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An evidence review of research on health interventions in humanitarian crises

2021 Update

Executive Summary



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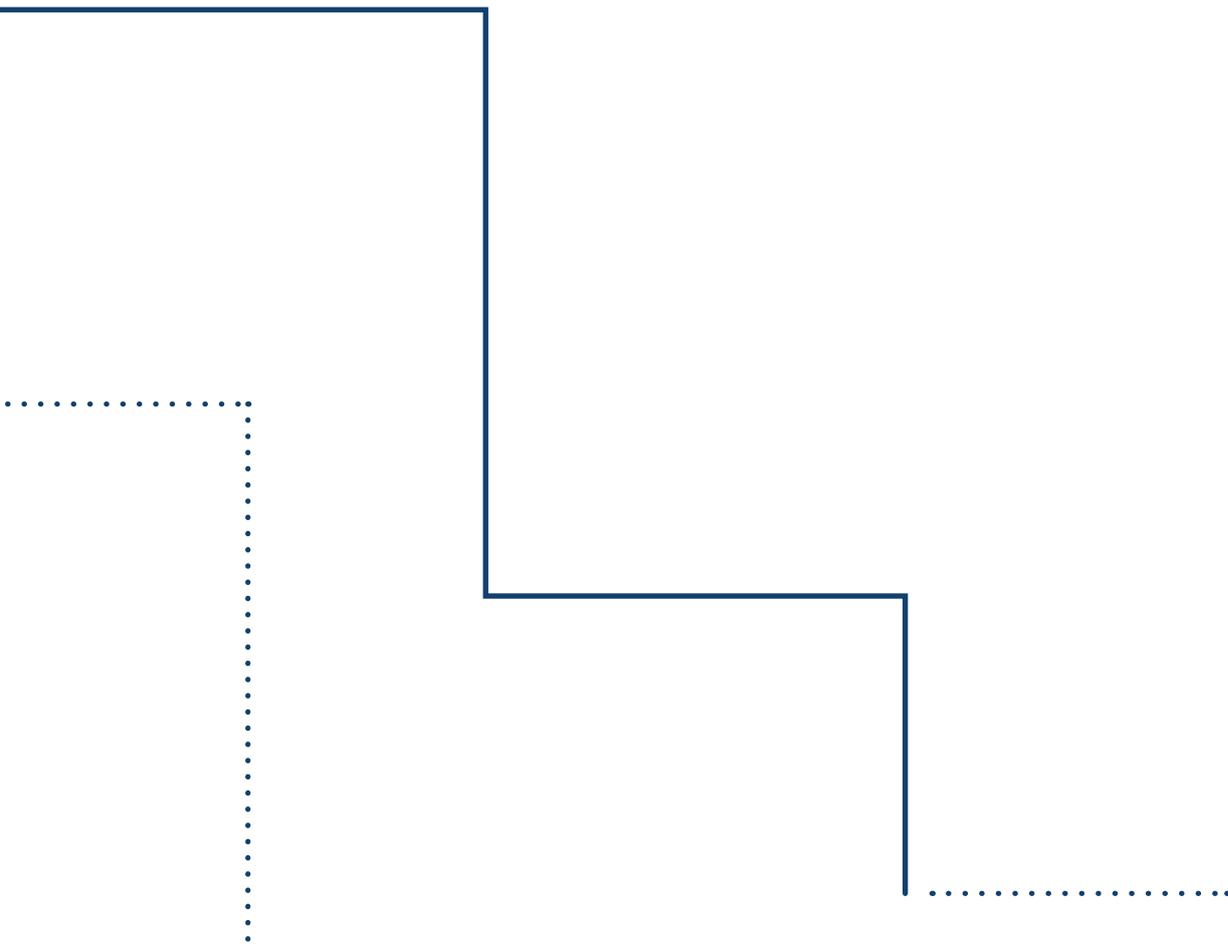
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ABOUT ELRHA

We are [Elrha](#). A global charity that finds solutions to complex humanitarian problems through research and innovation.

We are an established actor in the humanitarian community, working in partnership with humanitarian organisations, researchers, innovators, and the private sector to tackle some of the most difficult challenges facing people all over the world. We equip humanitarian responders with knowledge of what works, so that people affected by crises get the right help when they need it most. We have supported more than 200 world-class research studies and innovation projects, championing new ideas and different approaches to evidence what works in humanitarian response. Elrha has two successful humanitarian programmes: Research for Health in Humanitarian Crises (R2HC) and the Humanitarian Innovation Fund (HIF).

The R2HC aims to improve health outcomes for people affected by humanitarian crises by strengthening the evidence base for public health interventions. Our globally-recognised research programme focuses on maximising the potential for public health research to bring about positive change and transform the effectiveness of humanitarian response.

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ABOUT THE JOHNS HOPKINS CENTER FOR HUMANITARIAN HEALTH

The [Johns Hopkins Center for Humanitarian Health](#) is a unique and collaborative Johns Hopkins academic program conducted jointly by the Bloomberg School of Public Health, the School of Medicine, and the School of Nursing. It is hosted by the Department of International Health at the Bloomberg School of Public Health and draws upon a variety of disciplines, including epidemiology, demography, emergency and disaster medicine, health systems management, nutrition/food security, environmental engineering, mental health, political science, and human rights. The Center collaborates with a variety of organizations including national and international non-governmental organizations (NGOs), multilateral and UN organizations, and Governmental agencies, as well as other research institutions on field-based research and humanitarian projects.



FOREWORD

Humanitarian crises threaten the health, protection and dignity of hundreds of millions of people worldwide.¹ In the face of pre-existing and emerging crises, and often working with limited resources, health responders and humanitarian health policymakers are under constant pressure to adapt humanitarian health responses to optimise their effectiveness, often with limited resources.

This has been particularly true of the global response to the COVID-19 pandemic and concurrent established and emerging humanitarian crises. This response has shown how evidence-informed policies and practices can have a positive impact on health and human rights – for example, through timely community-driven mitigation efforts such as handwashing and physical distancing, which have limited the spread of the virus, and community collaboration to determine public health restrictions deemed both appropriate and effective in different settings.²

However, COVID-19 has also provided a stark reminder of the challenges associated with evidence-informed decision-making, particularly where competing political priorities are at play and where the available evidence is often limited or lacks local contextualisation.

To address gaps in the evidence base informing humanitarian health programmes, in 2013 we launched the Research for Health in Humanitarian Crises (R2HC) programme.³ The programme plays a crucial role in funding public health research in humanitarian settings and promoting the uptake of new evidence among decision makers, humanitarian practitioners and funders.

At that time, we also commissioned the first [Humanitarian Health Evidence Review \(HHER1\)](#),^{4,5} bringing together evidence on the effectiveness of public health interventions in humanitarian crises. The review identified the limited quality and quantity of humanitarian health intervention research over the preceding 30+ years. Its findings reinforced the need for the R2HC, and the importance of dedicated funding and technical support for the delivery and uptake of humanitarian research.

Since 2014, we have funded over 90 research studies in more than 45 countries, spanning issues as diverse as community-based Ebola virus disease control in the eastern Democratic Republic of the Congo, and hypertension and diabetes care for Syrian refugees in Jordan.

As we approach a decade since the creation of the R2HC, and in recognition of the persistent need for evidence-informed public health response in diverse and complex humanitarian settings, we have taken stock of humanitarian health research published since the first review was conducted. We are pleased to present here the second Humanitarian Health Evidence Review (HHER2), which reflects a collaboration between Elrha and the Johns Hopkins Center for Humanitarian Health, led by Shannon Doocy, Emily Lyles and Hannah Tappis.

This updated review has identified a substantial increase in humanitarian health intervention research across nine topic areas; 269 studies have been published since mid-2013, compared with 387 between 1980 and early 2013.

The growth in health research in humanitarian settings reflects sectoral appreciation of the importance of robust evidence to high-quality and effective health programming. Such evidence plays a critical role in efforts to reduce morbidity and mortality among people affected by humanitarian crises such as armed conflict and violence, environmental disasters and disease outbreaks.

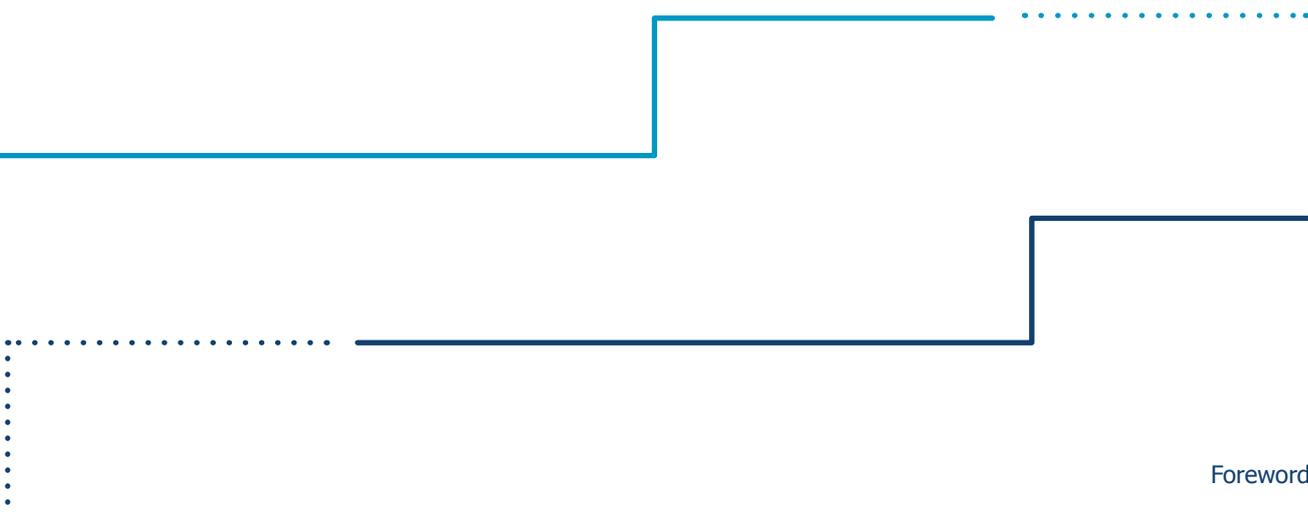
HHER2 highlights where progress has been made in some topic areas, such as the continued growth of mental health and psychosocial support research, but also identifies persistent and emerging evidence gaps for which people-centred and context- and crisis-specific research is still urgently needed. People affected by humanitarian crises have diverse and often complex health needs, and we must continue to support efforts to ensure communities and health responders have timely access to the knowledge and resources to meet those needs.

We encourage frontline humanitarian practitioners to engage with the findings of this review, and to pinpoint research gaps where further evidence is needed to determine the effectiveness of humanitarian health activities. Researchers will recognise the substantial growth in health research in humanitarian settings. By working closely with frontline responders and the people most affected by humanitarian crises, they can refine a research agenda that is sensitive to the most pressing humanitarian health needs.

Finally, we hope that policymakers and donors will see in this review the scope for and potential of high-quality humanitarian health research. Continued investment in research in humanitarian settings is vital if we are to ensure effective, ethical and appropriate humanitarian response in the years ahead.

Jess Camburn, CEO, Elrha

Paul B. Spiegel, Director, Johns Hopkins Center for Humanitarian Health





Executive Summary

EXECUTIVE SUMMARY

Background

Humanitarian crises pose a major threat to health and dignity worldwide. There is a need for evidence-based interventions in humanitarian settings to maximise the impact of efforts to respond to pressing needs. The first Elrha Humanitarian Health Evidence Review (HHER1), led by a team from the London School of Hygiene & Tropical Medicine and published in 2015, was the first report to provide a comprehensive assessment of the evidence base for humanitarian health interventions in low- and middle-income countries (LMICs).

Recognising that a significant body of relevant research has been published since 2013 (the upper limit for publication dates included in the first review), we commissioned researchers from the Johns Hopkins Center for Humanitarian Health to update HHER1, documenting new evidence that has contributed to the public health evidence base informing humanitarian decision-making.

This review, HHER2, has assessed evidence for interventions in humanitarian crises in nine thematic areas:



communicable disease control



sexual and reproductive health (SRH), including gender-based violence (GBV)



non-communicable disease (NCD)



water, sanitation and hygiene (WASH)



mental health and psychosocial support (MHPSS)



health service delivery strategies



nutrition



injury and physical rehabilitation



health systems interventions

Methods

The review builds on HHER1. It comprises a thorough mapping of peer-reviewed literature on quantitative evaluations of the effectiveness of health interventions in humanitarian settings in LMICs published since HHER1 searches were completed in 2013; and an analysis of the critical weaknesses in the evidence base for sectoral areas of interest.

Evidence mapping included assessment of the depth and quality of evidence based on recognised methods for individual study quality appraisal and evaluating bodies of research. The systematic review methodology adheres to the [Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement](#).

Overview

A total of 269 peer-reviewed articles met the eligibility criteria across all topics, with 81 (30%) reporting on multiple topics. This reflects a continuation of the increase in publication volume first documented in HHER1, though the volume of evidence and increase in publication rates vary substantially across topics.

Across all topics, the diversity of interventions studied has increased. To some extent, this reflects a shift in focus to some of the narrow evidence gaps identified in HHER1. However, it also reflects a general broadening of the scope of humanitarian interventions in recent decades and an increase in the publication of peer-reviewed research on more aspects of programming.

Choice of methodology, along with the quality of the evidence base, also vary substantially across and within topics. Experimental and quasi-experimental studies account for 98 (36%) included studies. Seventy-six (28%) articles were judged to have a low risk of bias in their study design. Gaps in information needed to assess the risk of bias in publications are common across topics; half of all included studies were deemed to have an unclear risk of bias due to insufficient reporting detail, for which reporting quality remains an area in need of improvement.





Communicable disease control

Seventy articles on communicable disease control interventions met the inclusion criteria and were reviewed, of which nine (13%) are experimental or quasi-experimental studies, and five (7%) are economic evaluations.

Communicable disease control literature focuses largely on Ebola virus disease and cholera. There is a complete or near absence of evidence for other diseases that comprise a significant portion of the disease burden in humanitarian settings such as respiratory infections, diarrhoeal diseases and malaria.

Vaccination campaigns are the most frequent intervention of focus (n=22, 31%), followed by surveillance and contact tracing (n=13, 19%). Few publications were identified that address communicable disease treatment, testing and other prevention measures.

Compared to HHER1, HHER2 has seen a shift away from experimental and quasi-experimental studies on treatment interventions in armed conflict contexts to a greater preponderance of observational studies during outbreak responses.

Recommendations for future research include prioritising diseases with a high morbidity and mortality burden or where there has been a failure to achieve disease control despite existing evidence. Focus is also needed on interventions to increase access to and ease of diagnostic testing and treatment interventions that have been shown to be effective in other contexts, but for which evidence in humanitarian settings is lacking.



Water, sanitation and hygiene

Twenty-one articles on WASH interventions met inclusion criteria and were reviewed, including four (19%) quasi-experimental studies, and one mixed-methods study that includes an economic assessment.

Most articles (n=15, 71%) report on water-related interventions, with 12 (57%) reporting on hygiene interventions with less emphasis on sanitation-related interventions. Interventions most frequently focus on water quality (n=12, 57%) and education or promotion (n=10, 48%). Less-represented intervention types include in-kind assistance, waste or wastewater management, environmental hygiene, water quantity or supply, and water storage.

HHER2 found more than three times as many WASH articles than HHER1. The distribution of articles assessing interventions related to water, sanitation, hygiene or a mix thereof is largely the same, though HHER2 has seen a diversification in intervention types.

A particular challenge with the WASH review was identifying publications that specifically report on health and nutrition outcomes. Most of the published evidence does not investigate or report on direct links to health outcomes. Future WASH research should include health and/or nutrition outcomes. Economic evaluation components are also needed, as cost-effectiveness is a persistent evidence gap.



Nutrition

Thirty-four articles on nutrition interventions met the inclusion criteria and were reviewed, of which nine (27%) articles report on randomised controlled trials (RCTs), eight (24%) on quasi-experimental studies and three (9%) on economic evaluations.

The largest proportion of articles focus on wasting, with far fewer articles on other nutrition topics. Supplementary feeding and cash transfers are the most common intervention areas of focus. HHER2 has seen greater representation of non-observational study types and increased representation of cash transfers compared to HHER1. Emphasis on wasting and supplementary feeding has remained consistent across the two reviews.

Previously identified evidence gaps that have not been well addressed by recent literature and which should be future research priorities include: interventions to improve breastfeeding; breast milk substitutes; re-lactation; complementary feeding strategies; nutrition education; bundled and multi-sectoral interventions; and targeting, specifically of older people and people with disabilities.



Sexual and reproductive health and gender-based violence

Thirty-two articles on SRH interventions met the inclusion criteria and were reviewed, of which seven (22%) articles report on RCTs, six (19%) on quasi-experimental studies and three (9%) on economic evaluations.

Over half (n=17, 53%) of the articles report on maternal and newborn health (MNH) interventions, with GBV interventions comprising an additional nine articles (28%). Half report on service delivery interventions and nearly a quarter on GBV prevention, with other intervention types minimally included.

HHER2 has seen a shift towards experimental and quasi-experimental study designs, as well as increased diversification by topic area and intervention type. MNH is the most frequent topic of focus in both reviews.

Recommendations for future research include: expanding research on service delivery strategies for multifaceted packages of care; more consistent assessment of SRH service quality and use of common frameworks and evaluation metrics; and diversifying population groups and humanitarian settings that are subject to research.



Mental health and psychosocial support

One hundred and four articles on MHPSS interventions met the inclusion criteria and were reviewed, making this the topic area with the largest evidence base, of which thirty-three (32%) articles report on RCTs, 20 (19%) on quasi-experimental studies and one on an economic evaluation.

Most articles (n=60, 58%) report on non-specialised service interventions. Psychological interventions are the most common intervention type (n=33, 32%). HHER2 has identified greater use of mixed-methods studies, as well as an expanded scope of outcomes of focus. Most studies include measurement of non-disorder-related psychosocial and psychological constructs, as well as non-specific psychological distress and wellbeing outcomes.

Recommendations for future research include continued support for replication studies to better understand the effectiveness of interventions and delivery modalities across diverse humanitarian settings and for varied subpopulations.

Also, research implementation and uptake recommendations outlined in *Elrha's Review and Assessment of Mental Health and Psychosocial Support Intervention Research in Humanitarian Settings*⁶ and other recent consensus-based research prioritisation exercises should be embraced.



Non-communicable diseases

Fifteen articles on NCD interventions met the inclusion criteria and were reviewed, of which five (33%) report on RCTs and one on a quasi-experimental study. Two studies include costing outcomes. Five studies focus on both diabetes and hypertension, with an additional two solely on diabetes.

Other NCDs such as cancer, respiratory pathologies and other cardiovascular diseases are minimally included. Primary care provision is the most common intervention type, with most interventions delivered at health facilities.

HHER2 has seen a shift towards experimental and mixed-methods study designs, and from disease monitoring and management protocols to integration of NCDs into primary care provision. The Middle East is the main region of study in both reviews and most research focuses on populations affected by conflict.

Recommendations for future research include diversifying the focus of NCD research to include crisis-affected contexts in Africa and Asia, as well as other types of crises such as environmental disasters. NCD research during humanitarian crises should focus on access to care and intervention effectiveness for the most prevalent NCDs at primary care level, and should incorporate longer-term follow-up periods and health outcome measures.



Injury and physical rehabilitation

Six articles on injury and rehabilitation interventions met the inclusion criteria and were reviewed, with one article reporting on results from an RCT. Trauma care interventions account for half of the articles, with one article assessing post-trauma care and two focusing on rehabilitation.

HHER2 has seen a noticeable decrease in the volume of research conducted on injury and physical rehabilitation. Both reviews report primarily on studies occurring in settings affected by armed conflict. While most articles in HHER1 focused on orthopaedic care, HHER2 has identified a more diverse range of topics.

The low number of publications identified in the review suggests there is a broad need to expand research on injury and physical rehabilitation in humanitarian crises. Research on injury rehabilitation programmes is an important gap in the recent literature, as are studies conducted in humanitarian settings across Africa. Incorporation of longer-term outcome measures and costing would help to address persistent evidence gaps.



Health service delivery

Fifty-six articles on health service delivery interventions met the inclusion criteria and were reviewed, of which thirteen (23%) articles report on experimental and quasi-experimental studies, with an additional four reporting on mixed-methods studies with an experimental study component. Four articles are economic evaluations; and an additional article reports on a mixed-methods study with an economic evaluation.

Community-based and primary care interventions are the two most commonly studied levels of care. MHPSS is the most common intervention type, followed by SRH. Over half of the articles evaluate the effectiveness of service delivery models. One third evaluate specific protocols, procedures or clinical decision support tools.

HHER2 has identified diversification in study designs, including experimental, quasi-experimental and mixed-methods studies; and in the level of care studied, including community-based services in addition to facility-based care. The vast majority of articles in HHER2 focus on specific health needs, while most HHER1 articles addressed general health needs.

Research on resilience, sustainability and scalability of service delivery strategies is limited. There is a need for more multi-site, larger-scale and longer-term research on effective models of care in different contexts and among different subpopulations.

More systematic reporting on interventions to strengthen health service delivery and packages of care is needed to facilitate comparisons of intervention effectiveness across settings. Finally, more research on the effectiveness and costs of both focused and integrated models of community- and facility-based care is needed.



Health systems

Thirty-two articles on health systems interventions met the inclusion criteria and were reviewed, of which five (16%) are quasi-experimental studies, two (6%) RCTs and two (6%) economic evaluations. Fourteen articles report on health workforce interventions, with ten focusing on service delivery and nine on health information system interventions.

HHER2 has seen a slight shift from the preponderance of case studies in HHER1 to greater representation of experimental and quasi-experimental study designs. Most articles in HHER1 assessed interventions focused on policy areas of leadership and governance, while health workforce interventions are most represented in HHER2.

There is a need to expand health systems research generally. It should include the study of intervention strategies that address other essential health system building blocks, including health financing, access to medicines and medical products, vaccines and technologies, as well as leadership and management.

More systematic reporting on the roles that governments, humanitarian and development organisations, and other key stakeholders play in strengthening health systems in humanitarian crises, as well as the immediate and longer-term impacts of health systems interventions, would benefit the health systems evidence base.

Conclusions

There has been a notable increase in the publication of studies evaluating the effectiveness of humanitarian health interventions between HHER1 and HHER2. The topic areas with the most limited evidence base on intervention effectiveness remain NCDs and WASH.

The types of interventions studied has increased across all topic areas. An overarching theme is the challenge of implementing high-quality and well-reported humanitarian health research. Humanitarian contexts present significant challenges to research design – particularly in relation to experimental designs – and implementation.

Improvements in reporting and intervention description could make research more impactful. The collective aim of humanitarian health researchers should be to improve the utility of research findings, which requires inclusion of far more context, methodology and intervention information to allow for the replication of successful interventions, along with clear limitations and generalisability statements.

Of critical importance for intervention research is the need to prioritise investment in research where study designs allow for the characterisation and attribution of changes resulting from a particular intervention. Researchers should try to incorporate standard indicators and should also consider the feasibility of measuring longer-term outcomes to enable better comparison of the effectiveness of different interventions against one another, as well as intervention effectiveness across different contexts and populations over time.

Shifts in the evidence base indicate efforts to address gaps identified in HHER1. However, the variation in research across and within topic areas does not necessarily reflect the health issues of greatest concern or bottlenecks to quality health service delivery in humanitarian settings. Several previously identified and well-established evidence gaps have yet to be addressed. Notably, there is a need for additional research on health service delivery – in particular, task shifting, and other strategies for scaling up evidence-based interventions and supporting health system resilience. Similarly, economic evaluations continue to make up a small proportion of studies (13 articles, 5% of publications). This is a significant limitation to the current evidence base given the importance of cost, particularly in settings where humanitarian needs exceed available financial resources.

Many research priority-setting efforts are topic- or sector-specific. To bring about change in humanitarian health programming and policy, there is a clear need to prioritise expansion of cross-cutting topics – namely, health service delivery, health systems and the study of cost-effectiveness in humanitarian health research.



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