proctor and colleagues.³⁴ Two experienced Spanish-speaking qualitative researchers conducted two focus groups (with two directors, two programme coordinators, and six MDs), and 24 semi-structured interviews (with 12 MDs, eight nurses, and four clinical supervisors). Guides for data collection can be found in Appendices 3.7, 3.8, 3.9, and 3.10.

Data collection took place in the main office of the organisation, clinics or residences of participants, according to their preference and depending on the availability of a private space. All interviews and focus groups were audio recorded, except in two instances when consent was not provided, so detailed notes were taken. All audio recordings were transcribed verbatim by bilingual researches. GME checked the quality and accuracy of these transcriptions.

4.3.5.3 *Qualitative data analysis*

Framework analysis was utilised to analyse the qualitative data. We followed a process of (1) data familiarisation, (2) coding, (3) development of an analytical framework, (4) framework application and (5) interpretation.¹⁷⁵ We used pre-established definitions of

implementation outcomes³⁴ to develop the analytical framework. The analysis was conducted in Spanish. Two bilingual researchers familiar with the context translated relevant quotes to English. The accuracy of these translations was assessed by a group of independent bilingual researchers, and changes were made if needed.

4.4 Results

4.4.1 Penetration

We used quantitative and qualitative data to explore the extent of penetration of the CES mental health programme, defined as the extent to which the programme activities have been integrated into the organisation and the PHC clinics. According to clinical supervisors and MDs, training and supervision for mental health care are delivered as part of a general curriculum that aims to support MDs in all areas relevant to PHC, including maternal health, nutrition, chronic conditions and infectious diseases. All participating MDs reported providing mental health services at PHC clinics, which include diagnosing, prescribing pharmacological treatment and providing talk-based interventions.

Between December 2016 and December 2017, MDs delivered at least one mental health consultation to 486 adults diagnosed with a mood or anxiety disorder (table 4.1). The majority were women (84.4%), around a third were between 18 to 29 years old (34.5%), and two thirds were living less than 30 minutes away from the clinics (66.3%). Most were diagnosed with a mood disorder (68.2%), about half were experiencing severe symptoms at diagnosis (50.9%) and 16.7% had a comorbid physical condition (i.e. diabetes, cardiovascular diseases, epilepsy, pregnancy, or asthma). Almost half of service users only received pharmacological treatment (44.6%). The majority did not have a community health worker allocated (82.9%) and had been receiving services for more than six months (>70%).

Table 4.1. General characteristics of the clinical sample (n=486)

	Total	
	N	%
Sex		
Female	410	84.4
Male	76	15.6
Age		
18-29	166	34.5
30-39	137	28.5
40-49	74	15.4
50-59	57	11.9
>60	47	9.8

Residing 30 minutes or less from clinic		
No	164	33.7
Yes	322	66.3
Diagnosis		
Mood disorders	331	68.2
Anxiety disorders	127	26.2
Mixed	27	5.5
Severity at diagnosis (according to PHQ-9 or GAD-7)		
Severe	214	50.9
Moderate	121	28.8
Mild	60	14.3
Minimal	25	5.9
Other medical conditions		
No	398	83.3
Yes	80	16.7
Type of treatment		
Both	129	32.7
Pharmacological	176	44.6
Talk-based intervention	90	22.8
Community health worker assigned		
No	403	82.9
Yes	83	17.1
Months in treatment		
1-6	139	28.6
7-12	191	39.3
13-24	75	15.4
25-36	44	9.0
37-50	37	7.6

Most participants highlighted that the support offered by CES for the mental health programme through the appointment of a programme coordinator and funds for the purchase of medications has been key to its penetration. This support acknowledges the importance of addressing the mental health needs of service users at PHC services, provides necessary resources, and builds capacity to do so:

“A mental health programme coordinator exists. It does not exist for chronic or infectious diseases. That is how you know that it is something important.” (Sup2, clinical supervisors, male)

“The organisation facilitates things because if it was not for its initiative to treat mental health, there would not be any services for mental health. If I were only supported by the Ministry of Health, I would not know what to do with mental health [service users].” (Com6X, MD, male)

4.4.2 Fidelity

We used both process indicators and qualitative data to assess fidelity, i.e. the extent to which the programme was delivered as intended. In this section, we explore fidelity to guidelines, dose of services delivered, and quality of services.

4.4.2.1 Fidelity to guidelines

MDs at CES supported PHC clinics identified service users with potential mood or anxiety disorders, and made diagnoses. 63% of service users were diagnosed according to programme guidelines, 25% did not undergo a clinical assessment, 5% did not complete an assessment scale, and 7% had missing data that prevented determination of the diagnostic process. MDs also provided both pharmacological and talk-based interventions at the clinics. Treatment was allocated in full accordance with guidelines for 28% of service users. Of the 72% (N=350) service users that were not delivered treatment according to guidelines, in the majority of cases this was due to a lack of talk-based interventions (figure 4.1).

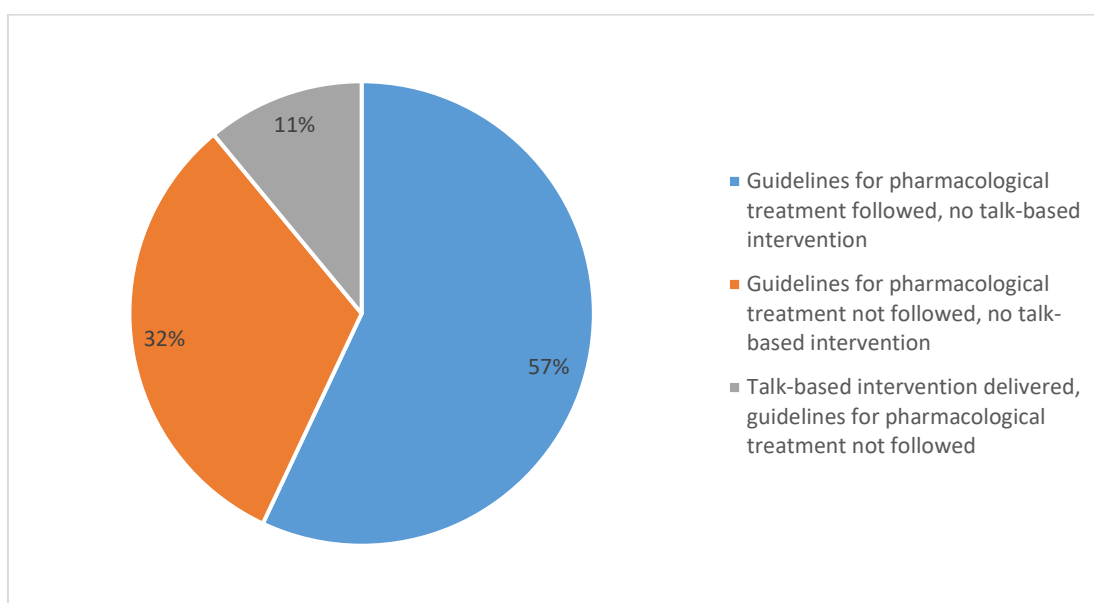


Figure 4.1. Reasons for lack of treatment fidelity (N=350)

Of the 1770 mental health follow-up consultations delivered, MDs used a scale to assess symptoms in 76% of consultations, and further explored key symptoms and relevant life events in 52% and 41% of consultations respectively. A talk-based intervention was provided in 24% of mental health follow-up consultations.

The majority of MDs and clinical supervisors report finding the materials available for the delivery of mental health services, such as the guidelines and other aids to provide

talk-based interventions, as useful. Materials offered helpful reminders and made MDs feel more comfortable providing these treatments. However, about a third of MDs reported that guidelines remained under review by the clinical director for many months and, in a few instances, they were not available in a printed format, both of which made it difficult to access relevant information in a timely manner, negatively impacting fidelity.

4.4.2.2 Dose of services: proportion of attendance to follow-up consultations

Less than half (41.6%, n=202) of service users attended more than 50% of their corresponding follow-up consultations. To calculate the rate of non-attendance, we analysed data for 335 service users that were enrolled in the programme during the study period. All service users attended their first consultation, but only 20%-37% of subsequent consultations were attended (figure 4.2).

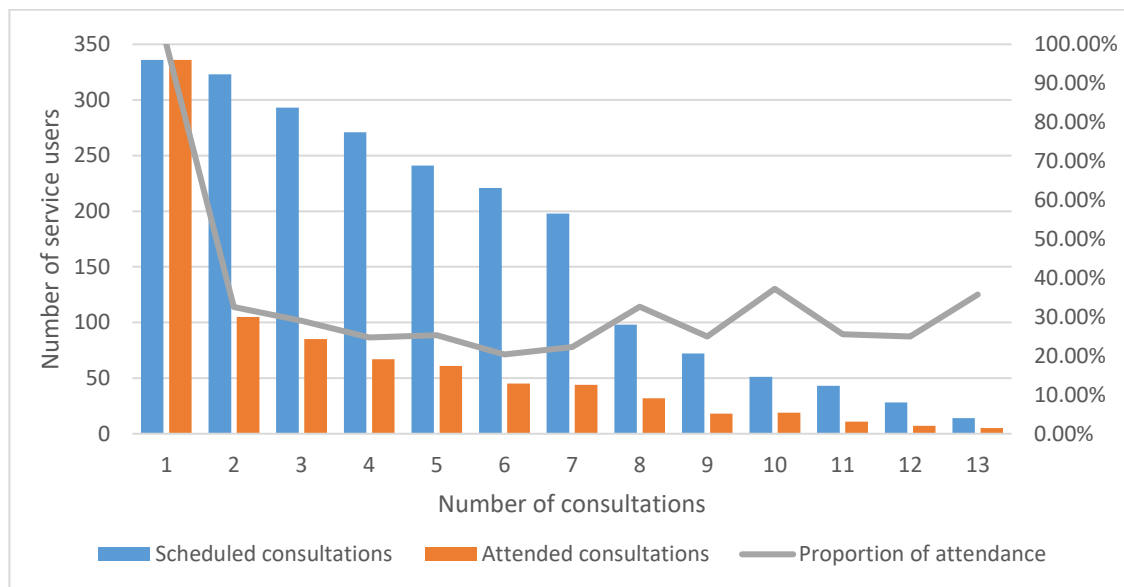


Figure 4.2. Number of mental health consultations scheduled and attended per service user between December 2016 to December 2017 (N=336)

Attendance at follow-up consultations was an important challenge to programme fidelity. A few providers perceived that low attendance is an indicator that some service users are not benefitting thoroughly from the mental health services:

“I’m not very convinced that [the treatment impact] will be a long-term thing. Because many times there is low adherence. [Service users] come once, and perhaps they let out everything they have been carrying since who knows when. They feel better [...] and then they don’t come back. I’ve seen it with some patients,

it's a cycle of maybe two, three months and [then] they come back because [the cycle starts] again." (Com1X, MD, female)

Low attendance could be attributed to the limited appropriateness of the programme to the service users' needs. The lack of social services, difficulties in the communication between providers and users, and distance to clinics were some challenges identified by health providers (see Appropriateness section).

4.4.2.3 *Quality of services*

The qualitative data also provided insight into barriers to the delivery of quality services. Most MDs reported difficulties providing mental health services at the beginning of their placement, since they received virtually no mental health training in medical school. MDs mainly expressed concerns regarding the delivery of talk-based interventions, since these require skills for which they have not been trained. Most MDs worry that the talk-based interventions that they are providing are of poor quality and hence not useful to service users:

"I am worried because I do not know if what I am offering is of good quality or if it is helping the patient or not." (Com8X, MD, female)

However, experience along with exposure to monthly training and supervision were reported to help improve the quality of services:

"I can't say that there's something in particular that has made [me] improve. I think that it's been a bit of everything. The courses. When [the programme coordinator] was here and sent me some articles [...] and the experience in general." (Com7X, MD, male)

4.4.3 *Acceptability*

We used qualitative data to explore the level of acceptability, i.e. the degree of agreement or satisfaction, of health workers with the CES mental health programme. This was discussed in relation to involvement in training and supervision, delivery of mental health services, and management of the needs of the service users.

All MDs acknowledged the need for mental health care and their limited knowledge and skills to provide it, therefore they were open to receiving training to deliver it. Acceptability from health professionals came from a sense of responsibility to provide needed pharmacological and non-pharmacological treatments. MDs recognised that they were the only personnel available to provide mental health care due to human resource shortages, and the difficulties in accessing other mental health services:

“I know that probably what they are going to tell me, or what they come to express, they cannot tell to anyone else. If I do not listen to them, no one else will. [...] I think it is that commitment.” (Com1X, MD, female)

However, according to about half of the MDs, the needs of mental health service users were perceived as challenging. Service users have problems that MDs are not used to treating and require lengthy talk-based support which can be difficult to offer due to time constraints and the emotional effort they entail. MDs feel they are treating people going through a large amount of social suffering, whose health is affected by social factors which they cannot address. Limited skills from MDs to deal with these challenges led to a sense of low self-efficacy, which affected acceptability:

“I asked the questions, but I felt my patients did not find anything that I was doing helpful. I think they felt the same. [...] My first mental health consultations were chaotic and disorganised. They impacted me because I felt useless and powerless in the face of [service users’] extraordinary problems.” (Com10X2, MD, male)

MDs received positive validation of their work when they could observe positive outcomes in service users, which also improved acceptability:

“There are days when you are tired, but when you see a patient is improving or that they are better able to do things in their daily lives [...] that gives you the energy you need.” (Com7X, MD, male)

4.4.4 Appropriateness

We explored perceived appropriateness from the perspective of the health workers (i.e. the fit, relevance or compatibility, of the mental health programme to their needs and those of service users) through qualitative data. Several topics were discussed: the extent to which mental health guidelines and materials fit the needs of MDs in the clinic and during the consultation, the fit between capacity building needs of MDs and actual training and supervision available, and the appropriateness of the programme for the needs of service users.

Regarding mental health guidelines and materials, all MDs reported that these are easy to use within their daily practice as they are presented in a concise and simple manner, and also use language that is easy to understand for both clinicians and service users.

In terms of capacity building, all MDs reported that training sessions were helpful but insufficient to develop the skills that mental health consultations require. Supervision

and training delivered on site by specialists, although limited due to human resource shortages, were seen as more appropriate for MDs' needs as they can observe how real-life scenarios are approached:

"Sometimes I observed how the psychologist interviewed, which were the techniques she used, and that is very useful because I could learn first-hand from someone that is an expert, and then adopt those tools from when I was the main interviewer. I think that is very useful, and a solid preparation that the course does not give you." (Com10X2, MD, male)

Finally, according to all participants, many of the service users have mental health needs that arise from social circumstances, such as economic insecurity and exposure to intimate partner violence or trauma, which cannot currently be addressed due to the lack of social services and targeted treatments:

"One of my patients suffered from sexual violence [...] If we were in, say, Denmark, [...] my role would be different. I would be a health provider who would do the first contact and behind me would be a large and prepared team with a lot of resources to give my patient better care than I can do on my own, not because I do not want to give her better care but because I do not have the tools to do so." (Com10X2, MD, male)

Even though scales like the PHQ-9 have been validated for this population and talk-based interventions have been developed to respond to users' needs, using these tools during the consultations can be difficult due to differences in culture and language mannerisms between providers and service users. A clinician explained the following about the difficulties of using the PHQ-9:

"Sometimes the definition of sadness is relative and in each consultation you have to remind people what each thing means. [...] It is possible that it is a communication issue." (Com7X, MD, male)

In settings with limited infrastructure and high levels of poverty, community-based and outreach services may be more appropriate compared to services in PHC clinics, as many service users face numerous challenges, such as long and costly journeys, to access services at the clinics:

"For example, if patients come from [the community] they have to pay [for] a trip. The distance [is a difficulty] as well because it is very far and they have to walk."

Some patients have told me that they were not able to find a car, and they had to walk up the hill, for [...] many hours, like 3 or more.” (Com1W1, nurse, female)

4.4.5 Feasibility

We used qualitative data to explore health workers’ perspectives related to the extent to which the programme was feasible, i.e. could be implemented within this particular health setting and context. The support and resources available from CES, and time and specialist human resource shortages were discussed.

Delivering mental health services at included PHC clinics was deemed feasible to a certain extent. Providers reported the support structure provided by CES makes the delivery of services possible. In this sense, all MDs and clinical supervisors highlighted that the CES mental health coordinator manages training and supervision, provides advice when dealing with difficult cases, and helps coordinate referrals to other services in the state. In terms of resources, important and complementary aspects are the availability of printed materials to provide mental health treatments and pharmacological treatments, which are provided by CES:

“In certain cases you need medication and if we do not have [any] its worrying because [...] the closest pharmacy is hours away. Or you can have the best medications available but if you are not trained to know how to use it, then it is useless.” (Com10X, MD, female)

Most MDs emphasized the importance of supervision in enabling them to work in the PHC clinics. Supervisors help them with clinical decision-making but also help them deal with the frustration caused by large workloads, the lack of efficient referral systems, and, on a personal level, living in a remote community, far from relatives and friends, and with limited capacity to communicate with them:

“[...] They come and help me in my work every month. I think without the supervision I would not be able to solve many problems [...].It helps a lot that [my supervisor] comes and listens to me, personal problems with my friends, my family, everything, about here, the community, how I feel. Both personally and professionally, the supervision is helpful.” (Com5X2, MD, male)

However, the limited knowledge and experience of clinical supervisors in treating mental health conditions was considered a barrier. Since clinical supervisors had no specialist training in psychiatry or psychology, a few MDs felt that they were no better equipped than them in providing mental health services. Moreover, most clinical

supervisors identified their lack of training to mentor others in the development of skills relevant to the provision of mental health services as a challenge:

“I think we need a monthly or bimonthly class to learn what we can do to improve our supervision of mental health [...] so that we are told what the MDs are doing well and what they can improve.” (Sup4, clinical supervisor, male)

We identified two key challenges to the delivery of services within the programme: (1) time constraints coupled with the many competing priorities present at the clinics, and (2) the limited availability of specialists to provide mentorship to MDs. A common concern amongst supervisors was the difficulty of providing good quality support in all areas due to the time constraints and the numerous requirements of each health programme managed at the PHC clinics:

“It is very difficult to deliver quality [...], so I think that something that happens is that each person delivers quality and focuses on what they care about the most or on what they feel the most competent in or on what they feel can help the [MD] the most because you cannot give quality in everything, and it is obvious because there are too many tasks.” (Sup2, clinical supervisor, male)

MDs also report they have to allocate time and effort to complete many different activities. The majority of MDs report frustration with not being able to allocate more time to look for service users who have not returned to the clinic or to conduct home visits, and also consider it unfeasible to complete all the tasks and paperwork that are required by CES and the Ministry of Health. The time available for each consultation is an issue according to most MDs as in many cases service users require services for more than one health complaint:

“I think the majority of mental health patients should have longer consultation times because you have to do a lot with them, [...] apply the PHQ-9, check that there are no adverse effects from the medication, [...] check for physical things, but the most important is that it is the time the patient has to talk, unload, and also the time that psychoeducation requires. [...] I cannot give that in 15 to 20 minutes.” (Com3X, MD, female)

All MDs and clinical supervisors perceive there is a need for more involvement of either psychologists or psychiatrists to improve the training and supervision and also to advise on difficult cases. Related to this, they report that due to their limited experience in delivering treatment for people with mental disorders and the lack of secondary and

tertiary services available for service user referrals, people who have complex symptomatology and require psychotherapy are left with inappropriate care:

“We are lacking trained professionals like psychologists or psychiatrists that can give us feedback and advice. [...] And the fact that there are no mental health specialists in the state to refer to or to get support from also makes things very difficult because we have seen that what makes our work easier is to have a support structure and we do not have it at other levels of care.” (Sup1, clinical supervisor, female)

4.5 Discussion

The CES programme was successful terms of achieving the integration of mental health services into 10 PHC clinics located in a rural area of Chiapas, Mexico. A summary of programme strengths and remaining challenges can be found in figure 4.3. The penetration of programme activities was evidenced by the presence of capacity building activities and the routine delivery of mental health services, including identification of service users with mood or anxiety disorders, diagnosis, and treatment delivery. A key driver for penetration was the presence of a programme leader and a team that promoted the delivery of mental health services and provided continuous support to do this. The programme was also largely acceptable to providers, as evidenced by providers’ engagement and commitment to programme activities. Programme fidelity was not fully achieved given the low rates of attendance, and limited adherence to treatment guidelines. Low attendance can be attributed to challenges travelling to the clinics, as well as a lack of interventions that tackle the service users’ social needs. Adherence to treatment guidelines by MDs was limited, as talk-based interventions were not provided in the majority of consultations. Key challenges included the limited availability of training and on-site supervision by specialists, as well as limited time due to the numerous tasks that providers are responsible for, and the large patient loads at the clinics. Despite feasibility challenges, the essential support and resources provided by CES, including mentoring, guidelines, printed materials, and medications made the programme implementation possible.

	STRENGTHS	CHALLENGES
Penetration	<ul style="list-style-type: none"> • Health providers are engaged in capacity building activities • Services for anxiety and depression are delivered at PHC clinics 	<ul style="list-style-type: none"> • None reported
Fidelity	<ul style="list-style-type: none"> • High fidelity to guidelines for clinical assessment at diagnosis and follow-up 	<ul style="list-style-type: none"> • Limited fidelity to treatment guidelines due to limited provision of talk-based interventions • Low dose of services due to non-attendance
Acceptability	<ul style="list-style-type: none"> • Providers' acceptability to training and supervision related to mental health, and to materials and guidelines developed to aid the service delivery • Strong motivation and commitment to the delivery of mental health services from providers 	<ul style="list-style-type: none"> • Providers' acceptability to deliver mental health treatments is hindered by low levels of self-efficacy, and the time and emotional effort mental health consultations require
Appropriateness	<ul style="list-style-type: none"> • Appropriateness of materials and guidelines for the working conditions in the clinics 	<ul style="list-style-type: none"> • Training and supervision available are not fully appropriate for capacity building needs as more on-site supervision is needed • Service users experience high levels of social suffering and social services are not available
Feasibility	<ul style="list-style-type: none"> • Feasibility to deliver mental health services enabled by the availability of capacity building mechanisms, material resources and a mental health coordinator 	<ul style="list-style-type: none"> • Low feasibility to deliver talk-based interventions due to the multiple tasks and limited time of PHC providers, and by the lack of specialists to provide mentorship • Limited capacity to adequately treat service users with complex symptoms due to lack of specialists services to refer to

Figure 4.3. Summary of findings from the current study according to implementation outcomes

A previous study in Mexico highlighted the difficulties of delivering mental health services in PHC due to an overwhelming lack of resources (i.e. budget constraints, lack of medications and sufficient human resources) at this level of care.¹⁷⁹ Our findings indicate that the presence of strategies that strengthen the service delivery platform (i.e. adequate financing, the inclusion of ongoing capacity building mechanisms, information systems to monitor progress and ensuring medication supply) are essential to implement mental health programmes in PHC.^{85, 117} Similar to previous literature, we also found that important challenges that need to be addressed are frequent turnover of health personnel,¹¹⁷ the skills and time requirements to deliver talk-based

interventions,¹⁸⁰ and the need of specialists to support PHC providers and ensure that services delivered are of quality.⁷⁸ To overcome some of these challenges, besides adequate resourcing, committed leadership and support teams are also key to promote implementation and provide continuous assistance in this process.^{119, 181}

The essential need for capacity building mechanisms that include adequate and ongoing support and supervision, has been highlighted as relevant by other programmes integrating mental health services at PHC.¹⁸² Previous research indicates that rather than single trainings, apprenticeship models are required for effective implementation.¹⁸³ According to our findings and previous research, capacity building can improve self-efficacy,¹⁸⁰ and in this programme supervision was essential to help providers manage the stress caused by working in underserved areas where high levels of social suffering are witnessed. It is possible that the high levels of acceptability reported by health providers can also be attributed to the presence of capacity building mechanisms, which are dissimilar to what has been observed in other Mexican settings where levels of stigma from health providers' are high.¹⁷⁹

Collaborative care models have been promoted as a solution to make more efficient use of resources and redistribute workloads.¹⁰ Other programmes have pointed out that appropriate implementation of this model requires the recruitment of new cadres, e.g. CHWs, to deliver non-pharmacological treatments and manage the chronic care needed by mental health service users.^{104, 184} Our findings also indicate that this might be necessary to distribute the burden of PHC providers, and deliver talk-based interventions more effectively. Moreover, increasing the availability of psychiatrists and psychologists to support capacity building, and strengthening specialist services to refer those service users with complex needs are also necessary steps for successful implementation.¹⁸⁵

Finally, the role of intersectoral collaboration in tackling the social determinants of health has been previously emphasised,¹⁸⁶ and it is especially important in settings where the risk of poor mental health is greater due to high levels of poverty and other social risk factors.¹⁸⁷ To appropriately tackle the social needs of service users we will need to develop targeted interventions that address intimate partner violence, income and food insecurity, and other structural issues in these and other similar settings.¹⁸⁸ In this sense, there is an important role for the inclusion of links to social work interventions in the planning of PHC based programmes.¹⁸⁹ Furthermore, increasing community based services through CHWs and community participation is essential to

accomplish better access to interventions that tackle both health and social needs.¹⁹⁰ This is also relevant since in remote and rural places even PHC clinics can be too hard to reach.¹⁹¹

The current study has several strengths. We used a comprehensive methodology that both described the implementation of the mental health programme, and described how this was achieved,¹⁶³ and selected implementation outcomes based on relevant frameworks.^{34, 172} Our findings point out that implementation outcome frameworks need to be complemented with process indicators, as learning from the implementation of a particular programme requires good understanding of the process by which this was achieved. For this study, developing indicators for fidelity and dose was essential to understand the process by which the programme services were delivered. The use of longitudinal data also allowed us to understand the constantly changing nature of implementation. Frameworks to assess programme implementation and outcomes should aim to capture the dynamism of this process, rather than viewing it as a static phenomenon. The selection criteria for both samples aimed to be as unrestrictive as possible to improve representativeness. The data collection was performed by researchers who spent at least a year in the field, which increased familiarity with the context and buy-in from the programme staff. Qualitative data was checked for quality, and translations of quotes were done by multiple researchers. We also ensured high quality of quantitative data by using several techniques, including cross checking between the HIS and other data collection tools, and double-coding of fidelity scores.

In terms of limitations, for the qualitative study we used a convenience sample due to time constraints, however we included 56% of the programme personnel. Administrative staff perform important activities for the programme, but none of them were included for practical reasons. Service user perspectives were also not included in the current analysis, but are presented elsewhere. For the quantitative component although there were very few instances of missing data due to provider error, there was a lack of standardized guidelines for recording data, which meant the quality of clinical notes was variable. Additionally, the clinical notes could not be interpreted as a perfectly faithful representation of all events that occurred during a consultation due to variability regarding what talk-based interventions entail. Finally, the generalizability of our findings might be limited given that providers' of this programme report allocating between 15-20 minutes per consultation, which is significantly more than the average of 5 minutes found by previous research.¹⁹²

4.6 Conclusions

The current study aimed to contribute to the scarce evidence base on implementation of mental health programmes integrated in PHC platforms in low resource settings, which is needed given the difficulties in translating policy into practice. This study demonstrates that it is possible to deliver certain mental health services at PHC platforms by non-specialists when adequate resources, support and supervision structures are in place, even in low-resource, rural, and remote settings. MDs identified service users with mental health conditions successfully and performed appropriate clinical assessments. However, talk-based interventions, an important element of programme guidelines, were rarely delivered. Fidelity to guidelines is constrained by the lack of mental health training MDs receive related to mental health in their professional education and the limited availability of mental health specialists to provide mentorship. The majority of service users did not attend more than one follow-up consultation. Distance and lack of social support services need to be tackled to increase the appropriateness of services for service user needs. Integration of mental health care services in PHC in Mexico will require improved financing and resource management of PHC and specialist services, ongoing capacity building, the development of effective referral systems, further development of community-based services, and to link PHC with locally-relevant social interventions.

Chapter 5. Factors related to attendance to mental health follow-up consultations in primary care clinics in rural Mexico: a mixed-methods study

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5.1 Abstract

5.1.1 Background

Non-attendance is a major challenge for the delivery of mental health care. Service users who miss consultations do not receive the intended dose of an intervention, are less likely to adhere to pharmacological treatments, and have worse health outcomes. Despite the fact that people living in poor and rural areas face greater challenges to access mental health services, research into the factors related to non-attendance in these settings remains scarce. This study aimed to investigate factors contributing to low attendance to mental health follow-up consultations provided by a primary care mental health programme delivered in rural Mexico.

5.1.2 Methods

We employed mixed-methods explanatory sequential design. We analysed quantitative data collated from the clinical records of adult service users who started receiving mental health services between December 2016 and December 2017 at 10 primary care clinics. We assessed sociodemographic, health and treatment correlates to two primary outcomes: (1) non-attendance to mental health follow-up consultations, and (2) attendance to less than 50% of mental health follow-up consultations. Subsequently, we used a framework analysis to analyse qualitative data collected from service users between May 2017 and February 2018 to understand their perspectives related to barriers and facilitators to attendance.

5.1.3 Results

A total of 323 service users were included in the quantitative study sample, and 30 were included in the qualitative study sample. More than half of service users attended at least one mental health follow-up consultation (58.5%). However, 52% attended less than 50% of their scheduled mental health follow-up consultations. Long distance to the clinics, type of treatment, waiting times, conflicting commitments, and low motivation

were identified as barriers to attendance, whereas presence of a comorbidity, age, and perceived need of treatment were identified as facilitators. Experiences with providers or treatments were identified as both facilitators and barriers, depending on whether these were positive or negative.

5.1.4 Conclusions

Our findings suggest the reorganisation of services is necessary to increase service user engagement, and reduce clinic workloads. We suggest increasing community-based services as an alternative. Strategies to enhance understanding between service users and health providers are necessary to improve the extent to which the needs and preferences of service users are met.

RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

SECTION A – Student Details

Student ID Number	375159	Title	Ms
First Name(s)	Georgina		
Surname/Family Name	Miguel Esponda		
Thesis Title	What enables and hinders implementation? A mixed-methods case study of a mental health programme implemented in primary care clinics in rural Mexico		
Primary Supervisor	Ritsuko Kakuma		

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

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Where was the work published?			
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SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	The current will be separated into two papers: one with the qualitative results and one with the quantitative results. The paper presenting the qualitative results will be submitted to Social Science & Medicine and the paper presenting the quantitative results will be submitted to PLOS One.
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Please list the paper's authors in the intended authorship order:	Georgina Miguel Esponda, Sarah Hartman, Fátima Rodríguez Cuevas, Ritsuko Kakuma
Stage of publication	Not yet submitted

SECTION D – Multi-authored work

For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)	I was the lead researcher and I was responsible for the study design, data collection, data analysis, and the writing of the manuscript. Sarah Hartman contributed to the qualitative data collection, was the second coder of the qualitative data, provided input for the identification of themes during the qualitative data analysis, and provided comments on earlier drafts of the manuscript. Fátima Rodríguez advised on the study design and data collection, contributed to the data analysis and discussion, and provided comments earlier drafts of the manuscript. Ritsuko Kakuma provided extensive guidance in the process of data analysis and in the presentation of results, and also gave detailed comments and feedback on all drafts.
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SECTION E

Student Signature	
Date	10/04/2020

Supervisor Signature	
Date	10/04/2020

5.2 Background

Non-attendance, i.e. the lack of attendance to scheduled health or medical appointments, is a major challenge for the delivery of mental health care, in both non-specialist and specialist health services. Globally, the prevalence of non-attendance to primary care and psychiatric consultations ranges between 3%-55% and 16%-31%, respectively.^{193, 194} Multiple individual, treatment, service and environmental factors have been associated with non-attendance, and it has been recognised that predictive factors vary according to patterns of non-attendance, health problems, and types of services.¹⁹³⁻¹⁹⁷ Non-attendance is an indicator of inequitable access to services.¹⁹⁸ More importantly, it impacts the effectiveness of treatments given that service users who miss consultations may not receive the intended dose of an intervention,¹⁹⁹ are less likely to adhere to pharmacological treatments,¹⁰ and have worse health outcomes.²⁰⁰⁻²⁰²

Despite the important implications of non-attendance, its correlates and impacts have mostly been investigated in high-income countries (HICs).^{193, 194, 196} However, treatment-seeking and adherence have been identified as challenges related to the implementation of mental health programmes in low-and middle-income countries (LMICs).¹⁸² The few studies that have investigated barriers to attendance to mental health services in LMICs have reported that symptom severity,²⁰³ distance to services or lengthy travelling times,^{104, 112, 117, 118, 203} long waiting times,¹⁰⁴ financial constraints or cost of treatment,^{117, 118, 203} transportation costs or loss of wages due to time required to access services,^{104, 112, 117, 118, 203} dissatisfaction with services,²⁰³ and medication side effects or the perception that treatment is not helpful or no longer necessary are related to non-attendance.^{99, 104, 112} On the other hand, service users receiving mental health services at primary care clinics in India reported that positive relationships with providers, the perception that treatment would be helpful, perceived positive impact of treatment, flexible appointments, receiving reminders, free treatment, family support, ease of transport and short waiting times motivated or facilitated attendance.¹⁰⁴

In the rural areas of the state of Chiapas in Mexico, people with mental disorders face numerous barriers to access mental health services given that these are primarily delivered through specialist services located in urban areas.⁶⁰ Compañeros en Salud (CES), a non-governmental organisation, partnered with the Chiapas Ministry of Health to increase access to quality care through 10 primary health care (PHC) clinics located in the Sierra region, a rural area of Chiapas. Through these clinics, a mental health programme is delivered by non-specialist health providers. A recent evaluation of the programme implementation showed that low attendance is a key remaining challenge,

given that the majority of service users only attended one initial mental health consultation and did not return to most follow-up consultations (see Chapter 4). Despite improvements in accessibility and positive implementation outcomes, adherence to treatment remains an important challenge to the effective coverage (i.e. the proportion of those in need of treatment who receive a health benefit from accessed treatment)²⁰⁴ of this programme.

The aim of the current study was to investigate factors contributing to low attendance to mental health follow-up consultations delivered by CES. To the best of our knowledge, this study is the first investigating non-attendance to mental health services using mixed-methods in a LMIC. Our objectives were (1) to seek correlations between each of the two primary attendance outcomes, i.e. non-attendance and low attendance to mental health follow-up consultations, and socio-demographic, health and treatment characteristics of service users, and (2) to describe barriers and facilitators related to attendance to mental health follow-up consultations drawn from service user interviews.

5.3 Methods

5.3.1 Setting

The current study was conducted in 10 rural communities of the Sierra region of the state of Chiapas in Mexico. These communities are located in a remote mountainous region of the state. In order to reach these communities from the state capital, it is necessary to travel for more than 6 hours through largely unpaved roads. Each community has at least one pre-school, one primary school, a small shop, two churches, and a PHC clinic. There is no access to mobile networks in the communities, and phone and internet connection is limited. People in these communities have to travel to the nearest town (2-4 hours away) to access banks, markets, and secondary health services. Tertiary health services for all specialties, including mental health, are located 6-8 hours away in the state capital. Each community has 1,000 to 2,000 inhabitants. Coffee farming is the main economic activity in the region. However, until recently most people were supported by the “Social Inclusion Programme PROSPERA”, a government conditional cash transfer programme, given that most inhabitants in these communities live in extreme poverty.⁷¹ The conditions of the communities are representative of the state, where around half of the population live in rural areas and two thirds live in poverty.⁷⁰

CES, in collaboration with the local Ministry of Health, supports the 10 PHC clinics located in these communities to deliver general health services, including mental health services. Mental health services available include diagnosis, pharmacological treatment and talk-based interventions, which are delivered by medical doctors (MDs) in the clinics. These MDs rotate on a yearly basis. Community health workers (CHW) also provide “community-based accompaniment” through home visits, which consists in medication and appointment reminders, psychoeducation, and psychosocial support.⁷⁴ The majority of service users receive services for a common mental disorder (CMD), and about 5% for a psychotic or alcohol use disorder.¹⁶⁶ Before CES started providing mental health services in 2014, the only mental health services available were a psychiatric hospital and an ambulatory mental health unit located at the state capital, which made it challenging for service users to access them.⁶⁰

5.3.2 Design

We employed mixed-methods explanatory sequential design. First, we analysed quantitative data collated from the clinical records of adult service users who started receiving mental health services between December 2016 and December 2017 at any of the 10 PHC clinics supported by CES. We assessed sociodemographic, health and treatment correlates to two primary outcomes: (1) non-attendance to mental health follow-up consultations, and (2) attendance to less than 50% of their scheduled mental health follow-up consultations. Subsequently, we used a framework analysis to analyse qualitative data collected between May 2017 and February 2018 from service users to further understand barriers and facilitators to attendance.

5.3.3 Quantitative data

5.3.3.1 Sample

We included all service users registered in CES’s health information system (HIS) who were (1) 18 years of age or older and, (2) diagnosed with a CMD between December 2016 and December 2017.

CMDs are depressive and anxiety disorders which are included in two ICD-10⁹² classifications: (a) neurotic, stress-related and somatoform disorders, and (b) mood disorders.⁹³ The general disorder categories that are included in these classifications are depression, generalised anxiety disorder, panic disorder, phobias, obsessive compulsive disorder, reaction to severe stress, somatoform disorder, manic episodes, bipolar affective disorders, and other and unspecified mood disorders. We only included people diagnosed with a CMD given that mood or anxiety disorders cause the highest disability

burden in the state.⁷⁷ Also, people diagnosed with these disorders represent 95% of the service users that receive mental health services from the programme.¹⁶⁶ For this study, children, adolescents and those who were diagnosed with psychosis or had experienced psychotic symptoms were excluded, since these service user groups have significantly different needs compared to those with CMDs.

5.3.3.2 Quantitative data collection

We extracted de-identified service user data from the HIS of the organisation. The HIS consists of electronic medical records stored in the software Microsoft Access, and we extracted sociodemographic, health and treatment data contained in these records. A negligible amount of data was missing (around 2%). A description of the variables generated using extracted data is presented below.

Non-attendance to follow-up consultations

We used the dates and content of clinical notes to determine the number of times each service user attended a mental health consultation. For the number of scheduled consultations, we assumed that one monthly consultation had been scheduled per service user since this is what is indicated in programme guidelines. Service users who only attended one initial mental health consultation where they were diagnosed and prescribed treatment and did not return for any follow-ups were considered non-attenders to mental health follow-up consultations. For those who attended one or more follow-up consultations, we created a dummy variable to categorise service users in two groups according to their proportion of attendance using a cut-off point of 50%. For this we divided the number of attended consultations by the number of scheduled consultations, and created categories to differentiate those who attend more or less than 50% of scheduled consultations. Both of these variables were binary.

Sociodemographic variables

Sociodemographic variables included sex, age (number of years of age at the beginning of the study, i.e. December 2016, calculated using the date of birth), and if the service user lived more or less than 30 minutes away from the clinic travelling by foot (calculated by estimating the time of travel based on the community of residence), given that this is the most common form of transportation in these communities.

Health variables

Health variables included current diagnosis, severity of illness at diagnosis and presence of comorbidities. According to the organisation's guidelines, MDs determine current diagnosis using clinical assessments and the score of either of two scales, the Patient

Health Questionnaire (PHQ-9) for mood or mixed disorders and the Generalized Anxiety Disorder (GAD-7) for anxiety disorders. The PHQ-9 has been validated for the population served by CES, and was demonstrated to have good internal reliability (Cronbach's alpha = 0.94), and predictive validity (statistically significant association with WHOQOL-BREF scores).¹⁷¹ The GAD-7 has not been validated for this specific population, but a study in the United States utilising a sample of Hispanics showed that the Spanish version of the scale has good internal reliability (Cronbach's alpha = 0.81) and predictive validity (statistically significant association with PHQ-9 and WHOQOL-BREF scores).²⁰⁵ Severity of illness at diagnosis is determined through the PHQ-9 or GAD-7 scores. We used the same cut-off points for both scales: 0-4 for minimal, 5-9 for mild, 10 to 14 for moderate and 15 or more for severe symptoms. Comorbidities or other medical conditions included diabetes, cardiovascular diseases, epilepsy, pregnancy, and asthma.

Treatment variables

Treatment variables included type of treatment received at the clinic (i.e. pharmacological, talking-based or both), and whether a patient was assigned to a community health worker (CHW). We identified prescription of pharmacological treatment through clinical notes, or prescriptions. Delivery of a talk-based intervention was determined by the content in clinical notes. Commonly reported talk-based interventions were: psychoeducation, motivational interviewing, CBT-based exercise, or life-style advice.

5.3.3.3 Quantitative data analysis

We used quantitative cohort data for the current analysis. All analyses were performed using rStudio (Version 1.1.453). We used Pearson chi-square tests to assess bivariate associations between the primary outcomes, non-attendance to mental health follow-up consultations and attendance to more or less than 50% of mental health follow-up consultations, and all sociodemographic, health and treatment variables.

Subsequently, we conducted two multivariate logistic regression analyses to assess correlates to both non-attendance outcomes. Only for the multivariate analyses, we excluded all cases where data was missing for one of the variables of interest. Variables were included in the logistic regression model if they were bivariately associated with the primary outcome at $p < 0.05$, and if there was evidence of their role as potential confounders based on previous evidence (i.e. sex and age). We used stratification to identify interactions between all variables, and tested for significance in the model.

Collinearity was assessed examining the Variance Inflation Factor, and the goodness-of-fit of the model was assessed using the likelihood ratio test.

5.3.4 Qualitative data

5.3.4.1 *Sample and recruitment strategy*

Due to ethical and practical issues, it was only possible to recruit participants who were already enrolled in the programme and receiving services at the clinics. For this reason, we used different eligibility criteria for the qualitative study sample. We used a convenience sample, and included service users who were (1) 18 years of age or older, (2) diagnosed with a CMD, (3) had attended the clinic at least once between December 2016 and December 2017 to receive services for a mental health complaint, and (4) were available for an interview at the time of data collection. We excluded service users (1) who were diagnosed with psychosis or had experienced psychotic symptoms since their treatment needs are significantly different compared to those of service users with CMDs; (2) who were known to have experienced domestic or partner violence, to protect the safety of both participants and interviewers; and (3) those who were not able to provide written consent due to a lack of understanding of the study purposes or other emotional or physical impediments.

Given the difficulties to travel around the communities in the Sierra region, it was only feasible to recruit participants that lived within 30 minutes of the clinics or that were available for an interview in the clinic on the day of recruitment. Similar sample sizes have been used by previous research investigating non-attendance.¹⁹⁶

Service users were recruited during their visits to the clinics. After attending a mental health consultation, service users were invited to the study by MDs. MDs explained the purposes of the study, and introduced interested service users to a member of the research team. MDs did not inform the research team about service users who were not interested to participate. Researchers explained the study in detail to interested service users, and requested informed consent before conducting interviews. A total of 30 service users were included in the qualitative data collection.

5.3.4.2 *Qualitative data collection*

We collected qualitative data related to service users' perceived health and mental health needs, experiences with the services available at the clinics, and barriers to attendance to follow-up consultations. The interview guide is available in appendix 3.11. Before the start of interviews, participants were reminded that participation was voluntary, that their decision whether to participate or not would have no impact on the

services they received at the clinic, that participation could be stopped at any moment and that any information that they provided would remain confidential and would be fully anonymized for its analysis and dissemination. Two experienced Spanish-speaking qualitative researchers conducted all the qualitative data collection, which took place in the clinics or residences of participants, according to their preference and depending on the availability of a private space. Interviews were audio recorded if participants consented. Fifteen participants did not consent to be audio recorded, and detailed notes were therefore taken instead. All audio recordings were transcribed verbatim for analysis by bilingual researchers. GME checked the quality and accuracy of these transcriptions.

5.3.4.3 Qualitative data analysis

Framework analysis was utilised to analyse the qualitative data. We followed a process of (1) data familiarisation, (2) coding, (3) development of an analytical framework, (4) framework application and (5) interpretation.¹⁷⁵ Interviews were independently double coded by two researchers, whom also engaged in discussions to identify emerging themes. The analysis was conducted in Spanish. Two bilingual researchers familiar with the context translated relevant quotes to English. A group of independent bilingual researchers assessed the accuracy of these translations, and we made changes if needed.

5.4 Results

323 service users were included in the quantitative study sample, and 30 were included in the qualitative study sample. Those service users included in the quantitative analysis were predominantly female (81%) with an average age of 36.44 years (SD=14.25). The majority lived less than 30 minutes away from the clinics (70%). Most service users were diagnosed with a mood or depressive disorder (63%) and about half were experiencing severe symptoms at the time of diagnosis (46%). Only 16% were diagnosed with a comorbid physical condition. Almost half of service users received talk-based treatment only (44%), followed by pharmacological treatment only (36%), and both pharmacological and talk-based treatment (20%). Access to community services was limited as only 6% service users had a CHW assigned.

Twenty-eight of the 30 service users included in the qualitative study sample were female. Participants were between 18 and 60 years old, and had started receiving services before the start of the current study. All reported having received pharmacological treatment at some point, but about 50% were receiving talk-based treatment only at the time of the study.

5.4.1 Factors associated to non-attendance to mental health follow-up consultations

The characteristics of the study participants can be found in Table 1. Almost half of service users did not attend any mental health follow-up consultations (41.5%, n=134). The proportion of service users living more than 30 minutes from a clinic was higher among those who did not attend follow-up consultations (37.5%) than those that did (24.9%, p=0.023). The proportion of service users diagnosed with a comorbid condition was lower among those who did not attend follow-up consultations (3.8 %) than those who did (20.8%, p<0.0001). Furthermore, the proportion of service users receiving both pharmacological and talk-based treatment was lower among those who did not attend follow-up consultations (9.7%) than in those that did (27.5%, p=0.0002). We did not find any significant differences for sex, age, diagnosis, severity at diagnosis and having a CHW assigned.

Table 5.1. Characteristics of service users that did and did not attend mental health follow-up consultations

		Total		Attendance (n=189)		Non-attendance (n=134)		Crude odds ratio	p-value
		N	(%)	N	(%)	N	(%)		
Sex	Female	262	(81.1)	157	(83.1)	105	(78.4)	1.0	0.357
	Male	61	(18.9)	32	(16.9)	29	(21.6)	1.36	
Age	>60	26	(8.2)	16	(8.6)	10	(7.6)	1.0	0.524
	18-29	124	(38.9)	66	(35.3)	58	(44.0)	1.41	
	30-39	86	(26.9)	51	(27.3)	35	(26.5)	1.10	
	40-49	43	(13.5)	27	(14.4)	16	(12.1)	0.95	
	50-59	40	(12.5)	27	(14.4)	13	(9.8)	0.77	
Residence within 30 minutes from the clinic									0.023
	Yes	219	(70.0)	139	(75.1)	80	(62.5)	1.0	
	No	94	(30.0)	46	(24.9)	48	(37.5)	1.81	
Diagnosis									0.572
	Anxiety disorders	101	(31.4)	55	(29.1)	46	(34.6)	1.0	
	Mood disorders	204	(63.4)	124	(65.6)	80	(60.1)	0.77	
	Mixed	17	(5.3)	10	(5.3)	7	(5.3)	0.83	
Severity at diagnosis									0.39
	Mild	43	(15.6)	21	(12.8)	22	(19.8)	1.0	
	Minimal	24	(8.7)	14	(8.5)	10	(9.0)	0.68	
	Moderate	81	(29.4)	48	(29.3)	33	(29.7)	0.66	
	Severe	127	(46.2)	81	(49.4)	46	(41.4)	0.54	
Diagnosed with a comorbidity									<0.0001
	Yes	44	(16.0)	39	(20.8)	5	(3.8)	1.0	
	No	276	(86.2)	148	(79.1)	128	(96.2)	6.67	
Type of treatment									0.0002
	Both	65	(20.1)	52	(27.5)	13	(9.7)	1.0	
	Pharmacological	116	(35.9)	66	(34.9)	50	(37.3)	3.03	
	Talk-based	142	(44.0)	71	(37.6)	71	(53.0)	4.0	
Community Health Worker									0.253
	Yes	19	(5.9)	14	(7.4)	5	(3.7)	1.0	

In the logistic regression model, we included sex and age as potential confounders, and residence within 30 minutes from the clinic, comorbidity diagnosis and type of treatment received as exposures, since these were the variables that showed a statistically significant association with the outcome of interest. After including all variables in the model, all exposure variables were still significantly associated with attendance to mental health follow-up consultations (Table 2). Service users who lived more than 30 minutes away from the clinics were more likely to not attend follow-up consultations (OR=2.05; 95% CI: 1.19 - 3.56), compared to those who lived less than 30 minutes away from the clinics. Those who were diagnosed with a comorbid physical condition were less likely to not attend follow-up consultations (OR=-0.16; 95% CI: 0.05 - 0.40), compared to those who only received treatment for mental health. Those who received either only pharmacological or only talk-based treatment were more likely to not attend mental health follow-up consultations (OR=3.81, 95% CI: 1.81-8.53 and OR=5.59, 95% CI: 2.69-12.39, respectively), compared to those who received both pharmacological and talk-based treatment.

Table 5.2. Logistic regression model of correlates to non-attendance (subsample, n=306)

Variables	B (SE)	Adjusted odds ratio	95% CI for OR	
Sex				
Female	Baseline	-	-	
Male	0.455 (0.327)	1.575	(0.831 - 3.007)	
Age				
>60	Baseline	-	-	
18-29	0.121 (0.529)	1.128	(0.405 - 3.291)	
30-39	0.063 (0.540)	1.066	(0.374 - 3.172)	
40-49	0.007 (0.592)	1.007	(0.317 - 3.296)	
50-59	-0.350 (0.604)	0.704	(0.215 - 2.341)	
Residence within 30 minutes from the clinic				
No	Baseline	-	-	
Yes	0.720 (0.278)	2.055	(1.195 - 3.568)	*
Diagnosed with a comorbidity				
No	Baseline	-	-	
Yes	-1.815 (0.506)	0.163	(0.053 - 0.404)	**
Type of treatment				
Both	Baseline	-	-	
Pharmacological	1.268 (0.396)	4.940	(2.368 - 10.990)	*
Talk-based	1.597 (0.389)	3.555	(1.674 - 7.991)	**
Significance levels: * < 0.01, ** < 0.001				

5.4.2 Low or high attendance to mental health follow-up consultations

Over the study period service users were scheduled a mean of 7.79 follow-up consultations (SD=3.16) and attended a mean of 3.66 (SD=2.05). Of the 189 service users attending at least one follow-up consultation, 52% attended less than 50% of mental health follow-up consultations. As shown in Table 3, age, distance of residence to the clinic, type of diagnosis, and severity at diagnosis were not significantly associated with attendance levels. However, compared to those with high attendance, a smaller proportion of service users with low attendance were diagnosed with a comorbidity (14% vs 28%, $p=0.032$). Furthermore, although not statistically significant a higher proportion of service users with low attendance were not allocated a CHW (96%).

Table 5.3. Characteristics of service users that attended more or less than 50% of mental health follow-up consultations

	Total		More than 50% of follow-up consultations attended (n=91)		Less than 50% of follow-up consultations attended (n=98)		Crude odds ratio	p-value
	N	(%)	N	(%)	N	(%)		
Sex								0.585
	Female	157	(83.1)	77	(84.6)	80	(81.6)	1.0
	Male	32	(16.9)	14	(15.4)	18	(18.4)	0.81
Age								0.119
	>60	16	(8.6)	12	(13.5)	4	(8.6)	1.0
	18-29	66	(35.3)	30	(33.7)	36	(35.3)	0.27
	30-39	51	(27.3)	24	(27.0)	27	(27.3)	0.29
	40-49	27	(14.4)	9	(10.1)	18	(14.4)	0.16
	50-59	27	(14.4)	14	(15.7)	13	(14.4)	0.35
Residence within 30 minutes from the clinic								0.640
	Yes	139	(75.1)	67	(73.6)	72	(76.6)	1.0
	No	46	(24.9)	24	(26.4)	22	(23.4)	1.17
Diagnosis								0.162
	Anxiety disorders	55	(29.1)	29	(31.9)	26	(26.5)	1.0
	Mood disorders	124	(65.6)	60	(65.9)	64	(65.3)	0.84
	Mixed	10	(5.3)	2	(2.2)	8	(8.2)	0.22
Severity at diagnosis								0.728
	Mild	21	(12.8)	11	(14.3)	10	(11.5)	1.0
	Minimal	14	(8.5)	8	(10.4)	6	(6.9)	1.21
	Moderate	48	(29.3)	23	(29.9)	25	(28.7)	0.83
	Severe	81	(49.4)	35	(45.5)	46	(52.9)	0.69
Diagnosed with a comorbidity								0.032
	Yes	39	(20.9)	25	(28.1)	14	(14.3)	1.0
	No	148	(79.1)	64	(71.9)	84	(85.7)	2.34
Type of treatment								0.434
	Both	52	(27.5)	29	(31.9)	23	(25.8)	1.0
	Pharmacological	66	(34.9)	30	(33.7)	36	(40.4)	0.67
	Talk-based	71	(37.6)	32	(35.9)	39	(43.8)	0.66
Community Health Worker								0.070
	Yes	14	(7.4)	10	(11.0)	4	(4.1)	1.0
	No	175	(92.6)	81	(89.0)	94	(95.9)	2.90

Three cases were excluded from the logistic regression model due to missing data. After controlling for sex and age, being diagnosed with a comorbidity was still significantly associated with low attendance (not tabulated). Service users without a comorbidity were more likely to have low attendance levels (OR=2.16; 95% CI: 1.02-4.71). This analysis also showed that service users between 40 and 49 years old were less likely to have low levels of attendance (OR=0.16; 95% CI: 0.03-0.66).

5.4.3 Barriers and facilitators to attendance to mental health follow-up consultations

5.4.3.1 Motivators for attendance to mental health consultations

Participants described experiencing symptoms such as sadness, irritability, low energy, body pain, and sleeping difficulties. These symptoms were perceived as negative as they significantly affected participants' relationships with other family members, and their capacity to perform daily household activities like cleaning or childcare:

“When I fell into depression [...] I felt really sad. Really lonely. My head hurt. I got frustrated, I used to get angry with my daughters for anything. There were moments where I did not feel like doing anything, no housework, nothing. [...] When someone came to visit me, I would not pay attention and just close the door.”
(Participant_31, female)

Half of the participants mentioned their primary motivation to attend mental health consultations was a desire to alleviate these symptoms, or, for those who were in remission, wanting to avoid experiencing these symptoms again:

“If I would not have wanted to get better, maybe I would have let some appointments pass. But no, I was very constant with my [attendance], and whatever the date the doctor said, I would be there. Because I wanted to get out of there. It is not nice to be sad, or angry, or anxious, or with fear.” (Participant_6, female)

Participants perceived the services at the clinic will help them feel better. About a quarter of service users believed medication would help them to alleviate their symptoms, and about the same number perceived that both pharmacological and talk-based treatments would help them: *“I think it is necessary to have something to help as a distraction like exercise, dancing, or going out, the medication, and having someone to talk to, to unload.”* (Participant_6, female)

However, the extent to which service users understand depression and anxiety as a chronic or acute condition is unclear, with many participants speaking about “symptom control” and others expecting that the treatment provided at the clinics would *cure or heal* them:

“[I would like] to be healthy, [that treatment] takes away all that I feel. To be good in one moment, be happy, be cheerful, be fine, and not thinking every day that I am sick, and whether I will heal.” (Participant_25, female)

“I wanted to take the treatment so that my symptoms would be properly controlled.” (Participant_12, female)

Finally, service users seem to adhere to treatment, and attend mental health consultations as long as they feel they require them. Participants reported both adhering and not adhering to treatment based on their perceived need for it:

“I like the talks [with the MD], but I already feel good so I do not think it is important anymore.” (Participant_7, female)

“It is not easy because there are moments in which I felt I was coming out [of my depression], and then went back to the same thing. But yes, [...] it is possible to come out of depression. Sometimes you cannot do it on your own. It needs medication and family support. [...] These past months I have not been to the clinic because I have felt calmer, and I haven’t used more treatments.” (Participant_6, female)

5.4.3.2 Experiences with service providers and treatments and their influence on attendance

Positive and negative experiences with the services provided at the clinics, or the health providers seemed to influence the decision to attend or not attend mental health follow-up consultations. About half of participants explicitly reported having positive experiences, and these included either being treated in a positive way by providers, being satisfied with the treatments or services available at the clinics, and perceiving that treatment had a positive impact in their own mental health.

Service users perceived as positive and useful that providers were good listeners, gave agreeable advice, demonstrated understanding and empathy, and cared about them. These characteristics contributed to acceptability of service users to the services offered

at the clinics and influenced attendance: *“It is normal that we go to talk to the doctor about what happens to us. It is like she says, “that is what we are for, to care for you, to talk, to listen.” Thankfully, when I go to see the doctor to talk, she pays attention.”*

(Participant_4, female)

Related to this, a few participants also expressed that they attended mental health consultations because they were satisfied with the type of services available at the clinics. More than half of participants also reported perceiving that treatment had a positive impact in reducing their symptoms, and this was reported in relation to both physical and mental health symptoms:

“When I started taking [these pills] I started getting sleepy. [...] I told my husband that I was going to carry on taking [the pills] because for me it was important that they helped me sleep.” (Participant 10, female)

“[I see a positive impact] because I do not have those horrible thoughts I use to have. Not now, what I want is to move forward. Before I was really down and I only wanted to stay locked in, not go out, hurt myself. [...] I do not feel that anymore. Like the doctor says, she sees me running in the streets, I go out more, I have more fun, I take my son to play to the field. [...] I improved a lot since I started seeing the previous doctor.” (Participant_15, female)

However, about a quarter of participants reported having negative experiences with service providers. Negative experiences were mainly in relation to communication issues, e.g. limited explanations about diagnosis and treatment, and lack of empathy or trust from providers. These negative experiences were given as reasons for not attending mental health consultations at the clinic: *“This doctor has not offered me that trust. I have not talked to him. In comparison, the other doctors tried to talk to me in the park, would remind me when I had not gone to my appointments, or motivated me. They gave me that trust.”* (Participant_23, female)

A few participants reported doubts regarding the usefulness of pharmacological treatment, or expressed concerns about its long-term use. Both of these situations hindered acceptability to treatment and also engagement with services:

“I do not like [medication] very much because sometimes he gives me some pills that make me feel very hot, or take away my appetite and I do not sleep much.” (Participant_19, female)

“When the doctor told me to come I said I was not going to because I was not going to take treatment for a year. My husband tells me off, and people tell me that it is bad, that it damages the liver.” (Participant_7, female)

Finally, a few participants reported feeling that there were particular providers with whom they had developed positive relationships, shared difficult experiences and had conversation that they found helpful. Given that PHC providers change on a yearly basis, this presents a challenge to ongoing engagement with services: *“I did not want to answer the questions of this doctor [...] maybe because I do not trust this one, like I used to trust the one before. I had been coming with [the last doctor] for some time. I also did not want to remember [what happened] again, and say it again.”* (Participant_30, female)

5.4.3.3 Long waiting times and conflicting commitments as barriers to attendance

All participants reported having to wait for their consultations, even when they came to their appointments on time. Although waiting times vary, it is not uncommon to wait for several hours, and service users reported feeling impatient and frustrated due to this:

“Sometimes I come on the date of my consultation and see that there is a lot of people, and I feel very exasperated. [When I am waiting], I feel exasperated at times. Sometimes I go for a little stroll, or to see family that live nearby, and then I come back again. [I don’t want] to be sitting there all day.” (Participant_5, female)

For interviewed participants who reported having to travel long distances to attend the clinics, long waiting times were an added obstacle that led to frustration: *“[I would like to change] that we have to wait. [...] And it is worse when you come from far away.”* (Participant_29, female)

Conflicting commitments were also reported as barriers to attendance by participants. Examples of these included: house work, taking care of other family members, school meetings or other mandatory meetings scheduled as part of the conditional cash transfer programme all service users were part of: *“My grandfather is here, and there are times he wanted me to take him out, or another thing. [...] It is not that I don’t want to [attend follow-ups], but I can’t.”* (Participant_6, female)

Finally, a few participants also reported that they travel often, either to the bigger towns to see family, or to the plantations during the harvesting season. Therefore, they cannot attend the clinics regularly: *“Our coffee takes two or three months. Depending on how the coffee is, but yes sometimes two months. [...] We are [in the coffee plantation] every day.”*

We do not come over here, which is why I tell the doctor to give me treatments for all of those months.” (Participant_5, female)

5.4.3.4 Other barriers to attendance

A few participants mentioned that they did not attend consultations because they did not feel like going to the clinic, or leaving their homes. As reported previously, participants experiencing depressive symptoms have described not wanting to go out, or just wanting to stay locked in. It is unclear whether this is due to a lack of motivation or the presence of stigma, but it was reported as a barrier to attendance: *“I did not feel like going. I did not like going out. Until now... I don’t know. It seems that I feel embarrassed when I am about to go out. And [the doctors] would tell me, “we will wait for you at the clinic”. But, to be honest, I would not go.” (Participant_31, female)*

5.5 Discussion

The current study explored factors associated with non-attendance to mental health follow-up consultations in primary care clinics in rural Mexico. More than half of service users included in this study attended at least one follow-up consultation after receiving a mental health diagnosis. However, about half of these attended less than 50% of their scheduled appointments. Perceived need for care was the primary motivation for attendance when present, and also led to non-attendance when absent. Long distance to the clinics, type of treatment, long waiting times, conflicting commitments, and low motivation were identified as barriers to attendance, whereas, presence of a comorbidity and age were identified as facilitators. Experiences with providers or treatments were identified as both facilitators and barriers, depending on whether these were positive or negative.

The use of a mixed-methods design is an important strength of the current study, as this methodology enabled a more in-depth and holistic understanding of the characteristics and factors associated with attendance and thereby better informing strategies to improve compliance and maximise treatment effectiveness. However, that we used existing clinical data from medical records rather than collect our own data limited the information available to answer our specific research questions. For example, some factors identified in previous literature (e.g. socioeconomic status¹⁹³) as having an influence on attendance could not be taken into account due to a lack of routine data. Furthermore, the quality of the data available was variable, and there is a possibility that clinical notes do not reflect the entirety of the content of consultations. In this sense, if for any reason a health provider did not report prescribing pharmacological treatment

or delivering a talk-based intervention this would have an impact on our results, as we would have underestimated the number of service users who received each type of intervention. Finally, there are certain limitations with the data used to measure the distance from the patient's residence to the clinic. We calculated this by estimating the time of travel based on the community of residence, however there are other important factors that should be taken into account when assessing the impact of distance on attendance, for example the availability of transport (either public or private), self-reported time of travel and self-reported difficulties to travel to the clinics.

While the use of routine data may have hindered our ability to examine some important correlates to attendance, the use of qualitative methods enabled us to address and capture issues otherwise not possible from the quantitative data, and highlighted areas that can be investigated in future studies. Due to ethical and logistic constraints, we used different eligibility criteria for our quantitative and qualitative study samples. This led to a lack of representation of service users who did not attend any follow-ups in our qualitative data collection, and further studies are needed to better understand the experiences of this group of service users. Moreover, women were overrepresented in our study sample. Research to understand the experiences of other underserved population groups, such as men, is also necessary to improve the design and equity of services.

Distance to clinics was associated with not attending any follow-up consultations, but not with low proportion of attendance among those who visited the clinics more than once. Distance to the clinics has been linked to low attendance to services in HICs,^{196, 206} but more frequently in LMICs.^{104, 112, 117, 118, 203} It is likely that in settings with high levels of poverty and reduced transport infrastructure, reaching health services is more difficult due to low capacity to cover the cost of travel, lengthier travelling times and the economic impact of reduced time at work.^{104, 112, 117, 118, 203} Waiting times and difficulties to find time to attend clinics have also been associated with attendance in various settings and among different conditions.^{104, 196, 207} Often service users experience more than one practical challenge to access services, therefore people in need of services might not be able or willing to attend clinics unless they have a high perceived need for care. This may be of particular importance in poor and rural settings where health service infrastructure is scarcer, and challenges to access them are greater which contributes to inequity in health care access and outcomes.^{208, 209} Mild mental health symptoms and perceived need of care have been previously found to lead to poor and high attendance, respectively.^{193, 206, 210, 211} This study also found that service users'

decision to attend mental health consultations was associated with their perceived need for care. Having to visit the clinic for a comorbid physical condition may increase a service user's perceived need for care, and therefore the likelihood of attending mental health follow-ups. Strategies to reduce barriers to service user engagement, for example by strengthening community-based or outreach services, are necessary. In Nepal, for example, services delivered at the community by community counsellors were found to be more effective than primary care based services delivered by health workers.²¹² Previous research on attendance has also suggested that non-attenders who are affected by economic constraints might benefit more from social interventions, and that mental health interventions should be tailored to specific service user needs.¹⁹⁵

Receiving both talk-based and pharmacological treatments has previously been associated with higher attendance.²¹³ A study conducted with people diagnosed with Type I Bipolar Disorder, found that medication was perceived as useful to stabilize mood, and that service users expected it to help them be normal or get cured.²¹⁴ On the other hand, talk-based interventions seem to have an important role in making service users feel listened to and supported. Positive and empathic relationships with service providers have been reported to be associated with higher attendance.¹⁰⁴ In contrast, poor user-provider relationships have been found to be related to non-attendance among service users attending chronic disease and psychiatric services.^{196, 202, 215} Our findings also indicate that receiving both medication and talk-based support is associated with attendance.

Allocating treatment according to service users' preferences has been associated with increased treatment initiation, attendance and adherence.^{216, 217} The use of shared decision-making (i.e. the exchange of information related to a medical condition and treatment between a service user and a health provider to jointly select a treatment) could improve service user engagement, since it has shown to improve satisfaction with health services,²¹⁸ and has been promoted to increase service user autonomy, better understand service user needs, and improve the ways in which health care meets those needs.²¹⁹

Finding treatment helpful or not also has an important role in facilitating or hindering attendance.^{99, 104, 112, 206} The expectations that service users have of treatment might affect the extent to which this is found to be useful, and therefore attendance. Previous research related to mental health and other chronic conditions (i.e. HIV and diabetes), have pointed out that people who experience these conditions seek a cure or permanent

alleviation of their symptoms.²²⁰⁻²²² Service users' acceptability of long-term treatment for chronic conditions is a remaining challenge for the delivery of health services. The stigma associated with long-term reliance on pharmacological treatments,²²³ and other issues around these treatments such as side effects need to be considered in the delivery of mental health services.²²⁰ Shared decision-making and other psychosocial interventions can help address these challenges and better support service users.

5.6 Conclusions

We described correlates to attendance to mental health services delivered at primary care clinics in rural Mexico. Our findings indicate the distance to the clinics and other practical challenges such as long waiting times and conflicting commitments are important barriers to ongoing attendance. Delivering services at the community can increase service user engagement, especially in rural settings with high-levels of poverty where, due to gaps in the healthcare system, people have to travel to nearby PHC clinics, which is still a time-consuming and costly option. Additionally, providing certain services at the community can reduce clinic workloads, and potentially waiting times. Perceived need for care, being diagnosed and receiving treatment for a comorbid condition and receiving both pharmacological and talk-based treatment were in turn associated with higher attendance. The provision of psychoeducation is essential to help service users understand the nature of their condition and treatment needs. Moreover, shared decision-making can also enhance understanding between service users and health providers, and improve the extent to which the needs and preferences of service users are met.

Chapter 6. What enables and hinders implementation? A qualitative study of a mental health programme integrated into primary care clinics in rural Mexico

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6.1 Abstract

6.1.1 Background

The integration of mental health services into primary health care (PHC) platforms is considered a priority to increase access to mental health care in low- and middle-income countries (LMICs). Available evidence demonstrates that the delivery of mental health care by non-specialist health workers in PHC is feasible and effective. However, services at PHC remain unavailable in the majority of LMICs, which is partially due to the “translational gap”, i.e. the challenges in translating evidence-based interventions into routine practice. To overcome this gap, it is necessary to study the factors that determine successful implementation in a wide variety of contexts. The current study aimed to elicit the factors that hindered and facilitated the implementation of a mental health programme integrated in 10 PHC clinics located in a low-resource rural area of Chiapas, Mexico.

6.1.2 Methods

This qualitative study included semi-structured interviews with 24 health providers and managers, and 30 service users, 2 focus groups with 10 health providers and managers, and observations in 10 PHC clinics. Data collection took place between May 2017 and February 2018. We analysed the data through a framework analysis approach guided by the Consolidated Framework for Implementation Research (CFIR), and used NVivo 12 to aid data management and analysis.

6.1.3 Results

Key facilitators included the cultural adaptation and perceived advantage of interventions to deliver mental health care, the commitment of health providers, the availability of key resources, an organisational culture that promoted health care as a human right, and the presence of a strong programme leadership. Key barriers included the complexity of mental health interventions, low self-efficacy from health providers,

insufficient availability of mentorship from specialists, and the complex needs and expectations of service users.

6.1.4 Conclusions

This study provides insights into the factors which enable or hinder the implementation of mental health programmes in PHC settings located in low-resource contexts. Ongoing mentorship, a supporting organisational culture and an enabling implementation climate are key aspects to the delivery of high quality mental health services.

RESEARCH PAPER COVER SHEET

Please note that a cover sheet must be completed for each research paper included within a thesis.

SECTION A – Student Details

Student ID Number	375159	Title	Ms
First Name(s)	Georgina		
Surname/Family Name	Miguel Esponda		
Thesis Title	What enables and hinders implementation? A mixed-methods case study of a mental health programme implemented in primary care clinics in rural Mexico		
Primary Supervisor	Ritsuko Kakuma		

If the Research Paper has previously been published please complete Section B, if not please move to Section C.

SECTION B – Paper already published

Where was the work published?			
When was the work published?			
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SECTION C – Prepared for publication, but not yet published

Where is the work intended to be published?	Implementation Science
Please list the paper's authors in the intended authorship order:	Georgina Miguel Esponda, Fátima Rodríguez Cuevas, Hugp Flores Navarro, Alex Cohen, Ritsuko Kakuma

Stage of publication	Not yet submitted
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SECTION D – Multi-authored work

<p>For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)</p>	<p>For the qualitative study of the factors affecting implementation presented in Chapter 6, I was the lead researcher and I was responsible for the study design, data collection, data analysis, and the writing of the manuscript. Fátima Rodríguez advised on the study design and data collection, contributed to the data analysis and discussion, and provided comments earlier drafts of the manuscript. Hugo Flores contributed to the presentation of results, discussion, and provided comments on earlier drafts of this manuscript. Alex Cohen provided advice during the design of study and data collection, and also provided comments in earlier drafts of this manuscript. Ritsuko Kakuma provided extensive guidance in the process of data analysis and in the presentation of results, and also gave detailed comments and feedback on all drafts.</p>
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SECTION E

Student Signature	[REDACTED]
Date	10/04/2020

Supervisor Signature	[REDACTED]
Date	10/04/2020

6.2 Background

The integration of mental health services into primary health care (PHC) has been a priority for increasing access to mental health care in low- and middle-income countries (LMICs).⁷⁹ Available evidence demonstrates that non-specialist primary care providers can deliver services for mental health, including diagnosis, pharmacological treatment and talk-based interventions.¹⁸⁰ Moreover, mental health services at PHC have been shown to reduce symptom severity and increase recovery.¹⁹ Despite evidence supporting the feasibility and efficacy of this approach, examples of mental health services integrated into PHC in LMICs are uncommon.^{9, 62} Low availability of mental health services at PHC has been attributed to important resource challenges²⁰ as well as the “translational gap”, i.e. the difficulties in translating evidence-based interventions into routine practice.^{24, 224}

The field of implementation science emerged to provide an approach to the study of the barriers to and facilitators of the adoption and sustainability of evidence-based practices.^{26, 35} In a recent systematic review of the factors that affect implementation of mental health programmes in PHC in LMICs, we only found studies related to nine mental health programmes and none of these took place in Spanish speaking or Latin American countries.¹⁸² More research in a wide variety of settings is needed to support the integration of mental health programmes in PHC, given the important interplay between context and implementation.²²⁴

In Mexico, the integration of mental health services in PHC is promoted by national policies and programmes, but mental health care is only available in 30% of PHC clinics.⁵⁸ Estimates indicate that in Mexico, only 20% of those with a mood disorder and 10% of those with anxiety disorders have accessed any type of mental health treatment,⁵⁶ and less than 50% of those who accessed treatment received minimally adequate care,²²⁵ therefore the appropriate implementation of mental health programmes is urgently needed. The current study aimed to contribute to our understanding on how to better design and implement mental health programmes at PHC in Mexico by investigating the factors that enabled and hindered the implementation of a programme currently delivering mental health services at PHC clinics in a rural area of the country.

6.3 Methods

6.3.1 Setting

This study was conducted in Chiapas, Mexico where a mental health programme is being delivered since 2014 by a non-governmental organisation, *Compañeros En Salud (CES)*, in a collaboration with the local Ministry of Health (MoH).¹⁶⁶ The programme is delivered through 10 PHC clinics located in 10 rural communities with approximately 1,000-1,500 inhabitants each, the majority of whom live in extreme poverty (i.e. their annual income is less than 12,500 MXN pesos or ~650 US dollars).²²⁶ The main economic activity in this mountainous region is the production of coffee, which has been increasingly affected by climate change.²²⁷

These communities are approximately 4-5 hours from the nearest general hospital and 6-8 hours from the nearest psychiatric hospital and ambulatory mental health unit, both of which are administered by the MoH, and can only be accessed by largely unpaved roads.

6.3.2 CES and the mental health programme

CES supports the delivery of general health services. To this end, CES recruits, trains and supervises recently graduated medical doctors (MDs) to complete their compulsory one-year social service delivering all health services at the PHC clinics. The compulsory social service is a requirement to graduate from university in Mexico. The MoH uses this requirement to ensure clinics in rural and remote areas are staffed.²²⁸ Due to this form of recruitment, there is an annual turnover of MDs. CES also provides funding to ensure medication supply, locally adapted materials to support clinical decision-making, an electronic health information system, and support for making referrals to secondary and tertiary services.

Mental health services are delivered among general health services in the PHC clinics. The mental health programme coordinator oversees the delivery of mental health services and capacity building activities, and supports the management of complex cases. Capacity building activities include a monthly training delivered by the coordinator or visiting specialists, and supervision delivered by clinical supervisors, who are MDs with no specialist mental health training. Services are designed according to clinical guidelines adapted from the mhGAP,²⁵ and include case identification, pharmacological treatments, individual and group talk-based interventions, home visits and support with referrals to tertiary level services. The majority of service users

receive treatments for mood or anxiety disorders (~95%), however alcohol use and psychotic disorders are also targeted.¹⁶⁶

6.3.3 Study design

Between May 2017 and February 2018, we conducted a qualitative case study to investigate how different factors facilitated and hindered the implementation of the CES mental health programme. Previous research investigating the implementation of mental health services has used qualitative methods to understand the factors or processes that influence this,^{154, 155, 157, 160-162} as these methods are preferred to address “why” and “how” questions.^{153, 154}

6.3.4 Sample

We used a convenience sample of health providers, managers, and service users. During the study period, around 400 service users received mental health care, and five directors, six administration staff, five programme coordinators (three of whom were also clinical supervisors), eight clinical supervisors, 14 MDs, and 13 nurses were involved in the delivery of services. Table 6.1 contains the eligibility criteria for all participants. We did not exclude any health workers. However, we excluded service users with psychosis (due to the different services they require), those who suffered intimate partner violence (in order to protect the safety of participants and interviewers), and those unable to provide consent.

Table 6.1. Eligibility criteria for study participants

	Inclusion criteria	Exclusion criteria
Health providers and managers	<ol style="list-style-type: none"> 1. Involved in the mental health programme implementation 2. Available to participate in a face-to-face interview or focus group 	None
Service users	<ol style="list-style-type: none"> 1. 18 years of age or older 2. Diagnosed with a common mental disorder, e.g. a mood or anxiety disorder 3. Attended the clinic at least once between December 2016 and December 2017 to receive mental health care 	<ol style="list-style-type: none"> 1. Diagnosed with psychosis or having experienced psychotic symptoms 2. Known to have experienced domestic or partner violence 3. Unable to provide informed consent due to a lack of understanding of the study purposes or other impediment

4. Available for an interview at the
time of data collection

Recruitment took place in the main office of the organisation or in the PHC clinics where services are provided. For the focus groups, programme directors, clinical supervisors, MDs and programme coordinators were individually approached at the main office of the organisation, at which point the purposes and procedures of the study (i.e. one-hour focus group) were explained. All of the participants approached agreed to participate and provided informed consent, but some were not available to attend the focus groups. Two focus groups were conducted with those available, one with health providers (six MDs) and another one with health managers (two directors and two programme coordinators/clinical supervisors).

For individual interviews, clinical supervisors, MDs and nurses were recruited in the PHC clinics. The researcher visited the clinics and scheduled individual appointments with all available health workers. During this appointment the researcher explained the purposes and procedures of the study (i.e. two one-hour semi-structured interviews and one- or two-week observations in the clinic). All of the health workers approached agreed to participate and provided informed consent. Interviews took place immediately after the appointments or at an agreed time. Observations started immediately after consent was granted. Service users were recruited in the clinics by MDs who explained the purposes of the study, and introduced those interested in participating to a member of the research team. Researchers explained the study, including procedures (i.e. a one-hour semi-structured interview), and sought informed consent from those who agreed to participate. A total of 12 MDs, eight nurses, four clinical supervisors, and 30 service users participated in individual semi-structured interviews; observations took place in all 10 PHC clinics.

6.3.5 Data collection

Two experienced Spanish-speaking qualitative researchers collected all the qualitative data from two focus groups, 54 semi-structured interviews, and observations in 10 PHC clinics. Researchers maintained positive and professional relationships with all health workers, however they had a close interaction, in particular during observations, which allowed the development of trusting relationships. Service users, on the other hand, considered researchers to be MDs. Communities are remote and located outside the tourist area of the state, therefore people who are not from the communities tend to be

associated with the clinics, assumed to be MDs and seen as foreigners. Service users value the free and accessible services they receive in the clinics, therefore these perceptions of researchers could have influenced their responses during interviews.

6.3.5.1 Focus group discussions

Participants were grouped into two groups to ensure participants belonging to different hierarchies felt comfortable and free to express their opinions: 1) managers i.e. directors and programme coordinators; and 2) providers, namely MDs. The focus group discussion guide was based in the CFIR domains and constructs (appendix 3.7). Focus groups were used to explore relevant barriers to, and facilitators for, implementation with the aim to narrow down the focus of the subsequent semi-structured interviews. The elements explored included (1) identification of relevant barriers and facilitators in the execution of key programme activities, i.e. capacity building and service delivery, (2) rationale behind relevance, and (3) impact of these barriers or facilitators.

The focus groups were conducted in the main office of the organisation in a private space to protect the confidentiality of participants. Both focus groups were audio recorded and transcribed verbatim in Spanish by bilingual researchers. GME checked the quality and accuracy of the transcriptions.

6.3.5.2 Semi-structured interviews

Data related to implementation determinants of the CES mental health programme were collected through semi-structured interviews. The interview guide was based on the CFIR domains and constructs. Questions for the different participants varied depending on their roles in the programme. Questions for MDs explored their perceptions and experiences delivering services, as well as participating in capacity building activities (appendix 3.8). For clinical supervisors, questions explored: perceptions and experiences supporting the capacity building activities for MDs (appendix 3.9), nurses' their perceptions and experiences of the delivery of services (appendix 3.10), and service users' perceived needs, experiences with the clinics and providers, and perceptions of treatments received (appendix 3.11).

Data collection took place in the clinics or residences of participants, depending on their preferences and the availability of a private space in which to conduct the interviews. Seventeen participants (two health workers and 15 service users) out of 54 did not consent to have their interviews audio recorded; therefore, detailed notes were taken instead. Interviews of the remaining participants were audio recorded, and transcribed

verbatim by bilingual researchers. GME checked the quality and accuracy of the transcriptions

6.3.5.3 *Observations*

Data related to the general characteristics of the clinics and the communities was collected through observations and informal conversations with members of the communities. We used the case study methodology developed by Cohen and colleagues¹⁷⁴ (appendix 3.12) to guide observations. GME conducted observations for one to two weeks at each of the 10 clinics supported by CES.

6.3.6 *Data analysis*

Framework analysis was utilised to analyse collected data. We followed a process of (1) data familiarisation, (2) coding, (3) development of an analytical framework, (4) framework application and (5) interpretation.¹⁷⁵ We used the CFIR domains and constructs to develop the analytical framework, and created new codes and sub-codes for all content that did not fit in the framework. Emerging themes within each CFIR construct were identified. We conducted all analyses in Spanish, and two bilingual researchers familiar with the context translated relevant quotes to English at the reporting stage. A group of independent bilingual researchers further assessed the accuracy of these translations, and changes were made if necessary.

6.3.7 *Ethics*

This study received ethical approval from the London School of Hygiene & Tropical Medicine (11955/11955-1) and the Chiapas State Ministry of Health (5033/1800).

6.4 *Results*

Facilitators and barriers to the mental health programme implementation were identified in relation to the characteristics of: (1) the individuals involved in the delivery of mental health services at the PHC clinics, (2) the mental health services offered at the clinics, (3) the organisation managing the programme delivery (inner setting), (4) the wider health system, communities and service users (outer setting), and (5) the process in which the programme was developed and implemented. An overview can be found in table 6.2, and key findings are presented below.

6.4.1 *Individual characteristics*

6.4.1.1 *Knowledge and beliefs about the intervention*

All health workers identified the minimal amount of mental health training they received during their professional education as a barrier. Some participants also reported that the

training they received was of bad quality, as it often focused on theory, and did not include any practical aspects of treatment delivery. Providers reported that among all the health complaints for which service users seek treatment, mental health is the area in which they lack the most knowledge:

“The mental health area is one of my main weaknesses in medicine. We are taught, from the beginning, that a patient is not only the biological aspect, a patient is also a person with a social sphere, with a mental sphere, [...] it is not just a body with an illness. The problem is that there is no balance on what we are taught from each sphere.” (Com7_X, MD, male)

The motivation of health providers to deliver mental health care was identified as a facilitator. MDs and nurses indicated that training and supervision in mental health were necessary given that many service users need mental health care, and they would like to be able to help them: *“There are patients that tell me, “Oh, I feel this way, but I do not know what it is”, or they tell me their stories, and I sometimes do not know what to answer. That is why I would like [to receive training].”* (Com1_W1, nurse, female)

6.4.1.2 Self-efficacy

All MDs reported barriers related to their self-efficacy (i.e. belief in their own capacity to deliver mental health services). As mentioned above, MDs feel they have not received sufficient training to deliver mental health care, but the complexity of mental disorders, lack of biological markers, and their lack of experience in the area also contribute to low self-efficacy:

“[Mental health care] is more abstract than an illness that is just physical, where you know that you have to do a clinical interrogation, physical examination, analysis, diagnosis and treatment. It is a lot more complex, so I do not feel trained enough to handle it in a way that I find satisfactory or that I feel I am helping somehow.”
(Com1_X, MD, female)

A few MDs struggle with the level of responsibility they are given at the clinics, as they spend their first year as fully trained MDs on their own in the clinics. They perceive they are in charge of treating populations that are at greater risk of poor health outcomes due to the socioeconomic conditions in which they live: *“You face a responsibility so big, that you never had before in your life, and it is difficult. Most of all because it is someone’s life, and a vulnerable life, and you want to do the least harm in all ways.”* (Com4_X, MD, female)

A few MDs and clinical supervisors also expressed difficulties in dealing with health problems caused by social problems that were out of their control, such as poverty and abusive family relationships. These social problems are referred to as “the enormity” given that they are extremely complex, damaging, and are embedded in the social and economic structures that underlie the lives of service users.

However, providers perceived that their skills to provide mental health care improved through capacity building, which increased self-efficacy and facilitated implementation. Most importantly, CES is perceived as a community of people that provide the emotional support necessary to cope with the difficult aspects of the work at the PHC clinics, as well as manage the frustration caused by this:

“The problem with the patients is that the situations that drive them to have certain mental health problems have to do with the violence they suffer, or with life situations over which we have no type of control, or destructive relationships that are going to last because they have no possibility of getting out of them. [...] So the first step was to accept that, which helped me do my work, and the CES structure helped me to get over the frustration that it caused.” (Sup1, clinical supervisor, female)

6.4.1.3 Individual stage of change

Two facilitating factors were reported to influence the process by which MDs come to engage with the delivery of mental health services: adaptability to the context and acceptance of their own fallibility.

The process of contextual adaptation was identified as a facilitator given that becoming familiarised with members of the communities as well as with local social norms helped MDs deliver better care by improving their communication and understanding of service users: *“To know the context of the person with whom you are talking helps a lot to understand the patient, and the characteristics of the patient.”* (Com1_X, MD, female)

MDs and clinical supervisors also reported that an important facilitator was the acceptance of their own fallibility, i.e. the acceptance of their knowledge and skill gaps and a willingness to fill these gaps through the engagement in capacity building activities, and practicing new things: *“Most of all what helps is to practice because even if you read a lot if you don’t apply it, you will not really face the challenges.”* (Com3_X, MD, female)

6.4.1.4 Individual identification with the organisation

CES delivers services based on the central value that quality health care is a human right. Many participants expressed beliefs aligned with this central value, which seems to be an important contributor to the commitment of service providers to the work in the clinics:

“Something about the organisation is that everyone has a right to health, and to improve the health of communities and patients. As a nurse or medical doctor, the essential thing is that we are in charge of improving health. We have the same objective: the organisation, the [MDs] and nurses.” (Com5_W, nurse, male)

Health workers also spoke about the importance of providing “humane consultations”, especially for mental health service users. In this, service user needs are assessed within the wider contexts and socioeconomic conditions in which they live, service users are actively listened to and genuinely supported: *“When you are immersed in this type of environment, it makes you deliver a humane consultation because we are not going to solve their problems, but you can listen calmly.”* (Com10_X2, MD, male)

6.4.1.5 Other personal attributes

Empathy and active listening were highlighted as facilitators by health workers, as they perceived many times service users were mostly looking to be listened to. Many service users reported feeling that MDs cared about their health and were willing to help them, which facilitated their engagement with services: *“The doctor gave me information, talked to me and I felt I could trust him. He told me to try the treatments and that whenever I wanted to go, he would be there. Whenever I come, I have to wait but he gives me the consultation.”* (Participant_5, service user, female)

6.4.2 Intervention characteristics

6.4.2.1 Intervention source

Guidelines for clinical decision-making and materials to support the delivery of talk-based interventions were adapted from evidence-based interventions by people with experience delivering services at CES supported clinics. This was a facilitator since it influenced health workers’ perceptions of the extent to which the intervention was designed to fit their workflow, clinical context, and the clinical and sociocultural characteristics of service users.

6.4.2.2 *Adaptability*

MDs and clinical supervisors considered the adaptability of intervention materials to their knowledge, skills, and working conditions to be a facilitator. A few health providers indicated that they were trained to use a range of talk-based interventions, which was useful to choose the ones that fit their practice and personalities, as well as different service user needs.

MDs and clinical supervisors recognised that interventions are meant to be adapted to the sociocultural characteristics of service users, however, a few of them expressed doubts regarding the extent to which certain programme components are appropriate for the target population. For example, many MDs reported that the PHQ-9 scale and talk-based interventions that required analytical skills were difficult to use with some service users, especially elderly people and those with limited education. A few providers also expressed concerns about the helpfulness of some interventions (e.g. yoga and relaxation exercises) which felt foreign to communities' daily practices.

6.4.2.3 *Relative advantage*

MDs and clinical supervisors reported that guidelines and materials for the delivery of mental health interventions facilitated implementation since they provided guidance on how to communicate with service users, offered detailed and specific direction on how to deliver talk-based interventions and initiate pharmacological treatment, and provided a structure to organise mental health consultations.

Health providers also reported that they perceived mental health services were useful to some service users, given that they engaged with talk-based interventions and positively changed behaviours. Service users also reported making use of the MDs advice and finding mental health services helpful, as they could perceive clear changes in their levels of functionality and mood: *"I had a lot of problems and I felt bad, sad and about to commit suicide, but the doctor helped me a lot and all the negative thoughts have disappeared."* (Participant_2, service user, female)

However, health providers felt that there were limited alternatives for service users that did not benefit from standard interventions: *"I have seen in patients that do not respond to treatment, and with them it is difficult. I can see that what I am doing is not very effective, and it becomes harder with every consultation because you wonder what else you can offer to that person."* (Com3_X, MD, female)

Finally, the long-term establishment of mental health services has helped to increase awareness about mental conditions:

“Many times I hear in the street about people that [...] that are ill due to their nerves or mind. The clinic has become a real option for these kind of things, and I think that the way in which they talk about it now is because of all what they have been told about depression in the past, and now they identify it and look for help.”

(Com1_X, MD, female)

6.4.2.4 *Design quality and packaging*

MDs and clinical supervisors reported that the design of materials facilitated implementation, including the use of colours, the printed format, the use of simple language and brief explanations, and the provision of clear instructions for their use.

6.4.2.5 *Trialability*

A few service providers reported some barriers to testing materials. MDs tended to use materials they knew and with which they felt comfortable. When MDs used materials with which they were not familiar, they perceived this disrupted their conversations with service users:

“When I wanted to use the [materials] I would ask the patient to wait while I went to the pharmacy to familiarise myself with them. I felt that the rhythm of the consultation broke in that process, and sometimes it was harder to go back to where we were. So I think they are useful but we have to know them better beforehand.” (Com3_X, MD, female)

6.4.2.6 *Complexity*

The complexity of treating mental disorders was a main barrier to the programme implementation. Algorithms available to aid clinical decision-making use the scores of scales (i.e. PHQ-9 or GAD-7). However, providers indicate that it is necessary for them to use their experience and clinical judgement, as sometimes their clinical observations and the scale’s score do not seem to correlate. Furthermore, providers report they have to explore psychological symptoms and social factors, in addition to physical symptoms, which requires a lengthy dialogue with service users. Therefore, clinical decision-making for anxiety and depression is seen as a process that requires multiple steps, is time-consuming and subjective.

MDs also report challenges in the management of medication, given that the guidance they receive on the adjustment or termination of pharmacological treatment is too

general. Providers and managers recognise that this guidance is difficult to formulate in an algorithm due to considerations pertaining to individual cases:

“There is clarity and consensus regarding what are the extremes, what people do and do not need medication, but there is a grey area in the middle. There is a grey area in all diseases, hypertension and diabetes, but for mental health this grey area is enormous. There is a big space between the extremes where there is a lot less consensus, and management depends a lot more on the clinician.” (Sup6, director, male)

Delivering talk-based interventions is also complex because providers need mastery of communication skills to prompt service users to reflect on their symptoms or problems, establish a trusting relationship so that service users share these reflections, and direct users through interventions. MDs mention that experience is necessary to adequately adapt interventions to service user needs: *“I find very difficult to apply [talk-based interventions]. For example, there is an exercise of transforming thoughts from negative to positive, and I find difficult to dig into the problem and get the patient to share his thoughts with me, so that then I can transform it to another thought.”* (Com8_X, MD, female)

6.4.3 Inner setting

6.4.3.1 Structural characteristics

We identified barriers and facilitators in relation to the different cadres of health providers (i.e. MDs, nurses and CHWs) that form part of the organisational structure. Regarding MDs, programme managers highlighted that the regular recruitment of MDs is a central part of the CES model. Before CES started supporting these clinics, the majority of clinics were only staffed with nurses, and some were often closed due to a lack of staff. CES created partnerships with different universities to recruit MDs to complete their compulsory social service in their supported clinics, which has ensured the constant staffing of clinics.

However, the resulting rotation of personnel has been reported as a barrier by CES’s managers as it results in a constant loss of qualified and experienced providers: *“The medical doctors leave, everyone leaves, therefore all the time we have a constant loss of capacity.”* (Sup5, director, male) The development of trusting relationships between service providers and users is a key element to mental health care delivery, and the yearly rotation also means that these relationships have to be constantly rebuilt. This takes time and exacts an emotional toll on both providers and service users.

As the sole providers in the clinics, MDs also perceive that they are expected to acquire a great deal of new knowledge in a small amount of time, manage a large patient load, and cope with the social suffering and mental health complaints of service users on their own. All of these experiences are reported to be physically exhausting and affect their wellbeing, which has an impact in the delivery of services, especially for mental health:

“Your mood at the time of providing services also affects the mental health of patients. I have definitely seen that I am less patient with patients because I become exhausted of little things, and it affects the services I provide.” (Com5_X, MD, male)

Nurses are not recruited or officially supported by CES, although good relationships are maintained with the majority of them. Certain clinics have nurses with permanent contracts that have been working at the clinics for many years and have also become important members of the communities. These nurses were perceived to facilitate implementation given the historical and local knowledge they hold and share with the organisation’s newcomers. Other clinics have nurses with temporary contracts. In this case nurses were also reported to form close relationships with community members and facilitate work at the clinics, although they required more training and support. Moreover, their presence in the clinics was less stable.

The lack of consistency of the presence of nurses at the clinics has prevented the mental health programme to officially allocate roles to them. However, during interviews nurses reported to have an interest in being involved in capacity building and service delivery activities as part of the mental health programme: *“I would like to learn about the different disorders, including their diagnosis and treatment. [...] If I was trained, I could help with their treatment and organising other activities with [mental health service users]. [...] It would help me to give better care to patients and their families.”* (Com1_W2, nurse, female)

Nurses also mentioned that an important barrier is the amount of paperwork that needs to be completed for the MoH on a monthly basis. Even though most expressed they would be able to allocate time to the mental health programme, a few nurses expressed concerns about being responsible for new tasks.

Finally, MD and programme managers reported that a facilitator to implementation is the availability of trained CHWs to deliver accompaniment to service users with chronic conditions. Identified strengths of CHWs included the fact that they are members of the

communities, that they have more time to deliver talk-based interventions, and that they are well positioned to perform early identification of people at risk as well as to increase awareness. However, MDs and managers also reported that some CHWs needed more training and supervision to improve the quality of the support they provide to mental health service users.

6.4.3.2 *Networks and communication*

An important barrier was the lack of institutional communication systems. Communication between members is driven by personal relationships, rather than by a formal mandate. The establishment of institutional communication systems was considered to be challenging given logistical constraints, such as poor internet connectivity and the constant travelling of members. However, strong and supportive relationships between members of CES were helpful for coping with work challenges.

A facilitator was the presence of a mental health information system, as participants reported it eased case management. However, the use of this system was time consuming, which led to delays in the information exchange or poor information quality.

6.4.3.3 *Culture*

The central mission and values promoted by CES were identified as a strong facilitator for the programme implementation. In line with its rights-based approach, CES aims to bring services for vulnerable and marginalised groups, i.e. people in need of health care that due to health system failures cannot access services. People with mental illnesses are considered a particularly excluded group, and members have a sense of responsibility to provide health care for them:

“There are many primary care clinics in Mexico that do not provide health care to patients with depression, anxiety, bipolar, chronic psychosis. In our clinics, and in the CES culture we see it as the same as diabetes, hypertension. [...] The culture of the organisation is also about looking for the most forgotten and marginalised, and [people with mental illnesses] are really marginalised.” (Sup6, director, male)

6.4.3.4 *Implementation climate*

The presence of a positive and active learning environment facilitated implementation, according to health providers and managers. The relationships between trainers and trainees tends to be horizontal, and there is an implicit belief that everyone holds a different type of knowledge and that therefore it is always possible to learn from each

other. Participating health providers reported feeling comfortable asking for help, and expressed positive perceptions regarding the knowledge-sharing environment:

“All supervisors have been really good, and all of them have always made us feel comfortable asking for help. Many of them have also asked me things, and I have learnt a lot from them. It has always been very nice because I have never felt embarrassed or anything about asking.” (Com10_W, nurse, female)

Regarding the prioritization of the mental health programme in the organisation, health providers and managers felt that a facilitator is that the programme has received strong institutional support from CES. MDs and managers acknowledged that CES allocates significantly more resources to mental health compared to the MoH, however, providers also felt that despite the importance of mental health for the organisation, resources allocated to the programme were not sufficient. Specific examples included insufficient staff working on the programme, limited presence of specialist health providers to provide mentorship, and underrepresentation in trainings given the providers' knowledge level.

6.4.3.5 Readiness for implementation

Three different aspects related to the readiness for implementation were discussed including, access to information and knowledge, available resources, and leadership. In terms of access to information and knowledge, health providers and managers reported that a facilitator is the availability of printed aids to support clinical decision-making and delivery of talk-based interventions. At the time of the study, algorithms were only available for depression, anxiety, epilepsy and psychosis. A barrier was the limited helpfulness of clinical algorithms when prescribing treatment for service users with complex symptomatology, or with other mental disorders.

Regarding the availability of resources, CES funds the purchase of medications, orders medications from the relevant suppliers, and delivers them to the clinics. Providers highlighted this greatly differentiates CES supported clinics from other MoH clinics, and reported that it enabled the treatment of people with mental illnesses:

“Now we have a backup, including medications to support patients. Before we could detect [mental illnesses], but we did not have medication or anything to do with the patient. That is why the CES programme gives good results. The MoH programme is still in place, but there are no resources. Well, only to detect but after that there is nothing else.” (Com6_W, nurse, male)

Another strong facilitator to the delivery of services was the presence of training and supervision, which were considered essential to increase the knowledge and skills of health providers to treat mental illnesses. Supervision was highlighted as a better strategy to learn given that MDs are able to receive support and feedback related to real-life situations encountered at the clinics, and it is a source of emotional support, which is important due to the workload and context challenges to which MDs are constantly exposed. However, many clinical supervisors and MDs perceived that the mental health knowledge of supervisors was not sufficient, and that the quality of supervision was affected by whether supervisors had a personal interest in mental health:

“As a supervisor, if you don’t like mental health, instead of facilitating or helping you might not give [mental health] that much importance and it may be that you do not help or encourage the [MD] to use the existing tools.” (Sup7, clinical supervisor, female)

Health providers and managers highlighted that more training and supervision from psychologists, psychiatrists or the mental health coordinator are needed, especially on the management of medication and delivery of talk-based interventions.

Another key barrier was the numerous tasks that have to be managed at the PHC clinics. MDs are in charge of delivering health services, managing CES and MoH programmes in the community, managing the relationship between CES and the communities, maintaining the clinic, completing the MoH and CES paperwork, and participating in capacity building activities. There was a general sense that there was not enough time to complete all tasks to the desired level of quality, which led to frustration from health providers but also resulted in certain mental health programme activities not being completed, or not being given the time and attention required (e.g. searching for service users who do not attend follow-ups). Finally, time was also reported to be insufficient given the multiple activities that were required during mental health consultations.

The mental health programme leadership was considered a facilitator given that all members of the mental health team were strongly committed to the programme implementation, which was reflected in their availability and willingness to support health providers however needed and the constant efforts they made to improve the programme design, materials, and interventions.

A frequently reported barrier regarding the programme leadership was the insufficient amount of staff. Providers and managers perceived that even though the programme has strong leadership, the number of clinics and the need for support was too large to be managed by the relatively small team:

“There is a need for more staff because [...] I have a lot of mental health patients, but there are only like 2 or 3 persons in the programme [team]. [...] I need someone from the team to come to train and support me every two months, but the coordinator will only come once or twice in the whole year because she can’t come any more times because she has no capacity.” (Com5_X2, MD, male)

6.4.4 Outer setting

6.4.4.1 Cosmopolitanism

The lack of psychiatric or psychological services to which to refer service users was identified as a barrier related to cosmopolitanism, i.e. the degree to which CES works or collaborates with external organisations. Health providers and managers reported that the only specialist services available in the state are very difficult to access as they are located many hours’ travel from the communities, and are insufficiently staffed and resourced. A nurse explains his experience managing mental disorders before CES started to support the clinic:

“Mental health is included in the basic package of services, but we do not have links to refer patients, to provide follow-ups. We had a patient that had been ill for many years, and we had taken him to the psychiatric hospital, but he had received no follow-ups. He would receive one consultation, then they would send him back, and we could not find a way in which the patient could receive an actual benefit.” (Com6_W, nurse, male)

6.4.4.2 External policies and disincentives

We identified a few barriers related to health system policies and disincentives through interviews and observations. As previously mentioned, before CES started supporting the PHC clinics included in this study, MDs were not available at any of them. In one of the clinics, an MD was supposedly contracted, but no one was posted to the clinic. This issue was identified as ghost contracting by members of the organisation. Nursing staff also reported that permanent contracts were rarely available, therefore they were forced into taking temporary contracts (i.e. of five months or less) in different facilities. Both of these practices result in personnel rotation, which is an important barrier to the delivery of services more generally.

Another barrier reported by health providers is that according to regulations, only PHC facilities with a psychologist can provide mental health services. Despite state authorities promoting the delivery of mental health services at the PHC level by non-

specialist health workers, limited communication between different units of governance and lack of changes in regulations are barriers to implementation.

6.4.4.3 *Service user needs and resources*

Health providers identified that service user understandings of mental illnesses and expectations of treatment were a barrier to the delivery of mental health services. According to MDs, service users understand mental illnesses based on their physical symptoms, and seek services at the clinics expecting to obtain medication that will eliminate these physical symptoms immediately. Expectations seem to result from the understanding and experience of mental illnesses as physical or somatic illnesses. Providers report difficulties helping users accept that mental disorders have a mental and emotional component that many times cannot be fixed with medication. The extent to which service users' expectations are met has an impact on the level of trust for the clinic services and treatment adherence:

“[Service users] have to understand that medication is not magical, and that will not get rid of [the illness] in one day. I explain to them that fluoxetine needs to be taken for a month before they see any changes, and they take it for a week and come back complaining they feel the same. This influences adherence. It is difficult to make them understand that treatment includes the medication and the [talk-based interventions], that they also need to work on it at home, that their exhaustion and foot pain is due to their depression, and that they are not illnesses in themselves... or for example, a patient that had chest pain and that felt it was a heart illness, but in reality was going through a panic attack. Helping them understand their illness is difficult.” (Com2_X, MD, female)

According to health providers, there are other common beliefs about medications that affect adherence, including service users' belief that taking pharmacological treatment for an extended time will cause side effects. Service users also sometimes reported experiencing negative physical symptoms, which they attributed to medication (e.g. sleepiness or stomach pains).

The management of social risk factors was another barrier reported by service providers. They perceived that poverty is a clear issue that determines the health status of the members of communities. Women are a particularly vulnerable group due to sexist cultural norms. Providers report women are often subjected to physical, emotional and sexual violence. Being hit, humiliated, cheated on and not allowed to use birth control are experiences commonly reported by women, according to health

providers. Depression, anxiety, and alcohol use disorders were identified as resulting from the social and economic issues that dominate the lives of service users:

“[...] sexism, violence, and obviously the economic situation. I think all are risk factors to the suffering [of mental disorders]. Like, the stress that there is no food, and that they have to take care of many children, that they do not receive support. Sometimes the husband drinks because he is depressed as well. [...] It is very difficult.” (Com1_X, MD, female)

6.4.5 Process of implementation

6.4.5.1 Planning

The mental health programme was introduced after the implementation of system strengthening strategies by CES, which was a facilitating factor. Specifically, there were mechanisms and funds in place to ensure the availability of health providers, provide capacity building, supply medications, and enable to referrals to specialist services. The organisation had developed these strategies to provide general health services, mainly to provide care to people with chronic conditions and during pregnancy. However, health providers at the clinics identified that mental illnesses were highly prevalent in the clinics, and this led to the introduction of the mental health programme. The mental health programme was created due to the perceived needs of health providers, and its activities were shaped by the needs of providers, both of which also seem to have facilitated its implementation.

Barriers in the planning process were related to its organic development. Given that the planning was not done with a systematic approach, strategies and activities were developed as needs were identified, which resulted in a programme that has no specifically defined objectives. Furthermore, service user needs were not directly investigated, but only considered from the providers perspectives. Other related issues are the lack of standardisation of the training and supervision health providers receive, as well as communication and evaluation mechanisms.

6.4.5.2 Engaging

A key facilitator to the implementation of all CES programmes is the strong engagement of community leaders in the work of the organisation. Before CES began supporting the clinics, members of the organisation participated in meetings to reach agreements regarding the role of CES and the support that was expected from the community. This previous contact coupled with ongoing engagement with community authorities has been key for the organisation to work effectively in these clinics. However, for the

mental health programme, the involvement of service users in the planning and evaluation of the programme has been very limited since its onset. Recently, research projects have investigated service user needs, but their participation in the development of interventions or materials has been lacking. A few health providers reported this to be a limitation, given that cultural and social understanding of mental illnesses, treatment and cure are significantly different to theirs, therefore there is a perception that available treatments would be more appropriate if co-designed with members of the communities.

6.4.5.3 Evaluating

A strong facilitator in the evaluation of the programme activities was the responsiveness to emerging needs. Both the mental health team and other members of the organisation are open to feedback and change, when this is for the improvement of the programme: *“I think a facilitator is the capacity of change of the organisation. I think the majority of people that work here are good listening to feedback. So if you tell them something is not working they will listen and try to change or improve.”* (Sup3, clinical supervisor, female)

However, while there were mechanisms in place to monitor the clinical progress of service users, mechanisms to track the progress and results of implementation processes (i.e. capacity building activities or use of printed materials) were lacking.

Table 6.2. Barriers and facilitators to the implementation of the CES mental health programme

	Barriers	Facilitators
Individual characteristics		
Knowledge and beliefs about the intervention	<ul style="list-style-type: none"> · Limited training related to mental health care in providers' professional education 	<ul style="list-style-type: none"> · Providers' perceived importance of the delivery of mental health services
Self-efficacy	<ul style="list-style-type: none"> · Providers' limited knowledge on the delivery of talk-based interventions · Providers' perception that services delivered do not help service users · Providers' difficulties dealing with the responsibility of being the only care provider available in a large catchment area · Providers' challenges continuously confronting social suffering 	<ul style="list-style-type: none"> · Presence of capacity building mechanisms · Presence of emotional support among members of the CES community
Individual stage of change	<ul style="list-style-type: none"> · None 	<ul style="list-style-type: none"> · Providers' process of contextual adaptation · Providers' acceptance of own weaknesses and fallibility
Individual identification with the organisation	<ul style="list-style-type: none"> · None 	<ul style="list-style-type: none"> · Providers' belief that health care is a human right · Providers' perceived importance of providing humane consultations
Other personal attributes	<ul style="list-style-type: none"> · None 	<ul style="list-style-type: none"> · Hand-picked MDs to deliver mental health services · Providers' motivation to receive training and deliver services · Empathy
Intervention characteristics		
Intervention source	<ul style="list-style-type: none"> · None 	<ul style="list-style-type: none"> · Intervention adapted by people with experience working in CES communities
Adaptability	<ul style="list-style-type: none"> · Limitations in the adaptability of the intervention to service user characteristics, preferences, context 	<ul style="list-style-type: none"> · Availability of talk-based interventions that are adaptable to health providers preferences and clinical practice
Relative advantage	<ul style="list-style-type: none"> · Providers' perception that programme provides limited alternatives when a service user does not show improved clinical outcomes 	<ul style="list-style-type: none"> · Printed materials facilitate communication with service users, deliver mental health services and structure consultations

		<ul style="list-style-type: none"> · Uptake of recommendations by service users, and improved clinical outcomes · Increased mental health awareness in the communities
Design quality and packaging	<ul style="list-style-type: none"> · None 	<ul style="list-style-type: none"> · Colour printed materials · Use of concise and simple language in programme materials · Clear and detailed instructions in programme materials
Trialability	<ul style="list-style-type: none"> · Challenges to deliver talk-based interventions using printed materials due to the lack of familiarity with these, and complexity of intervention 	<ul style="list-style-type: none"> · None
Complexity	<ul style="list-style-type: none"> · Complex clinical decision making required for diagnosis · Treatment allocation different on a case-by-case basis · Need for dialogue and analysis to deliver talk-based interventions 	<ul style="list-style-type: none"> · None
Inner Setting		
Structural characteristics	<ul style="list-style-type: none"> · Yearly rotation of MDs: affected relationships with providers, learning pace and clinic workload · Irregular recruitment of nurses in a some clinics paired with very limited involvement in mental health programme · Nurses overloaded with administrative work from the MoH · Insufficient mental health related training and supervision available to CHWs · Lack of cadre that specializes in the delivery of talk-based interventions, and specialists to provide mentorship 	<ul style="list-style-type: none"> · Regular recruitment of MDs · Nurses well positioned to perform early identification and provide short mental health interventions due to proximal and long relationships with community members · Nurses interested in being involved in mental health capacity building and service delivery · Availability of community-based interventions (accompaniment and awareness) delivered by CHWs
Networks and communication	<ul style="list-style-type: none"> · Lack of formal communication structures or systems between members · Limited communication infrastructure · Lack of institutional support networks · Time consuming information system 	<ul style="list-style-type: none"> · Presence of an informal but highly supportive and cohesive community between members · Information system aids communication with mental health team
Culture	<ul style="list-style-type: none"> · None 	<ul style="list-style-type: none"> · Members identification with the mission of CES

Implementation climate	Learning climate	<ul style="list-style-type: none"> · None 	<ul style="list-style-type: none"> · Presence of an environment in which members constantly share knowledge and acquire new knowledge and skills · Members feel comfortable asking for help
	Relative priority	<ul style="list-style-type: none"> · Perception that there is political but not resource commitment from the organisation 	<ul style="list-style-type: none"> · Presence of institutional support for mental health to be considered a priority
Readiness for implementation	Access to information and knowledge	<ul style="list-style-type: none"> · Many materials were only available online and, due to limited internet access, this was not useful to providers · Clinical algorithms remained under review by the clinical director for many months · Clinical algorithms are only available for the most common mental illnesses 	<ul style="list-style-type: none"> · Availability of printed materials for clinical decision making and the delivery of talk-based interventions
	Available resources	<ul style="list-style-type: none"> · Limited range of medications · Insufficient supply in clinics with high demand · Medication supply sometimes affected by a lack of medication availability at the state or country level · Limited mental health training of clinical supervisors · Numerous tasks and limited time in consultations and for clinic management 	<ul style="list-style-type: none"> · CES purchases and delivers all medication necessary to treat mental disorders to the clinics · Availability of ongoing training and supervision
	Leadership	<ul style="list-style-type: none"> · Insufficient human resources to carry on all necessary work 	<ul style="list-style-type: none"> · Members of the mental health team are committed to the programme improvement, and are strong advocates of the importance of its implementation · Active involvement in implementation (i.e. constantly available to support providers, and aware and responsive towards emerging needs)
Outer setting			
Cosmopolitanism		<ul style="list-style-type: none"> · Limited availability of specialist mental health services to refer service users 	<ul style="list-style-type: none"> · None
External policies and disincentives		<ul style="list-style-type: none"> · Short term contracts for PHC providers · Ghost contracts · Regulations about the provision of services for people diagnosed with a mental disorder 	<ul style="list-style-type: none"> · None
Service user needs and resources		<ul style="list-style-type: none"> · Service users' expectations of treatment · Service users' beliefs related to side effects 	<ul style="list-style-type: none"> · Service users' acceptability to services and trust in CES and health providers

	<ul style="list-style-type: none"> · Stigma to mental health conditions in communities · Social risk factors in the communities including poverty, gender-based violence and low levels of education 	
Process of implementation		
Planning	<ul style="list-style-type: none"> · Programme milestones not clearly set from the start · Perceived needs of services users not included during programme planning · Limited standardization of training and supervision 	<ul style="list-style-type: none"> · Mental health programme introduced after system strengthening strategies were in place · Mental health programme introduced due to perceived needs by health providers · Programme tailored to the needs of health providers and sociodemographic characteristics of service users
Engaging	<ul style="list-style-type: none"> · Limited involvement of service users in the development and evaluation of the programme 	<ul style="list-style-type: none"> · Strong buy-in from community members in place prior to CES official arrival to the clinics
Evaluating	<ul style="list-style-type: none"> · Lack of mechanisms to monitor implementation processes · Resource intensive evaluations that place a burden on the mental health team 	<ul style="list-style-type: none"> · Openness to feedback and responsiveness to emerging needs · Presence of a clinical monitoring system · Evaluation of programme activities by external collaborators

6.5 Discussion

The current qualitative study contributes to the scarce evidence on the implementation of mental health programmes integrated in primary care in LMICs. We identified facilitators and barriers to the implementation of the CES mental health programme, which is delivered in a rural and low-resource area of Chiapas, Mexico. We identified six key facilitators within the intervention, individuals and inner setting domains, including the cultural adaptation and perceived advantage of interventions to deliver mental health care, the commitment and motivation of health providers, the availability of key resources, an enabling organisational culture, and the presence of a strongly committed programme leadership. We also identified four key barriers within the intervention, individuals and outer setting domains, including the complexity of treatments for mental health, low self-efficacy from health providers, insufficient availability of mentorship from specialists, and the complex needs and expectations of service users.

The current study has several strengths. First, it was theory driven from its design to its analysis. Second, it considered the perspectives of key stakeholders, including service providers, managers and service users. Third, it used different sources of qualitative data, and finally it was conducted through a collaboration between researchers and implementers. However, there are limitations including the lack of involvement of service users in its execution, e.g. in the selection of research questions or data collection. Further, despite researchers' efforts to ameliorate the impact of power dynamics between researchers and service users, these could have influenced the data collection. Finally, we used a convenience sample given that data collection had to be conducted over a two-week period in each of the communities. The limited communication infrastructure did not allow us to conduct any recruitment activities remotely, therefore we had to visit communities for recruitment and data collection. We aimed to interview all health providers, managers and service users who were eligible and available at the time when data collection was conducted. Despite time constraints, we included 56% of the programme personnel and at least two service users from each community. However, this sampling method could have introduced some bias, for example, underrepresenting health providers and managers who were less motivated or interested in participating in the study or service users who attend the clinics less regularly due to increased barriers to access care. The fact that most service users were female in addition to the chosen sampling strategy probably explains why male service users were underrepresented in our sample. Finally, due to our sampling strategy the

results here presented may not represent all health providers, managers and service users of the CES mental health programme.

A central aspect of the support that CES provides to the PHC clinics is ensuring the availability of health providers to staff the clinics. Worldwide, around half of people living in rural areas do not have access to health care, which is largely due to a deficit of 7 million health providers in rural health services.²²⁹ In Mexico, staff shortages have led to the reliance on MDs completing their compulsory social service year to staff clinics in rural areas.²³⁰ Previous criticisms have highlighted that populations at greater need are served by inexperienced clinicians who do not have enough medications and support to deliver quality health care.²²⁸ CES also recruits MDs who need to complete their social service, however, health services are delivered within an enabling implementation climate. Important characteristics of the implementation climate include the availability of essential resources (i.e. human resources for the delivery of services and supervision, ongoing capacity building or mentorship mechanisms, and medications),^{47, 98, 99, 101, 103, 105, 106, 109-111, 114, 117, 119} strong leadership,^{47, 105, 114, 118} and a supportive and collaborative learning climate.^{98, 105, 110, 128} Related to the learning climate, strong relationships between members of the organisation were key, and ensuring that people felt supported, part of a community and working for a common goal were some relevant aspects. In this case this common goal was the promotion of mental health care as a human right, which was also a strong facilitator. Previous evidence has pointed out that these enabling shared values and beliefs between members of an organisation lead to improved implementation and performance.²³¹

Interventions for mental health in PHC in LMICs are necessary and lead to benefits, such as improved delivery of care^{100, 107, 109} and clinical improvement as perceived by service users.^{98, 104} However, the current study, along with studies from Zimbabwe and India, have highlighted that the adaptation of interventions to the local context and culture is of particular importance.^{98, 104} Moreover, the availability of tailored and well-designed materials can enable the delivery of complex interventions for mental health, especially in contexts where limited time is available. The complexity of interventions and delivery of services for mental health have been identified as an important challenge, due to the need of lengthy consultations and coordination between multiple cadres.^{110, 117, 128} However, in the current study it was mostly attributed to the difficulties in clinical decision-making and delivery of talk-based interventions. Previous research investigating how family doctors diagnose depression has pointed out this is highly subjective process, where the “aetiological and contextual thinking is more important

than symptom counts".²³² Therefore diagnoses were seen to require clinical judgement and a dialogue with the service users to improve understanding of their situation and illness.²³²

In Mexico, 4% of medical education is focused on mental health.⁶⁰ Given the burden of disease attributed to mental disorders, further advocacy is needed to increase mental health training in medical curricula, as well as to improve quality. Lack of mental health training leads to limited knowledge and skills for delivery of care, which is widely recognised as a barrier to implementation.^{98, 105, 106, 113, 119} However, current and previous evidence indicates that ongoing training and supervision can help overcome this.^{100, 105, 107, 128} In previous studies of mental health integration into PHC, training and supervision were provided by specialists,^{107, 112, 233} which health providers participating in this study reported to be a remaining need. In this study, we found the commitment and motivation of providers to be a key facilitator. Motivation of providers was positively influenced by the presence of resources (i.e. opportunities for professional development and availability of needed resources to perform a task), incentives and the organisational culture.²³⁴

Estimates indicate that around 25% of Mexican women suffer from intimate partner violence (IPV),²³⁵ which has been identified as a risk factor for emotional distress,²³⁶ depression and anxiety.²³⁷ However, most women who suffer from IPV do not access appropriate support.²³⁸ A study testing a PHC-based intervention for IPV showed this only had short term effects on mental health outcomes.²³⁹ Current and previous research has pointed out that managing social risk factors, such as IPV, poverty, low education levels, and housing issues^{47, 98, 99, 106, 110, 118} at PHC is difficult given resource shortages previously discussed, as well as a lack of social services and limited collaboration between sectors.^{108, 114, 117, 239} Other complex needs such as comorbidities^{98, 99} and severe symptomatology¹⁰⁰ are also difficult to manage, especially given the absence of well-resourced specialist services⁵ to make referrals.

The current study has identified relevant areas that need further study, especially in LMICs. More research is needed into the factors that influence the motivation of health providers, the presence of strong organisational cultures, and positive learning climates, to inform the development of enabling strategies. Capacity building is another key aspect of implementation that warrants further investigation. In this study, we found a variability in the type of training and supervision that different providers received. Efforts to understand active ingredients of training and supervision, as well as efforts to

standardize capacity building mechanisms are needed. Finally, the development and integration of interventions that address social needs is also necessary to have a deeper impact on the health of vulnerable populations. In this sense, greater inclusion of service users in the development, delivery and evaluation of services can improve engagement and outcomes of mental health programmes integrated in PHC.¹⁵²

Chapter 7. Discussion and conclusions

The current chapter provides the overall interpretations and key conclusions of this PhD thesis work. It describes the main findings in relation to the thesis aims, the strengths and limitations of the overall study design, as well as the relevance and implications of the research findings to the programme under study, the field of research and policy. Finally, areas for future research are outlined.

7.1 Main findings

This research project investigated the process and factors related to the implementation of a mental health programme delivered by *Compañeros en Salud* (CES) at 10 primary health care (PHC) clinics in rural Mexico, to inform the future development and implementation of mental health programmes or services integrated into PHC in similar settings. Specific aims were to:

- a) Review and synthesise the existing qualitative evidence on facilitators and barriers to the implementation of mental health programmes for common mental disorders (CMDs) in PHC settings in LMICs;
- b) Examine the implementation process and outcomes of the CES mental health programme integrated in 10 PHC clinics in rural Mexico;
- c) Understand why service users do not attend mental health follow-up consultations delivered by the CES programme; and
- d) Elicit the factors that enabled and hindered the implementation of the CES mental health programme

In order to address the first aim, I conducted a systematic review of published, peer-reviewed, qualitative literature related to the facilitators and barriers to the implementation of mental health programmes for CMDs in PHC settings in LMICs (Chapter 2). Findings helped to identify characteristics of the PHC setting, service users, health providers, the intervention, and process of implementation that either enabled or hindered implementation. First, the availability of resources and access to training and supervision in the PHC setting are necessary elements for the implementation of mental health programmes integrated into PHC. Commonly reported resource constraints that impeded implementation included low budgets for mental health care, staff shortages, limited infrastructure for the delivery of interventions, poor medication supply, lack of supervisory mechanisms, and absence of referral mechanisms. Second, the complex health and social needs of service users were identified as barriers to implementation. Examples include the presence of comorbid conditions, high symptom severity, and high

exposure to social risk factors (i.e. poverty, violence, low literacy and poor household infrastructure). Third, health providers' limited knowledge and negative attitudes related to mental health hindered implementation, whereas good communication skills enabled implementation by leading to better delivery of mental health services. Fourth, the adaptation and perceived advantages of the intervention facilitated implementation. In terms of adaptation, examples include the use of locally validated tools, local idioms, culturally accepted treatments or tailoring interventions to service user needs. Perceived advantages were reported by both health providers and service users, and these were related to the perceived usefulness of the intervention to address service user health complaints at PHC, and the perceived usefulness of treatment. Finally, within the implementation process, planning and evaluation were facilitators. Specifically, the use of formative research allowed for programmes to be tailored to local contexts, and piloting of programmes was useful for testing initial models of care and making adjustments as needed.

This systematic review also helped identify four research gaps: (1) the evidence available on the barriers and facilitators to implementation of mental health programmes in PHC in LMICs is scarce, (2) none of the studies identified by this review utilised relevant implementation frameworks, (3) none of the studies identified by the review have been implemented past initial stages of adoption, and (4) the inclusion of service user perspectives in the included studies was limited.

The second, third and fourth aims of this research project sought to address the identified research gaps. To address these aims, I conducted a mixed-methods case study to investigate the implementation of the CES mental health programme, including the process, outcomes, facilitators and barriers to implementation. Three studies nested within the case study were conducted to address the different aims.

First, I conducted a mixed-methods study using a convergent design (Chapter 4), to examine the process and outcomes of the implementation of the CES mental health programme. I sought to understand the extent to which the programme had achieved integration into PHC, as well as to explore strengths and limitations of the implementation. In terms of outcomes, the CES mental health programme was successfully integrated in 10 PHC clinics, which was evidenced by the presence of programme activities (i.e. supply of medications, capacity building and monitoring through health information systems), and the routine delivery of mental health services (i.e. identification of service users with depression or anxiety, diagnosis, and delivery of

pharmacological and talk-based interventions). Health providers delivered at least one mental health consultation to 486 adults diagnosed with a mood or anxiety disorder. The majority were women (84.4%), who lived less than 30 minutes away from the clinics (66.3%) and had been diagnosed with a mood or depressive disorder (68.2%). Just under half received only pharmacological treatment (44.6%).

The programme was acceptable to health providers, as evidenced by their engagement and commitment to programme activities. There were limitations in terms of the programme's feasibility, appropriateness, and fidelity. Implementation was deemed only partially feasible. The support and resources provided by the organisation (e.g. medications and capacity building) made implementation possible, however limited training on site by specialists, time constraints, and large patient workloads hindered feasibility. The programme was deemed largely appropriate to the needs of health providers but not of service users. This was due to the challenges service users face in accessing the clinic-based mental health services, as well as a lack of interventions to address social risk factors associated with depression and anxiety.

I examined process indicators to understand the fidelity of the programme implementation. Fidelity was not fully achieved, as evidenced by the limited adherence to treatment guidelines and low rates of attendance to mental health follow-up consultations. Over half of service users were diagnosed according to the programme's clinical guidelines (63%), however only 28% of service users were given treatment according to guidelines. Both at initial and follow-up consultations, health providers did not provide talk-based interventions on most occasions (57% and 76%, respectively). Finally, less than half (42%) of service users attended more than 50% of their scheduled mental health consultations.

As a second step, I sought to further explore low attendance to mental health follow-up consultations offered by the CES mental health programme. To this end, I conducted a mixed-methods study using a sequential explanatory design (Chapter 5), to explore factors associated with non-attendance and understand the perspectives of service users related to barriers and facilitators to attendance. For this study, I included only service users who were diagnosed during the study period (i.e. a subsample of the one used for the study described above). Forty-two percent of service users did not return to the clinics after receiving a diagnosis of depression or anxiety in an initial consultation, and of those who attended follow-up consultations, 52% attended less than half of their scheduled follow-ups. The quantitative analysis identified two variables that increased

the likelihood of not attending any mental health follow-up consultations: living far away from the clinic (OR=2.05; 95% CI: 1.19 - 3.56) and only receiving either pharmacological or talk-based treatment (OR=3.81, 95% CI: 1.81-8.53 and OR=5.59, 95% CI: 2.69-12.39, respectively). On the other hand, the presence of a comorbid physical condition decreased the likelihood of not attending mental health follow-ups (OR=-0.16; 95% CI: 0.05 - 0.40). Among those who attended follow-ups, the absence of a comorbid physical condition also increased the likelihood of low attendance (OR=2.16; 95% CI: 1.02-4.71). Moreover, being between 40 and 49 years old decreased the likelihood of low attendance (OR=0.16; 95% CI: 0.03-0.66).

Qualitative findings indicated that perceived need for care was the primary motivation for attendance, whereas the perception that care was unnecessary led to non-attendance. Long travelling times to clinics, along with long waiting times and conflicting commitments were reported barriers to attendance. The majority of service users expressed being satisfied with services, having had positive experiences with health providers and perceiving reduction in symptoms as a result of treatment. All of these positive experiences led to higher attendance. However, a few service users also reported having negative experiences such as encountering health providers with poor communication skills or whom they did not consider trustworthy, which led to non-attendance.

As a third step, I conducted a qualitative study to explore the facilitators and barriers to the implementation of the CES mental health programme from the perspectives of health managers, providers and service users (Chapter 6). Enabling factors were identified in relation to the characteristics of the interventions, health providers, and PHC setting where the programme was integrated. The adaptation of the interventions to the clinical and cultural context where the mental health services was a facilitator to implementation, as well as the perceived advantage of interventions. Advantages were reported by both providers and service users, and included uptake of recommendations by service users, improved clinical outcomes, and increased mental health awareness among communities. Regarding health providers, their commitment and motivation facilitated implementation. High levels of commitment were attributed to an identification with the mission of the organisation which promotes quality health care as a fundamental human right of all people. Motivation was also associated with the mission, but was maintained through support from the organisation, as well as sufficient resources to deliver mental health care. Regarding the PHC setting, CES used strategies to strengthen the service delivery platform which included adequate financing, ensuring

the medication supply and providing training and supervision. These resources were key facilitators to the implementation of the mental health programme. However, support at all levels of the organisation, a positive learning environment and strong leadership were also essential to promote and sustain implementation.

Hindering factors were identified in relation to the characteristics of the intervention, individuals and the wider health system and communities where the programme is implemented. Regarding the intervention, its complexity was identified as an important barrier. Despite efforts to systematise mental health diagnosis and treatment allocation, the clinical judgement of health providers is still required. Both pharmacological and talk-based treatment should be tailored to individual service user needs, and this necessitates lengthy dialogue with service users to understand their symptoms and treatment needs. Health providers with limited experience in the delivery of mental health services working in busy PHC clinics find this to be extremely challenging. Regarding health provider characteristics, low self-efficacy was the most commonly identified barrier to implementation. Health providers perceived that their knowledge related to mental health is limited, that delivering mental health care is a difficult task that requires very different skills to those developed in their professional education as medical doctors, and that service users have social needs that they do not have the tools to address. Furthermore, health providers feel they lack mentorship from specialists to further develop skills to diagnose and treat more complex cases, and improve the quality of the talk-based interventions they deliver. Finally, the lack of specialist services to refer service users with severe symptoms was identified as a barrier within the broader health system. In the communities, social risk factors (i.e. poverty, intimate partner violence and low educational levels), stigma and the expectation of a cure from mental illness are ongoing difficulties for the delivery of mental health care.

7.2 Methodological considerations

7.2.1 Collaboration between researchers and implementers

The current project was a collaboration between researchers and programme implementers, which ensured the study was relevant to the programme needs and its further development. At the design stage, I engaged in conversations with programme managers to agree the study objectives. The first draft of the study proposal was presented during a research meeting in the organisation, and different members made suggestions for the improvement of the study. For example, one of these suggestions was the addition of nurses to the study sample. The criteria used for the study sample, and all

forms of data collection were approved by the programme coordinator, and changes were made according to her input.

A paper on the challenges of executing implementation science research has highlighted that the participation of implementers, or programme developers, is necessary to ensure people with expert knowledge of the programme and its setting are involved.³⁵ Besides expertise, CES contributed with support that was essential to the project implementation and completion. For example, they facilitated transportation, provided accommodation, introduced the data collectors to key members of the community, helped us understand local norms and language, and provided access to their databases. CES members also developed a sense of ownership due to their involvement, which ensured they facilitated the data collection processes, were involved in the analysis, and made changes to the mental health programme according to study findings.

7.2.2 Mixed-methods case study methodology

The use of a mixed-methods case study methodology design is a strength of the current project as it allowed for the utilisation of different types of data (i.e. quantitative and qualitative) collected from multiple key stakeholders (i.e. health providers, managers and service users). A previous review of the use of mixed-methods in implementation research indicates these methods are effective in studies that seek to investigate the outcomes and process of implementation, assess both the intervention content and context, incorporate the perspectives of participating stakeholders such as providers and users, and compensate for the limitations of each individual method.²⁴⁰

The use of a case study methodology meant that the current project was theory driven from its design to its analysis, which has previously been highlighted as necessary to ensure the utility and validity of implementation studies.²⁴¹ A review of implementation studies found that only 20% of them used any guiding theory.²⁴² Another review investigating studies that have cited the CFIR specifically found that, of more than 400 studies, only 26 used this framework at some point in the methodology, and more than half of these only used it in the analysis stage.⁴⁴

Finally, due to the study design, data collection and analysis happened simultaneously,²⁴³ which allowed the identification and further investigation of relevant aspects of the programme implementation. An example of how this improved the study is service user attendance. Initially attendance was only assessed through process outcomes to investigate implementation fidelity. However, it became evident that attendance was a common issue that required further attention and investigation.

7.2.3 Observer bias

Observer bias is a potential limitation of the current study. Observer bias refers to the influence of the researcher's previous knowledge or preconceived ideas of a phenomenon on the way data is collected or analysed. To ameliorate observer bias, I used two strategies. First, I conducted two focus groups with health providers and managers to understand relevant facilitators and barriers for these two groups and made changes to the interview guides according to the findings. Second, during the interviews I also inquired about relevant aspects I identified during observations, to confirm or disconfirm my ideas around these. Finally, I engaged in conversations with the two research assistants involved in the data collection where we discussed key findings, and checked the validity of our individual observations. Observer bias can also be introduced while analysing and interpreting the data. To counteract this, other researchers were involved in the process of coding qualitative data, identifying emerging themes, and interpreting findings.

7.2.4 Use of routine data

The use of routine data is both a strength and a limitation of the current project. Previously identified benefits of routine data include its availability, lower cost, and observational rather than experimental nature, which is of great value in studies seeking to understand routine programme implementation.²⁴⁴ In this case, the use of routine data allowed for a more faithful representation of the programme, and did not place a burden on health providers by having them collect additional data.

However, it has also been highlighted that poor quality of routine data is a common issue.²⁴⁴ In this case, we were limited by both quality and type of data available. A large proportion of the analysis for the current project used clinical notes recorded by MDs. The content of clinical notes was not standardised so there was some variability in the type and depth of information. Furthermore, it is possible that the content of the clinical notes does not reflect the actual content of the consultation, and there could be a trade-off between the time spent completing a clinical note and the time spent with a service user. In this sense, shorter clinical notes with less information might reflect that a health provider spent more time talking to a service user. Nevertheless, we used clinical notes given that detailed note taking is an institutionalised practice within the organisation. This is mainly due to health providers changing every year; therefore, there is a need to ensure future providers have sufficient information about the medical history of a service user. The need to standardise the content of clinical notes was informed to the

programme managers, and I contributed to the design of strategies to standardise and improve the quality of the data.

The analysis of factors related to attendance was constrained by the available data. Some factors identified in previous literature (e.g. socioeconomic status¹⁹³) could not be taken into account due a lack of routine data. However, the analysis allowed for an initial exploration of an important implementation challenge. Moreover, the quantitative analysis was complemented by the analysis of qualitative data.

7.2.5 Culture and language

My familiarity with the language, culture and context due to the fact that I am Mexican and a native-Spanish speaker was a strength of the current project. Speaking a common language and having a similar sociocultural background helped me build trusting relationships with the organisation and members of the communities. Furthermore, all researchers who participated in the data collection and analysis spoke fluent Spanish. All researchers also spent at least three months in the communities before the start of data collection, which allowed a deeper understanding of local idioms, social norms, and other relevant cultural aspects. The characteristics and experiences of researchers improved understanding between them and participants, which strengthened the validity of findings.

Another strength of this project and a methodological contribution was the development of a method for the translation of qualitative data from Spanish to English. I recruited three native Spanish speakers from different countries whom are completing the Global Mental Health MSc to participate in a translation workshop. During this workshop students first translated quotes independently, and then translations were compared, differences discussed and final versions agreed. This process helped identify subtle differences and similarities in the understandings of language based on the particular sociocultural background of the person who performs a translation. This workshop also highlighted the importance of group discussions to ensure that language is correctly translated and the original meaning kept intact.

7.2.6 Generalisability of findings

The conditions in which the CES mental health programme takes place might have an impact on the generalisability of findings. CES and the local Ministry of Health (MoH) established a public-private partnership (PPP) to ensure the delivery of health services in the 10 PHC clinics where this study took place. The differences between the 10 PHC clinics supported by this PPP and clinics that are only supported by the MoH are

significant. Although a common feature between clinics is the use of MDs completing their social service year to deliver services, there are important differences in the experiences of MDs working in both types of clinics. Examples include differences in available medications and other medical supplies, access to training and printed clinical guidelines, availability of monthly on-site supervision and support to perform referrals. For this reason, the generalisability of findings to other settings in Mexico might be limited. However, the current study added to our understanding of how PPPs can improve service delivery and quality of services through additional resources and expertise. PPPs are promoted as a strategy to address health coverage gaps that governments are unable to fulfil,²⁴⁵ therefore our findings are an important contribution and can help shape future PPPs that aim to improve mental health service delivery.

An important difference between CES clinics and other PHC settings is the amount of time available for each consultation. Worldwide, on average 5 minutes are available for each consultation in PHC,¹⁹² however in CES clinics, health providers spend an average of 20 minutes on each consultation, with some lasting up to an hour.

Finally, the programme mainly provided services for women with depression or anxiety. Further studies of programmes or services providing mental health care for men and those with other conditions such as alcohol use disorders and psychoses are necessary.

7.2.7 Service user participation

Whereas the participation of programme implementers in the design and execution of the current study is an important strength, a limitation is the lack of participation of service users. A recent systematic review of service user participation highlighted the scarce number of projects involving service users or caregivers in the development of services, their monitoring and evaluation.¹⁵² However, participation is important to ensure mental health services are designed according to the needs and priorities of those who receive them.¹⁵²

Although extremely relevant and important, there is limited evidence about how to effectively ensure service user participation in research in LMICs.¹⁵² Given that this was a PhD project with no funding available for research costs and a limited timeline, it was not feasible to involve service users.

To counteract this important limitation, I engaged in efforts to improve service user participation within the programme. First, one of the key recommendations to implementers is the formation of a service user committee to be involved in changes to

the programme design, as well as monitoring and evaluation. Second, I led a public engagement project that aimed to understand the perspectives of service users on depression and anxiety, as well as to improve understanding between health providers and service users. A total of 20 service users participated in four workshops based on the Photovoice methodology.²⁴⁶ Each service user developed a photo project about their experiences living with a mental illness and presented this to their peers and family members. The use of photography empowered participants to have conversations about their mental illnesses with others. Additional information about the public engagement project and its results can be found in appendix 7.1.

7.2.8 Power dynamics

The power dynamics between researchers and services users might have affected the data collection. Since CES started supporting the clinics, many health providers and researchers from other Mexican states and other countries have visited the communities. It is worth noting the differences between the clinic visitors and the local population. People from the communities live in extreme poverty and have completed an average of seven years of education.^{70, 71} In contrast, those visiting are usually middle-class MDs, specialists or professionals with post-graduate education. Members of communities refer to clinic visitors as “doctors” regardless of their education, welcome them into the communities and their homes, and treat them with respect. Until recently, before CES started supporting the clinics, inhabitants of the communities had to travel several hours and pay large amounts of money to access health care. Hence, the preferential treatment that people associated with the clinics receive is also related to a gratitude for the ongoing support health professionals provide. People who have received services from the clinics often express their gratitude for the presence of the organisation, visitors and the support provided.

During the data collection, we asked service users for their feedback regarding the health services offered by the clinics. The questions in the interview guides specifically explored both positive and negative experiences. The majority of people only reported positive experiences. Of those who reported negative experiences, many times they refused to provide any personal details (basic sociodemographic data), and also refused to be audio recorded. We observed some hesitancy to provide negative feedback, which might have been due to a fear to lose the support or services provided at the clinic.

During the process of obtaining informed consent we took measures to ensure the data collection would follow good research practice. We made sure participants were aware

of their freedom to choose to participate or not and to end participation at whatever point they preferred. We were also careful to express clearly that all their responses were confidential, that they did not have to answer questions if they preferred not to, and finally, we reiterated that neither their participation nor their answers would have an impact on their ability to benefit from the services at the clinic.

7.3 Policy and programme implications

In this section, I begin by summarising some of the main arguments supporting the integration of mental health services into PHC in Mexico, and suggest some key missing elements of PHC initiatives to appropriately address the health needs of people with depression and anxiety. Then I discuss service user engagement with services, which is a key remaining challenge identified by this study. I move on to propose community-based services as an alternative to the PHC-based model and explain the role of social interventions in addressing the social determinants of health. Finally, I present a set of recommendations related to the points discussed in this section.

7.3.1 Mexican health system challenges that prevent integration

The Mexican mental health policy promotes three main elements: (1) integrating mental health services into general health services, (2) increasing human resources and budgets for mental health care as well as the quality of available services, and (3) increasing health promotion and advocacy actions.⁶⁰ The promotion of integration in the Mexican mental health policy emerged as a response to the heavily centralised and institutionalised mental health services in the country.⁵⁷ Until now, there is, on average, one psychiatric hospital per state, and most mental health services are still delivered in these hospitals.⁶⁰ This service organisation has caused two central problems that integration aims to tackle: (1) the violation of the human rights of mental health service users and (2) the limited access to mental health care by most of the population in need.⁵⁷ Internationally, these have also been arguments supporting the integration of mental health services in general health services.¹⁴ Other reasons include addressing low help seeking due to stigma, and making use of additional resources available in the health system, given the low budgets available for mental health.^{5, 14}

Actions to implement integration have largely focused on the PHC platform for valid reasons. In health services, the PHC platform is often the first point of access to health care.⁸⁰ PHC services are intended to promote health, prevent illness, offer general health services, refer those in need of specialist services to the secondary or tertiary level of care, and provide ongoing management for back-referrals.⁸⁰ For this reason, PHC

facilities are the most numerous in Mexico and many other countries, and are typically located in reasonably close proximity to where people live and work.⁹¹ Therefore, it seems obvious that mental health services need to be available at this first point of access, especially given that not all people with mental disorders experience severe symptoms and, therefore, do not need to receive treatment from a specialist.

However, the sole focus on PHC is also problematic for the following reasons. The first and most important is that the PHC system is extremely under-resourced and inappropriately organised to deliver care for chronic conditions, such as mental health conditions. According to the OECD, Mexico spends 2.8% of its gross domestic product (GDP) on health, which is significantly less than the 8.8% average health expenditure of the OECD countries.²⁴⁷ Furthermore, issues with the allocation and distribution of resources in Mexico result in a shortage of health providers, medications and other supplies at all levels of care.^{67, 248} Resource constraints are worsened by the multiple vertical programmes that aim to be integrated in the already overburdened PHC system.²⁴⁹ A “Health System Review” of the Mexican health system performed by the OECD in 2016 identified a few issues regarding the organisation of PHC services, including the lack of a system for registration of service users to a particular PHC facility or provider, limited opening times and fragmentation between the different levels of care.²⁴⁸ These issues directly interfere with the continuum of care necessary to treat people with chronic conditions.²⁴⁸ Moreover, whatever services are available are difficult to access and of poor quality, which might explain why 38.9% of people interviewed for the ENSANUT or National Health and Nutrition Survey in 2012 who accessed ambulatory health services two weeks before the survey reported paying for a private consultation.²⁵⁰ This same survey also showed that less than 50% of people with hypertension were aware that they had this condition; of the approximately 50% who were aware, around 70% received treatment, and treatment was effective for less than half.²⁵⁰ The situation in rural areas is markedly worse. This is in part due to the remote location of PHCs coupled with poor transport infrastructure meaning they are hard to reach.⁶⁷ Furthermore, rural PHC offer fewer services, often have poorer facilities and the majority are staffed solely by recently graduated MDs completing their social service year.⁶⁷

This thesis has shown that mental health services delivered through PHC clinics can increase access to care. However, adequate resourcing and management are necessary preconditions for their successful implementation. Therefore, system-wide reforms are necessary to strengthen the Mexican health system to effectively deliver the additional

services. The introduction of the Popular Insurance in 2003, increased the allocation of financial resources to the health system.⁶⁷ However, a report on the progress of the country on achieving universal health coverage pointed out that management reforms are still needed to make more efficient use of resources and increase quality of care.⁶⁷

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There is also a need for increased mental health training as part of the professional education of health providers. Providers from this study identified it as the weakest part of their professional education, and this issue has been previously recognised in other settings.⁷⁸ The majority of capacity building initiatives comprise a single training session. According to a review of the implementation of the mhGAP in LMICs, only one third of the projects that reported using the guidelines for training provided some form of continuous supervision.⁶² In Mexico, anecdotal evidence also suggests that PHC providers have only received a single mhGAP training session. There is substantial evidence that single training sessions are not effective in changing long-term health provider behaviour but rather, evidence indicates that ongoing training coupled with supervision tends to be more effective.³⁷ The current study highlights the need for capacity building mechanisms that are ongoing and tailored to the needs of health providers in their specific health settings and contexts. Training and supervision need to be ongoing due to personnel turnover, but also to be responsive to emerging needs of health providers.¹⁸³ There is a wide variety in the presentation of mental disorders; therefore, providers need to have enough support and information available as they face new challenges.¹⁸³ Improving mental health training will not only improve the skills of health providers, but also promote mental health service delivery as part of their role, even as non-specialists. Some studies have reported resistance from health providers to deliver mental health services as an implementation challenge.^{109, 110, 113} However, our findings indicate that providers will deliver mental health services when adequately prepared and supported, and when they have the resources to deliver such services.

PHC-based mental health programmes still require high quality and well-resourced specialist services. Proposed models of care for mental health acknowledge the need for specialists and specialist services to provide treatment for service users that cannot be managed at PHC and to be available for the assessment of complex cases.¹³⁶ The planning of PHC-based mental health programmes often relies on the specialist services already available in the particular setting,^{251, 252} however, there is a large shortage of specialist human resources, especially in LMICs.⁷⁸ Further, psychiatric facilities tend to be overburdened and under staffed, and are among those settings as well as the setting

where human rights violations most often occur.¹⁵ Policy makers and programme planners cannot forget PHC is one part of the system, and in order to function it needs to be supported well-integrated with by the rest of the system.

The planning of mental health programmes needs to take a whole system perspective and integrate strategies targeting the strengthening of psychological and psychiatric services,¹¹⁴ to ensure these are adequately resourced. Some strategies include increased recruitment of mental health specialists, improvement of working conditions,⁷⁸ increased training and recruitment of mid-level staff (e.g. psychiatric nurses),¹¹² adequate resourcing of specialist services, establishment of referral mechanisms, and interventions targeting human rights violations, such as the innovative QualityRights project developed by WHO.²⁵³

Better coordination between primary and secondary services is also necessary to ensure the complex needs of service users with severe conditions are adequately addressed. A few HICs have implemented share care models for mental health, which involve the introduction of mechanisms to enhance coordination between providers at different levels of care, an agreement between them regarding the distribution of treatment responsibilities, use of case management, the establishment of communication mechanisms between providers and of governance systems.²⁵⁴ These models have been found to improve the clinical outcomes of people with depression and anxiety.²⁵⁴

7.3.2 Improving service user engagement

Despite the many achievements of the CES programme, the current study indicates that engagement of service users with the mental health programme is a remaining challenge. Perceived need of care seems to be a central factor affecting attendance. This suggests psychoeducation is of particular relevance, to help service users understand the nature of their condition, as well as available treatments. Previous research from Uganda investigating the role of psychoeducation found this increased medication adherence and knowledge about mental illness.²⁵⁵ Other research has pointed out increased knowledge has a positive impact in prognosis, among service users diagnosed with depression.²⁵⁶ Mental health care needs to be tailored to the local idioms and conceptualisations of mental disorders to ensure appropriate understanding.^{98, 257}

Shared decision-making is another potential strategy to increase engagement with services. Shared decision-making consists of a dialogue between a health provider and a service user to increase understanding regarding the service user's needs, preferences and priorities, and their role in the selection of a specific treatment.²¹⁹ In mental health

care, shared decision-making also considers the importance of involving family members. Besides increasing understanding between health providers and service users, shared decision-making leads to a shared responsibility between provider and user regarding the treatment selection.²¹⁹ Previous evidence indicates that shared decision-making increases knowledge about treatment options, participation in the decision-making process, perception of treatment risk, choice of treatment based on service user values, and communication between providers and users.²⁵⁸ Research on mental health service users also indicates people engage more with their treatment when it aligns to their preferences.^{216, 217} Furthermore, this process can help the development of a positive relationship between the provider and user, which, according to previous evidence, also has a positive impact on the engagement with mental health services.¹⁰⁴

The mental health recovery approach is another alternative for increasing service user engagement that has been promoted in HICs and which assumes that a person can recover from a mental illness.¹⁸⁹ This approach prioritises the definition of well-being and recovery for each individual person without presupposing that symptom alleviation is the most important outcome.¹⁸⁹ The recovery model promotes empowerment, self-determination, positive identity, hope, and meaning, and takes into account the social dimensions of illness.¹⁸⁹ The recovery model is aligned with the latest Lancet Commission on Global Mental Health and sustainable development, which suggests the social factors need greater attention as they are closely linked as determinants and outcomes of mental disorders.²⁵⁹ Further it has been suggested that rather than clinical interventions, responses to mental disorders need to integrate social interventions.²⁶⁰ Designing mental health services according to the recovery approach could be more appropriate in settings with heightened exposure of social risk factors. However, researches investigating the adoption of the recovery approach in India's mental health care policy have highlighted that it is necessary to ensure that the understandings and concepts on which this approach is grounded are "locally rooted" and are developed based on the language, experiences and perspectives of the people they intend to benefit.²⁶¹ Previous research in HICs has identified differences between minority groups regarding preferred sources of care and collectivist notions of recovery,²⁶² which highlights the importance of tailoring recovery models to the needs and preferences of particular groups. The recovery approach was developed under a neoliberal way of thinking and, in its inception, promotes values such as self-management, individualism and freedom of choice.²⁶³ These individualistic values might not be the ideal in cultures

where belonging to a community or a group are favoured over individual agency.²⁶³ For example, Bayetti and colleagues (2016) stress that in India recovery is closely linked to participation in the family and community. In Colombia, a study on displaced populations found that recovery was mainly associated with the wellbeing of the family and not just oneself.^{264 264}

Amongst Mexican people, *familismo* has been described as a core value.²⁶⁵ *Familismo* refers to attitudes and behaviours that place the needs of the family unit above those of the individual.²⁶⁵ A survey of people who experienced depression in Mexico found that support was sought from social networks (i.e. partner, family or friends) or religious leaders.²⁶⁶ Amongst the Mexican population, spirituality, alternative sources of care and family belonging are also important constructs that warrant further investigation to understand culture-appropriate definitions of recovery.

Further, whilst in HICs the necessary systems and structures to implement the recovery approach are likely to be available, this might not be the case in many LMICs. For example, it has previously been argued that in many LMICs access to mental health care is so limited that advocacy should not promote one type of treatment over another, but rather the availability of any treatment.²⁶³ Bayetti and colleagues (2016) point out that in India it is necessary to strengthen the social welfare sector to enable the implementation of this approach, i.e. ensure the availability of interventions or support that tackles poverty, gender-based discrimination, crime, displacement and other social determinants of health.²⁶¹ In Colombia, access to education and fairly paid employment were also found to be essential for recovery.²⁶⁴ In Mexico, access to quality mental health care is a remaining challenge. Moreover, despite achievements from the Mexican social welfare system, estimates indicate current interventions will fail to achieve long-term reductions in poverty and inequalities.²⁶⁷ The adoption of the recovery approach in Mexico would need various interventions at different levels of care and government sectors.²⁶⁷

Time and resource constraints in PHC services might hinder the feasibility of engaging in lengthy processes to ensure the needs and preferences of service users are appropriately understood and considered by health providers.²⁶⁸ These limitations should be considered in the design of models of care for mental health in PHC, and strategies to distribute the workload should be utilised, e.g. task-sharing and community-based services.

7.3.3 Nurse-led services

Regarding those best positioned to deliver these services, the current study found that most nurses had been staffing the PHC clinics for more than three years, and up to ten years. Due to these lengthy placements, nurses had developed strong ties with the communities, i.e. they were familiar with social norms, local idioms, community members, existing conflicts and many other relevant aspects of these contexts.

In many countries, the provision of health care relies on nurses due to shortages of medical doctors, and cost-effectiveness.^{269, 270} In Belize, nurses have been trained as psychiatric practitioners to overcome human resource shortages and deliver services at the community level.²⁷¹ These nurses have three years of experience before receiving training, which consists of a six-month course followed by ongoing supervision from psychiatrists.²⁷¹ A study in Mexico which investigated the rate of education wastage among university trained nurses identified that only half of nursing graduates are employed as nurses,²⁷² therefore developing mental health training programmes for nurses might be a viable option, especially for the provision of mental health services in rural settings where MDs are rarely contracted for long periods of time.⁶⁷

7.3.4 Community-based services

Health services need to be delivered at different levels to effectively respond to all service user needs.¹³⁶ It has been previously suggested that people with mild symptoms of depression and anxiety can benefit from low intensity interventions delivered at the community level.²⁷³ Community-based services are delivered at schools, workplaces, neighbourhoods or communities by community health workers, health committees, or NGOs.²⁷⁴ Services delivered at the community level can be more effective in addressing the needs of service users, can be more acceptable and accessible, integrate the views and perspectives of people with lived experience and make use of wider support networks.²⁷⁵

The findings of the current research suggest that PHC-based mental health services are still hard to access due to distance, waiting times, and conflicting commitments. Moreover, services at PHC delivered by MDs cannot always address all the needs of service users with mental disorders due to time constraints in clinics with high patient loads.^{182, 276} Another important issue of the CES programme, also experienced in many other PHC settings, is the high turnover of personnel. To overcome these challenges, one of the central recommendations to the CES programme was to strengthen the

community-based services that are delivered at service user's homes by locally recruited community health workers.

Community health workers still require ongoing training and support but due to low turnover, this cadre of health personnel are better able to gain long-term expertise. Low turnover can also have a positive impact on the development of relationships between providers and users. If appropriately managed, community health workers can have more time available to spend delivering talk-based interventions. Finally, given that these health workers are from the local communities, their knowledge and awareness of social norms and idioms can improve understanding between providers and service users. Besides the benefits of improved feasibility and acceptability, services delivered by community health workers might be more effective. Evidence from Nepal indicates that mental health services delivered by community health workers were more effective than those delivered by PHC providers.²¹²

Community-based rehabilitation models, which promote the participation of service users, family members and communities in the process of recovery and delivery of care might be more appropriate in remote and rural areas.^{277, 278} These models aim to improve the inclusion of service users in their communities, improve access to adequate support and have been shown to improve outcomes in LMICs.²⁷⁸

7.3.5 The role of social interventions

Considering the environments where people live is essential for a true understanding of illness and for the development of effective strategies to improve mental health.²⁷⁹ This is of particular importance in low-resource settings, such as Chiapas, where people are vulnerable to multiple environmental risk factors.²⁸⁰ Previous research conducted in one of the communities where CES delivers services found a 50% prevalence of intimate partner violence (IPV), and a significant association between IPV and experiencing symptoms of depression.²⁸¹ Besides IPV, other social and environmental problems affecting these communities include poverty, food insecurity and climate change. Previous research has linked all of these to increased risk of experiencing mental distress.^{187, 282}

Whilst mental health is affected by social risk factors, poor mental health can also worsen social outcomes.¹⁸⁷ Psychosocial wellbeing has an influence on the extent to which a person participates socially and takes advantage of opportunities that may lead to improved social outcomes.²⁸³ According to Amartya Sen's Capabilities Approach, to achieve human and economic development,²⁸³ individuals need to have the freedom to

do what they value.²⁸⁴ White and colleagues suggest that important components of the Capabilities Approach are (1) the agency and capability that allow an individual to be free, and (2) whatever an individual values doing or being.²⁸⁴ Michael Marmot (2003) has suggested that the extent to which an individual has the agency or freedom to pursue these values is intrinsically related to health outcomes.²⁸⁵ Marmot (2003) has also stated that health outcomes in a population follow a “social gradient”, i.e. those more advantaged have better outcomes than those less advantaged.²⁸⁵ To improve health and mental health, it is therefore necessary to ensure the capability of populations, including those with mental health needs, to participate socially, i.e. access educational opportunities, have employment and get involved in political processes.²⁸³ Previous research has highlighted the role of violence, stigma and discrimination in preventing the social participation of individuals,^{283, 284} therefore interventions that tackle these experiences should be prioritised.

^{281, 187, 282}Interventions to support women suffering from IPV or promote social capital can be implemented at the community level. In South Africa, a participatory intervention aiming to improve sexual health and gender equality (“Stepping stones”) combined with a livelihood intervention (“Creating futures”) successfully increased monthly income, gender-equitable attitudes and reduced economic stress, reduced violence.²⁸⁶ In the Democratic Republic of the Congo, an intervention promoting social capital among survivors of sexual violence increased group membership, participation and support seeking behaviour.²⁸⁷ Particular emphasis should be placed in introducing interventions that are acceptable and culturally appropriate in the context of the Chiapas communities.

Interventions at the community level might not be sufficient if social and environmental causes of mental distress are not addressed systemically; therefore, intersectoral collaboration should be promoted to effectively address important issues such as poverty and IPV.²⁷⁹

Until recently, a conditional cash-transfer programme called “PROSPERA” supported the families in these communities.⁷¹ There is some evidence linking cash transfer programmes to decreased presence of depression²⁸⁸ and IPV,²⁸⁹ however, a study in one of the CES supported communities did not find differences in IPV between women supported and not supported by “PROSPERA”.²⁸¹ The extent to which ²⁹⁰“PROSPERA” is achieving its goals in poverty reduction is questionable. “PROSPERA” was designed to decrease poverty by improving nutrition and education.⁷³ In Chiapas the majority of the population only complete elementary school,⁷¹ which results in increased risk of poor

mental health.²⁹¹ A study looking at a cohort of children whose families were supported by “PROSPERA” found that the programme achieved an improvement in grades and an increase in the years spent in education but not in cognitive achievement.^{292, 293} The quality of education needs to be increased for educational years to translate to increased opportunities for people living in the rural communities of Mexico.⁷² An analysis of the extent to which “PROSPERA” will increase access to employment concluded that this is likely to be the case without additional policies or interventions that address the shortage in employment opportunities.²⁹⁴ Poverty programmes seem to be implemented in a vacuum, whilst coordinated efforts are necessary for significant achievements.²⁸³ The Capabilities Approach can be useful to drive the design of such coordinated efforts.

7.3.6 Recommendations

Based on the points discussed in this section, here I present a set of recommendations on how to achieve necessary changes at different levels of the health system.

1. Increase quality of care at PHC: the findings of the current study have shown that to improve mental health care in PHC, the PHC platform into which we are aiming to integrate services must be adequately resourced and provide high quality care. One of the main aims of the 2003 health reform in Mexico was to increase health expenditure.⁶⁴ Whilst this has been achieved, it has not translated into a significant improvement of the quality of care.⁶⁷ The architects of the 2003 health reform have suggested that policies to increase the regulatory power of the MoH need to be put in place.⁶⁷ The MoH needs to transition into an entity that issues guidelines regarding quality of care and has the capacity to oversee compliance.⁶⁷
2. Increase the funding available for mental health care: CES has demonstrated how mental health care in PHC can be successfully implemented in challenging contexts, through the allocation of necessary resources and training at all levels of care. In Mexico, less than 2% of the health budget is allocated to mental health, which is significantly lower than other countries in the Latin American region.⁸¹ Non-governmental organisations and researchers have an important role in advocating for an increase in funding for mental health services.
3. Allocate more resources to community mental health services: the current study has demonstrated that providing services close to where people live and work is essential in ensuring timely access to care. In Mexico, resources for mental health are disproportionately allocated to tertiary or specialist settings, for example 80%

of the mental health budget is allocated to psychiatric hospitals.⁶⁰ Allocating more resources to mental health care in primary care and community settings is a necessary first step as this will allow a more efficient use of resources.

4. Improve the leadership in mental health care: the current study showed that effective leadership and programme coordination have helped ensure the ongoing delivery of services and continuous improvement in the quality of mental health care. The government commission in charge of formulating and overseeing the implementation of the National Mental Health Plan is part of the MoH. Strengthening the governance and accountability mechanisms of the MoH could also lead to improvements in the quality of mental health care.
5. Introduce a case management role in PHC services for chronic conditions: the findings of this study indicate that MDs in the CES mental health programme were essential connecting service users to community and specialist services, as well as ensuring continuity of care. However, it was difficult for MDs to fulfil this role at all times due to competing priorities at the PHC clinics. A review has shown that case managers lead to a more efficient use of resources and improved coordination between different levels of care.²⁵⁴ Therefore this role should be officially recognised and adequately funded. Additional staff could be recruited to perform this role, however it could also be performed through task-shifting (see recommendation 6 below).
6. Increase the power and capacity of nurses and other cadres: the CES mental health programme is primarily coordinated by MDs, who are already overburdened. According to the findings of this study, CHWs and nurses did not have a well-defined role in the programme. The use of these cadres can have advantages over the use of MDs, as they can be better positioned to provide outreach services and often are closely linked to communities.²¹² Nurses, social workers and health auxiliaries are incredibly valuable human resources within the health system, however power dynamics continue to place them below MDs in Mexico. Allocating essential roles to these cadres, for example case finding, screening and management, could promote their value within the system and increase their power. Improved task-shifting in the CES mental health programme and in government services should be promoted.
7. Increase resources and capacity for outreach services: our findings indicate services at the community might be more appropriate to meet the needs of the

service users of the CES mental health programme. As previously mentioned, resources for mental health care are disproportionately allocated to psychiatric hospitals. This is incongruent with a Mental Health Plan that aims to transition to community-based mental health care.⁶¹ It is necessary to allocate more resources to outreach or community services. The strengthening of community services will also require a shift in the role of specialists in Mexico, from care providers to managers and supervisors of other health cadres. Strengthening the capacity of CHWs through close training and supervision is a remaining need.

8. Strengthen the social welfare system and link to health services: our findings indicate that mental health services delivered at PHC are necessary to meet the health needs of service users, but are not sufficient to improve the mental health of populations. Social risk factors such as poverty, income insecurity and IPV were common among our study population and cause a significant impact on mental health. These cannot be addressed through biomedical treatments or interventions. It is clear that addressing the mental health needs of population groups affected by poverty and other social issues will require a holistic approach and coordinated effort between different government systems. Poverty reduction programmes and improved access to education and health care need to be implemented hand in hand. Improvements in the social welfare system in Mexico are urgently needed, as although current systems have shown some positive impacts on health outcomes,²⁹⁶ estimates indicate that significant and long-term reductions in poverty and inequalities will not be achieved.²⁶⁷

7.4 Future research

7.4.1 Implementation science research

Through the systematic review on the barriers and facilitators to the implementation of programmes for CMDs in LMICs, I only identified 24 eligible studies related to nine mental health programmes, and most of these studies investigated the initial stages of the programmes' implementation. More research is needed to investigate programmes being implemented in a wider variety of settings, given the role contextual characteristics on health care delivery. Moreover, more studies need to investigate the long-term implementation of programmes, as it is likely that new challenges will emerge as programmes evolve.

The findings from this study indicate that the efficient use of resources and the implementation climate, i.e. presence of strong leadership and a supportive and

collaborative learning environment are key enabling factors. However, these have been rarely investigated in LMICs.^{231, 297} Previous research from HICs has highlighted the role of these on improved implementation, and performance.^{231, 297} Even though the characteristics of successful leaders, and positive and enabling cultures and learning climates have been identified, our knowledge regarding effective strategies to promote them is limited.²⁹⁷ More research is necessary to improve our understanding in LMICs of what constitutes good leadership, enabling organisational culture and positive learning climates. Moreover, more research is needed to develop effective strategies to promote these within health systems in different settings.

7.4.2 Capacity building

Capacity building is a central aspect to ensure non-specialist health providers have the knowledge and skills necessary to provide mental health care. In the CES mental health programme, high-intensity capacity building delivered in a positive learning climate was a key facilitator that helped overcome low self-efficacy and made MDs feel supported while delivering services for complex conditions in a challenging context. However, findings also highlighted that the training and supervision that health providers received was not standardised. Moreover, supervision relied on the preferences and skills of clinical supervisors that had not received any training on mental health, which led to a variability in the quality of supervision health providers received. Another identified issue was the lack of clarity regarding the objectives of the capacity building mechanisms, i.e. what specific knowledge and skills were health providers expected to acquire.

Previous research looking at capacity building mechanisms has highlighted that we need a better understanding of what are the characteristics of training and supervision that make them effective.³⁷ Also, despite the availability of other training materials, such as those developed by the WHO for the mhGAP,²⁹⁸ research in Mexico is necessary to develop contextually tailored capacity building programmes. Finally, we need to improve our understanding of the specific impact of curricula on attitudes, knowledge and skills, to ensure these are effective in what they aim to achieve.

To respond to the research gaps previously highlighted, I developed a curriculum for the training and supervision of non-specialist health providers delivering services in PHC clinics, in collaboration with other members of the CES mental health programme. The process followed to develop the curriculum, the resulting curriculum, and the protocol for its evaluation can be found in appendix 7.2.

7.4.3 Service user engagement with services

An important finding of the current project was the low engagement of service users with the mental health services delivered at PHC clinics. However, previous research has highlighted the existence of different types and patterns of low engagement. More research is necessary to understand engagement more widely in this region. First of all, considering the prevalence of mood and anxiety disorders in Mexico is 4.8% and 6.5%, respectively,²⁹⁹ it is likely that many people with these disorders in the region are not receiving treatment. Therefore, research on barriers to help-seeking is necessary. Furthermore, I was not able to collect qualitative data from people who were diagnosed and did not return to the clinics. More research is also necessary to understand the experiences of this group of non-attenders. Also, distance seems to be an important barrier to attendance, however, our measure of distance had some limitations, since it was estimated using the community of residence. More research looking at distance specifically and using different measurements is necessary. These measurements could include self-reported time of travel, or self-reported difficulties to travel to the clinics. Finally, research looking at engagement in other population groups, such as men and adolescents, and among people with other disorders, such as alcohol use disorders, is also necessary to better understand different mental health service needs across the population.

7.4.4 Community-based services and social interventions

Within the CES programme, more research is necessary to strengthen community-based services, for example, looking at training and supervision of community health workers and assessing implementation at this level of care. Furthermore, improving the engagement of service users in the planning, delivery and evaluation of mental health services are also necessary to improve the extent to which the programme actually addresses service user needs. In this sense, research to develop or adapt social interventions targeting common issues such as IPV are essential to tackle the sources of distress in the communities.

7.5 Conclusions

This thesis aimed to contribute to our understanding of the facilitators and barriers to the implementation of mental health programmes in primary care in low-resource settings, by focusing on a programme delivered through a PPP between CES and the local MoH in PHC clinics in Chiapas, Mexico. Through this PPP mental health care is now available to a population that previously lacked access to ongoing care due to the absence of services at the PHC or community level. The programme implementation was

possible due to the presence of an adequately resourced platform of care, ongoing capacity building mechanisms and an enabling organisational culture. However, implementation is still hindered by the limited availability of specialists to provide mentorship, specialist services to support with referrals of complex cases, and by poor service user engagement with services. This thesis findings suggest the planning of mental health programmes in PHC needs to include strategies to strengthen the health system through adequate financing, improved resource management, incorporation of ongoing capacity building mechanisms, and improved capacity of specialist services at the secondary and tertiary level of care. Finally, appropriately addressing the needs of service users in low-resource settings where there is an increased exposure to environmental risk factors will require the development of culturally relevant social interventions linked to PHC services as well as collaboration with other sectors.

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