

Mapping and analysing community health worker programmes in the Eastern Mediterranean region

Uta Lehmann^{1,2}  | Gulin Gedik³ | Arooj Jalal³ 

¹School of Public Health, University of the Western Cape, Bellville, South Africa

²South African Medical Research Council, Cape Town, South Africa

³WHO Regional Office for Eastern Mediterranean, Cairo, Egypt

Correspondence

Uta Lehmann, School of Public Health, University of the Western Cape, Robert Sobukwe Road, Bellville 7535, South Africa.
Email: ulehmann@uwc.ac.za

Abstract

Background: Community health worker (CHW) programmes are increasingly being recognized as an important strategy that can help to strengthen comprehensive primary health care (PHC), as the foundation of work towards achieving universal health care (UHC) and meeting the Sustainable Development Goals (SDGs). The WHO Regional Office for the Eastern Mediterranean undertook a situational analysis of CHW programmes in the Region to better understand the current situation and the issues involved.

Methods: A two-step process was employed: a review of available literature on CHWs in the Region was conducted, followed by a survey of CHW programmes in the region, focussing on programmes that were country-led and country-wide.

Results: Thirteen countries were found to have community health worker programmes with varying governance and programmatic structures. Broadly, two categories can be distinguished: (a) several countries have well established and mature national CHW programmes that are in most cases supported by external donors but driven and coordinated by national governments; (b) a greater number of

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countries that have smaller, emerging government or partner led projects and programmes. A few countries have deliberately opted for other models to strengthen primary care and community outreach, for example, through community nursing.

Conclusion: CHW programmes play an increasingly important role in primary health care in the Eastern Mediterranean Region, providing promotive, preventive, and emergency services. This bodes well for efforts to strengthen and embed comprehensive primary health care as the foundation of national health systems, to improve health emergency preparedness, achieve UHC and meet the SDGs. Nonetheless, all but a few programmes face challenges of weak governance, fragmentation and unreliable support, similar to those in other countries. However, the main finding of the analysis was that the role of CHWs in countries' health service delivery is woefully under-researched in almost all countries in the region, and more research to better understand and support programmes in the context of local health system contexts is urgently needed.

KEYWORDS

community health workers, comprehensive primary health care, governance, health emergency preparedness, health workforce, WHO regional office for the Eastern Mediterranean (WHO)

Highlights

- A growing number of EMRO member states have CHW programmes
- CHW roles have expanded substantially, as seen during COVID-19 pandemic.
- Integration, weak governance & donor dependency are a concern in most countries.
- In all but a few countries CHW programmes are woefully under researched.

1 | INTRODUCTION

Internationally, community health workers have been identified as potentially important contributors to strong and resilient health systems, most recently during the COVID-19 pandemic. CHW programmes are recognised as one of the strategies to strengthen the health workforce and primary health care towards advancing UHC and meeting the

SDGs. In 2019, the World Health Assembly passed a historic resolution, emphasising the need for CHWs, “to assure that universal health coverage and comprehensive health services reach difficult-to-access areas and vulnerable populations,” and highlighting their contribution to “advancing equitable access to safe, comprehensive health services.” The Assembly called upon member states to “optimise CHW programmes” as part of the global strategy to achieve UHC and to attain Sustainable Development Goal 3 (Ensure healthy lives and promote well-being for all at all ages).

In this paper we report on a situational analysis of CHW programmes in the World Health Organization's Eastern Mediterranean Region (EMRO), conducted in 2022, which aimed to gain an overview of the state of CHW programmes in the region, as well as identifying information and knowledge gaps. EMRO comprises 21 Member States and the occupied Palestinian territory. It is characterised by great diversity and heterogeneity of its health systems and health service provision generally, and its health workforce situation more specifically. Some country health systems in the region are well resourced and organised, while others are fragile and under resourced, often as the result of protracted crises and armed conflict. Some countries grapple with inequitable geographic distribution and skill mixes of the health workforce, and all confront health worker retention challenges.¹

The *Framework for action for health workforce development in the Eastern Mediterranean Region 2017–2030*, which aligns a range of strategies with the SDGs and the *Global strategy on human resources for health: Workforce 2030*, identifies shortages and distributional imbalances as common problems across countries and prioritises “the availability of a fit-to-practice, fit-for-purpose health workforce which contributes to strengthening health systems to provide universal access to health care in the Eastern Mediterranean Region.”^{2(p6)} It also articulates as its very first strategy the need to “scale up and sustain the production of health workers with appropriate quantity, quality and relevance.”^{2(p16)} CHW programmes are one health workforce strategy to reach these objectives.

The Eastern Mediterranean Region has several countries with large and well established CHW programmes, and a number of member states with new and emerging programmes. This study provides an overview of CHW activities and programme status' for the whole region, and identifies information and knowledge gaps.

2 | METHODOLOGY

To provide a situational assessment of CHW programmes in the region, WHO Eastern Mediterranean Region embarked on a process of mapping different community health worker programmes in member states. To this end, a two-step process was employed: firstly, a narrative review³ of the available literature on CHWs in EMRO member states was conducted, focussing on literature published since the 2016 EMRO publication, *Community health workers: a strategy to ensure access to primary health care services*,⁴ Secondly, a survey of programmes in the region was conducted, focussing on country-led CHW programmes.

- Literature review

An extensive search of literature on CHW programmes in EMRO member states published since 2016 was conducted, searching key academic databases, including Pubmed, BioMed Central, ScienceDirect, EBSCO host and Google Scholar, as well as Google, using a range of search terms, including 'community health workers', 'CHWs', 'lay health workers', 'lady health workers', 'community volunteers', 'raedats', 'Behvarz', CBHC, 'community midwife'. Furthermore, the reference lists of retrieved literature were searched for further information. All articles, which in some way shed light on aspects of CHW programmes in the region were included in the review, without further exclusion criteria.

The literature published in recent years is limited, and continues to focus strongly on a handful of countries with well-established programmes, that is, Afghanistan, Iran, and Pakistan. We found that, generally, literature on the health workforce in EMRO member states focuses very strongly on the production, regulation, and governance

of specific professional cadres (in particular, physicians, nurses, and midwives). Similarly, limited recent literature on the role of health workforce in conflict and refugee settings primarily focuses on health professionals, not CHWs. Very little research has been done on smaller programmes in other member states. A few articles, mostly grey literature, have recently addressed the role of CHWs in refugee health service delivery in Jordan.

- *Survey*

A survey tool, which had previously been developed for a joint mapping study of the *African Union*, *WHO*, *UNICEF*, *UNAIDS*, based on the recommendations of the WHO guideline, was adapted for EMRO, and was administered through *Survey Monkey*. The countries that are known to have a CHW programme (14 countries out of 21 member states) were asked to complete the survey, and all but one sent responses. Countries had the option to complete the survey online or submit the completed survey by email via their focal points. The survey tool also provided opportunities for countries to reflect qualitative information regarding challenges CHW programmes face and suggestions in addressing them. Several countries sent training manuals.

- *Data Analysis and Dissemination*

Data were analysed and aggregated within and across countries after having been cleaned manually, using simple cross tabulation and manual analysis of open-ended questions. As this was a descriptive, cross-sectional survey, advanced statistical methods were not applied.

This report presents an overview and analysis of CHW cadres, programme activities, and challenges, and it includes individual country fact sheets.

2.1 | Ethics considerations

The survey and document review relied on evidence and data, which are publicly available within countries and/or within government agencies and partners and did not include individuals' personal details and identifiers, hence no ethics clearance was required. All data and results will be owned by and available to countries and partner institutions.

3 | FINDINGS

3.1 | The role of CHWs in national health systems

CHW programmes are most successful where they are understood as, and integrated into, a country's community and primary care workforce. Their existence and role thus must be understood within a wider context of health workforce and comprehensive service delivery at community level. Some countries in the region have opted to address community-level service delivery through other cadres. Oman, for example, has outreach teams "comprising doctors, nurses, dieticians, social workers and health educators for providing home visits to conduct health education, counselling sessions and training of care givers among family members".^{4(p17)}

Health worker density varies dramatically across the region. For example, density of nurses ranges from 3.8 per 10,000 in Afghanistan to 81 per 10,000 in Qatar, and physician to population density ranges between 1.7 in Yemen and 31.2 in Lebanon.⁵ In most cases, countries reflecting low health worker density are also those who have

established or newer CHW programmes, while countries with higher density are relying more heavily on nurses and physicians.

3.1.1 | CHW programmes in the EMRO region

Thirteen (13) member states have substantial CHW programmes, most of which have very low overall health worker density (with the exception of Libya). These can be roughly divided into two categories:

1. There are several countries that have well established and mature national CHW programmes that are in most, but not all, cases supported by external donors, but driven and coordinated by national governments.

The oldest of these, Iran's *Behvarz* programme has existed for 43 years,^{6,7} the *Lady Health Worker* programme in Pakistan and the *raedat reyfats* (pioneers) in Egypt have existed since 1994.^{8,9} In Afghanistan, CHWs have been part of the Community-Based Health Care (CBHC) Component of the Basic Package of Health Services (BPHS) since 2003, and are responsible for large parts of primary care service delivery.^{7,10-12} Somalia has a younger programme, but the country's 2016 HRH strategy provides for an expansion of community-based services and the integration of Female Community Health Worker (FCHWs) into the health system, against a background where only 20% of the population have access to health services, and most of these are services provided by NGOs and other non-government providers.¹³

2. Several countries do not have large national programmes, but do have a range of different government and/or partner led projects and programmes. These include programmes in Iraq, Sudan¹⁴ Click or tap here to enter text., Yemen,^{15,16} Libya, Morocco, Palestine, and Syria.¹⁷

Numbers of CHWs vary dramatically, from just a few hundred, to over 90,000. In part this reflects populations sizes in member states, but even per capita figures, as shown in Figure 1 (number of CHWs per 1000 population), show vast differences: a CHW density of just less than one CHW per 1000 population in Afghanistan, to 0.1 or fewer CHWs per 1000 particularly in countries with newer programmes (i.e., a ten-fold difference). In Jordan, community health volunteers render services specifically to refugees,¹⁷⁻¹⁹ but we were unable to ascertain reliable numbers.

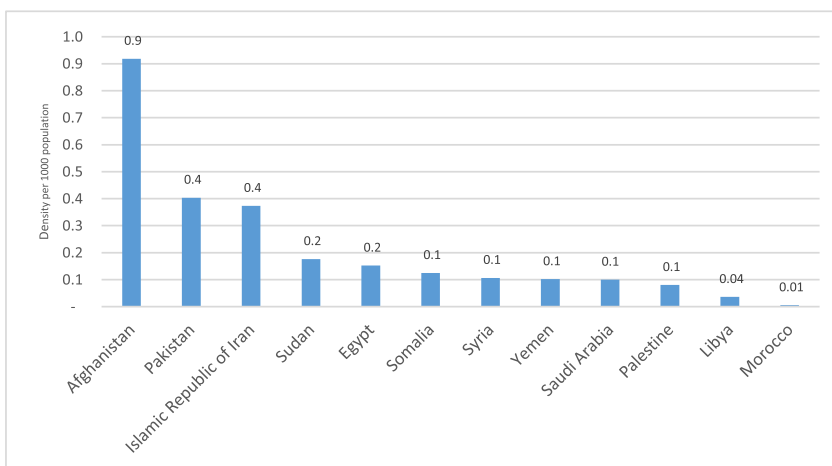


FIGURE 1 CHWs per 1000 population. Source: EMRO survey 2023.

3.1.2 | Governance and stewardship

While CHW programme governance is multi-faceted and complex, we explored the following indicators as markers of functioning governance:

- Existence and availability of government policies, guidelines and/or directives for CHW programming.
- Existence and functionality of a coordinating and oversight mechanism of CHW activities within a relevant government ministry.
- Integration of CHWs into the formal health workforce, and existence of a national registry and national association of CHWs.

Ten countries (Afghanistan, Egypt, Iran, Jordan, Libya, Morocco, Pakistan, Somalia, Sudan, Yemen) reported that they had CHW-related directives, guidelines, policies, and strategies. Some well documented examples are the Afghanistan National Health Strategy 2016–2020¹² and the 2015 Somali Community Health Strategy.²⁰

In the latter two, the role of CHWs is framed within the context of a comprehensive community health strategy, which, in Afghanistan, is providing the foundation for the country's Basic Package of Health Services^{21,22}, and in Somalia is a key aspect of the 2014 Somali Health Policy.²³

In Iran, the CHW programme has been fully integrated into the formal health system and the Ministry of Health and Medical Education for many years. "MOHME, accompanied by medical universities, provides funds for community-based research, for developing CHW training programs, and for on-the-job trainings."^{7(p170)} Rural and urban centres of comprehensive health services exist to provide support and supervise the services for two to five rural health houses or urban health posts.

In Pakistan, the *Lady Health Worker* (LHW) programme is formally well integrated into the health system. Provinces and districts are responsible for the implementation of the LHW programme, LHWs are formally employed, and there are referral systems between health facilities and LHWs in place. A recent evaluation reported that the *Ministry of National Health Services, Regulations and Coordination* (MoNHSR&C) has responsibility for the delivery of national health sector strategies, the regulatory environment, and coordination, while the Provincial Project Implementation Unit is responsible for the delivery of the LHWP strategy and planning, as well as financing and the allocation of resources to the district level. At the district level, the District Project Implementation Unit maintains responsibility for the actual implementation of the LHWP. The Basic Health Unit (BHU) level supports the recruitment and training of LHWs, as well as monthly reporting. LHWs provide primary care services at the community level.^{24(p7)} However, the evaluation also reported a substantial level of dissatisfaction with the stewardship role of central government, and found that the autonomy of provincial government had led to the development of differentiated approaches to the organization of health services among provinces, including the LHWP. In one province, for example, LHWs had been integrated into the IRMNCH and nutrition programme.^{24(p51)}

Somalia has made great strides to integrate two cadres of CHWs in their 2014 *Community Health Strategy*, which also clearly defines governance roles at different levels of the health system.

In Iraq, female community health workers staff *Community Health Houses* (CHH), which constitute the first level of facilities in the primary care infrastructure that offer Basic Health Service Package (BHSP) (the other three levels of facilities providing the BHSP are PHC sub centres, PHC main centres and district hospitals). CHHs services include "Information Education and Communication (IEC) activities, distribution of condoms and oral contraceptives, and micronutrient supplementation and support during vaccination campaigns and growth monitoring. Limited curative care after receiving appropriate training will be provided for IMCI as well as acting as DOTS providers. Female community health workers will focus on providing care for normal deliveries, identifying danger signs, and referring patients to health centres."^{25(p21)}

Eight countries reported that CHWs are part of the formal health workforce, although of these only Egypt, Palestine, Somalia, and Yemen reported having a national registry and a national association of CHWs (the latter not in Somalia).

Seven countries (Afghanistan, Egypt, Iran, Morocco, Pakistan, Somalia, Yemen) reported the existence of a national coordination mechanism for all CHW programmes in the country.

These findings suggest that those countries that have well established programmes have also ensured governmental oversight from national and/or sub-national level. In Somalia, government has invested substantially in strengthening government's role in the CHW programme. In other countries, governments' role in programme development and implementation appears to be less well developed. A more comprehensive health systems assessment would provide insights into measures that could improve integration, alignment, and overall governance.

3.1.3 | Partner presence and support

Most CHW programmes in the region, with the exception of programmes in Iran and Pakistan^{6,7}, are substantially or fully funded by development partners. This support, and the relationship between government authorities, take different forms, ranging from programmes coordinated, directed and at times implemented by government, but fully or partially funded by development partners, to programmes that are independently run and resourced by development partners.

The impact of a strong donor presence and involvement in programmes, particularly in countries with severe resource constraints, is complex. On the one hand, donors and development partners often ensure service delivery generally and CHW presence specifically where, without their contribution, it would simply not exist. On the other hand, donor involvement can undermine sustainability and coordination, as well as coherence of service delivery and alignment of health systems functioning, as recently identified in a report on training initiatives in the EMR.²⁶ Good governance and strong national coordination of donor activities, are therefore crucially important to prevent fragmentation and strengthen alignment. While the limited evidence suggests that this is an area that requires attention in many member countries, there are exemplars in the region that provide useful learning opportunities.

3.2 | Cadre differentiation and scope of service provision

Countries reported different cadres and designations of CHWs, as well as substantial variations in the services that CHWs are expected to deliver.

Primarily two forms of cadre differentiation can be identified. First, CHW and CHW supervisors are present in several countries where the supervisor is a senior, more experienced CHW, not a health professional. (eg Lady Health Workers and Lady Health Worker supervisors in Pakistan). The second common cadre differentiation is between various single purpose workers. Yemen, for example, reports having nutrition volunteers, malaria volunteers and health education volunteers. Sudan reports a distinction between Community Health Worker (usually responsible for management of common health problems and conditions), Community Health Promoters (usually responsible of health education and promotion activities), Community Surveillance focal persons (responsible for reporting on priority diseases and conditions), Community Rapid Response focal person (reports on health emergencies and outbreaks and implement early response measures). A third distinction is between volunteers and paid CHWs, although this usually is not a 'differentiation', but dependent on partners and government policy.

As for the scope of service provision, in virtually all countries CHWs play a role in health education and awareness raising, particularly in the areas of reproductive, maternal and child health, nutrition, and general health messaging. Interestingly, some countries (Egypt and Somalia) have added prevention and reporting of gender-based

violence, but only Egypt mentions NCD awareness raising. In Morocco and Iran, CHWs have a focus on environmental health issues. Notably, in Sudan CHWs are responsible for the management of common health problems, that is, fulfil a curative function as well, while in Palestine they lend support to professional nurses.

This diversity of roles is a common feature, reiterating the heterogeneity of cadres as described above. Whether or not CHWs can perform the expected services successfully depends crucially on the quality of training and support they receive (see 3.4.1 below and Figure 4), and whether their roles and activities fit in and are aligned with the roles of other health cadres in respective country health systems.

Figure 2 maps the range of services offered by country across the continuum of care, from promotive to curative services. It is noteworthy that a growing number of countries rely on CHWs not only to provide health education and mobilisation, but also substantial preventive and curative services, which again reflects international trends.

It is important to note that, apart from rendering a range of different services, community health workers play essential roles as mediators or boundary spanners between the formal health system and communities. Najafizada et al, in their paper on the role of CHWs in health systems in Afghanistan, observe: a “characteristic that makes CHWs particularly useful within health systems is the unique location that CHWs occupy, navigating between formal and informal HRH systems and crossing boundaries between the two. As volunteers, they are situated within the community and the informal health systems. As health workers, they are viewed as members of the health system. (...) In Afghanistan, CHWs have been able to use their referral power and links with the formal system to bridge the western health care with traditional communities in the rural and remote areas.”^{27(p8)}

Hence, CHWs can not only play an important service delivery role, but can also facilitate access to health services' to communities in times of crisis, where such access may otherwise be hampered by mistrust, lack of communication and other barriers. Internationally, the important role that CHWs can play in health crises and pandemics is increasingly being recognised.^{28,29} In a recent international review of the role CHWs can play in post-conflict settings, Werner et al found “four key functions of CHWs in healthcare delivery in post-conflict settings including (1) access to care and treatment coverage, (2) case management and adherence support, (3) disease detection and monitoring and (4) scaling up of services”^{29(p267)} – the latter through facilitating access to services and through task shifting and task sharing. However, more systematic research and policy action is needed to better understand the role CHWs have been playing and can play during health emergencies and in rebuilding health systems after conflicts, both globally and in the Eastern Mediterranean Region, and to advance policy solutions that support their roles.

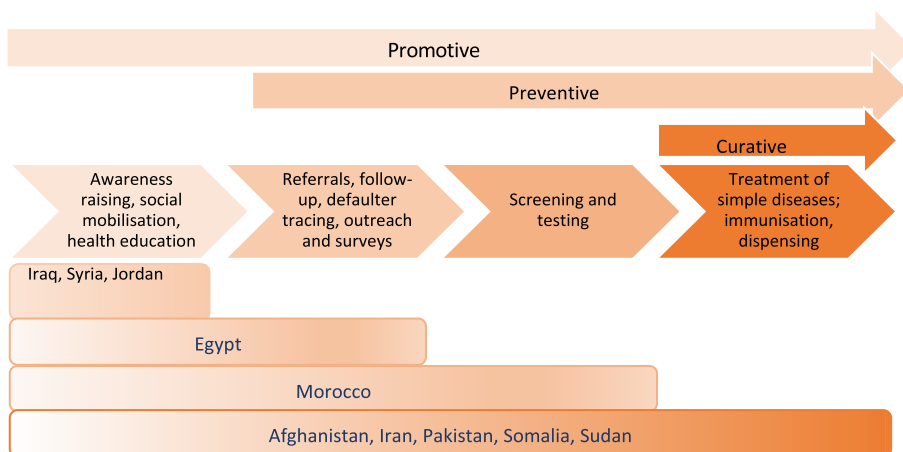


FIGURE 2 Community services along continuum of care. Source: EMRO survey 2023.

3.3 | Gender distribution of community health workers

CHW programmes worldwide reflect gender inequities in occupational roles in the health sector, where, on the whole, women continue to occupy jobs with least pay, security and power.³⁰ This is no different in EMRO, as reflected in the gender profile in Figure 3. The vast majority of CHWs are women, as is common in care work. Societal and cultural norms further shape the roles of CHWs and the structures of programmes.

Although the importance of gender equity in the health workforce generally, and the community health workforce more specifically is increasingly acknowledged, the multiple ways in which gender shape the roles,

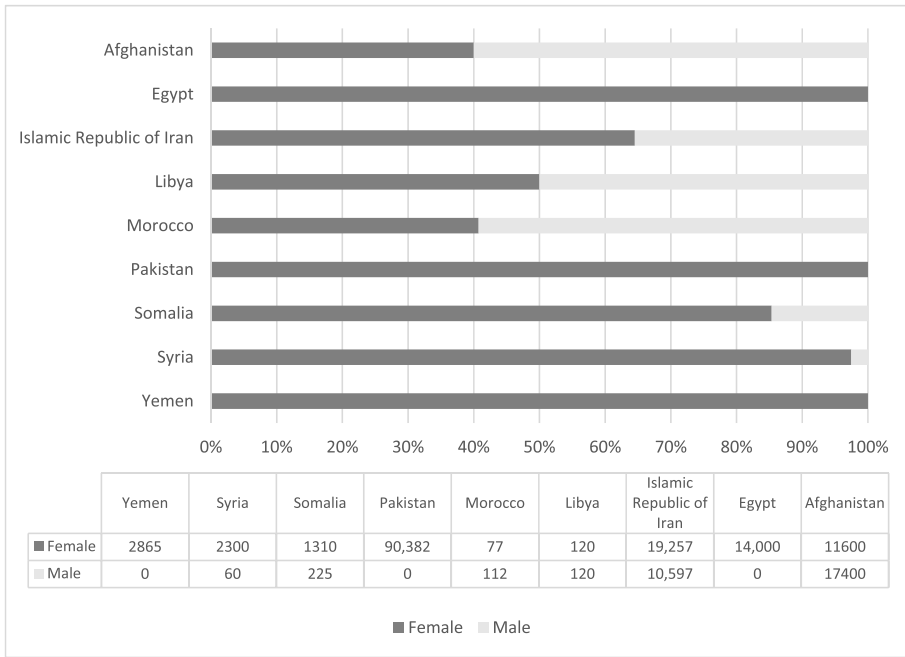


FIGURE 3 Gender distribution of community health workers. Source: EMRO survey 2023.

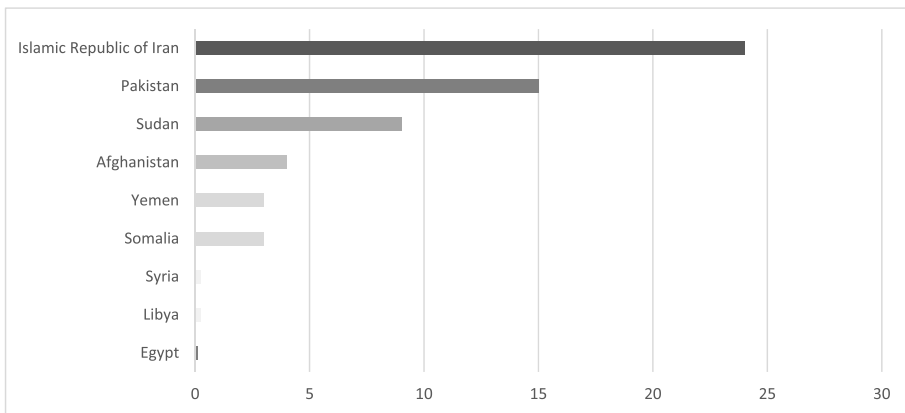


FIGURE 4 Training duration in months. Source: EMRO survey 2023.

treatment, relations, and potential impact of CHWs remain poorly understood. As El-Kalaawy et al recently emphasised, “Without a comprehensive understanding of the gender and power relations from both the demand and supply side, CHWs programmes may reinforce, rather than transform, inequitable gender relations.”^{31(p1)}

3.4 | Management of programmes

3.4.1 | Recruitment, training and supervision

Like elsewhere in the world, most countries expect CHWs to be recruited from the communities they serve, although this is not always fully implemented.^{10(p942)} In contrast to many CHW programmes internationally, most programmes in EMRO (with the exception of Afghanistan and Sudan) expect CHWs to have completed at least secondary education.³² This has led to difficulties in recruiting adequate numbers of CHWs, and furthermore has meant that “in areas that lack educational opportunities for girls, women cannot meet the LHW requirements, so the LHW programme cannot serve these communities.”^{10(p946)}

The quality, duration and appropriateness of training are key predictors of CHW performance and impact: the more aligned with CHWs' needs and expected tasks the training is, the more likely that CHWs can perform the services they are expected to render.³³ As Rahbar et al point out, “development of the job and task analysis to ensure providing the right training needs”³⁴ is strongly recommended to improve programme performance.

Like elsewhere in the world, length of training varies substantially, reflecting programme size and maturity, as well as the diversity of cadres, roles and services rendered. However, reading Figure 4 alongside the range of services offered (Figure 2) there is an evident mis-match between breadth and depth of expected services and length of training in some countries (eg. Egypt and Somalia), even taking prior skills levels into account. In Egypt, for example, CHWs are expected to not only provide health education and promotion, conduct referrals and community mobilisation, but also provide first aid and MNCH interventions, based on only a few days of training. In contrast, training in Iran, Pakistan and Sudan extends over several months, and up to 2 years, depending on prior level of education, and is conducted by designated training units.

In many countries training is ad hoc and aligned with specific programme needs. For example, Hadush¹⁸ explored training of community health volunteers (CHVs) in Syrian refugee camps in a small study. He found that training varied between 4 and 7 days, focussing on communication skills, and educational information about specific health and wellbeing topics. Refugee CHVs activities included visiting refugee families to establish their needs, referring them as needed and reporting health information.

A report mapping CHW training initiatives in EMR suggests that in many countries focus, length and target audience of training rely very heavily on what UN and international development agencies can offer at any one time, rather than systematically following an agreed training plans and responding to needs.²⁶ The recommendations, based on detailed country analyses in six countries (Egypt, Jordan, Lebanon, Morocco, Somalia, and Sudan) focus on coordination and sustainability:

1. “Align CHWs training curriculum and content with country health needs and priorities.
2. Develop a strategy to ensure the sustainability of CHWs training in the region, aligned with country-specific needs.
3. CHWs training initiatives should be coordinated among all implementing partners to achieve economies of scale.
4. Foster partnerships between agencies in the implementation of CHWs training programmes and in the development of a standardized training curriculum
5. Develop a common platform that will allow implementing partners to share information and experiences on on-going CHWs training in the region”^{26(p75)}

Supportive supervision of CHWs is known to be one of the most complex, least developed, yet crucial aspects of CHW programmes, impacting directly on job satisfaction, retention, performance, and impact.^{35–38} This review revealed limited availability of information on supervision and very diverse practices across countries where information is available, again highlighting the need for a regional research agenda, as well as peer learning opportunities. Countries where CHWs are well integrated into the health system usually have well established and structured supervisory systems, with monthly supervision through facility staff (Afghanistan and Iran) or dedicated CHW supervisors (in Pakistan).

3.4.2 | Payments and incentives

The 2016 review, *Community health workers: a strategy to ensure access to primary health care services*, which this review build on, found that, “payment of CHWs may differ from country to country. In some countries of the Region (Egypt, Islamic Republic of Iran, Jordan, and Pakistan), they receive regular salaries from the ministry of health, while in other countries (such as Afghanistan), they receive different kinds of incentive such as recognition in the local community and some reward from the local community for providing certain services.”^{4(p15)}

In 2021, most countries with CHW programmes reported the payment of salaries or monetary incentives to all or some of their CHWs, suggesting increasing alignment with the WHO guidelines, which recommend “remunerating practising CHWs for their work with a financial package commensurate with the job demands, complexity, number of hours, training and roles that they undertake”.^{33(p47)}

However, there are exceptions. In Afghanistan, CHWs are volunteers who must have primary education. They are trained for a period of four to 6 months. Interestingly, although CHWs are volunteers, “the drop-out rate of CHWs in Afghanistan has consistently been less than 8% per year.”^{7(p33)} Najafzada et al^{27(p4)} suggest that there may be several reasons for this, such as “altruism, social recognition, personal knowledge gain, and a desire to enter or climb up a ladder of health professionals (mainly community health supervisors, nurses or midwives, which are all paid positions)”.

In most cases, salaries and monetary incentives are either paid fully by development partners, or by governments in collaboration with development partners. Only Iran and Pakistan reported payments being made exclusively by government.

However, information on the frequency of payment, and lack of information available on amounts, suggests that payment practices remain far from desirable and urgently need better government coordination.

3.5 | Impact

Impact of CHW programmes is a complex and multi-dimensional concept. Impact can speak to the achievement of programme objectives, the potential for programme sustainability, the impact of the programme on outcomes such as health care access and quality, or the impact on community health literacy and resilience.

Generally, research on all forms of impact of CHW programmes in the region is very limited or quite dated. Although not specifically reviewed in their paper, Folz et al report that many measurable determinants of health outcomes have improved through these programmes, such as improved maternal and reproductive health outcomes, increased reproductive health uptake and education, communicable disease control, and positive impacts on nutrition.^{10(p946)}

Perry et al report that in Afghanistan “CHWs have been very effective in increasing demand for vaccinations and ANC, as well as for skilled birth attendance at health facilities. Two important services that they have been able to provide directly to their communities are the management of sick children and the provision of

contraceptives.^{7(p37)} They also note that during the same period there has been an increase in utilization of formal health services, indicating an overall strengthening of the Afghan health system, building the foundations of the CBHC.

There is substantial agreement that the CHW programme in Iran has contributed substantially to health gains and demonstrated that “the Islamic Republic of Iran's health houses are responsible for a sharp drop in mortality over the last decades, with notifiable life expectancy increasing. The PHC system is highly organised and efficient, resulting in notable decreases in infant, maternal, and neonatal mortality rates. The burden of disease attributable to communicable diseases has decreased to 10%. As a result, non-communicable diseases are responsible for 80% of the burden of disease, and injuries for 10%. Narrowing the rural–urban gap in health status since the 1970s is another reflection of the performance of Behvarzs in rural areas.”^{7(p174)} This was also shown when “in early 2020, with the arrival of the COVID-19 pandemic, *Behvarzs* and *Moraghebe-salamats* screened 76 million people (92% of the total population) over a 2-month period.”^{7(p174)} While it is impossible to attribute these gains directly or solely to CHWs, it is clear that Iran's *Behvarzs* and *Moraghebe-salamats* play a key role as pillars of a robust and well functioning PHC system.

The LHW programme in Pakistan has been evaluated several times, most recently in 2019. The latest evaluation found that “despite the clear challenges faced by the LHWP, [...] the LHWP continues to have an impact on the long-term health outcomes of the population it reaches. Three domains of healthcare are explored: family planning; maternal care; and infant and young child care. We find the strongest impacts in family planning and maternal care. We find little impact on infant and young child care (including immunisation rates), though a positive impact on polio is an exception, reflecting a diversion of resources to this area. Although we find that the LHWP misses many marginalised communities, the impact of the LHWP is strongest for the poorer households that it does reach. In comparison to the Fourth Evaluation of the LHWP, the overall level of impact has declined, with the programme no longer having an impact on the proportion of children aged 12–23 months who are fully vaccinated.”^{24(pix)} Other research also shows that new-born health and contraceptive use were higher in areas where LHWs were active.^{39–41}

And so, while there exists evidence of impact in the region's older and well established programmes, research is urgently needed to track and support younger and emerging programmes to allow learning, adaptation and support.

3.6 | Challenges

Like CHW programmes elsewhere in the world, programmes in the EMRO region face numerous challenges. These include lack of standardisation and role clarity, inconsistent programme implementation and training, inadequate supply systems, unreliable payments of CHWs, lack of awareness and respect for CHWs in communities, limited career opportunities, all leading to uneven performance and high attrition.^{4,7,10}

A small body of literature furthermore raises threats and dangers that health care workers generally face in EMRO countries.⁴² Much of this literature focuses on health care professionals, but often implicitly or explicitly includes CHWs. And while most of the literature specifically addresses threats emanating from war and armed conflict, some articles also address verbal and physical violence as a result of deaths of patients, delays in care, lack of facilities etc.^{43,44}

Interestingly, very few countries elaborated challenges they face in their survey results, and only countries with well established programmes have detailed specific challenges.

3.7 | Limitations

Firstly, the quality of the mapping results (both in terms of correctness and completeness of data submitted) relied on each country's submission, and on the availability of data and documentation within countries.

Fourteen (14) countries submitted surveys, and several were not fully completed. The quality of data varied significantly. Unfortunately, only very few countries submitted policy documents or working links to such documents. Relevant country government websites were accessed to search for documents, but this was only successful in a small number of cases.

Secondly, it should be noted that this paper reflects information and evidence as submitted by member states, in their surveys and policy documents, and as available in the very limited literature, without validation by any field mapping exercises, which was beyond the scope of this exercise.

Thirdly, the survey was geared to large, national-level programmes. However, as several countries have more than one programme, run by development partners or by governments, these were also included. Due to the structure of the survey, information about these programmes was only included in as far as these were captured at national level and submitted by MoHs. The need for more substantial research, particularly on new and emerging programmes is among the key recommendations of this report.

4 | DISCUSSION AND CONCLUSIONS

Health systems in the Eastern Mediterranean Region are diverse and distinct, reflecting different socio-economic, political, and cultural histories and present-day situations. This diversity is reflected in countries' health workforce arrangements, regarding cadre differentiation, density, and roles. Community health worker programmes, as one important, internationally recognised strategy to strengthen health systems and the health workforce at community level, have long histories in a small number of EMRO member states.

This review aimed to shed light on the state of CHW programmes and the role of CHWs in the region. It has generated the following conclusions:

While a small number of countries have had large and well established CHW programmes for many years, more recently several countries in the region have established new programmes, albeit in some cases embryonic, which hold promise for strengthening primary health care, UHC and the SDGs, as well as countries' abilities to respond to pandemics and health crises and build resilient health systems from the bottom up. However, apart from research on the well established programmes in Afghanistan, Iran and Pakistan, the knowledge base for programmes in Egypt, Somalia, Yemen and Jordan is very slim, and for other countries with more recent programmes virtually non-existent. No peer reviewed research studies could be found, and even grey literature is largely absent. The survey results further suggest that the information and data available to Ministries of Health about their CHW programmes is uneven and, in some cases, very limited, as pointed out by numerous countries. There is an urgent need to remedy this situation and to establish a research programme to support and track programmes.

At the same time, both literature and survey results suggest that increasingly CHWs are relied on not only for health education and promotion, but also a wide range of preventive and curative services, as well as support in pandemics and health crises, particularly in countries that have seen a high out-migration of health professionals due to war and other reasons. This reflects a trend to recognise CHWs as providers of essential health services, and hence an integral part of health systems, which include community health systems. While some national policies already reflect this development, others still need to conceptualise and articulate this integration of CHW programmes into health systems as part of comprehensive primary health care in their national policies.

Although the importance of gender equity in the health workforce generally, and the community health workforce more specifically is increasingly acknowledged, the multiple ways in which gender shape the roles, treatment, relations, and potential impact of CHWs remain poorly understood. However, without a comprehensive understanding of the gender and power relations from both the demand and supply side, CHWs programmes may reinforce, rather than transform, inequitable gender relations.

Lastly, in many countries the governance of programmes is weak. Many countries identified a lack of planning and management of role clarification, training, supervision, supplies, and monitoring as key challenges, due mainly

to lack of investment and likely lack of capacity in ministries of health and their sub-national units. We noted in particular that there is a mis-match between breadth and depth of expected services and length of training in some countries, a disjuncture, which needs to be addressed quite urgently, if CHWs are to fulfil their true potential in strengthening comprehensive primary health care.

Overall, it can be concluded that CHWs play an increasingly important role in many EMRO member states, evidenced most recently by their active participation in responding to the COVID pandemic. While this bodes well for efforts to reach *Universal Health Coverage* and meet the *Sustainable Development Goals*, more needs to be done at national and regional levels to better integrate these programmes as foundations of health systems and primary health care, to develop context-appropriate models and policies, and to accompany policy development and implementation with better information systems and rigorous research.

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CONFLICT OF INTEREST STATEMENT

None to report.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from World Health Organisation. Restrictions apply to the availability of these data, which were used under license for this study. Data are available from the author(s) with the permission of World Health Organisation.

ETHICS STATEMENT

The survey and document review relied on evidence and data, which are publicly available within countries and/or within government agencies and partners and did not include individuals' personal details and identifiers, hence no ethics clearance was required. All data and results will be owned by and available to countries and partner institutions.

DISCLAIMER

Where authors are identified as personnel of the World Health Organization, the authors alone are responsible for the views expressed in this article and they do not necessarily represent the views of the World Health Organization.

ORCID

Uta Lehmann  <https://orcid.org/0000-0002-2627-8954>

Arooj Jalal  <https://orcid.org/0000-0002-1495-2833>

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AUTHOR BIOGRAPHIES

Uta Lehmann is professor at the School of Public Health, University of the Western Cape, South Africa. A social scientist by training, she has worked in public health and health personnel education for 30 years. Her interests and expertise lie in health policy and systems research, HRH, and qualitative research.

Gulin Gedik is currently Coordinator, Health Workforce in the WHO Regional Office for Eastern Mediterranean. She is a physician with postgraduate training in public health and health economics. She has been working in the areas of health policies, systems and human resources for health over 30 years.

Arooj Jalal is a Technical Officer, Health Workforce for the WHO Regional Office for Eastern Mediterranean. She has postgraduate training in public health and has been working in the areas of health workforce, health systems and policies.

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