Abstract

Background: Community health workers (CHWs) help reduce healthcare disparities and improve access to and quality of care in many countries.

Aim: To provide an overview to compare and contrast characteristics of CHW programmes in Egypt, Pakistan and Afghanistan and describe the strengths, weaknesses and challenges of the programmes.

Methods: Scientific databases and grey literature were searched including PubMed, Medline, Cochrane Review Library, WHO databases, and grey literature websites including those of national health ministries. We shortlisted 23 articles to be included in this study.

Results: The three programmes reviewed vary in their organization, structure, enrolment and payment structure for CHWs. Key challenges identified in the review include: commodity security that compromises quality of services; inadequate and irregular training; unpredictable or inadequate remuneration structure; and lack of standardization among organizations and government ministries. Strengths identified are that the programmes are accepted and integrated into many communities; and have the support of health ministries, which enhances sustainability and regulates standardized training and supervision. These also increase participation and empowerment of women, evident in the fact that CHWs have organized among themselves to demand better treatment and more respect for the work that they do.
Conclusion: Our findings should alert policy-makers to the need to review CHWs’ scope of practice, update education curricula, and prioritize in-service training modules and improved working conditions. The effectiveness and impact of CHW programmes has been shown countless times, demonstrating that task sharing in healthcare is a successful strategy with which to approach global health goals.

Keywords: community health worker, female health worker, raedat, task sharing, Eastern Mediterranean Region


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Introduction

In the past several years, community health worker (CHW) programmes have been consistently effective in improving the health of the populations they served. This has led to the understanding that task-sharing in healthcare is a successful strategy with which to approach global health goals (1,2). CHWs serve as liaisons between small communities and larger health systems by providing community-based primary health care, especially for rural populations. According to the World Health Organization (WHO), “community health workers should be members of the communities where they work, should be selected by the communities, should be answerable to the communities for their activities, should be supported by the health system but not necessarily a part of its organization, and have shorter training than professional workers” (3). Although there is much variation in the characteristics and duties of CHWs globally, they have proven to be a crucial bridge to reduce unmet healthcare needs in rural populations, and are often advocates for community engagement and education in health (1).
Providing health care within communities is important, and perhaps nowhere more so than in the WHO Eastern Mediterranean Region. CHW programmes are especially important in the Region because there are high illiteracy rates, poor infrastructure in some areas, and especially tight-knit communities that in some cases may lack trust for higher networks such as governments and nongovernmental organizations (NGOs). Improving, scaling up or developing CHW programmes in the Region could have a significant impact on maternal and child health outcomes, as well as improve mental health and reduce infectious disease burden (1–6). Several countries within the Region have had significant success with CHW initiatives.

The objectives of the study were to give an overview of the characteristics of three specific CHW programmes in Egypt, Pakistan and Afghanistan, and to review their strengths, weaknesses and challenges.

**Methods**

A literature search was conducted in PubMed, Medline and Cochrane Review Library. Grey literature including governmental programme evaluations and WHO documents were also searched. The search was conducted from 1 June to 30 September 2017. We identified papers about CHW programmes in all the countries of the WHO Eastern Mediterranean Region. Search terms used in PubMed were “community health worker”, “lady health worker”, “raeda”, “behvarz”, the MeSH term “community health workers”, and the names of all the countries in the Region. In addition to a search in PubMed, an individual search for CHW programmes in each country was conducted in Google. Based on the findings from these searches, we chose to compare Egypt, Pakistan and Afghanistan in this paper because they represented three different types of CHW programmes and had > 3 literature sources identified in our review.

We reviewed the abstract of 63 papers in PubMed; 16 of which were reviewed in full text and seven of which were included in the study. Inclusion criteria for sources were that studies reported quantitative demographic information about CHWs and gave descriptive information about how the CHW programme functions on a national level. Papers that focused on CHW programmes in any other than the three selected countries were excluded. Papers that reported the effectiveness of CHW programmes without discussing programme characteristics were excluded, as the goal of this search was to gather information about the workings of the CHW programmes. Three reviews were included from the Cochrane Library and 14 sources came from grey literature, including WHO published documents and documents from national governments. See Figure 1 for an overview of the papers included. We reviewed the selected literature and also reported any relevant qualitative information. We compared the following characteristics of CHW programmes from Egypt, Pakistan and Afghanistan: programme organization and scope, and CHW requirements, demographics, duties, populations served,
training, supervision and remuneration. Challenges identified in the reviewed literature were reported and compared.

**Results**

**CHW programmes in WHO Eastern Mediterranean Region**

A basic Google search indicated that 14 of the 23 countries/regions within the WHO Eastern Mediterranean Region had some form of CHW programme. Details about the majority of these programmes were difficult to find, but we considered that the following countries have had some form of CHW programme: Afghanistan, Islamic Republic of Iran, Jordan, Kuwait, Oman, Pakistan, Syrian Arab Republic, Yemen, Palestine, Egypt, Morocco, Tunisia and Sudan. The literature search within PubMed yielded at least 1 scientific study involving CHWs in Afghanistan, Islamic Republic of Iran, Iraq, Pakistan, Egypt, Tunisia and Sudan, although these countries did not necessarily have programmes in place.

**Comparison of CHW programmes in Egypt, Pakistan and Afghanistan**

The characteristics of the three CHW programmes are listed in Table 1. The oldest programme is in Egypt where CHWs are called raedats. This programme was started in 1964 by the Ministry of Social Affairs, initially to promote family planning and population development (7). The programme has greatly changed over the years and is now run by various government ministries and NGOs, which have different goals and structures (8). The next programme reviewed is in Pakistan, where CHWs are called lady health workers (LHWs). This programme was started by the Pakistani government in 1994 and has continued to be operated and regulated by the government (9). This programme has historically been the most cohesive and standardized of the three reviewed; likely because it is run by a single organizing body with a standardized mission statement and job description for all LWHs. The last reviewed is the CHW programme in Afghanistan, which was founded in 2003 as a postwar redevelopment effort (10). This programme is run by 29 international NGOs with some governmental involvement, and being the youngest of the programmes, it has been possible to model its structure and organization on other global CHW programmes (11).

**Selection and demographics of CHWs**

In all programmes, CHWs must be members of the community that they serve. The importance of this is highlighted by interviews with community members who said that they were more likely to trust CHWs from the same sociocultural background as themselves (7). In Pakistan and Afghanistan, CHWs must have formal approval by the community before starting their job. In Egypt in 1995, 87% of raedats lived in the same community that they served (7), while in Pakistan in 2008, 97% were found to reside in the community where they worked (12). In Egypt and Pakistan, CHWs must be female. In Afghanistan, CHWs are both male and female, and each health post in the country aims to have 1 CHW of each sex, ideally related to each other. In order for women to be CHWs in both Egypt and Afghanistan, they need permission from their...
Selection of CHWs varies between the countries, but in all three countries, CHWs are interviewed before they are hired. In Egypt and Pakistan there is an educational requirement for CHWs. Egypt relies on community members, ideally young married women with not too many children, to volunteer for the job of raedat (6,7,11). Community leaders are often relied upon to recruit promising candidates. Candidates must have a higher than average education level, and some organizations require literacy (8). In Pakistan, women aged 18–50 years, preferably married with children, are recruited by job postings in communities. After interviews, they are hired by a committee, which includes medical officers and at least one community member (12). LHWs must have ≥ 8 years of education; a rule that is strictly enforced, with only 1% of LHWs not meeting this criterion (12). In Afghanistan, men and women aged > 18 years, ideally well educated, although there is no strict requirement, are hired through a consultation process between NGO staff and community elders (13). After they are hired, CHWs are expected to turn a room of their house into a health post, and the village must approve the appointment (14). Additional demographics and selection criteria are compared in Table 1.

**Services delivered and populations served**

The responsibilities of CHWs in the three programmes vary slightly and are listed in Table 2. CHWs in all three programmes are responsible for providing information about family planning (FP), writing referrals to other health workers, providing either ante- or postnatal health care, promoting vaccination, and providing disease prevention and other general healthcare information. CHWs in Pakistan and Afghanistan are additionally certified to provide treatment for some common diseases such as diarrhoea, malaria, respiratory illnesses and intestinal worms, and directly observed therapy for tuberculosis. CHWs in Afghanistan additionally provide education for mental health and substance abuse. LHWs in Pakistan are trained to provide emergency relief. Other common non-healthcare responsibilities of CHWs are mapping their communities, and population record keeping (7,8,13,15,16). Promoting community engagement of women is also an important feature of these CHW programmes. Afghanistan employs male CHWs who carry out many of these responsibilities not strictly related to FP.

Pakistan has the most robust programme with an estimated 90 000 LHWs in 2008 (12). The number of community members served by each individual CHW varies between organizations, and most organizations outline targets for their CHWs. There is greatest variation in Egypt, with each CHW responsible for 400–600 homes (7). The other defined targets are 200 households per CHW in Pakistan and 100–150 households in Afghanistan. These targets are generally met in both countries, as shown in Table 2 (11,14).

**CHW training, supervision and payment**
Details about differences in training, supervision and payment are reported in Table 3. In Pakistan, LHW training is the most standardized, regulated and enforced compared to the programmes in Egypt and Afghanistan, with 100% of LHWs completing 3 months pre-service training plus 1 year of training in the field (12). In Afghanistan, training is also standardized; however, replacement CHWs who take over posts of former CHWs often do not undergo formal training. For this reason, only about 76% of CHWs reported having attended the three 3-week training modules (13). The innovative training schedule in Afghanistan includes classwork and in-service training, and has standardized pictographic training manuals that can be used regardless of literacy. In Egypt, training requirements vary by organization, and depending on which government body or NGO employs the raedat, 28–92% reported receiving training (7). The Ministry of Health and Population raedat programme, which employs the largest number of raedats, has a 5-day training course. However, as the course is offered only rarely, many raedats report working for 3–5 months before undergoing training (7,8). Formal supervision and retraining requirements are standardized and enforced in Pakistan and Afghanistan, with ~98% of CHWs reporting supervision in both countries. CHWs in both of these countries are formally assigned to health facilities that employ CHW supervisors. Supervision and retraining in Egypt vary between organizations that employ raedats (7,8,11). In all three countries, supervision and evaluation is conducted in the field. Evaluations vary between programmes and may be based on number of home visits made, quality of record keeping, and community member satisfaction with the CHWs (11,14).

CHWs in Egypt and Pakistan are paid, while those in Afghanistan work on a voluntary basis, but may be compensated with nonmonetary commodities such as food, transportation, bicycles, household items, or stipends based on referrals to health facilities for FP and tuberculosis treatment (11,14). LHWs in Pakistan have a standardized salary set by the government (8000 rupees/month in 2012), although many of them wait several months between receiving payments, and report intermittently not receiving their salary in full. Remuneration is not standardized in Egypt, and depending on the organization, payment may only cover transportation expenses. Interviews with CHWs in both Egypt and Afghanistan illuminated the fact that most CHWs feel that their remuneration is inadequate, which represents a major barrier to performing their best in the job (7,11). However, in both countries many CHWs see the satisfaction that they gain by serving others as the primary motivation for performing their job (7,11). In Afghanistan, 85% of CHWs reported that they receive recognition and appreciation from their communities (11).

Challenges and recommendations

In Egypt, the main challenges that the CHW programme faces are due to lack of standardization. Through interviews with raedats, community members and programme coordinators, the challenges were mainly identified as a lack of clear job description and community awareness about the existence and role of raedats. The lack of extensive training was also identified as a problem, and many villagers wished that the raedat were more knowledgeable in issues beyond FP (7). Raedats themselves found that their workload was too
heavy, incentives too little, that they were not respected enough by community members or healthcare facility staff, and that there was not enough upward career mobility (7,8,17). There is a high attrition rate for these reasons, especially among those with higher levels of education. There is also difficulty recruiting raedats, especially in more conservative parts of the country.

Table 4

The following are recommendations compiled from reviewed papers about CHWs in Egypt:

- unify and improve training so that it is skills-based and takes place often enough to prevent long waiting times;

- standardize and define the role and responsibilities of CHWs;

- training should more effectively teach communication skills for promoting FP;

- geographical areas should be better defined and coordinated to reduce redundant coverage;

- referrals should not be tied to the organization/facility with which the CHW is associated, but instead should link clients to the nearest/best facility;

- programme expansion to include other aspects of maternal and child health;

- incentives should not be linked to FP acceptors, but instead should be standardized and based on factors such as client satisfaction, quality of home visits and degree of raedat motivation;

- create a standardized supervision system;
create a database including all organizations with CHWs to be shared; and

research should be done on a full country scale to determine programme effectiveness and possibilities for improvement.

The LHW programme in Pakistan faces a different set of challenges. In recent years, LHWs have not received their full promised stipends, and wages have not increased adequately in the opinion of many LHWs. Concerns have been raised about community push-back against LHW initiatives, such as polio vaccination, in some areas. In situations, like these, where safety can be compromised, LHWs feel they should receive higher remuneration (12,13,15,16,18,19). Additionally, there have been problems with the provisions of drugs and contraceptives at the health facilities to which LHWs refer patients; usually due to insufficient communication between federal, provincial and district government tiers (9,15,16,20). The lack of provisions at health facilities reduces LHW credibility in communities (15,16,20). Another challenge is insufficient numbers of LHWs in poor and underserved areas, due to the high educational level needed for entry into the CHW programme. In areas that lack educational opportunities for girls, women cannot meet the LHW requirements, so the LHW programme cannot serve these communities (9,21,22). Many LHWs feel that their training could be improved and advocate the inclusion of more skills (15,16).

The following are recommendations compiled from reviewed papers for the LHW programme in Pakistan:

reform the district level health system for more appropriate resource allocation;

incentive structure to make LHWs feel motivated to further their career;

incorporating LHWs into the government as health employees to provide them with benefits, such as insurance and job security;

increase coordination between levels of government to reduce supply chain issues;
expansion of the programme to reach more underserved areas;

improve training to include emergency obstetric care and more communication skills;

more referrals to health facilities for particularly vulnerable patient populations;

increase supervision capacity and reliable vehicles; and

a system for dealing with or terminating nonperforming LHWs.

The newer CHW programme in Afghanistan faces yet another set of problems. One main theme gained from interviews is a lack of respect and trust for CHWs due to their volunteer status and potentially low level of education (11,14). Despite this, there is high demand for CHW services, and CHWs feel that often patients are so sick by the time they visit a health post that they can do little to help, which reduces their credibility in the community (14). Many CHWs feel that more comprehensive and further training, as well as a salary would help them provide better care (14). Another challenge is a lack of provisions from a robust supply chain, which further reduces credibility (11,14). Similar to Egypt, high attrition and difficulty recruiting is a problem in Afghanistan, and if a CHW steps down, communities can be left suddenly with no access health care or supplies (14). A lack of standardized retraining of replacement CHWs remains a barrier, and if CHWs relocate to new communities, it is difficult for them to continue their work due to the bureaucratic recruitment process (14). Also similar to the other programmes, a lack of standardized supervision and transportation presents major barriers. Lastly, a lack of female supervisors or managers presents a barrier to the CHW programme in Afghanistan. It is important to have women in leadership positions for the empowerment of women in Afghanistan, and because many families will not allow women to become CHWs if they must interact with nonrelated men (14); a situation which is often inevitable due to the lack of female supervisors or managers.

The following are recommendations compiled from reviewed papers for the CHW programme in Afghanistan:
better provision of drugs and contraceptives through a strengthened supply chain;

improved visibility of CHWs in communities;

budget allocated for training replacement CHWs;

more incentives or salaries for CHWs to ensure programme sustainability;

improved and expanded training that includes more technical skills;

improved supervision system with reliable transportation;

increased involvement and recruitment of women for supervisory, managerial and policy-making positions; and

undertaking a cost analysis and other research on the programme to assess its effectiveness and cost.

**Discussion**

All three of the programmes reviewed have effected positive change in their respective countries, and have advanced women’s engagement in local communities. While not reviewed in this paper, many measurable determinants of health outcomes have been improved through these programmes, such as improved maternal and fetal health outcomes (23–26), increased reproductive health uptake and education (27–29), communicable disease control (30,31), and positive impacts on nutrition (32,33). Our goal was to identify strengths and weakness of the CHW programmes in the WHO Eastern Mediterranean Region in order to improve them in the future. Some major themes that arose from the papers reviewed are discussed below.
The common themes and opportunities for improvement include: programme scope and job descriptions; drug and other commodity provisions; quality of training; supervision systems; incentives and motivation; governmental support and coordination between organizations; and visibility of CHWs in communities.

A clear job description with the inclusion of a broad range of methods to improve community health seems to be preferred by CHWs and community members compared to a narrow programme that only promotes FP, as was the case with the Egyptian programme when it was first founded. The inclusion of men in the programme in Afghanistan, and the wide range of capabilities such as providing education for mental health and substance abuse are strengths that can be used in existing and future CHW programmes. All three programmes have difficulties providing CHWs with the drugs, contraceptives and equipment that they need to serve their communities. This is often due to lack of organization of the national medical supply chain. A lack of necessary commodities decreases the quality of care that CHWs can provide, as well as the status and standing of CHWs in communities. This can be improved by efforts in countries to strengthen their supply chains on a national level.

CHWs from all three programmes desired opportunities for further training. The suggestions range from recommending training for specific skills to restructuring the course to include less theoretical and more technical information. CHWs should be continuously consulted with regards to their satisfaction with training, and their feedback should be taken seriously. Having some type of review process would increase the CHWs feeling of investment in and responsibility and pride for the programme. The inclusion of pictorial training manuals in Afghanistan is a strength that has increased accessibility of the CHW job to more candidates, and can be used in existing or future CHW programmes. Supervision is an important method to ensure programme sustainability and continued satisfaction in communities. Some suggestions for improvement from the three countries include increased standardization and even distribution for CHWs to supervisors. For example, in Pakistan, supervisors are unevenly distributed, with LHW supervisors responsible for 1–40 LHWs depending on the region. Supervision in the field is a strong aspect of all 3 programmes, which boosts CHW status and allows for more comprehensive feedback. There is also a need for more female supervisors, as was noted in Afghanistan, as this would help with the empowerment of women in general, improve the recruitment of new CHWs, and provide motivating examples of career advancement.

Incentives in the form of salaries, commodities, community respect and appreciation, and opportunities for career advancement are essential for the sustainability of CHW programmes. Although CHWs are paid in Egypt and Pakistan, their stipends can be unreliable and untimely,
which decreases CHW satisfaction. CHWs from all 3 countries reported that their incentives were not adequate or reflective of their workload, and CHWs have dropped out of all 3 programmes due to better incentives in other jobs. Nonmonetary compensation such as community recognition and respect, acquisition of valued skills, personal growth and development, association with a larger organization that provides identification (badges, uniforms etc.) and a clear role have all been shown to improve CHW satisfaction (34). Importantly, opportunity for career advancement is an important source of motivation, and all CHW programmes should allow promotions, as is the case in Afghanistan, where CHWs can be promoted to supervisors and beyond. This can also help increase female representation in leadership. Governmental support is a major strength exemplified by the programme in Pakistan. This has historically made for a sustainable and standardized programme that is well respected in communities. Standardized training and incentive programmes increase adherence to these policies, leading to a more uniformly prepared workforce of CHWs. A lack of coordination between organizations and a lack of clear policy were cited as major problems in Egypt that decreased CHW and community satisfaction. Standardization also helps reduce overlap between organizations and improves programme efficiency.

CHW visibility in communities is important as it increases access of community members to healthcare. Visibility also leads to CHW accountability, in that CHWs who are known to their community are less likely to reserve resources for only friends and relatives, which was a complaint that arose in interviews in Egypt (7). One successful practice in Afghanistan to improve visibility has been the development of village health councils that disseminate CHW announcements to the community. Afghanistan has also set an example with communication and collaboration between CHWs and religious leaders who help relay messages through announcements in the community mosque (14). LHWs in Pakistan are government workers, which improves their visibility and status in communities. Even efforts such as providing uniforms, in-person visits from supervisors to communities, and regular delivery of supplies can help increase respect for CHWs in communities.

**Conclusion**

CHW programmes will be increasingly important in achieving health and development goals in the years to come. Countries in the Region can benefit greatly from these programmes, and there have been several successful models. From the older raedat programme in Egypt, to the government-run LHW programme in Pakistan and the recently implemented CHW programme in Afghanistan; all of these have successfully improved the health of the populations they serve and have given women opportunities to engage actively in community health. Lessons can be learned from different characteristics of these programmes, and can be applied when implementing or scaling up CHW initiatives in the Region. More research should be conducted on CHW existing and future CHW programmes in the Region, to learn what effectively works to improve the efficiency and functioning of these programmes. While there have been many research projects measuring the effects of CHW programmes on population health, it would be helpful to have more studies about how to improve CHW programmes to aid them in functioning
to the best of their capability.

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**Résumé**

**Contexte:** Dans de nombreux pays, les agents de santé communautaire contribuent à réduire les disparités en matière de soins de santé et à améliorer l’accès à des services de qualité.

**Objectifs:** Fournir une vue d’ensemble permettant de comparer et de mettre en lumière les similitudes et les différences entre les programmes destinés aux agents de santé communautaires en Afghanistan, en Égypte et au Pakistan, et décrire les atouts, les faiblesses et les difficultés de ces programmes.

**Méthodes:** Des recherches ont été effectuées dans des bases de données scientifiques et dans la littérature grise, notamment PubMed, Medline et la Cochrane Review Library, dans les bases de données de l’OMS et sur des sites Web de littérature grise, notamment ceux de ministères de la santé nationaux. ; 23 articles ont été sélectionnés et inclus à la présente étude.

**Résultats:** Les trois programmes examinés diffèrent sur le plan de leur organisation, de leur structure, de leur inclusion et au niveau du système de paiement des agents de santé.
Les difficultés essentielles relevées lors de notre analyse comprenaient les points suivants : la sécurité au niveau de l'approvisionnement des produits qui compromet la qualité des services ; le caractère inadéquat et irrégulier des formations ; un système de rémunération imprévisible ou inadéquat ; et un manque d'harmonisation parmi les organisations et les ministères gouvernementaux. Les atouts identifiés sont l'acceptation et la bonne intégration de ces programmes au sein de nombreuses communautés, ainsi que l'existence de soutiens de la part des ministères de la santé, ce qui renforce la pérennité et permet de réglementer les formations et le contrôle de façon harmonisée. Ces atouts ont également favorisé la participation et l'autonomisation des femmes, comme le montre l'organisation, parmi les agents de santé communautaires eux-mêmes, de requêtes visant à obtenir de meilleurs traitements et un plus grand respect pour le travail qu'ils accomplissent.

Conclusions : Nos conclusions devraient alerter les responsables politiques quant au besoin de revoir le champ d'activité des agents de santé communautaires, de mettre à jour les programmes de formation et de donner la priorité aux modules de formation en cours d'emploi ainsi qu'à l'amélioration des conditions de travail. L'efficacité et l'impact des programmes destinés aux agents de santé communautaires ont été mis en évidence à d'innombrables reprises, ce qui démontre que le partage des tâches chez les personnels de santé représente une bonne stratégie pour aborder les objectifs de santé mondiaux.
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