Providers' perspectives of barriers and facilitators to scale-up of mental health care in the public health delivery system of Mozambique: a qualitative inquiry

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Abstract

Background A central challenge to closing the mental health treatment gap in low- and middle-income countries (LMICs) is determining the most effective pathway for delivering evidence-based mental health services. We are conducting a cluster-randomized, Type 2 hybrid implementation-effectiveness trial across 20 districts of Mozambique called the Partnerships in Research to Implement and Disseminate Sustainable and Scalable EBPs (PRIDE) program. Following training of nonspecialized providers in facilitation of evidence-based treatments for mental health and informed by the Consolidated Framework for Implementation Research (CFIR), we identified how PRIDE compares to care as usual and the perceived barriers and facilitators of implementation and modifications needed for widescale service delivery and scale-up.

Methods We conducted rapid ethnographic assessment using freelisting among 34 providers, followed by four focus group discussions ($n = 29$ participants) with a subsample of psychiatric technicians and primary care providers from 14 districts in Nampula Province. We used Thematic Analysis to inductively apply open codes to transcripts and then deductively applied the CFIR domains and constructs to organize open codes.

Results The main Outer Setting constructs relevant to implementation were recognition that patient mental health needs were significant. Additionally, numerous community-level characteristics were identified as barriers, including distance between clinics; shortage of providers; and low awareness of mental health problems, stigma, and discrimination among community members towards those with mental health struggles. The PRIDE program was perceived to offer a relative advantage over usual care because of its use of task-sharing and treating mental illness in the community. PRIDE addressed Inner Setting barriers of having available resources and training and provider low self-efficacy and limited knowledge of mental illness. Providers recommended leadership engagement to give support for supervision of other task-shared professionals delivering mental healthcare.

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Conclusions Primary care providers and psychiatric technicians in Mozambique perceived the relative advantage of the PRIDE program to address mental health treatment access barriers and offered recommendations for successful sustainment and scale up of integrated mental health care.

Keywords CFIR, Sustainability, Public mental healthcare, Mozambique, Sub-saharan Africa

Background

Mental health problems impose a major public health burden worldwide [1], especially in low-income countries like Mozambique. A key challenge to closing the vast mental health treatment gap in low- and middle-income countries (LMICs), where there are few mental health specialists, is determining the most effective pathway for delivering mental health services using evidence-based treatments (EBTs) and assessing multi-level barriers and facilitators to widspread and routine implementation of such services [2, 3]. Task-sharing mental health service provision to be redistributed to nonspecialized providers has been implemented across many LMICs to increase access to care [4].

Neurological, substance use, and mental illnesses constitute the leading cause (~25%) of years lived with disability in Mozambique [5]. Classified as a low-income country (having a gross national income per capita of $1,085 or less) [6], Mozambique lacks adequate specialized providers who number 439 psychologists and 18 psychiatrists to serve its population of 32 million. Resources to tackle these disorders are insufficient, and as many as 90% of people receive no care [7]. The Mozambican Ministry of Health has responded to this treatment gap by integrating mental health treatment into primary care services through task-sharing. The Ministry of Health began training psychiatric technicians (PTs), a mid-level health professional with a secondary school education, trained over a 30-month period to deliver mental health services and epilepsy care, including the prescription of psychotropic medications, over 20 years ago. PTs are supervised by mental health specialists (psychiatrists and psychologists) [8]. Although PTs now practice in all 135 districts, reach remains limited. As in other LMICs, the usual mental health delivery pathway in Mozambique depends on one mental health specialty clinic per district. These urban, district-level clinics are staffed by PTs and have limited community outreach and are difficult to access by a mostly rural population.

The Partnerships in Research to Implement and Disseminate Sustainable and Scalable EBPs (Evidence Based Practices) in Sub-Saharan Africa – Mozambique (PRIDE SSA-Mozambique) protocol was designed in collaboration with the Mozambican Ministry of Health. (See Wainberg et al. [9] for a complete description of the study protocol.) Our team is facilitating a two-year, cluster-randomized, hybrid implementation-effectiveness Type 2 trial in 20 districts of northern Mozambique; evaluating implementation, patient, and service outcomes comparing three comprehensive mental health delivery arms in a catchment population of 4.7 million. Arm 1 is usual care where community health workers and primary care providers refer cases to district-level mental health clinics where they are typically seen by PTs. Arm 2 – Screen, Refer, and Treat – trains community health workers to screen and refer cases to primary care providers for mental health behavioral and pharmacological EBTs in primary care clinics. In arm 3, community health workers (CHWs) screen and deliver mental health EBTs in the community and refer medication management cases to primary care providers in clinics. The arm with highest overall cost- and clinical effectiveness will be scaled-up in other districts. During a 12-month sustainment phase, Ministry of Health personnel will lead trainings, clinical activities, and supervision in all districts without research team support.

The present study

From June to November 2019, we trained 71 primary care providers and 25 PTs in arms 2 (care delivered by primary care providers) and 3 (care delivered by community health workers) in the PRIDE program focused on the mhGAP and evidence-based interventions to address four main categories of psychiatric disorders: Safety Planning Intervention (SPI) for suicidal risk; [10, 11] Interpersonal Counseling (IPC) for common mental disorders (depression, anxiety, PTSD); [12] Screening, Brief Intervention, Referral to Treatment (SBIRT) for substance use disorders; [13] and medication management for severe mental disorders. (See authors blinded for a quantitative analysis of training outcomes.) Trainings were held in Nampula City and lasted one week. They were created by international experts in each intervention in collaboration with the national cadre of expert trainers, developed through a train the trainer model. Pre-training harmonization workshops were held with the expert trainers to review training materials, practice presenting the trainings, and receive feedback about presentation content and style. We conducted qualitative research throughout these trainings to elicit a range of providers' perspectives to understand usual care for mental health problems and barriers and facilitators to improve implementation and sustainability of the PRIDE program.

In order to identify unanticipated multi-level barriers and facilitators to initial implementation and future scale-up, we used the Consolidated Framework for

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Implementation Research (CFIR) [14]. Used widely in high-income settings and LMICs [15], CFIR captures how 39 implementation constructs across five domains (intervention characteristics, outer setting, inner setting, characteristics of individuals involved, and the implementation process) affect implementation [16]. A systematic review of 26 studies that applied CFIR found that most studies did so in the post-implementation phase, and only two studies had applied CFIR pre-implementation [14]. Another systematic review that focused on application of CFIR in 34 studies conducted across 21 LMICs similarly found that most studies used the framework in the post-implementation phase and identified this as a significant gap in the field [15]. The authors noted this as a missed opportunity to pre-emptively identify barriers and facilitators that can be addressed prior to initiating implementation efforts. Our main research objectives were to apply CFIR throughout implementation to: [1] understand care as usual and identify barriers and facilitators that may influence current access to mental health services and [2] inform further modifications to PRIDE that will be necessary for sustainability of comprehensive mental health care in a public health system across Mozambique. The findings from this study will be used to tailor strategies that can address barriers and optimize facilitators.

Methods
Study setting
The Mozambique National Health System is decentralized with each province having autonomy. It is organized into four levels: (1) primary level (1575 rural and urban health centers); (2) secondary level (54 general, rural and district hospitals); (3) tertiary level (seven provincial hospitals); and quaternary level (seven centralized and specialty hospitals, including two psychiatric hospitals) [17]. There are 11 psychiatric units in general hospitals and 215 mental health outpatient clinics attached to hospitals in the country. Since 2014, there has been at least one PT per district, generally based at the district level [18]. The Ministry of Health at the central level is responsible for defining country policies and strategies. Province health directorates oversee the implementation of health programs and districts. All health facilities implement prevention and promotion activities involving community health workers (CHWs), each of whom is responsible for a population of approximately 500 to 2,000 individuals [19]. For selection, CHWs complete tests in Portuguese and mathematics. They then complete five months of training in first aid, nursing, vaccination, community activities, and health promotion. CHWs are responsible for multiple areas including reproductive health, maternal and child health (including vaccinations), malaria, and identification of neglected tropical diseases. They

serve as a critical link between the community and primary health centers.

Study design and procedure
We obtained informed consent from all participants consistent with the procedures approved by the New York State Psychiatric Institute and the Comité Nacional de Bioética em Saúde in Mozambique Institutional Review Boards. We conducted a qualitative study using two complementary methods following trainings. First, we conducted a rapid ethnographic assessment using a free-listing approach [20, 21] with 14 PTs and 20 nonspecialized primary care providers to identify what factors were perceived as important to successful training, implementation, and sustainability of the PRIDE program. There were no refusals for participation. We followed the rapid ethnographic assessment with four in-depth focus group discussions (FGDs) to obtain more information about perceptions of barriers and facilitators to implementation. The free-listing and focus group discussion participants were randomly selected from those present at the trainings. Two audio-recorded FGDs were conducted in Portuguese with PTs ($n=13$) and two FGDs were conducted with primary care providers ($n=16$) following their completion of training in the three EBIs. FGDs were facilitated by a female psychologist who was unaffiliated with the PRIDE program, unknown by the participants, and trained by the first author to conduct FGDs. The FGDs lasted between 1.5 and 2 h and were conducted in a private location. The complementary methods provided sufficient data for saturation.

Data collection
All data collection tools were translated into Portuguese and reviewed by local collaborators to ensure contextualization of questions. For the rapid ethnographic assessment, we asked providers to free list responses to four prompts using a paper form. These prompts were constructed from an implementation scientific advisory committee who brought expertise in use of mixed methods in implementation science, sustainability of services, and local health system knowledge. The prompts were: *(1) List all of the things you can think of that will help the PRIDE program work; (2) List all of the issues you can think of that would prevent the PRIDE program from being delivered as you were trained in it; (3) List all of the words you can think of to define the word sustainability (when thinking about the PRIDE program); and (4) List all of the things you think will be necessary to ensure that this program is sustained over time (continues to be delivered a year or more after it is originally in place)* [22]. We asked providers to consider each prompt according to three key implementation phases: training, implementation, and sustainment. The free listing responses were

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used to design a semi-structured FGD guide (see Supplementary File 1) according to the domains of CFIR relevant according to type of stakeholder and PRIDE phase, aligned with best practice recommendations to apply the framework throughout the research process to inform data collection and and data analysis [14]. Areas of focus were to understand: (a) characteristics of the inner setting to ascertain relative advantage of the PRIDE intervention (e.g., "Tell me how people in your community are identified and referred for mental health conditions before this project began."); (b) community needs at the outer setting to understand fit with population and context (e.g., "Think about the community you live in. What kinds of mental health conditions exist?"); (c) barriers, facilitators, and support needed for training and supervision at the provider level; and (d) general anticipated barriers to and facilitators of implementation (e.g., "Imagine you are the boss of the PRIDE project. What would you want to change? What would you want to keep the same?").

Data analysis

Although we selected CFIR based on its widespread use globally, the framework was developed in a high-income context. To ensure that we engaged in a participatory approach that allowed for all providers to openly discuss priorities in implementation that highlighted their experience in a particular context, we elected to use inductive Thematic Analysis methods to determine which constructs were relevant in Mozambique before deductively applying CFIR to organize initially generated codes [23]. The rapid ethnographic assessment free listing responses and FGD transcripts were translated into English. The free listing responses were first coded by a local team of two bilingual research assistants with discussion with the team lead and Mozambique research team. The responses to the assessment were then organized and ranked based on how many times a response was cited across the group. They developed a codebook, and the codes were entered into a spreadsheet organized by CFIR domains. To analyze the FGDs, five research team members familiar with CFIR read each FGD transcript individually. The team selected one transcript that each team member independently open coded using an inductive approach. The team developed a preliminary codebook using open codes, which was used to code remaining transcripts. They held weekly meetings to refine code definitions, discuss emerging codes, and ensure interrater reliability. After complete hand-coding of the transcripts and finalization of the codebook, two team members recoded all the transcripts using Dedoose software, a web-based platform used for analyzing qualitative data. The team discussed and identified preliminary themes using an iterative approach and process of constant comparison. Final codes were then organized according to CFIR domains and constructs. Inner setting was defined as implementation factors within each clinic. Outer setting was constructs outside of the clinic – e.g., the network of public healthcare infrastructure, community members, and policy. Using CFIR, themes are presented in the results based on the theoretical framework analysis.

Results

Participant demographics

Sociodemographic information of 26 (90%) out of 29 of healthcare providers who participated in the FGDs was collected. Almost half ($n=12$; 46%) were employed as primary care providers while the remaining 54% ($n=14$) practiced as PTs. Twelve of the 26 participants (46%) identified as female, and the mean age was 31.3 (SD±7.2 years). A total of 25 (96%) classified their highest level of education as "medium" (a technical health course receiving students with tenth grade who are trained for 2.5 years. Psychiatric, surgery, pharmacy, generam medicine technicians and maternal and health nurses are among this group) and 1 (4%) classified it as "basic" (a technical health course receiving sudents with sixth grade who are trained for 2.5 years, ending with an equivalence of tenth grade. These are essentially preventive medicine technicians and basic nurses) while 25 (96%) reported that they've received further technical training. Providers represented nine ethnic groups: Emakhwa, Xichangane, Echuabo, Makonde, Elomwe, Xichangane, Xitsua, Tewe, and Ciuute. Almost all ($n=25$; 96%) specified their race as Black; one (4%) identified as mixed race.

Barriers and facilitators of mental health care delivery and scale up

Providers identified several barriers to care as usual, noted areas where they perceived the relative advantage of the task-shared PRIDE program, and described recommendations for delivery and sustainment of implementation (see Table 1). Their observations about implementation of the PRIDE program related predominantly to determinants in the outer and inner settings of CFIR. Specific CFIR constructs are described below.

Outer setting

Providers across all groups had observed a high prevalence of *patient mental health needs* in their healthcare settings and communities. One participant shared, *"In my community, the greatest number of searches in the health unit is epilepsy, psychoses and … depression. The population has received the message, but there are few who attend the health unit. And cases of alcohol there are few [people] that stop, [only] sometimes appear. The person talks to the [alcohol] user and the user does not return"* [FGD3]. Providers most frequently recognized problems

Table 1 Barriers and facilitators of implementation of PRIDE

CFIR Domain	Construct	Barriers to Implementation	Facilitators/Recommendations to Implementation
Outer Setting	Patient Needs & Resources	High prevalence of mental disorders; epilepsy and substance use	
	Community Characteristics	Distance between clinics; transportation; ratio of provider to population; lack of community awareness, understanding of mental illness, stigma, and discrimination	Increase number of PTs; benefits of task-shifted care; increase reach through screening and services in clinics
	Local Attitudes and Beliefs		Combat stigma; increase knowledge through community-based awareness programming; train community health workers
Intervention Characteristics	Relative Advantage		PRIDE can decrease stigma and increase reach
Inner Setting	Lack of Available Clinic Resources	No previous training and resources to screen, follow, and treat patients	
Characteristics of Individuals	Provider Self-Efficacy	Lack of knowledge, evidence-based tools, unknown referral procedures	Training will help screen, identify mental health disorders and communicate with patients. Practice and participation in refresher trainings as critical in the sustainment of skills.
Implementation Process	Leadership Engagement		Quality of training, trainer/trainee skills and qualities, use of paper-based tools if challenges with technology, refresher trainings, tools that would aid screening and referral

of epilepsy (addressed within psychiatric care), psychosis, depression, and substance use. The biggest challenge discussed by providers was being able to address these needs adequately due to a lack of resources and patients not presenting at the healthcare facility. For providers, these barriers affirmed the necessity for comprehensive and efficient pathways for delivering mental healthcare.

Community characteristics external to health clinics presented as a key construct in discussion of barriers to mental healthcare. The main challenge to mental healthcare within the community were distance to the clinics and the lack of staff: *"The mental reality is that each district has only one mental health technician who [has] to answer eighty or a hundred thousand inhabitants of that community and he ends up not being able to answer the needs of some part of the community that lives far away"* (FGD 3). Referral pathways and services that required emergent transportation from local clinics to specialized care at larger hospitals at the district level presented as additional barriers to continuity of care. A provider explained, *"In my health unit, many times the ambulance does not appear. Even if it is for the case of maternity, we have to call the day before for it to appear the next day, and they question about the diagnosis of the patient. And if a diagnosis that little is given to them it doesn't matter, they don't even send an ambulance"* (FGD 4). Another provider confirmed that treatment for physical illness was prioritized over mental illness. S/he said, *"If there are two or more patients in which one or two have organic or physical illnesses and one has mental illness, priority is always for those who have organic disease"* (FGD 3).

A majority of FGD participants reported that if provisions were made to cover a wider area as well as more specialized staff were available, they would be able to address patient needs and engage the community better. One FGD member said, *"…if the number of psychiatric technicians was increased, as well as the service stations to improve in the case of distances. In the case of health facilities that are a little peripheral, a psychiatric technician could be there to help those people who are unable to go to headquarters to be treated as well"* [FGD 3]. However, aside from allotting additional scarce resources, providers recognized the advantage of task-sharing. The PRIDE program's integration into current healthcare services was viewed as a facilitator to reach and address psychiatric patients' needs. A participant explained, *"They may not be able to respond to some needs because people are unable to travel and the information does not get there. So the training of care providers in the health units is an action that will greatly help the training of multipurpose agents…"* (FGD 3). Rapid ethnography participants listed increased reach through clinics and screening as facilitators of implementation and as meeting the needs of the population. They conceptualized quality of services as needing to be efficient and flexible and noted the importance of quick repair of damaged or unworking tablets (used for screening and intervention).

A central concern was the perceived lack of mental health knowledge within the community. As a result of lack of awareness, providers expressed that patients may delay seeking care or seek care, that may not be effective, from a traditional healer. One provider shared, *"Most ask that when we treat this [mental disorders] with traditional medicine and it doesn't work, how will it work here at the hospital?"* (FGD 4). Providers perceived lack of knowledge to be related closely with stigma of mental disorders among community members. Lack of awareness, stigma, and discrimination led to challenges accessing

care, which exacerbated severity of mental health problems. Providers frequently talked about mental health stigma. They articulated stigmatizing attitudes towards mental illness as evident in "cultural myths" that included beliefs about spiritual etiology of mental illness and fears of contagion. Providers observed that isolation of people with mental disorders and abandonment of family members were routine. A provider explained, *"They already keep that person isolated. For them, it is not a person, it is useless. They stay away from that person so not to be contaminated with the disease"* (FGD 4).

Intervention characteristics

Increasing the delivery of mental healthcare and decreasing stigma emerged as a *relative advantage* of PRIDE over care as usual. As one provider commented, *"This project will perhaps make it easier for us to make the population realize that a mental patient is not different from us"* (FGD 1). Many FGD participants spoke of the need to increase knowledge, through promotional activities and lectures which in turn would dampen stigma and encourage patients to seek care. Additionally, all groups thought that PRIDE addressed the barrier of scant resources through its training on mental disorders, patient identification and screening, and evidence-based treatments. The rapid ethnography results showed that providers listed lectures, community awareness training, and informal training of community health workers as having high priority for the sustainability of PRIDE.

Inner setting

Participants frequently acknowledged the current insufficient services in healthcare facilities to meet the vast patient mental health needs. Due to a *lack of available resources* and training, providers repeatedly reported their inability to screen adequately (missing cases), as well as follow and treat patients. Some gave insight into their limitations given the current circumstances, *"At some point, the technician is limited. How we can help your community, especially in chronic areas, to get and evaluate, and monitor cases there"* (FGD 4).

Characteristics of individuals

Many participants reported that before PRIDE, they had low *self-efficacy*, little knowledge, and no additional mental health training outside of the specialization as a psychiatric technician (30 months) or primary care provider. Having little knowledge about how to address mental health problems was especially expressed by primary care providers. For instance, a primary care provider said openly, *"At my health unit, I had no valid knowledge of these diseases"* (FGD 4). Some expressed that they only felt confident identifying certain mental disorders. Referral pathways did not always seem clear to others. One

person stated, *"Before the actual PRIDE, I just referred. My health unit did not receive any medication like that. Only after we started receiving antiepileptic drugs, then, when the case came up, I could only identify it, because I had a little idea about mental health"* (FGD 4). However, several participants felt that the training would improve their ability to address patient needs. A provider shared, *"We were able to notice that the instruments could help us to bring more evidence and clarify diagnoses and be much more effective"* [FGD 1]. Several providers from the FGDs and rapid ethnography thought that the training would improve their ability to screen, identify mental health disorders and communicate with patients. They noted the importance of continual practice and participation in refresher trainings as critical in the sustainment and skills.

Implementation process

Regarding PRIDE, most participants emphasized the need for technical support during implementation including leadership engagement in the form of guidance from supervisors for how to best supervise other professionals in their catchment area. A respondent shared, *"The support we need from our supervisors is the technical support to supervise how we are supervising the program"* (FGD 1). Findings from the rapid ethnographic assessment showed that providers emphasized quality of training as important facilitators. They perceived quality of training as influenced by trainer skills and qualities (dynamic, communicate well, have good methods, and are caring). They also noted that trainee skills and qualities were facilitators. These included motivation, participation, engagement, focus, dedication, and active listening. Other FGD suggestions included using paper-based tools in case of challenges with the tablets for data collection, additional refresher trainings and developed tools that would aid screening and referral.

Discussion

This qualitative study investigated PTs and primary care providers' perceptions of usual care for mental illness and factors pertinent to successful training, implementation, and sustainability of the task-shared, comprehensive mental health PRIDE program in Mozambique. Guided by CFIR, findings provided insights into the barriers and facilitators related to all five domains: outer setting, inner setting, characteristics of the PRIDE intervention, characteristics of individuals, and implementation process. Typically, CFIR is employed post-implementation to assess factors affecting program execution and sustainability. However, the insights from this study underscore the utility of applying CFIR framework pre-implementation to anticipate challenges, tailor strategies to the local context, and enhance the likelihood of successful implementation and sustainment.

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Regarding the outer setting, providers recognized elevated *patient mental health needs* and the need for pathways to access mental healthcare, but thought they were unable to meet these needs due to lack of resources and mental health care seeking. Further, *community characteristics* such as distance from the clinic, lack of healthcare staff, perceived low mental health literacy, and high stigma presented barriers to mental healthcare. The PRIDE intervention offered the *relative advantage* of expanding mental healthcare and decreasing stigma over treatment as usual. Inner setting challenges were insufficient services – due to *lack of available resources* and training – to adequately screen, treat, or generally meet patients' mental healthcare needs. Regarding characteristics of the individual provider, prior to PRIDE, participants recognized they had low mental healthcare *self-efficacy* and knowledge. However, they expressed that PRIDE training would improve their ability to identify mental disorders and communicate with patients. Further, during implementation, participants lobbied for technical support and *leadership engagement* in the form of guidance on how to supervise other professionals.

It is clear from this study that providers witnessed a high burden of mental health disorders among their patient population. However, they found there to be inadequate human resources and infrastructure to address patients' mental health needs. Lack of resources allocated towards mental health services is a problem globally. In LMICs in Sub-Saharan Africa, less than 1% of the national budget is dedicated to mental health [24]. As a result, providers recognized a need for formal pathways to link patients to comprehensive mental health services. Our findings suggested providers value the PRIDE program, which adopts a comprehensive approach to addressing all types of mental health disorders. Given extensive comorbidities among mental disorders and the potential for negative outcomes of mental illness at individual, community, and national levels, the World Health Organization has recommended that services be provided in comprehensive packages of evidence-based treatments [25]. Programs should aim to create comprehensive pathways and strategies to connect patients to appropriate mental healthcare as opposed to a more siloed approach to addressing a single disorder among a specific population.

In this low-resource setting, distance to local primary care clinics presented a significant barrier to healthcare seeking, a challenge that is exacerbated by the additional distance needed to access specialized mental healthcare services at a tertiary site. Access to primary healthcare is extremely limited in Mozambique, with less than 10% of the Mozambican population residing within a 60-minute walk to the closest health facility; [17] access to tertiary facilities that provide mental health care is even more restricted. Our findings strongly support the utility of task-sharing initiatives that make mental healthcare services more physically accessible at both the primary- and community-levels. However, they also suggest that special attention to address patient-side barriers to mental healthcare seeking and continued engagement may be needed for more severe mental disorders that do require specialized psychiatric services from primary or tertiary facilities. A study from central Mozambique found that only 10% of individuals with depressive symptoms and/or suicidal ideation had ever sought mental health services [26]. Investment in delivery of task-shared, community-based mental healthcare initiatives have the potential to ameliorate some of the distance barriers to mental healthcare seeking. Recognizing these external factors prior to implementation can support resource allocation for strategies like task-sharing that are more likely to succeed.

Providers acknowledged that community mental health knowledge was low and recognized a related high level of mental illness stigma. Another study in central Mozambique confirmed a high prevalence of stigmatizing attitudes towards mental illness [27]. While mental illness stigma is widely recognized in the sub-Saharan region, only a few programs have found that mental illness stigma presented a barrier to the provision of mental healthcare services at the primary- and community-level [28]. Participants in this study spoke to a need for activities to increase community-level knowledge, which in turn would address stigma and encourage mental healthcare seeking. Other task-shared mental health programs in Uganda and South Africa unintentionally helped promote social inclusion, which in turn can assist in reducing stigma and discrimination [29], a potential benefit of task-sharing recognized in low resource settings [30]. While increasing mental healthcare knowledge and expanding the reach and accessibility of mental healthcare services has the potential to help address stigma, community-level sensitization and awareness building efforts may be needed to support the success of task-sharing programs such as PRIDE. Understanding this need at the pre-implementation stage allows for development and inclusion of such programming.

Providers felt that their self-efficacy in screening for mental disorders and providing mental healthcare improved through the PRIDE trainings and with the introduction of the mwTool, a brief comprehensive mental health screening tool developed in the context of this study [31]. This suggests the potential feasibility of training primary care providers to offer mental health services integrated into the primary care system. However, for successful ongoing implementation, providers also expressed a need for continued technical support, refresher trainings, and ongoing

capacity-building activities. While such sentiments demonstrate providers' investment in continuing to provide quality mental healthcare, such support will have implications for the cost and level of effort needed to implement and sustain task-shared mental health programs. As such, task-sharing mental health programs should carefully consider the necessary training, tools and ongoing support needed to successfully implement and sustain the program. Appreciating these concerns through a targeted pre-implementation evaluation can help the PRIDE program improve provider engagement and intervention fidelity at later stages in the implementation process.

Limitations
The limitations of the study should be considered when interpreting the findings. We elected to elicit providers' perceptions of task-shared mental health care given the formative stage of the PRIDE program and to reduce assumptions of implementation frameworks developed in high-income settings. However, a systematic review of 26 studies that used CFIR concluded that prior selection of constructs could provide more depth to analysis and increase ability to translate findings to other settings [14]. We conducted the rapid ethnographic assessment and FGDs immediately following training, and providers may have different perspectives on the PRIDE program after having more time and experience with implementing the program. Although we were careful to have an interviewer unaffiliated with PRIDE facilitate the FGDs, given the providers' employment with the public health system, social desirability could have influenced their responses. Participants were not selected randomly. Thus, there may be limited generalizability of findings to all primary care providers and psychiatric technicians in Mozambique. Additionally, CHWs had not yet been trained at this stage of the PRIDE project and therefore were not included as participants. Their perspectives could have depicted important insights about any differences between the study arms. Finally, we elected not to collect providers' demographic information prior to conducting the rapid ethnographic assessment, which constrained our ability to contextualize their responses with descriptive data.

Conclusion
Primary care providers and PTs in Mozambique identified several barriers to delivery of usual care for mental health problems, noted the relative advantage of the PRIDE program to address these challenges, and offered recommendations for successful implementation and sustainment of integrated mental health care. The implementation strategy of providing training to deliver task-shared mental health care in urban and rural primary care settings increased providers' self-efficacy through improved knowledge of mental illness and access to evidence-based mental health tools. Moreover, given the increased reach through primary care, providers thought this approach has the potential of combatting stigma associated with mental illness. By identifying and addressing potential barriers and facilitators in advance, the PRIDE program can be more effectively integrated into the Mozambique public healthcare system, leading to better service delivery and patient outcomes and improve the potential for program success and scalability.

Authors' contributions
JM helped conceptualize the study, led data analysis, and was a major contributor in writing the manuscript. LdV participated in data analysis, helped conceptualize the findings, and was a major contributor in writing the manuscript. MS and ACS were major contributors in writing the manuscript. BK, CS, and CB participated in data analysis and contributed in writing the manuscript; AS, PF, and PS supported data collection and edited the manuscript. RS and LP helped conceptualize the study and edited the manuscript. MW was the Principal Investigator, led the study, and edited the manuscript.

Availability of data and materials
The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
We obtained informed consent from all participants consistent with the procedures approved by the New York State Psychiatric Institute and the Comité Nacional de Bioética em Saúde in Mozambique (CIBS FM&HCM/64/2017) Institutional Review Boards.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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