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Community health workers for health systems resilience during COVID-19: protocol for qualitative evidence synthesis

Neha Adsul ,[1] Jyoti Tyagi,[1] Soumyadeep Bhaumik [1,2]

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[1]Meta-research and Evidence Synthesis Unit, The George Institute for Global Health India, New Delhi, India
[2]The George Institute for Global Health, Faculty of Medicine and Health, UNSW, Sydney, New South Wales, Australia

Correspondence to
Dr Soumyadeep Bhaumik; sbhaumik@georgeinstitute.org,
Dr Neha Adsul; drnehaadsul2721@gmail.com
and
Dr Jyoti Tyagi; jtyagi@georgeinstitute.org.in

ABSTRACT

Introduction COVID-19 exposed the fragility of health systems, where even the most basic health services in high-income and low-income and middle-income nations could not withstand the health systems shock due to the pandemic. Community health workers (CHWs) can contribute to improving the resilience of health systems, specifically to withstand shocks and emergencies and to avoid disruptions of routine service delivery. We aim to explore and understand the 'individual' and 'systems-level' resilience factors that shaped the involvement of CHWs in the COVID-19 response.

Methods and analysis We will search five electronic databases (PubMed, Cochrane Library, EMBASE, CINAHL and SciELO (Spanish)) and conduct citation screening to identify studies on CHWs' response during the COVID-19 pandemic. Two review authors will independently screen the studies for inclusion and to extract data. The software Rayyan will be used to assist in screening the relevant literature. A thematic analysis approach will be followed to analyse and synthesise the qualitative evidence. The quality of the included studies will be critically assessed using the Critical Skills Appraisal Programme Tool. We will use the GRADE CERQual(Grading of Recommendations, Assessment, Development, and Evaluations - Confidence in the Evidence from Reviews of Qualitative Research) approach to assess certainty in the synthesised findings of the qualitative evidence.

Ethics and dissemination This study will be conducted on published evidence, with no living participants; thus, no ethical approval is required. The final review will be submitted and published in a peer-reviewed journal. We will also develop a policy brief to communicate the review findings to the stakeholders.

STRENGTHS AND LIMITATIONS OF THE STUDY

⇒ Primary qualitative studies examine how CHWs were involved and their role in COVID-19 response but a review of qualitative evidence to address this issue has not yet been conducted.This review contributes to better understanding of the role of community health workers' (CHWs') in pandemic preparedness and response efforts from a health systems resilience lens.
⇒ To ensure high rigour, the review will be conducted in accordance with Cochrane Qualitative and Implementation Methods principles.
⇒ The heterogeneity in CHWs across cadres and countries regarding training, roles and responsibilities means significant diversity in their preparedness and response during the pandemic; we hope to capture this through the review findings as an important link between CHWs' response in influencing health systems resilience.
⇒ The inclusion of studies published only in English, Spanish, Bangla and Hindi can limit the study findings.

BACKGROUND

COVID-19 exposed the fragility of health systems, where even the most basic health services in high-income and low-income and middle-income nations could not withstand the health systems shock due to the pandemic.[1] The staggered health systems response during the COVID-19 pandemic has sparked interest in and discussion about the concept of health systems resilience. While maintaining core functions and responding to ongoing acute care needs, 'systems-level resilience' has been widely characterised as the capacity of health institutions and their actors to prepare for, respond to and absorb shocks.[2–4] Furthermore, individual resilience concerns healthcare workers' ability to persist in managing work demands imposed by the emergent situation without compromising their well-being. Consequently, in crisis, a resilient health system can effectively adapt and respond to reduce vulnerabilities across and beyond the system.

Known to be a key component of any health system, the health workforce has emerges as a fundamental part of how health systems have responded to the multiple and significant challenges posed by the COVID-19 pandemic.[5–11] The literature on health systems resilience acknowledges the importance of the health workforce.[2 9 12 13]

For example, Chamberland-Rowe *et al* identify the health workforce as one of the building blocks of the health system, which forms a prerequisite for health systems resilience.[14] Hanefeld *et al* argue that the health workforce is one of three components of health systems resilience besides health information systems and funding/financing mechanisms.[15] Groschke *et al* go a step further and argue that the health systems support enhances the resilient behaviour of the health workforce, thereby enabling them to respond better to a crisis situation.[13] On one hand, literature suggests that organisations' resilience is limited to their individuals' resilience.[16 17] On the other, literature also argues for building resilient organisations to create a supportive environment which will eventually promote resilient behaviour in individuals.[18 19]

Health workforce such as community health workers (CHWs) are important to most health systems, particularly in low-income and middle-income countries.[20–22] This can be attributed to their proximity to the communities while they provide a wide range of health services to individuals and communities.[23] Consequently, they are an integral link between the households, community and health service delivery facilities, cumulatively impacting the health system outcomes. While CHWs are usually provided with job-related training, there is no requirement for formal professional or educational training.[23 24] Often, they are involved in performance-based incentives, although some CHWs are volunteers while others receive a salary or stipend.[25 26] Relatively little attention has been given to the potential of CHWs to contribute to pandemic preparedness and response.[27 28]

In 2020, just when the COVID-19 outbreak happened, we conducted a rapid evidence synthesis (RES). The RES used a scoping review approach and found that CHWs faced many challenges while performing their roles and tasks during pandemics. Some identified challenges were stigmatisation, isolation and supply-side issues like logistics disruption and supportive supervision.[25] Ever since, CHWs have been engaged in COVID-19 response in many nations. To date, primary qualitative studies are limited to examining CHWs' involvement and their role in COVID-19 response.

Currently, we continue to have limited knowledge about the involvement of CHWs in the COVID-19 pandemic response. We argue that failure to adequately understand and prioritise support towards the challenges faced by the CHWs during a major global health crisis puts individual and systems-level resilience at risk. Therefore, the review intends to explore CHWs' response activities during the COVID-19 pandemic, the support provided to CHWs, gaps in the support and the challenges they face in delivering the pandemic response. Moreover, we would document the facilitators enabling CHWs to prepare and respond to the pandemic. Our contribution to the literature through this review is to provide insights into how the gaps and enablers in receiving support influenced the response of the CHWs in fulfilling their roles during COVID-19. This would help uncover valuable lessons for preparing them appropriately towards better handling any similar crisis in the future for early recovery and improved health systems resilience.

Aim

We aim to explore and understand the individual and systems-level resilience factors that shaped the involvement of CHWs in COVID-19 response .

Objectives

1. To identify and understand the role and scope of CHW involvement during the COVID-19 pandemic response.
2. To identify and understand the challenges and facilitators for individual resilience and health system-level resilience for the involvement of CHWs during the COVID-19 pandemic response.
3. To determine the lessons learnt from CHWs' COVID-19 pandemic response and how they can be supported to perform efficiently during pandemic outbreaks.

METHODS

Protocol and registration

The protocol for the review will be registered a priori. We follow the principles laid down by the Cochrane Qualitative and Implementation Methods[29–33] and those used previously in other studies.[34–36] The protocol was drafted and written according to the Cochrane Effective Practice and Organisation of Care: Qualitative Evidence Synthesis.[37] The planned (tentative) start and end dates for conducting the full review are 1 November 2023 and 31 March 2024.

Patient and public involvement

None

Inclusion criteria for considering studies for this review

The umbrella term 'CHW' encompasses diverse categories of health workers,[38] such as community distributors, community-directed health workers, health auxiliaries, health promoters, family welfare educators, health volunteers and village health workers.[39] With specific roles varying among countries, CHWs undertake a wide range of tasks related to core health service provision, such as community mobilisation, health promotion, and provision of preventive and clinical services.[40 41] Over the past decade, there has been a growing recognition of potential CHW roles in responding to pandemics. Based in communities, and often from these same communities, CHWs are often the frontline and first point of contact during a pandemic outbreak.[42 43]

For this review, we will consider the definition of CHWs as proposed by the 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 organisation, and have shorter training than

professional workers."[44–46] We included studies which met the following criteria.

Types of participants

We will include studies with CHWs (as defined by WHO) and relevant key stakeholders (supervisors of CHWs, state-level managers, health-facility managers, coworkers and colleagues, patients and policymakers) involved in COVID-19 response as study participants. CHWs are known by different names in different contexts, and our study takes an inclusive approach to include the following, although not limited to:

- CHW/aide/practitioner/provider
- Frontline health worker/aide/practitioner/provider
- Lay health worker/aide/practitioner/provider
- Accredited social health activist/community outreach health worker
- Rural/village health worker
- Aanchal ma
- Community health volunteer/assistant/worker/surveillance worker/agents
- Multipurpose health worker
- Health extension worker
- Female health worker

Phenomena of interest

Perceptions and experiences of CHWs or relevant stakeholders during COVID-19 response.

Setting

We will include studies irrespective of the setting, if they match our inclusion criteria and is published in any of the languages known to our team members (English, Spanish, Bangla and Hindi—which are also four of the seven most spoken languages). The choice to include these languages is to make the study robust.

Types of studies

We will include all studies using qualitative data collection methods, including, but not limited to, in-depth interviews, observations, focus group discussions and diaries. The studies should use qualitative approaches to study and analysis as eligible to be included, like ethnography, phenomenology, action research and grounded theory. Mixed methods studies will only be included if the results of the qualitative component of the study are reported separately.

Information sources and search strategy

We will search the following databases to identify eligible studies:

- PubMed
- Cochrane Library
- EMBASE
- CINAHL
- SciELO (Spanish)

The detailed search strategy in PubMed is presented in online supplemental file 1, and this will be adapted for other databases as well. We will also conduct a citation search in the network surrounding a source study to identify similar studies.

Screening and selection of studies

We (two review authors) will independently assess the titles and abstracts of the identified records to evaluate their eligibility. We will use the software Rayyan to assist in screening the relevant literature. Further, we will retrieve the full text of all the papers identified as potentially relevant. Then, both the review authors will assess the study texts independently. In case of any disagreements, we will resolve them through discussion with a third review author. We will document this process using the Preferred Reporting Items for Systematic Review and Meta-Analysis flow chart. If necessary, we may contact the study authors to obtain further information on the selected paper.

DATA EXTRACTION

Two review authors will extract data from studies using a standardised extraction form that will be developed iteratively. Both reviewers will independently start filling in the data extraction sheet and then compare. Discrepancies will be discussed till consensus is attained or through the involvement of the third reviewer if required. The final data extraction form will be applied to all included studies.

In addition to parameters required for quality appraisal of included studies and thematic analyses, the data extraction form will contain the following data parameters:

- Study identifiers
- Context
- Aims and objectives
- Study design
- Sampling frame and recruitment
- Participants
- Method of data collection and analysis
- Summary of major study findings

Assessment of the quality of the included qualitative studies

We will appraise the quality using the Critical Appraisal Skills Programme quality assessment tool for qualitative studies.[47] Two review authors will independently assess the risk of bias, with a third reviewer involved for consensus decisions if required. We will document the overview of the quality criteria used in a tabular form. The following questions will be used:

1. Was there a clear statement of the aims of the research?
2. Is the qualitative methodology an appropriate methodology for addressing the research goal? Is the data collection method clearly described and appropriate for the research question?
3. Is the study context clearly described?
4. Is the sampling method clearly described and appropriate for the research question?
5. Is there evidence of researcher reflexivity?
6. Is the data analysis sufficiently rigorous?

Box 1 RETREAT framework for selecting qualitative evidence syntheses approaches

⇒ Review question: What are the individual and systems-level resilience factors which shaped the CHWs' response during the COVID-19 pandemic?
⇒ Epistemology: Qualitative naturalistic inquiry underpinned by interpretivist epistemology.
⇒ Time/timeframe: 4 months.
⇒ Resources: Not funded. We have access to databases and qualitative software.
⇒ Expertise: We have a team with expertise in evidence synthesis and qualitative research
⇒ Audience and purpose: Academics, programme managers and policymakers in the health human workforce.
⇒ Types of data: Preliminary scoping indicates the availability of some conceptually rich studies. We did not do a comprehensive search during the scoping phase.
⇒ Chosen method: Thematic syntheses as outlined by Thomas and Harden.
⇒ The rationale for choice: The review intends to collate evidence about the individual and system-level resilience factors which shaped the CHWs' response during the COVID-19 pandemic.
CHWs in pandemics.

7. Are the claims supported by sufficient evidence, that is, did the data provide sufficient depth and detail?
8. Have ethical issues been taken into consideration?
9. How valuable is the research in contributing to the existing knowledge and the transferability of the findings?

Data synthesis

We will analyse and synthesise the qualitative evidence using a thematic analysis approach defined by Thomas and Harden.[48] This method is particularly appropriate where evidence is likely to be largely descriptive and conceptually rich as opposed to being highly theorised. Box 1 presents the detailed rationale for choosing thematic syntheses as defined in the RETREAT framework.[49]

We will follow the standard methods outlined by the thematic approach.[50] Broadly, this will consist of the following steps:

- Coding and developing descriptive themes: Two review authors will conduct line-by-line coding using NVIVO (Lumivero) software in a set of five articles and develop a hierarchical coding framework, and then apply this to other articles. After every fifth article, the coding framework will be revised iteratively based on newer concepts identified. The final coding framework will be developed as an iterative process output and applied to all included studies. Repeated checks, constant comparison and discussion between both reviewers will be undertaken to ensure consistency.
- Development of analytical themes: One review author will then independently read and re-read the selected studies and identify key categories. Further, these categories will be collated into relevant descriptive emergent themes that capture and describe patterns in the data across studies. The author will allocate them into emergent themes with scope for iteratively engaging in emergent categories. The author will search for themes until all the studies have been reviewed. Finally, the thematic synthesis will involve the development of analytical themes. This analysis phase aims to 'go beyond' the primary reported data by synthesising findings across studies and interpreting their meaning about the overarching aim of our review research.

Appraisal of certainty of review findings

We will use the GRADE CERQual (Grading of Recommendations, Assessment, Development, and Evaluations - Confidence in the Evidence from Reviews of Qualitative Research)[51] (certainty of the qualitative evidence) approach to assess how much certainty can be placed in the qualitative evidence for each review finding. By certainty, we mean how likely it is that the review finding happened in the contexts of the included studies and could happen elsewhere. In this approach, our assessment of certainty will be based on four components: methodological limitations, coherence, adequacy of data and relevance.[51] Each review finding would be assessed to have 'no or very minor concerns', 'minor concerns', 'moderate concerns' or 'serious concern' in relation to these components based on the contributing body of evidence. An overall rating would then be developed for each review finding in light of the assessment across the four components. The final confidence rating would be classified into one of the following categories: 'high', 'moderate', 'low' or 'very low'. [52]

We will prepare summary tables of the qualitative evidence synthesis findings as a final step. This 'Summary of qualitative findings' table will be like the 'Summary of Findings'[53] tables used in Cochrane reviews of effectiveness and will summarise the key findings, the certainty of the evidence for each finding and explain the assessment of the certainty of the qualitative evidence.

ETHICS AND DISSEMINATION

This study will be conducted on published evidence; thus, no ethical approval is required. We will publish the findings in a peer-reviewed journal, present our findings at conferences and disseminate the results via social media. We will also develop a policy brief for circulation.

Twitter Soumyadeep Bhaumik @DrSoumyadeepB

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ORCID iDs
Neha Adsul http://orcid.org/0000-0002-7375-5354
Soumyadeep Bhaumik http://orcid.org/0000-0001-9579-4453

REFERENCES

1 Malik MA. Fragility and challenges of health systems in pandemic: lessons from India's second wave of coronavirus disease 2019 (COVID-19). *Glob Health J* 2022;6:44–9. 10.1016/j.glohj.2022.01.006 Available: https://doi.org/10.1016/j.glohj.2022.01.006
2 Biddle L, Wahedi K, Bozorgmehr K. Health system resilience: a literature review of empirical research. *Health Policy Plan* 2020;35:1084–109. 10.1093/heapol/czaa032 Available: https://doi.org/10.1093/heapol/czaa032
3 Lotta G, Fernandez M, Corrêa M. The vulnerabilities of the Brazilian health workforce during health emergencies: Analysing personal feelings, access to resources and work dynamics during the COVID-19 pandemic. *Int J Health Plann Manage* 2021;36:42–57. 10.1002/hpm.3117 Available: https://doi.org/10.1002/hpm.3117
4 Thomas Steve AS, Larkin J, Cylus J, *et al*. Strengthening health systems resilience: Key concepts and strategies. *In Policy Brief* 2020:36.
5 Bal R, de Graaff B, van de Bovenkamp H, *et al*. Practicing Corona - Towards a research agenda of health policies. *Health Policy* 2020;124:671–3. 10.1016/j.healthpol.2020.05.010 Available: https://doi.org/10.1016/j.healthpol.2020.05.010
6 Denis JL, Côté N, Fleury C, *et al*. Global health and innovation: A panoramic view on health human resources in the COVID-19 pandemic context. *Int J Health Plann Manage* 2021;36:58–70. 10.1002/hpm.3129 Available: https://doi.org/10.1002/hpm.3129
7 Forman R, Atun R, McKee M, *et al*. 12 Lessons learned from the management of the coronavirus pandemic. *Health Policy* 2020;124:577–80. 10.1016/j.healthpol.2020.05.008 Available: https://doi.org/10.1016/j.healthpol.2020.05.008
8 Gupta N, Balcom SA, Gulliver A, *et al*. Health workforce surge capacity during the COVID-19 pandemic and other global respiratory disease outbreaks: A systematic review of health system requirements and responses. *Health Planning & Management* 2021;36:26–41. 10.1002/hpm.3137 Available: https://onlinelibrary.wiley.com/toc/10991751/36/S1
9 Kuhlmann E, Dussault G, Wismar M. Health labour markets and the "human face" of the health workforce: resilience beyond the COVID-19 pandemic. *Eur J Public Health* 2020;30:iv1–2. 10.1093/eurpub/ckaa122 Available: https://doi.org/10.1093/eurpub/ckaa122
10 McCauley L, Hayes R. Taking responsibility for front-line health-care workers. *Lancet Public Health* 2020;5:e461–2. 10.1016/S2468-2667(20)30179-1 Available: https://doi.org/10.1016/S2468-2667(20)30179-1
11 Zapata T, Buchan J, Azzopardi-Muscat N. The health workforce: Central to an effective response to the COVID-19 pandemic in the European Region. *Int J Health Plann Manage* 2021;36:9–13. 10.1002/hpm.3150 Available: https://doi.org/10.1002/hpm.3150
12 Burau V, Falkenbach M, Neri S, *et al*. Health system resilience and health workforce capacities: Comparing health system responses during the COVID-19 pandemic in six European countries. *Int J Health Plann Manage* 2022;37:2032–48. 10.1002/hpm.3446 Available: https://doi.org/10.1002/hpm.3446
13 Gröschke D, Hofmann E, Müller ND, *et al*. Individual and organizational resilience-Insights from healthcare providers in Germany during the COVID-19 pandemic. *Front Psychol* 2022;13:965380. 10.3389/fpsyg.2022.965380 Available: https://doi.org/10.3389/fpsyg.2022.965380
14 Chamberland-Rowe C, Chiocchio F, Bourgeault IL. Harnessing instability as an opportunity for health system strengthening: A review of health system resilience. *Healthc Manage Forum* 2019;32:128–35. 10.1177/0840470419830105 Available: https://doi.org/10.1177/0840470419830105
15 Hanefeld J, Mayhew S, Legido-Quigley H, *et al*. Towards an understanding of resilience: responding to health systems shocks. *Health Policy Plan* 2018;33:355–67. 10.1093/heapol/czx183 Available: https://doi.org/10.1093/heapol/czx183
16 Coutu. *How Resilience Works*. Harvard Business Review, 2002.
17 Shin J, Taylor MS, Seo M-G. Resources for Change: the Relationships of Organizational Inducements and Psychological Resilience to Employees' Attitudes and Behaviors toward Organizational Change. *AMJ* 2012;55:727–48. 10.5465/amj.2010.0325 Available: https://doi.org/10.5465/amj.2010.0325
18 Pangallo A, Zibarras L, Lewis R, *et al*. Resilience through the lens of interactionism: a systematic review. *Psychol Assess* 2015;27:1–20. 10.1037/pas0000024 Available: https://doi.org/10.1037/pas0000024
19 Wachs P, Saurin TA, Righi AW, *et al*. Resilience skills as emergent phenomena: A study of emergency departments in Brazil and the United States. *Appl Ergon* 2016;56:227–37. 10.1016/j.apergo.2016.02.012 Available: https://doi.org/10.1016/j.apergo.2016.02.012
20 Javanparast S, Windle A, Freeman T, *et al*. Community Health Worker Programs to Improve Healthcare Access and Equity: Are They Only Relevant to Low- and Middle-Income Countries? *Int J Health Policy Manag* 2018;7:943–54. 10.15171/ijhpm.2018.53 Available: https://doi.org/10.15171/ijhpm.2018.53
21 Pallas SW, Minhas D, Pérez-Escamilla R, *et al*. Community health workers in low- and middle-income countries: what do we know about scaling up and sustainability? *Am J Public Health* 2013;103:e74–82. 10.2105/AJPH.2012.301102 Available: https://doi.org/10.2105/AJPH.2012.301102
22 Salve S, Raven J, Das P, *et al*. Community health workers and Covid-19: Cross-country evidence on their roles, experiences, challenges and adaptive strategies. *PLOS Glob Public Health* 2023;3:e0001447. 10.1371/journal.pgph.0001447 Available: https://doi.org/10.1371/journal.pgph.0001447
23 Méllo LMB de D e, Santos RC dos, Albuquerque PC de. Community Health Workers in the Covid-19 pandemic: scoping review. *Saúde Debate* 2022;46:368–84. 10.1590/0103-11042022e125i Available: https://doi.org/10.1590/0103-11042022e125i
24 Feroz AS, Khoja A, Saleem S. Equipping community health workers with digital tools for pandemic response in LMICs. *Arch Public Health* 2021;79:1. 10.1186/s13690-020-00513-z Available: https://doi.org/10.1186/s13690-020-00513-z
25 Bhaumik S, Moola S, Tyagi J, *et al*. Community health workers for pandemic response: a rapid evidence synthesis. *BMJ Glob Health* 2020;5:e002769. 10.1136/bmjgh-2020-002769 Available: https://doi.org/10.1136/bmjgh-2020-002769
26 Scott K, Beckham SW, Gross M, *et al*. What do we know about community-based health worker programs? A systematic review of existing reviews on community health workers. *Hum Resour Health* 2018;16:39. 10.1186/s12960-018-0304-x Available: https://doi.org/10.1186/s12960-018-0304-x
27 Boyce MR, Katz R. Community Health Workers and Pandemic Preparedness: Current and Prospective Roles. *Front Public Health* 2019;7:62. 10.3389/fpubh.2019.00062 Available: https://doi.org/10.3389/fpubh.2019.00062
28 Nepomnyashchiy L, Dahn B, Saykpah R, *et al*. COVID-19: Africa needs unprecedented attention to strengthen community health systems. *The Lancet* 2020;396:150–2.
29 Cargo M, Harris J, Pantoja T, *et al*. Cochrane Qualitative and Implementation Methods Group guidance series-paper 4: methods for assessing evidence on intervention implementation. *J Clin Epidemiol* 2018;97:59–69. 10.1016/j.jclinepi.2017.11.028 Available: https://doi.org/10.1016/j.jclinepi.2017.11.028
30 Flemming K, Booth A, Hannes K, *et al*. Cochrane Qualitative and Implementation Methods Group guidance series-paper 6: reporting guidelines for qualitative, implementation, and process evaluation evidence syntheses. *J Clin Epidemiol* 2018;97:79–85. 10.1016/j.jclinepi.2017.10.022 Available: https://doi.org/10.1016/j.jclinepi.2017.10.022
31 Harden A, Thomas J, Cargo M, *et al*. Cochrane Qualitative and Implementation Methods Group guidance series-paper 5: methods for integrating qualitative and implementation evidence within intervention effectiveness reviews. *J Clin Epidemiol* 2018;97:70–8. 10.1016/j.jclinepi.2017.11.029 Available: https://doi.org/10.1016/j.jclinepi.2017.11.029
32 Noyes J, Booth A, Cargo M, *et al*. Cochrane Qualitative and Implementation Methods Group guidance series-paper

1: introduction. *J Clin Epidemiol* 2018;97:35–8. 10.1016/j.jclinepi.2017.09.025 Available: https://doi.org/10.1016/j.jclinepi.2017.09.025
33 Noyes J, Booth A, Flemming K, *et al*. Cochrane Qualitative and Implementation Methods Group guidance series-paper 3: methods for assessing methodological limitations, data extraction and synthesis, and confidence in synthesized qualitative findings. *J Clin Epidemiol* 2018;97:49–58. 10.1016/j.jclinepi.2017.06.020 Available: https://doi.org/10.1016/j.jclinepi.2017.06.020
34 Bhaumik S, Hunter K, Matzopoulos R, *et al*. Facilitators and barriers to child restraint use in motor vehicles: a qualitative evidence synthesis. *Inj Prev* 2020;26:478–93. 10.1136/injuryprev-2020-043655 Available: https://doi.org/10.1136/injuryprev-2020-043655
35 Cox KL, Bhaumik S, Gupta M, *et al*. Facilitators and barriers of life jacket use for drowning prevention: Qualitative evidence synthesis. *J Safety Res* 2022;80:135–47. 10.1016/j.jsr.2021.11.010 Available: https://doi.org/10.1016/j.jsr.2021.11.010
36 Panigrahi S, Parveen S, Kshatri JS, *et al*. Facilitators and barriers to bicycle helmet use: A qualitative evidence synthesis. *J Family Med Prim Care* 2022;11:5211–25. 10.4103/jfmpc.jfmpc_2464_21 Available: https://doi.org/10.4103/jfmpc.jfmpc_2464_21
37 Glenton C, Lewin S, Downe S, *et al*. Cochrane Effective Practice and Organisation of Care (EPOC) Qualitative Evidence Syntheses. *Differences From Reviews of Intervention Effectiveness and Implications for Guidance International Journal of Qualitative Methods* 2022;21. 10.1177/16094069211061950 Available: https://doi.org/10.1177/16094069211061950
38 Perry HB, Zulliger R, Rogers MM. Community health workers in low-, middle-, and high-income countries: an overview of their history, recent evolution, and current effectiveness. *Annu Rev Public Health* 2014;35:399–421. 10.1146/annurev-publhealth-032013-182354 Available: https://doi.org/10.1146/annurev-publhealth-032013-182354
39 Raven J, Akweongo P, Baba A, *et al*. Using a human resource management approach to support community health workers: experiences from five African countries. *Hum Resour Health* 2015;13:45. 10.1186/s12960-015-0034-2 Available: https://doi.org/10.1186/s12960-015-0034-2
40 Kuhlmann E, Denis J-L, Côté N, *et al*. Comparing Health Workforce Policy during A Major Global Health Crisis: A Critical Conceptual Debate and International Empirical Investigation. *Int J Environ Res Public Health* 2023;20:5035. 10.3390/ijerph20065035 Available: https://doi.org/10.3390/ijerph20065035
41 Olaniran A, Madaj B, Bar-Zev S, *et al*. The roles of community health workers who provide maternal and newborn health services: case studies from Africa and Asia. *BMJ Glob Health* 2019;4:e001388. 10.1136/bmjgh-2019-001388 Available: https://doi.org/10.1136/bmjgh-2019-001388
42 Glenton C, Javadi D, Perry HB. Community health workers at the dawn of a new era: 5. Roles and tasks. *Health Res Policy Syst* 2021;19:128. 10.1186/s12961-021-00748-4 Available: https://doi.org/10.1186/s12961-021-00748-4
43 Zulu JM, Perry HB. Community health workers at the dawn of a new era. *Health Res Policy Sys* 2021;19:130. 10.1186/s12961-021-00761-7 Available: https://doi.org/10.1186/s12961-021-00761-7
44 Kok MC, Dieleman M, Taegtmeyer M, *et al*. Which intervention design factors influence performance of community health workers in low- and middle-income countries? A systematic review. *Health Policy Plan* 2015;30:1207–27. 10.1093/heapol/czu126 Available: https://doi.org/10.1093/heapol/czu126
45 Lewin SA, Dick J, Pond P, *et al*. Lay health workers in primary and community health care. *Cochrane Database Syst Rev* 2005:CD004015. 10.1002/14651858.CD004015.pub2 Available: https://doi.org/ARTN
46 Maher D, Cometto G. Research on community-based health workers is needed to achieve the sustainable development goals. *Bull World Health Organ* 2016;94:786. 10.2471/BLT.16.185918 Available: https://doi.org/10.2471/Blt.16.185918
47 CASP. CASP-Qualitative-Checklist-2018_fillable_form. 2018.
48 Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Med Res Methodol* 2008;8:45. 10.1186/1471-2288-8-45 Available: https://doi.org/mAr tn4510.1186/1471-2288-8-45
49 Booth A, Noyes J, Flemming K, *et al*. Structured methodology review identified seven (RETREAT) criteria for selecting qualitative evidence synthesis approaches. *J Clin Epidemiol* 2018;99:41–52.
50 Miles MB, Huberman AM. *Qualitative data analysis: An expanded sourcebook, 2nd edn*. Sage Publications, Inc, 1994.
51 Lewin S, Booth A, Glenton C, *et al*. Applying GRADE-CERQual to qualitative evidence synthesis findings: introduction to the series. *Implement Sci* 2018;13:2. 10.1186/s13012-017-0688-3 Available: https://doi.org/ARTN
52 Lewin S, Glenton C, Munthe-Kaas H, *et al*. Using qualitative evidence in decision making for health and social interventions: an approach to assess confidence in findings from qualitative evidence syntheses (GRADE-CERQual). *PLoS Med* 2015;12:e1001895. 10.1371/journal.pmed.1001895 Available: https://doi.org/ARTN e100189510.1371/journal.pmed.1001895
53 Guyatt G, Oxman AD, Akl EA, *et al*. GRADE guidelines: 1. Introduction—GRADE evidence profiles and summary of findings tables. *Journal of Clinical Epidemiology* 2011;64:383–94. 10.1016/j.jclinepi.2010.04.026 Available: https://doi.org/10.1016/j.jclinepi.2010.04.026

PubMed Search strategy:

Concept		Search results
#1 Community health worker	"Community Health Workers"[MeSH] OR “Promotoras de salud” OR “promotoras” OR "community health worker"[Text Word] OR "community health aide"[Text Word] OR "community health provider"[Text Word] OR "frontline health worker"[Text Word] OR "lay health worker"[Text Word] OR "Accredited Social Health Activist"[Text Word] OR "ASHA"[Text Word] OR "rural health worker"[Text Word] OR "village health worker"[Text Word] OR "community health volunteer"[Text Word] OR "community health agent"[Text Word] OR "multipurpose health worker"[Text Word] OR "health extension worker"[Text Word] OR "lady health worker"[Text Word]	9337
#2 COVID 19	"COVID-19"[MeSH] OR “Coronavirus”[Mesh] OR “Coronavirus Infections”[Mesh] OR “severe acute respiratory syndrome coronavirus 2” [Supplementary Concept] OR coronavirus OR “corona virus” OR coronavirinae OR coronaviridae OR betacoronavirus OR covid19 OR “covid 19” OR nCoV OR “CoV 2” OR CoV2 OR sarscov2 OR 2019nCoV OR “novel CoV” OR “wuhan virus”	356158
#3 qualitative research	"qualitative research"[MeSH Terms] OR "focus groups"[MeSH Terms] OR "interviews as topic"[MeSH Terms] OR “semi-structured”[TIAB] OR semistructured[TIAB] OR unstructured[TIAB] OR informal[TIAB] OR “in-depth”[TIAB] OR indepth[TIAB] OR “face-to-face”[TIAB] OR structured[TIAB] OR guide[TIAB] OR guides[TIAB] OR interview*[TIAB] OR discussion*[TIAB] OR questionnaire*[TIAB] OR “focus group”[TIAB] OR “focus groups”[TIAB] OR qualitative[TIAB] OR ethnograph*[TIAB] OR fieldwork[TIAB] OR “field work”[TIAB] OR “key informant”[TIAB] OR “interviews as topic”[Mesh] OR “focus groups”[Mesh] OR narration[Mesh] OR qualitative research[Mesh] OR "personal narratives as topic"[Mesh] OR “lived experience” [TIAB]	1978429
#4	#1 AND #2 AND #3	**99**