

ORIGINAL ARTICLE

Mental health care delivery in poor settings through trained female community health workers: A five-year intervention program in Somaliland.

Yakoub Aden Abdi^{a, b}, Nasir Ibrahim Said^a Yusuf Abdi Hared^a, Ismail Ayeh^a and Said Ahmed Walhad^a^aAmoud University College of Health Sciences, Borama, Somaliland and ^b Somali-Swedish Researchers' Association (SSRA), Stockholm, Sweden**ABSTRACT**

Background: The situation of mental health globally is alarming particularly in developing countries. In Somaliland/Somalia, every third person may be suffering from some sort of mental illness according to the World Health Organization. Major barriers to improve mental health include stigma and lack of skilled human resources.

Objectives: The aim was to explore the feasibility of organizing integrated community-based mental, epilepsy and mother and child health services delivered by trained female community health workers (FCHWs) in three urban sites (Borama, Baki and Dila) in the Awdal Region, Somaliland.

Methods: After selection of the 3 project sites and recruitment and training of project staff, a baseline survey was carried out. First, the sites were properly mapped based on existing geographical administrative sectors and sub-sectors of the sites. Then a representative sample of 2,722 households was randomly selected from all the 3 sites. The female head of each of those households were then interviewed using a questionnaire containing 22 questions on the target groups. The questionnaire responses were coded, and data analysed using Statistical software program, SPSS. After the baseline survey, the FCHWs were deployed in the sites assigning a specified area to each female worker. The FCHWs worked 6 hours per day 6 days per week and were required to visit 6 families each day including follow-ups. Their activities included identification of patients with severe mental illness (SMI) or with epilepsy, counselling, distribution of medications, follow-up of patients already on medication, referral, stigma reduction and documentation of their daily activities in logbooks.

Results: The baseline study showed that 12% of the households were taking care of at least one person with SMI each, while 7% had one person with epilepsy each. Of the patients with SMI, 18% were on chains. During the project period (2015-2019), the number of people with SMI or with epilepsy who benefited from the project was 2,225 and 738 respectively and their families empowered through increased mental health awareness. Among the patients with SMI, 237 were on chains before intervention and 85% of them were successfully released from their shackles.

Conclusions: This project has shown that deployment of trained and supported FCHWs can be used to reduce the mental health care gap in Somaliland. It is suggested as a model project which could, hopefully, be replicated and tested in other similar settings.

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Background

The Alma-Ata declaration of "Health for all" in 1978 reaffirmed that health in terms of physical, mental and social wellbeing is a fundamental human right. Forty-two years later, the mental health situation globally is still alarming. According to the World Health Organization,

450 million people are estimated to suffer from mental and related disorders [1]. Looking into the global burden of diseases, mental disorders account for about 31% [2]. Although there are effective psychological and pharmacological treatments to manage most of the major

CONTACT Yakoub Aden Abdi, e-mail: yakoubaden@gmail.com, Termovägen 54, SE-17677 Järfälla, Sweden

mental health problems, access to such treatments is limited. Barriers to improve mental health include stigma, lack of drugs, wrong priorities by governments and lack of skilled human resources [1]. Although the situation in some populations has improved somewhat during the past decade, it remains still the same or has even worsened in others such as in Somaliland [3].

The Human Development Report's health related indicators for Somaliland/Somalia are among the worst in the world [4], in particular, when it comes to mental health care. According to WHO, one in three Somalis are affected by some form of mental illness, a far higher rate than the one in five reported from communities in war zones [5]. This high prevalence of mental illness is due to poverty, mass unemployment, insecurity, hopelessness and many years of war trauma, human and material destruction as well as heavy abuse of khat, the leaves of a tree which are chewed by many Somali men for their psychostimulant effects [6, 7].

Among Somalis, mental illness is associated with significant stigma. Mental illness is perceived as a shame or a curse to the whole family and often kept secret, as long as it is possible by chaining the sick persons at home or putting them in residential homes called "Cilajs". Somalis prefer to die than to become "mad" as this famous Somali proverb depicts, "*Allah please kill me if you wish, but do not make me mad*". There are many public beliefs about mental illness in the Somali culture such as the perception that mental illness is due to a punishment from God for bad behaviour or a result of possession by evil spirits or demons. The first sources of help are often the religious and traditional healers [8, 9], delaying the diagnosis and prolonging the agony and suffering of the patients and their families.

Mental health is a highly neglected sector in Somaliland and the scarce services are exclusively hospital based. Somaliland has five mental health facilities with a total number of 216 beds for a population of about 3.5 million people, approximately 1 bed for every 16,000 inhabitants. Regarding the human resources, there are only 9 psychiatrists (approximately 1 psychiatrist for every 400,000 inhabitants) of which most are working in the capital, Hargeisa, and no psychiatric nurses. None of the mental health facilities provide services to children or to patients with criminal records and rarely to women. Medicine supply is erratic and none of the facilities have sustainable means of medicine supply. There are also a plethora of residential homes "Cilajs" run by private entrepreneurs with little or no supervision from the government.

The lack of mental health specialists is a major issue that impacts many countries in the developing world [10]. Attempts have been made in response to this challenge by adopting alternative approaches, for example by allocating duties previously reserved for psychiatrists or psychiatric nurses to non-specialized workers such as community health workers, an arrangement which may be termed task shifting or task sharing [11]. Today, there is evidence that

this approach works and can be a cost-effective method to deliver much needed community-based mental health services in poor settings [12-16], particularly when coupled with some sort of incentives and supervision [15].

The overall objective of the present project was to explore the feasibility of providing essential mental health services delivered by trained female community health workers (FCHWs) at the doorsteps of families in three urban areas in the Awdal region, Somaliland, the first of its nature in the region. Specific objectives were:

- i. To initiate direly needed mental health services where such services did not exist;
- ii. To support the local medical college to find a training site in mental health at the community level for its medical undergraduates;
- iii. To explore whether less specialized health workers, in this case FCHWs could deliver essential mental health services in poor settings where trained mental health professionals are lacking; and
- iv. To mitigate stigma and discrimination against people with mental disorders through advocacy and empowerment of families and care takers of people with mental disorders, while integrating their services with mother and child health care.

This intervention program was developed in collaboration between Amoud University College of Health Sciences (AUCHS) in Borama and the Somali-Swedish Researchers' Association (SSRA), a Swedish non-governmental organization with Somali Diaspora members. The project was funded by grants from the Swedish International Development Cooperation Agency (Sida) via another Swedish NGO (ForumCiv). This publication is the first in a series of reports to be produced. It highlights the achievements of the project during a five-year period (2015-2019) with focus on the services to patients with severe mental illness (SMI) and epilepsy.

Material and methods

A lot of time was spent to plan the program in the form of meetings and discussions between AUCHS leadership and the SSRA project coordinator (YAA). After securing the grant to conduct the project, the two parties discussed and agreed on the selection of the project sites, the recruitment of the FCHWs and supporting staff, details about the roles and responsibilities of the project staff, how the FCHWs would document their daily activities, about support and monitoring mechanisms of the FCHWs as well as the reporting system. The two parties agreed also to start the project with a baseline survey and developed together its design including a questionnaire and implementation procedure. A conceptual framework was developed and agreed between the parties to give an overall picture of the organisational structure and the links between the different actors (Figure 1).

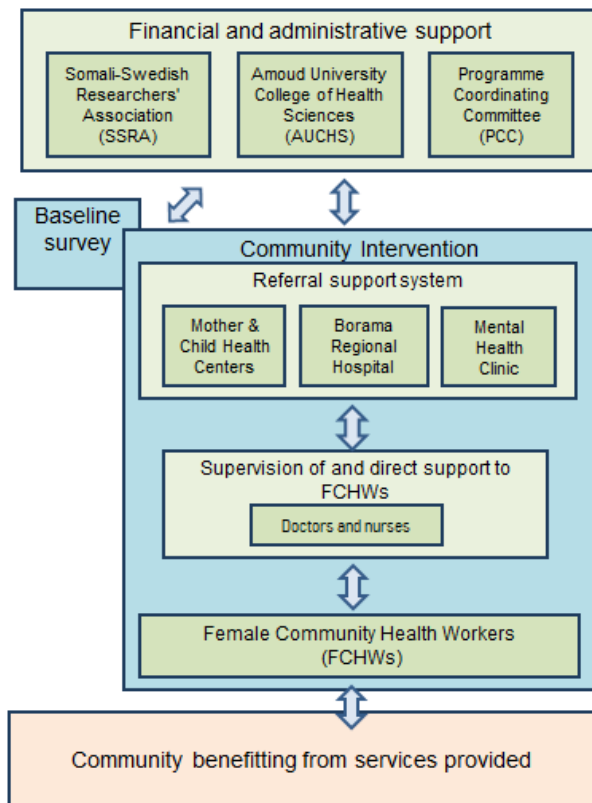


Figure 1. Project organisation and support structure

Study populations

The Awdal region was selected as the project site simply because the SSRA coordinator of the project (YAA) is originally from this area. He has good knowledge of the area and the people and he has been frequently travelling to the region to lecture at the AUCHS. Borama was selected as the main project site for logistical reasons, as it had the largest population in the region, and as AUCHS was located in the town and having community-based programmes intended for medical students. A further reason was the availability of a large number of candidates to be trained as FCHWs. Moreover, the only mental health clinic which was essential for the work of the project was located in Borama. The two parties also agreed to include two small rural towns Baki and Dila as outreach services to disadvantaged communities.

Awdal is the most north-westerly province of Somaliland. It has a population of around 670,000 according to a population estimation survey in 2014 [17]. The region comprises the four districts of Borama, Baki, Lughaya, and Zeila. The lack of civil registration systems in the region made it difficult to get accurate estimates of the current population sizes of the project sites. The Awdal region shares a long border with Ethiopia to the south and south-west and with Djibouti to the north-west. (See Figure 2 for a map and the location of the three project sites).

Borama is the regional and commercial capital of the Awdal region. It has the largest population in the region. The exact figure of the total inhabitants in Borama town is

uncertain. Borama is the site of several universities and colleges of which the most prominent is AUCHS, which is the first university in post-war Somalia. Baki is a rural town surrounded by mountains and valleys rich in agriculture. The exact number of inhabitants is not known. The town lies 37 kilometers northeast of Borama. The road to Baki is treacherous and difficult. Baki was only partly included in the project during 2015-2017 due to logistical problems. Dila is also a rural town and part of the Baki district. The exact figure of the inhabitants is not known. Dila lies 28 kilometers east of Borama along the tarmac road to Hargeisa, the Capital city of Somaliland. Dila is famous for its agriculture and is surrounded by small hills and large farming areas.

The main target groups for intervention in the project were people with SMI and with epilepsy. However, in order to avoid stigmatizing the FCHWs and the families taking care of such patients, pregnant women and mothers with children under five were included in the target groups.

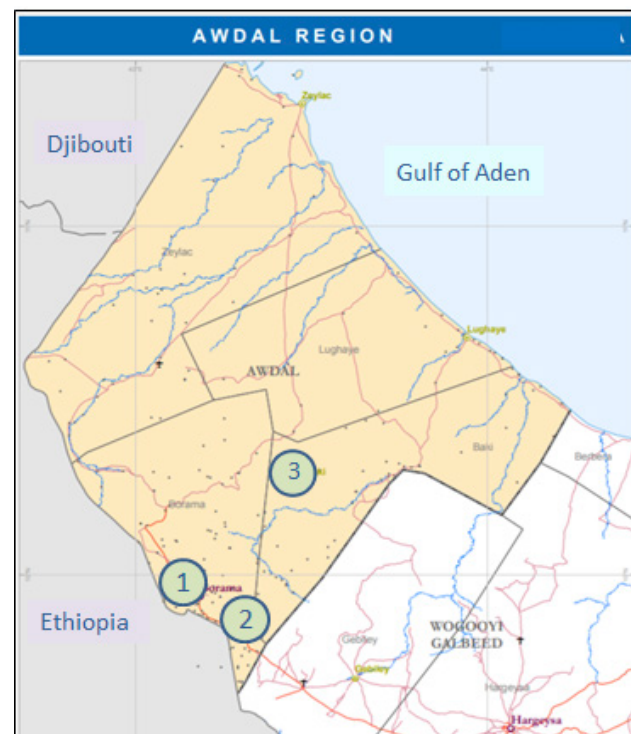


Figure 2: Map of the Awdal Region (18) showing the project sites. (1= Borama, 2= Dila, 3= Baki)

Selection and training of staff

The FCHWs were recruited using pre-set criteria agreed between the parts, AUCHS and SSRA. The criteria included that the FCHWs were to be married and living permanently in the same area where they were supposed to work, to have completed at least 8 year-primary school and to have passed a written and oral test and were willing to do the required work, which included walking long distances each day on a minimum wage of \$80 per month. The reason that only females were recruited was that women are usually present at home during the mornings when the FCHWS workers visited the households.

Moreover, traditionally, women are the main care takers of people with mental disorders at home.

This was followed by the selection of the supporting team: the nurses, the doctors and the project manager. Due to the stigma surrounding mental illness and everybody working with people with mental disorders, it was difficult to get competent individuals who were interested in the project. However, through persuasion, the university filled even these positions with the required people although the turnover particularly of the doctors was frequent during the first few years. The staff included some who were already working at the mental health clinic in Borama. The university also recruited a highly competent young man with a master's degree in public health and project management from Uganda to work half-time as a project manager. The number of staff varied over the 5 year-period. During the first 3 years (2015-2017), the staff were 48 persons including 40 FCHWs, 5 nurses, 2 doctors and one project manager, but the number was scaled down to 26 including 20 FCHWs during the last two project years (2018-2019) in order to facilitate for the Ministry of Health Development (MoHD) to take over the project.

After recruitment, the FCHWs received 3-month intensive training on the basic understanding of mental health, how to identify people with SMI and with epilepsy, basic knowledge about psychotropic medications, techniques in counselling and communication, awareness raising, and how to refer seriously sick patients. Included in the training were also practical exercises in the field, where the FCHWs were taught hands-on trainings on how to approach families, talk with the patients, clinical data collection and documentation. Further training of the FCHWs continued all through the project period one day per month focusing on specific topic each time. The trainings were facilitated by the project nurses and doctors as well as lecturers from the AUCHS.

Baseline survey

The purpose of the survey was to get baseline information about the target groups such as the prevalence of SMI and epilepsy in the community, level of education of the care takers, chaining of such people and type of treatment subjected to them as well as any major challenges which can derail the success of the project. A local consultant (YAH) was recruited for this assignment and got the overall responsibility of the planning, execution, monitoring and report writing of the study as well training of the research team. The research team consisted of the staff recruited for the project, i.e. 40 FCHWs, 5 nurses, 2 doctors and one project manager. A researcher from SSRA (YAA) was also supporting the research team. Before start of the survey, the research team received a full 6-day training program consisting of theoretical and practical field exercises on how to conduct the survey.

The baseline study design was a community-based cross-sectional survey. Firstly, the required sample size of the households was calculated using proportional formula [19], which gave a sample size of 2722 households.

According to their population size, this sample was divided among the three project sites Borama (n=2532), Dila (n=120) and Baki (n=70). To select the households, the project sites were then mapped based on existing geographical administrative sectors and sub-sectors and then broken down into smaller equally sized geographical area units, Borama (64 area units), Dila (4 area units) and Baki (2 area units). Then, the required sample of households was randomly selected from each of the small unit areas.

The survey was executed during May to July 2015. Information about the target groups was collected using a structured questionnaire in Somali. The questionnaire consisted of 22 questions relating to mother and child health including FGM as well as to mental health and epilepsy. The questions relating to mother and child health extracted information about the respondents' name, age, place of residence, number of persons living in the household, children under 5, whether respondent was pregnant, level of education of the respondent, information about place of delivery, level of her health education regarding breastfeeding, handwashing, vaccination. The questions relating to mental health and epilepsy were aimed to elicit information about the existence of a person with SMI at home or with epilepsy, whether the person was chained or not, the attitude and beliefs of the respondent about mental illness and epilepsy and the type of treatment given. Data collected were entered into Microsoft excel, coded, cleaned, and then imported into statistical software program, SPSS version 20 for analysis. More details about the baseline survey will be presented in a separate article in progress.

Permission to carry out the study was obtained from the Awdal Region Health Officer after ethical clearance from the Research Ethical Committee (REC) at Amoud College of Health Sciences. The participants were briefed about the nature of the study, its purpose and implications. Verbal informed consent was obtained individually from each of the participants before starting the interviews. Participants were informed in Somali that all information obtained would be treated with confidentiality by ensuring their identity would not be revealed to anyone and that data obtained would be used for the purpose of the study only.

Implementation of the intervention

To effectively launch and implement this project, a strong support system was set up around the FCHWs consisting of daily support from the project nurse, direct access to the project doctor/coordinator, a working referral system to major hospitals and regular support from the local committee and the general Programme Coordinating Committee (PCC). The project also enjoyed a strong and committed counterpart in AUCHS, which had the institutional capacity to undertake the implementation of the intervention, including training, supervision and co-funding. Moreover it had well established links with communities as well as the local and national authorities. AUCHS thus took part in the training of the FCHWs,

mapping of the project site and numbering the houses in the project area which was instrumental for the daily work of the FCHWs. Figure 1 illustrates the support structure built around the FCHWs to assure maximum success in the project.

Home visits and community mobilisation

To make the follow-up and monitoring of the work of the FCHWs easy, a logbook was developed for data collection during the home visits. The logbook consisted of two parts, a family card and an operational card. The family card was aimed to record the demographic data of each household such as number of persons in the household, information about the female respondent (mother) such as pregnancy and level of education, number of children under 5 and their status of immunization. It would also state if there was a family member with SMI or with epilepsy and give information about the person in terms of name age and gender and whether the patient was chained. The family card was filled only once during the first home visit. The operational card was intended for recording of the daily activities by the FCHWs, such as health education (handwashing, nutrition, vaccination, antenatal care, mental health promotion, danger signs of pneumonia etc.), counselling, provision of medications and patient referrals. The FCHWs were required to tick off in the card the type of activities they carried out but also describe in detail, where deemed necessary, i.e. the type of medication they dispensed and dosage, information about a referred patient, signs and symptoms of a new patient not seen yet by the nurse or doctor.

After completing the 3 month-training, the FCHWs participated also in the baseline survey which further sharpened their knowledge about the project sites and the target populations. Then the FCHWs were deployed in the three project sites. Each FCHW was given a clearly specified and marked area based on the existing administrative divisions of the sites usually in the neighbourhood where the FCHW was already living. The three project sites lacked a civil registration system and it was not feasible to organise a complete mapping and census in the areas, The FCHWs were instructed to visit and register households gradually and were expected to achieve a complete coverage of the respective communities by the end of the five year period.

The FCHWs usually started their work at 8.00 a.m. A typical day began with a short briefing from the lead nurse for guidance and shared work related challenges. Then each FCHW started to visit her assigned households. Each FCHW worked 6 hours each day and was required to visit 6 households per day. However, in case of more pressing issues such as to follow a seriously ill patient to the hospital, the numbers were less.

In the beginning the families were suspicious about the FCHWs; they met with strong resistance and were not easily welcomed by the families. In some instances, they were shouted at and even had doors closed in their faces. Slowly, however, they attained the trust of the community when their work became visible and the patients they

supported recovered and their chains released. During the home visits, the work of the health workers included identifying persons with SMI or with epilepsy while documenting any signs and symptoms when talking to and observing the patient or talking to the caretaker. They also offered education to the caretaker and when possible the whole family about mental illness. They showed positive attitude and conveyed hope to the family that their sick loved ones will be treated and will recover. They acted as a bridge between the family and the health professionals, nurses and doctors who in their turn quickly responded to the FCHWs' requests. After the first visit, the FCHWs continued to follow-up all patients on treatment and inform the doctors in case of side effects, lack of improvement of the patients' condition or the need for refilling of their stock of medicines. In some days, the FCHWs provided group counselling to several caretakers sitting with them under the shadow of a tree in the neighbourhood which the participants appreciated very much. The families were also able to contact their respective FCHWs by telephone in case they needed urgent help.

The FCHWS, nurses and the doctors were working as a team which increased their credibility and acceptance in the community. The doctors were responsible for setting the diagnoses, prescribing medications, making home visits if requested by the FCHWs, and training of the staff. The FCHWs had also access to both maternal wards and mental health ward at the Borama General hospital in case they needed to admit someone free of charge. The hospital is affiliated to the AUCHS which is the local partner and implementer of the project. The hospital administration, including the Director who is a trained gynaecologist, was also engaged by the university to support the project. AUCHS donated all medications which they acquired through their contacts with the business community in the region and abroad. The university also facilitated the printing of all the logbooks and reports free of charge.

Advocacy and community awareness raising have been important elements of the work by the FCHWs. Activities included workshops for the police working at the prison in Borama and for teachers working in the schools in the project sites. In this way hundreds of teachers and policemen were provided increased understanding of mental illness and of how to seek support in case they encounter someone with SMI. Moreover, the FCHWs once every quarter arranged tv and radio programs to educate the public about the mental illness and the rights of people with mental disorders including chain-free care.

Data registration, project monitoring and evaluation

Reports based on the FCHWs' logbooks were collected by the project manager on a monthly basis and the data summarized using Microsoft Excel and simple descriptive statistics. At the end of each month, the whole team met for two days going through the data to correct any errors or clarifications deemed necessary and to provide

continued training to the FCHWs.

The doctors and nurses supervised and monitored the activities of the FCHWs on a daily basis. The project manager met the whole team once per month and as required to see that all activities were proceeding as planned. The Principle of AUCHS who has the overall responsibility of the project was regularly briefed about the progress and challenges by the project manager and by meeting with the whole team once every quarter. Moreover, a project coordinating council (PCC) represented by most important stakeholders in the region met once every quarter to oversee the smooth-running of the project. The project coordinator from SSRA (YAA) visited the project site twice per year for supervision, training of the staff and lobbying for the project at the Ministry of Health. ForumCiv has sent its own evaluators twice to the project site and produced highly positive reports.

We hired independent external reviewers twice during the project period to evaluate the progress of the project [20, 21]. The evaluation survey used a combination of both secondary and primary data, incorporating both qualitative and quantitative methods using focus group discussions (FGD) and key informant interviews (KII) to capture information on the relevance, contextual factors that affected project implementation and outcomes, sustainability, and the impact of the community-based health program.

Results

Data from the Baseline survey

The average number of people in the households interviewed was 7. In total, 2722 households were successfully interviewed which is approximately 99% of the required sample (n=2750). Of the 2722 households interviewed, 314 and 189 reported to be taking care of someone with SMI or with epilepsy, respectively (Table 1). Fifty-six (18%) of the 314 SMI-patients were found to be on chains. Among the patients with SMI, the most common diagnoses were schizophrenia (32%), psychosis, mostly khat related psychosis (25%), bipolar disorder (22%) and depression (17%).

About 51% of the household respondents were found to have little or no knowledge about mental illness and approximately 79% reported that they sought support and treatment for their sick family members from traditional healers and Qur'an reciting. The majority of the epileptic patients were at a young age; seventy-three percent (73%) of the male and 62% of the female epileptic patients were under 24 years old. Although 67% of the respondents reported that their family members had been given modern medicine, around 92% reported to seek their treatment primarily from traditional remedies or Qur'an reciting (for further information we refer to our report on the baseline study in manuscript).

Table 1. SMI and epilepsy patients identified in the baseline survey sample of 2722 households

Category of patients	Number	% of households
SMI patients	314	11.5
- Male SMI patients	224	8.2
- Female SMI patients	90	3.3
- Patients on chains	56	2.1
Epilepsy patients	189	6.9

Basic information from and outcomes of the 5 year intervention

The total number of households counted by the FCHWs in the three project sites was 17,980, of which 17,040 in Borama, 600 in Dila and 340 in Baki. Since information about these households was incomplete, data from the baseline survey were used to estimate the size of population. The average number of 7 persons per household in the baseline thus indicated a total number of approximately 126,000 inhabitants (7x17,980) in the study areas.

Based on the baseline findings, the expected number of patients with SMI from the households visited by the FCHWs was estimated to be around 2067 (0.115 x17,980 households). However, the actual number of individuals identified with SMI was 2,225, slightly higher than the expected number. All patients identified by the FCHWs received proper medical and psychological help in their home environment and their families were educated about mental health.

Table 2. SMI and epilepsy patients identified and supported during the intervention 2015-19

Year	SMI patients	Epilepsy patients
2015	485	250
2016	685	183
2017	191	64
2018	477	143
2019	387	98
Total	2,225	738
SMI patients chained before intervention	237	-
SMI patients still on chains after intervention	35	-

Based on the baseline findings, the expected number of chained patients with SMI in the supported households was estimated to be around 401 (0.18x2,225 patients). However, the actual number of patients the FCHWs found chained was 237, which indicates a 59% detection rate as compared to the baseline survey (237/401). Eighty-five percent (85%) (202 out of 237) of those identified chained were successfully made chain-free. From those offered chain-free service, 35 patients were still on chains at the end of 2019 due to relapse or refusal by their families

being scared of the sick person (Table 2).

Based on the baseline study, the expected number of patients with epilepsy in the supported households was estimated to be around 2,041 (0.069 x 17,980). During the project period, the actual total number of patients with epilepsy identified by the FCHWs was 738 patients which indicates a detection rate of 59 %. All epilepsy patients registered by the FCHWs received medical attention and were provided with free medication.

Discussion

The main findings in this community based mental health program can be summarized in three points: a) The huge shortage of human resources for mental health care in the project areas could be overcome by trained Female community health workers (FCHWs) b) Mental health services could be delivered at the doorsteps of the target populations; and c) Stigma against people with mental disorders could be reduced.

The first finding of this project supports the idea of task shifting in mental health services in countries where mental health professionals are scarce. Psychiatrists are scarce in most developing countries. According to WHO Global Observatory Data [22], most low-income countries have 0.1 psychiatrists and 0.3 psychiatric nurses per 100,000 people. The WHO's European region has for example 200 times as many psychiatrists as in the whole of Africa. In Somaliland, there are only 9 psychiatrists (2-3 years training) and no psychiatric nurses for a population of about 3.5 million people. Thus, using trained community health workers to deliver much needed mental health services should be a highly welcome scheme in Somaliland. The use of FCHWs is also a tested method to deliver basic health needs in remote communities in many developing countries. For example, in Nepal FCHWs have been the backbones of the health care system in the country for the past three decades. To date, there are more than 50,000 volunteers in Nepal, educating villagers, delivering health services or collecting demographic data in the community [23, 24]. Pakistan is another country with long experience in using FCHWs, commonly known as "Lady Health workers". Currently, there are more than 100,000 FCHWs operational in Pakistan providing health care to people living in villages and in poor settings [25, 26]. FCHWs have however been rarely been utilized to deliver mental health services. We are not aware of any similar intervention project in Somaliland.

The second major finding of this project is the successful outreach mental health services provided to the target populations in the project areas. During the project years, a total of 2,225 patients with SMI (approximately the number to be expected from a preceding baseline study) and 738 patients with epilepsy (about 60% of the expected number) were identified and provided health care in their home environment. Moreover, all their families received mental health education and were subjected to awareness raising against stigma. The low

detection rate of patients with epilepsy is difficult to explain. The reasons could be due to difficulties in the diagnosis of the illness or families hiding their sick loved ones due to stigma. It is well known that epilepsy is associated, probably more than mental illness, with superstition and prejudice that makes families become quite resistant to accepting modern treatment [27, 28].

Among the 2,225 patients with SMI, 11% (n=237) were found to be on chains, which was about 60% of the expected numbers judging from the preceding baseline study. This indicates a low detection rate of chaining in the intervention study which may be related to the huge shame and stigma associated with having a chained sick relative at home forcing families to hide the sick person. The intervention was, however, very successful as 202 (85%) of the 237 patients were made chain free. Although all the patients on chains identified by the FCHWs before the intervention were offered chain-free health service, some families declined from removing the chains due to strong fear that the patient will relapse to khat chewing and become violent. Heavy khat abuse is a major precipitating factor of psychosis particularly in vulnerable groups [6].

Although the global trend is deinstitutionalization of mental health services from hospital based towards primary health care and community care-based services [29], in Somaliland the trend has been in the reverse direction. Since the colonial era during the 1950s, Somaliland had only two mental hospitals, one in Berbera and the other in Hargeisa with a total capacity of 125 beds. More recently, new mental health facilities were established in Borama, Gabiley and Buroa with a total capacity of 91 beds. During the past ten years, some private hospitals were also started or are under construction. Moreover, there are a large number of privately owned residential homes for people with mental disorders called in Somali "Cilajs", which accommodate large number of patients some of them for many years against their will.

This is the first time a community based mental health program with such magnitude and duration has been implemented in Somaliland. The success of the project gained the respect of the Ministry of Health Development leading to an agreement between AUCHS and the Regional health authority to integrate the project into the region's primary health care system. The project is currently going in its final year before it is taken over by the Ministry to be implemented jointly by AUCHS and the Ministry of Health in all the primary health care facilities in the Awdal region. The staff working in those facilities received one-week training on the WHO mhGAP Intervention Guide [30] by the project team in August 2020.

The third major finding of this project is the reduction of stigma against people with mental disorders. Through sustained information and education given to the families by the FCHWs, there was noticeable reduction of stigma among the people in the project areas. In an evaluation

study conducted by an independent external evaluator [20], focus group discussions (FGDs), conducted with project beneficiaries (households), project doctors, nurses and FCHWs, revealed that at the initiation of the project, there was a high degree of stigma exhibited by the families of the mentally ill patients, which dramatically diminished during the project implementation. In the beginning, many families were hesitant to have any contact with the FCHWs and in some instances were hiding their sick loved ones, but they slowly changed their minds and started to take the initiative by themselves approaching the FCHWs for support. Most families expressed their strong beliefs that mental illness is the result of possession of evil spirits, demons or the devil, having sinned, or lack of faith and that it therefore can only be cured through faith-based healing or through traditional healers. Here is a transcript of some of the statements from three FCHWs participating in the FGDs:

“When the project started there was stigma, and people did not understand about the causes of mental illness. They even did not know that mental illness can be treated. They used to chain the mentally ill persons”.

Another one said:

“We counselled the family members to involve the mentally ill patients in the daily activities and advised them to stop chaining them. The mentally ill started taking medications and when we went back for follow ups, we found the patients unchained, engaging with the family members in conversations. Patients were actively participating in home chores. They were allowed to sit with other family members and in some cases spending time with family members watching TV”.

A third FCHW said:

“Stigma is now low, because of the continuous education and counselling on mental illness, pointing out that mental illness is curable and treatable. Before, the community believed that there is no treatment for mental illness, but now the community has gained more understanding because they saw the results of the treatment which was effective”.

There is strong evidence that stigma is one of the major impediments to improve the health situation and quality of life of people with mental disorders [31, 32]. Our project shows that bringing mental health services closer to the community will not only contribute to health improvement of concerned patients but will also reduce stigma and discrimination against people with mental disorders by raising the level of mental health literacy in the community. Although research on stigma reduction interventions in low- and middle-income countries (LMICs) is scarce, a number of small-scale and short-term interventions have been reported during the past few decades which have shown small to moderate effect. These studies were focusing on education and contact or interactions with stigmatized people [33, 34], which is consistent with the activities of the FCHW's in our project. However, further well designed and controlled studies are needed to properly evaluate the long-term impact of the

work of FCHWs in our project on stigma.

This was a project fully supported by many actors both outside and inside Somaliland including generous financial support, thus its success must be interpreted with some caution with regard to its replicability. The whole SSRA Board were indirectly involved in the project, since its progress and challenges were regularly discussed during the annual meetings. Some individuals from the SSRA board with international expertise in public health and project management also regularly advised about the smooth running of the project and any challenges encountered. AUCHS was also a perfect partner in the project. The university pool of lecturers regularly contributed to the training of the project staff. The university made available its lecture rooms and conference halls to the project free of charge. The university also contributed the medications which were given to the patients free of charge which would otherwise have consumed the bulk of the project budget. The generous financial support the project enjoyed during so many years is also unique and it could be a challenge to maintain this support in the continuation of the project or its possible expansion to the whole of Somaliland or Somalia.

Conclusions

This project has shown that trained and well supported FCHWs can successfully reduce the gap in human resources in Somaliland and increase accessibility and equity of mental health services to marginalized and poor communities in one region of Somaliland. It may be considered as a model project. However, echoing the limitations mentioned above, the results need to be interpreted with caution regarding their replicability within the regular public health system or in other areas where such strong support systems around the FCHWs might not exist.

Summary in Somali

CINWAAN

Daryeelka Caafimaadka Maanka ee Deegaamada Danyarta ah oy Horkacayeen Haween Degaanka ah oo loo Tababaray Marwooyin Caafimaad: Khibraddii laga dhaxlay ka Fulinta Barnaamijka Somaliland Muddo Shan Sano ah

SOOKOOBID

Hordhac: Xaaladda caafimaadka maanka/dhimirka ee adduunku waa mid laga dayrinayo gaar ahaan waddamada soo koraya. Siday tilmaantay heya'dda caafimaadka adduunku (WHO), sadexdii qof ee somaliyeedba waxa dhici kara inuu midkood la liito nooc ka mid ah cudurada maanka. Caqabadaha waaweyn ee hortaagan horumarinta caafimaadka maanka waxaa ka mid ah cuqdada laga qabo cudurada maanka iyo la'aanta shaqaale xirfad leh.

Ujeeddo: Ujeeddadu waxay ahayd in la sahamiyo suurtagalnimada abaabul caafimaad oo loo fidinaayo dadka qaba xanuunada daran ee maanka, dadka qaba

suuxdinta iyo taakuleynta hooyada iyo dhallaanka kuwaas ay fulinayaan marwo caafimaad oo la tababarey kana fulinayaan gobolka Awdal gaar ahaanna magaalooyinka Borama, Baki iyo Dila.

Qalabka iyo Farsamada: Kaddib xulashadii 3da meelood ee mashruuca laga fulin lahaa iyo hawlgeintii iyo tababarkii shaqaalaha, waxa laga hirgaliyey 3da meeloodba daraasad aasaasi ah oo xog ururineed. Ugu horreyn, goobaha laga fulinayo mashruuca waxa lagu sameeyey calaamadeyn iyadoo la raacayo qayb-maamuleedka dawladda hoose. Kaddib muunad matala goobaha oo ka kooban 2,722 qoys ayaa si aan kala sooc lahayn looga xushay dhamaan 3da goobood. Hooyada qoyska ee guri-kasta ayaa ka dib la wareystey iyadoo la adeegsanayo su'aalo diyaar ah oo ka kooban 22 su'aalood oo ku saabsan kooxaha bartilmaameedka ah. Jawaabaha ay bixiyeen hooyooyinkaasi ayaa mid walba lambar la siiyey ka dibna lagu falanqeeay iyadoo la adeegsanayo barnaamijka softweerka ee statistikada, SPSS. Kaddib daraasadda aasaasiga ah, shaqaalihii marwada caafimaad ayaa loo qaybiyey goobaha, iyadoo marwo kastaba loo xilsaaray aag cayiman. Marwo kasta waxa looga baahnaa iney shaqeyso 6 saacadood maalintii, 6 maalmood usbuucii iyo inay booqato ugu yaraan 6 qoys maalin kasta oo ay ku jiraan qoysaskii hore loo arkey ee u baahan in lagu noqdo. Waxqabadyadooda waxaa ka mid ahaa helidda bukaanada qaba cudurada daran ee maanka, kuwa qaba suuxdinta, talobixin, qaybinta daawooyinka, la socoshada bukaanadii horey u qaatay daawada, u gudbinta dhakhtarka ama kalkaalisada bukaanada aad u liita, la dagaalanka cuqdada bulshadu ka qabto cudurada maanka iyo qorista iyo keydinta hawl maalmeedkooda.

Natiijoyinka: Daraasaddii aasaasiga aheyd waxay muujisay in boqolkii qoysba labo iyo toban ka mid (12%) ay daryeelayaan ugu yaraan hal qof oo qaba xanuunada daran ee maanka, halka boqolkii qoysba todoba ka mid (7%) ay daryeelayeen ugu yaraan hal qof oo qaba suuxdin. Boqolkiiba sideed iyo toban (18%) ka mida bukaanada qaba xanuunada maanka ee daran waxay ku xirnaayeen silsilado guryaha dhexdooda markii darasadda la waday. Intii lagu jiray muddadii mashruuca (2015-2019), bukaanada ka faaiideystey mashruuca waxay ahaayeen 2,225 oo ah kuwa qabay xanuunka maanka ee daran iyo 738 qof oo qabay suuxdin, iyadoo dadkaasoo dhan eheladoodiina sare loo qaadey aqoontooda cudurada maanka iyagoo la siiyey wacyigalin joogta ah. Labo boqol todoba iyo sodon (237) ka mida bukaanada qabay xanuunada maanka ee daran waxay ku xirnaayeen silsilado kahor intaan la daaweyn, iyadoo boqolkiiba sideetan iyo shan ka mid ah (85%) lagu guuleystey in laga furo silsiladihii markey bogsadeen

Gunaanad: Mashruucani wuxuu muujiyey in isticmaalka marwo caafimaad oo si fiican loo tababarey ay buuxin karaan baahida shaqaalo la'aaneed ee ka jirta daryeelka caafimaad maanka ee Somaliland. Waxan soo jeedinaynaa inuu mashruucani noqon karo mid tusaale ah oo laga tijaabin karo lagana hirgaliin karo meelaha kale ey ka jirto baahiyaha caafimaad oo la mida kan Somaliland.

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Author contributions

YAA conceptualized the program and drafted this article in its entirety, sharing the drafts with the other authors for comments and feedback. He was also responsible for making changes and edits as suggested by journal editors and the peer reviewers. Being the project coordinator from the SSRA end, YAA also participated in the planning and execution of the project as well in the writing of interim reports. He also participated in the coordination, trainings and lobbying for the project at the Ministry of Health which made possible the takeover of the project by the Ministry. NIS was the coordinator of the project at the local level. He was responsible for the smooth running of the day-to-day activities of the project, representing the project in local meetings and report writings. YAA was responsible for the design, implementation and preparing of the first draft of the baseline study. He also read and commented on some parts of this article particularly concerning the baseline. SAW, the Principle of AUCHS, and IA, the Dean of the School of Medicine at AUCHS, were members of the project coordinating council (PCC) and had the overall responsibility for the project as local partners. All authors contributed in the development of this article and approved the final manuscript.

Disclosure statement

No potential conflict of interest was reported by the authors.

Ethics and consent

Regarding the baseline study, permission was obtained from the Awdal Regional Health Officer after ethical clearance from the Research Ethical Committees at Amoud College of Health Sciences. Participants in the baseline study gave informed verbal consent after being fully informed about the purpose and procedures of the study. All responses were kept confidential and anonymous.

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Paper context

Mental health is a huge problem in Somaliland. Major obstacles for improvement include lack of human resources. This article addresses the importance of using trained and well supported female community health workers as a vehicle to deliver much needed mental health services at the doorsteps of poor families in most marginalized communities in Somaliland. The outcome

from this 5-year program points towards its potential role as a model that can be replicated in different regions in Somaliland and Somalia as well as in other similar settings.

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