Examining the evidence for best practice guidelines in supportive supervision of lay health care providers in humanitarian emergencies: A systematic scoping review

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Background Supervision is widely recognised as an important form of support for lay health service providers. However, guidance in appropriate supervision practices for task-shifting health interventions within the unique context of humanitarian emergencies is lacking. This review set out to identify empirically supported features of supervisory practices for lay health care providers in humanitarian emergencies, towards a stronger evidential basis for best practice in supportive supervision.

Methods In January 2021, six databases and five non-governmental organizations' websites were searched for articles examining the effectiveness of supervision for health care interventions delivered by lay providers in humanitarian settings. The inclusion criteria for study selection were qualitative or quantitative primary studies, articles published in peer reviewed journals or technical reports and the availability of the studies in English. The outcomes of interest were client clinical outcomes, health service efficiency and sustainability, and lay health care providers well-being. All articles were independently reviewed by the first and last authors.

Results A total of 3371 articles were initially identified, with a total of 11 articles retained following the systematic screening process (two quantitative, four mixed methods and five qualitative studies). All studies generally reported positive impacts of supportive supervision on client outcomes, service sustainability, staff well-being and staff performance. Only four studies offered emotional support as part of supportive supervision. No studies evaluated the effect of supportive supervision on service efficiency. The narrative synthesis suggests significant challenges with providing supportive supervision, including excessive workloads, difficult supervisory relationships, geographic dispersion of lay providers, safety concerns, poorly trained supervisors, and lack of supervisory guidelines.

Conclusions More efforts are needed to prioritize supportive supervision in task-shifting frameworks and to ensure that supervision is regular, consistent and of high-quality, with well-trained and well-supported supervisors.
Task-shifting is a practice that specifically addresses deficient supply and distribution of personnel, by cascading responsibility for less specialised tasks to providers with fewer formal qualifications [3]. Task-shifting therefore often makes use of ‘lay health workers’ also known as ‘lay health care providers’; individuals who are often from the community they are serving, who are not health care professionals, but are trained to provide certain health care interventions [4,5]. Lay health workers have been shown to effectively deliver a range of services, including health promotion and education, as well as diagnostics and therapeutics [6,7]. Specific examples include diagnosis and treatment of common childhood diseases (pneumonia, diarrhoea, and malaria), nutritional support, HIV education, testing and initiation of anti-retroviral therapies (ART), contraception counselling as well as mental health screening and education [8].

In 2011, the Global Health Workforce Alliance, WHO, International Federation for Red Cross (IFRC), United Nations International Children’s Emergency Fund (UNICEF) and United Nations High Commission for Refugees (UNHCR) published recommendations to expand the responsibilities of lay workers to include emergency care in humanitarian emergencies [9]. As stated by Miller et al. [10], lay providers “represent one of the most promising options for delivering basic healthcare services to populations affected by humanitarian emergencies”. To date, however, few studies have examined the effectiveness of task-shifting within emergency settings [10]. Therefore, less is known about the factors that contribute to lay health worker effectiveness within humanitarian contexts, where health care workers may be subject to deliberate violent targeting during conflicts or are themselves victims of natural disasters, resulting in further health worker flight, morbidity, and mortality [11,12]. Accordingly, providers that remain are expected to work in high stress conditions, often without basic resources and supports [11,13].

In their study in South Sudan, Kozuki et al. [14] found that lay providers, even those that had been internally displaced, were able to provide continued diagnostic and therapeutic interventions for childhood illnesses and families. Moreover, this care was often preferred by the patients, who felt it was safer than the formal health sector due to security risks [14]. Miller et al. [15] also reported similar findings across multiple settings where lay personnel provided maintained services despite the challenges of acute and protracted humanitarian crises, resulting in a faster recovery than settings that did not have a task-shifting mechanism in place. Ruckstuhl et al. [16] concluded that a programme where lay providers were responsible for diagnosing, managing, and treating malaria during civil and political unrest in the Central African Republic increased access to care for vulnerable and neglected populations and improved malaria surveillance. Another example from post-conflict Liberia demonstrated that training lay providers to deliver ART and psychosocial support to patients in rural settings who had no access to HIV care resulted in improved health outcomes and enhanced survival one year after the launch of this initiative [12].

Similar to task-shifting programmes implemented in non-humanitarian contexts, it stands to reason that lay health workers operating in humanitarian contexts also require that certain conditions be met to maximise the effectiveness of health services. To build strong networks between communities and health systems, increase healthy behaviour and ultimately, improve patient outcomes using task-shifting approaches, it is essential to have clearly defined roles, reasonable workloads with adequate resources, appropriate training, and supportive supervision [17]. Moreover, due consideration must be given to the unique experience of working within emergency contexts, including emotional exhaustion caused by high volumes of work and stressful conditions, as well as the trauma experienced by the beneficiaries they are serving [18]. Lay providers should further be formally recognised, respected, and integrated into the health system, as well as accepted and well-regarded by the communities they serve to facilitate their activities [8,17]. Delivery of maternal and child health services by lay providers, for example, was significantly hampered by weak support from the health system, inadequate resources, and mistrust from the communities during the West African Ebola outbreak [19]. Similarly, lay providers heavily involved in disaster relief services during the 2015 earthquake in Nepal cited poor training in disaster care, insufficient collaboration with aid agencies, and inadequate supervision as adversely impacting their efforts [20]. Indeed, supportive supervision is widely recognised as an important predictor of a range of performance-related outcomes among lay health providers [21], and as a vital resource to help harness the benefits of task-shifting frameworks and to protect the health and well-being of lay providers working within them [11].

Supportive supervision is defined as the mechanism of providing both technical and emotional assistance to staff on an ongoing basis [22]. Quality and consistent supervision should endeavour to ensure that lay workers are able to meet the challenges they face during task-shifting activities in the following ways: evaluating practices with suggestions for improvement and development; helping to solve clinical scenarios that go beyond the scope of lay providers’ experience and training; providing recognition and legitimacy to lay providers within communities and health systems; as well as monitoring for signs of burnout and providing emotional support and coping strategies [18,23-27].
Despite the documented advantages to supervision, Hill et al. [23] found that the supervision of task-shifting arrangements is often unavailable or of poor quality. Numerous studies from a variety of settings have demonstrated similar realities to those described by Hill et al. [23]: irregular or absentee supervision as well as demotivating or unsupportive supervisors who are poorly trained to provide knowledgeable and effective feedback [28-30]. For example, a study conducted in Ghana, found that less than 15% of lay providers reported feeling as though they could rely on their supervisors for support [30]. Ludwick et al. [31] found that ineffective supervision negatively impacted the performance of lay providers in task-shifting activities, consequently threatening treatment goals and health outcomes. Gaps in supportive supervision are even greater in humanitarian emergencies, where supervisors are fewer in number, inadequately trained, and lack the space and time needed to carry out their roles [32].

Taken together, and while task-shifting offers a promising approach to fill the gaps in health care service delivery in humanitarian emergencies; the lack of guidelines regarding appropriate supervisory practices in humanitarian contexts limits the effectiveness of services delivered by lay health providers. Accordingly, the Human Resources in Humanitarian Health (HRHH) Working Group-a team tasked with evaluating and addressing the global health workforce crisis- emphasised during the 2009 Humanitarian Action Summit, that task-shifting endeavours must be complemented by ongoing supervision from trained health professionals [12]. This review thus aims to identify those features of supervisory practices that are empirically supported for lay health providers working in humanitarian settings, with a view to informing the development and testing of best practice guidance for supportive supervision in emergency contexts.

METHODS

Eligibility criteria

The eligibility criteria for study selection were 1) qualitative or quantitative primary studies including some evaluation of the supervision of lay providers delivering a health intervention in a humanitarian context; 2) published in either peer reviewed journals or as technical reports; 3) available in English. The outcomes of interest were 1) client clinical outcomes, 2) health service efficiency and sustainability, and 3) lay health worker well-being. For the purpose of this review, the definitions of the abovementioned terms are found in Table 1.

<table>
<thead>
<tr>
<th>TERM</th>
<th>DEFINITION</th>
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<tbody>
<tr>
<td>Lay health worker/lay health care provider</td>
<td>Defined as a ‘member of the community who has received some training to promote health or to carry out some health care services, but is not a health care professional’ [5]</td>
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<tr>
<td>Humanitarian context</td>
<td>Settings of natural disaster, armed conflict, complex emergencies and their aftermath, political crises, and disease outbreaks such as Ebola and COVID-19</td>
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<tr>
<td>Client clinical outcomes</td>
<td>Defined as any ‘measurable changes in health, mental health, function or quality of life’ for those receiving health services [33]</td>
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<tr>
<td>Health service efficiency</td>
<td>Defined as ‘how well health care resources are used to obtain health improvements’ [34]</td>
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<tr>
<td>Health service sustainability</td>
<td>Defined as the ‘the long-term ability to mobilize and allocate sufficient and appropriate resources (manpower, technology, information and finance) for activities that meet individual or public health needs/demands’ [33]</td>
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<tr>
<td>Lay health worker well-being</td>
<td>Defined as the state ‘which allows individuals to realise their abilities, cope with the normal stresses of life, work productively and fruitfully, and make a contribution to their community’ [36]</td>
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Search Strategy

Key search terms were obtained from related research and the full search strategy is available in Appendix S1 in the Online Supplementary Document. On the 11th of January 2021, a search was initiated and completed via the six following databases using the abovementioned terms: Web of Science, Medline, Embase, Cinahl, Psychinfo and PDAT. Results were uploaded into the systematic review application Covidence [37] and duplicates were removed. The first and last authors (NA and AT) then independently screened article titles and abstracts against the inclusion criteria, removing any articles that failed to meet all the criteria. Full texts were then screened independently by the two reviewers against the inclusion criteria. A third reviewer (KM) was consulted to analyse and resolve any conflicts in screening decisions between the first and last authors. Any remaining articles were then brought forward for data extraction. In addition to the abovementioned database searches, the websites of WHO, Médecins Sans Frontiers (MSF), United Nations International Children’s Fund
(UNICEF), United Nations High Commission for Refugees (UNHCR) and International Federation for the Red Cross (IFRC) were searched using the following terms: ‘supervision’, ‘supportive supervision’, ‘supervision of lay providers’, ‘supervision of task shifting’, ‘supervision in humanitarian emergencies’ and ‘supervision in conflict’.

**Data extraction and analysis**

The first author, with the assistance of the last author, extracted the following pertinent data from included studies: author year and location, study purpose, study design, participant characteristics, outcomes of interest, description of supervision (ie, type, duration, frequency, goals), evaluation of supervision, and other relevant study findings and challenges identified. Narrative synthesis was then applied to present and analyse the findings, as an appropriate approach to apply when reviews cannot be synthesised statistically [38]. The critical appraisal skills programme (CASP) checklists [39,40] were used to systematically evaluate the quality of the randomized controlled trial [41] and the qualitative studies [2-45]. The JBI critical appraisal checklist [46] was used to examine the selected cross-sectional study [47] and the Mixed Methods Appraisal Tool (MMAT) [48] was utilised to evaluate the four mixed methods studies [14,49-51].

**RESULTS**

The initial search yielded 3371 articles. Of these, 21 were identified as duplicates and were removed, and 3284 articles failed to meet the inclusion criteria. The full texts of the remaining 65 studies were then screened, resulting in the removal of an additional 54 articles, and the retention of 11 articles for data extraction. The search of the NGO and UN databases identified a further 10 articles, but all were removed for not meeting the inclusion criteria. This process is depicted in the PRISMA flow diagram, as shown in Figure 1.

**Description of included studies**

Of the 11 articles included in this review, two were quantitative, five were qualitative and four employed mixed methods. Eight articles clearly described the supervisory parameters used including the type of supervision (peer, group, individual, etc.), whereas the supervision format was unclear in the remaining three articles [42,43,47]. More than half of the included research defined the goals of supervision [14,32,41,44,49,50]. Although no study directly compared different types of supervision and only one study [44] examined a training model with and without supervision, all studies emphasised the importance of supportive supervision to enhance staff well-being [32,44,45,47], to improve client outcomes [42,43,49,50], to increase service sustainability [14,41,43,44,51], and advance staff performance and competence [41-43]. No study explicitly evaluated the impact of supervision on service efficiency.

**Quality assessment of included studies**

The majority of the included studies used primary data. Some studies analysed secondary data such as policy documents [32], District Health Information Software data [51], field reports [51], and supervisory records [45]. All the included studies evaluated supervisory practices in some capacity. While two studies [14,51] focused more heavily on the quantity of supervision sessions received before, during, and after humanitarian emergencies, attempts were also made to explore supervision through the experiences of supervisors and lay supervisees. Aldamman et al. [47] used a cross-culturally validated scale, the Perceived Supervision Scale [21], to evaluate supportive supervision. Rahman et al. [41] used the Enhancing Assessment of Common Therapeutic Factors (ENACT) rating scale [33], which though does not directly evaluate supervision, was used to
evaluate the impact of supervision on the competence of lay providers. Six studies used key informant interviews and/or focus group discussions with supervisors and supervisees to evaluate the process challenges of supervision [14,32,42-44,51].

**Quality appraisal**

Rahman et al. [41] fulfilled the needed criteria for quality but had two areas of potential weakness: a 25% attrition rate not accounted for and the absence of blinding for researchers and participants. The qualitative studies met the necessary criteria for quality apart from Wong and Leung [45], which had a suboptimal research design, limited data analysis and the absence of explicit ethical considerations discussed. Aldamman et al. [47] was awarded a seven out of a total eight points and all four mixed methods studies fulfilled the needed criteria for the quality assessment. The complete details of these quality analyses are depicted in Tables 2-5.

<table>
<thead>
<tr>
<th>Table 2. CASP Checklist applied to the randomized controlled trial [41]</th>
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<tbody>
<tr>
<td><strong>CASP RANDOMIZED CONTROLLED TRIALS CHECKLIST [40]</strong></td>
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<tr>
<td><strong>FOCUSED RESEARCH QUESTION</strong></td>
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<tr>
<td>Rahman et al., 2019 [41]</td>
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CASP – Critical Appraisal Skills Programme

<table>
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<tr>
<th>Table 3. CASP checklist applied to the qualitative studies [32,42-45]</th>
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<tr>
<td><strong>CASP QUALITATIVE STUDIES CHECKLIST [39]</strong></td>
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<tr>
<td><strong>CLEAR RESEARCH QUESTION</strong></td>
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<tr>
<td>Raven et al., 2020 [32]</td>
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<td>Miller et al., 2020 [42]</td>
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<td>Horn et al., 2019 [43]</td>
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<td>McLean et al., 2015 [44]</td>
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<td>Wong and Leung, 2020 [45]</td>
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CASP – Critical Appraisal Skills Programme

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<tr>
<th>Table 4. JBI Critical Appraisal Checklist applied to the cross-sectional study [47]</th>
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<tbody>
<tr>
<td><strong>JBI CRITICAL APPRAISAL CHECKLIST CROSS-SECTIONAL STUDIES [46]</strong></td>
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<tr>
<td><strong>CLEAR INCLUSION CRITERIA</strong></td>
</tr>
<tr>
<td>Aldamman et al., 2019 [47]</td>
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JBI-Joanna Briggs Institute

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<tr>
<th>Table 5. MMAT criteria applied to the mixed methods studies [14,49-51]</th>
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<tbody>
<tr>
<td><strong>MMAT [48]</strong></td>
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<tr>
<td>Kozuki et al., 2018 [14]</td>
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<tr>
<td>Murray et al., 2014 [49]</td>
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<tr>
<td>Magdison et al., 2015 [50]</td>
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<tr>
<td>Shah, Miller and Mothabbir, 2019 [51]</td>
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MMAT – Mixed Methods Appraisal Tool
Evaluation of supervision practices

The results of all included studies are presented in Table 6 and outlined in detail in the following narrative synthesis.

Table 6. Data extraction table

<table>
<thead>
<tr>
<th>Authors, year, context</th>
<th>Study design</th>
<th>Participants description</th>
<th>Supervision description</th>
<th>Supervision evaluation</th>
<th>Supervision challenges identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kozuki et al., 2018 [14], South Sudan</td>
<td>Mixed methods</td>
<td>1. CBD (n = 3 FGDs): all F 20-40 clients each. 2. Supervisors (n = 2 FGDs + 3 IDIs)-IRC staff. 3. Policy makers (n = 10 IDIs). 4. Community leaders (n = 4 FGDs). 5. Program Implementers (n = 5 IDIs): IRC field staff</td>
<td>In-person supervision, monthly. 15-20 supervisees/supervisor. Goals: Supply Inventory and distribution, link to formal health system, performance evaluation</td>
<td>Supervision shifted towards rescue efforts for displaced CBDs.</td>
<td>Insecurity disrupted supervision, transportation challenges</td>
</tr>
<tr>
<td>Raven et al., 2020 [32], Sierra Leone, Liberia and DRC</td>
<td>Qualitative + policy document review</td>
<td>1. CHWs (Kenema, n = 8: 4F/4M) and Bonthe, n = 7: 5F/2M). 2. Decision-makers (Sierra Leone, n = 9: 7F/2M), Liberia (n = 10: 2F/8M), DRC (n = 8: 3F/5M)</td>
<td>Sierra Leone: 1. Peer supervisor: Monthly. Goal: observation, coordination. 2. Health unit manager: monthly. Goals: training, troubleshooting, supplies. 3. District local person: training, visits, reports. Liberia: 1. CHSS: in person, 10 CHWs each. 2. Facility manager: Checks reports, IA issues, reports to district health</td>
<td>Sierra Leone: support improved motivation and service delivery. DRC: Supervision identified areas for improvement and strengths, support and resources mobilized. Liberia: Not evaluated</td>
<td>Transportation challenges, overloaded schedules, poor supervisory training, strained relations between supervisor and CHWs, absent standardization of performance evaluation measures</td>
</tr>
<tr>
<td>Rahman et al., 2019 [41], Pakistan</td>
<td>Quantitative</td>
<td>1. LHWs (n = 80)-MOH trained, avg. age 35.5 years, avg. work years 12. Two LHW groups are similar. 2. SMT (n = 2). 3. NST (n = 2). 4. LHS (n = 8)</td>
<td>Monthly supportive supervision key to improve LHW competency. TACTS: LHW Competency achieved remotely: advantage in LMICs with limited specialists.</td>
<td>Limited availability of stable internet availability in conflict zones, 25% sample lost to follow up</td>
<td></td>
</tr>
<tr>
<td>Miller et al., 2020 [42], Yemen</td>
<td>Qualitative</td>
<td>1. Policy makers (n = 2). 2. Program Implementers (n = 10). 3. Health workers (n = 4). 4. CHW supervisors (n = 4). 5. Community leaders (n = 3). 6. CHWs (n = 2 FGDs)</td>
<td>Limited consistent, quality supervision</td>
<td>Distance, safety concerns, competing demands, poor supervisory training</td>
<td></td>
</tr>
</tbody>
</table>
Table 6. continued

<table>
<thead>
<tr>
<th>AUTHORS, YEAR, CONTEXT</th>
<th>STUDY DESIGN</th>
<th>PARTICIPANTS DESCRIPTION</th>
<th>SUPERVISION DESCRIPTION</th>
<th>SUPERVISION EVALUATION</th>
<th>SUPERVISION CHALLENGES IDENTIFIED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horn et al., 2019 [43], Sierra Leone and Liberia</td>
<td>Qualitative</td>
<td>1. Trainers (n=23: 10M/13F; 15 Sierra Leone, 18 Liberia, Avg. work 1-26 years) 2. Lay providers (n=36: 23M/13F 17 Sierra Leone, 19 Liberia. Avg. work 1-16 years). 3. Program managers (n=14: 6 Sierra Leone, 8 Libéria)</td>
<td>Not described apart from trainers supervising providers</td>
<td>Supervision necessary for fidelity and technical assistance, but variable in quality and consistency</td>
<td>Short training course, limited experiences</td>
</tr>
<tr>
<td>McLean et al., 2015 [44], Haiti</td>
<td>Qualitative</td>
<td>Phase 1: IDI (n = 18). Phase 2: IDI (n = 2) + observational data (n = 14 CHWs). Phase 3: 1st FGD (n = 7). 2nd FGD (n = 8)</td>
<td>Apprenticeship model: 1-week daily sessions, observation followed by practice of learned skills under supervision. Goals: debriefing, troubleshooting, brainstorming</td>
<td>Training supervision: strongest predictors of behaviour change. Should offer emotional support. Phase 2: improved knowledge re. MHPSS topics but minimal retention over time. Phase 3: 2 y MHPSS job retention. Improved knowledge and confidence</td>
<td>Short training course</td>
</tr>
<tr>
<td>Aldamman et al., 2019 [47], Sudan</td>
<td>Quantitative</td>
<td>Volunteers (n = 409, 182 F/223 M) Avg. volunteer years = 6 years, Avg. work = 11.14 h/week</td>
<td>Not described</td>
<td>Direct relationship between supervision and mental health outcomes. Good supervision contributor to well-being</td>
<td>Not described</td>
</tr>
<tr>
<td>Magdison et al., 2015 [50], Iraq</td>
<td>Mixed methods</td>
<td>1. CHWs (n = 11). 2. Study MD (n = 1). 3. TK (n = 1, BATD training. 4. BATD experts (n = 2, US based)</td>
<td>1 CHW weekly supervision from BT, in person or remote. Goal: review cases and troubleshooting. 2 BT: weekly supervision from US BATD expert, remote. Goal: challenges, technical issues.</td>
<td>BATD treatment by CHWs decreased depression symptoms and improved functioning vs control</td>
<td>Technical difficulties, language barriers</td>
</tr>
<tr>
<td>Shah, Miller and Mothabbir, 2019 [51], Bangladesh</td>
<td>Mixed methods</td>
<td>1. CHCPs (n = 44, MOH, &gt;12 grade, 3-mo training) 2. VD (n = 7, MDs, refer complications to MOH facilities). IDI (n = 28: 12 CHCPs/5 VDs, 8 supervisor, 3 policy makers. FGD (n = 13: supervisors + community leaders)</td>
<td>CHCPs and VDs supervised by MDs from sub-district health centre in person, monthly.</td>
<td>51% supervision reduction with flooding. 100% supervision achieved in non-flooding. After flooding, supervision recovery rate to 74%-85%.</td>
<td>Transportation challenges with flooding</td>
</tr>
</tbody>
</table>

CBD = community based distribution, LHW = lady health workers, MOH = Ministry of Health, SMT = specialist master trainer, NST- non-specialist trainer, LHS = lady health supervisor, CHCP = community health care provider, VD = village doctor, CHSS = community health service supervisors, CHW = community health workers, TL = CHW clinical supervisor, BT = bilingual therapist, BATD = Behavior Activation Treatment for Depression, TACTS = Technology Assisted Cascade for Training and Supervision, IDI = in-depth interviews, FGD = focus group discussions, IRC = International Rescue Committee, DRC = Democratic Republic of Congo.
II. Supervision findings

The included studies reported the impact of supportive supervision on the following parameters: client clinical outcomes, health service sustainability, and lay health worker wellbeing. None of the studies evaluated health service efficiency explicitly, but there was information about the impact of supervision on lay health worker performance.

a. Client clinical outcomes: Using an apprenticeship model for training and supervision, Murray et al. [49] found that mental health services provided by lay counselors resulted in a decrease in symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD) in survivors of torture and violence. Similar results were noted by Magdison et al. [50] when CHWs under supervision provided behavioral activation treatment for depression (BATD) to clients in Kurdistan, Iraq.

b. Health service sustainability: After engaging lay providers in a training course to provide psychological care to those suffering from Ebola-related trauma, Horn et al. [47] found that when supervision was inconsistent, service delivery was interrupted and erratic. McLean et al. [44] noted that supervision was the strongest factor for persistent behavior modification. When supervision and training was provided to three lay providers via an apprenticeship model, not only did this improve competence and knowledge in shorter term, but these providers were still incorporating what they had learned into their practice two years later, unlike the group of lay providers who were trained without supervision. Rahman et al. [41] noted that in fragile contexts with limited resources, remote supervision yielded similar lay provider competence levels as in-person supervision, thus enhancing the potential for improved service sustainability at lower costs.

c. Staff wellbeing: Aldamman et al. [47] found that supportive supervision, in combination with organizational and team support, was positively associated with mental wellbeing, and negatively associated with adverse mental health symptoms of anxiety, depression and perceived stress. In addition, Raven et al. [32] documented the experiences of lay providers and supervisors in Sierra Leone, Liberia, and Democratic Republic of the Congo (DRC) to highlight the ways CHWs should be supported in humanitarian settings. CHWs identified supervision, particularly one that is respectful and appreciative, as a motivating factor for their work. When they did not receive supervision or the supervisory relationship was tense, CHWs described feeling neglected and demoralised. McLean et al. [44] described an improvement in the perceived self-confidence of the three lay providers supervised using the apprenticeship model. McLean et al. [44] also concluded that supportive supervision should include emotional support for supervisees after many participants remarked on significant psychological stressors resulting from and affecting their work. This was echoed by Wong and Leung [45] who also emphasised that supervision should provide emotional support.
d. **Staff performance:** Both Raven et al. [32] and Murray et al. [49] discussed how supervision was key to identifying areas in need of development and capacity building to ultimately improve the service delivery and performance of lay staff.

### III. Identified challenges of supervision

a. **Lack of standardization of supervision guidelines:** A challenge identified by supervisors in the study by Raven et al. [32] was the lack of standardized benchmarks to evaluate CHWs and their work, especially when a CHW was performing poorly. Supervisors reported relying on technical indicators such as reports given the lack of alternative guidelines. Furthermore, the supervisory relationship was often described as a hierarchical system rather than one of mutual trust and collaboration, with some supervisors viewing CHWs as competition for their jobs [32]. Magdison et al. [50] also found that the goals of supervision were often poorly defined, resulting in mismatched expectations between supervisors and supervisees.

b. **Limited training and support for supervisors:** Miller et al. [42] noted that often supervisors receive no formal training in supervision and that this limited knowledge impinged on their ability to optimally guide the development and performance of CHWs.

c. **Heavy workload and poor prioritization for supervision:** Time was often not allocated for supervision and supervisors had many competing demands, decreasing the frequency of their supervisory activities [42]. This was also found in Liberia, where one key informant reported that even though supervisors were expected to visit their supervisees twice per month, overloaded work schedules hindered some supervisors from attending even monthly meetings [32].

d. **Logistical barriers:** Distance and transportation challenges were cited by both Kozuki et al. [14] and Miller et al. [42] as interfering with supervision. Supervisors reported having to travel as many as eight hours, often on foot, to reach their supervisees. During acute crises, destroyed roads and security concerns made these journeys nearly impossible, thereby limiting the consistency of supervision provided [14,42]. In addition, Magdison et al. [50] found that language and technical difficulties were also barriers interfering with the remote supervision provided by foreign supervisors.

e. **Culture and gender roles:** Murray et al. [49] found that mixed gender supervisory pairings were not suitable in the more conservative context of Iraq without appointing a second supervisor that matched the gender of the supervisee. Female supervisors were also limited from travelling, especially during times of crisis, without a male escort.

### DISCUSSION

This systematic scoping review set out to identify the features of supervisory practices of lay health care providers in humanitarian emergencies empirically supported to improve client clinical outcomes, improve health service efficiency and sustainability, and enhance lay health worker well-being. Despite results emphasizing the importance of supervision of lay providers in humanitarian emergencies, the evidence for best practice(s) is less robust. For example, even though both Murray et al. [49] and Magdison et al. [50] demonstrated a significant decrease in the psychiatric symptoms of clients who had received treatment from lay providers under close supervision, both study results should be interpreted with caution. First, improvements in outcomes for Magdison et al. [50] were in comparison to waitlist controls, limiting the conclusions that can be made about the effectiveness of supervision, but nevertheless suggesting that supervised intervention is better than no intervention at all. Similarly, Murray et al.’s [49] pilot study lacked a control group. Taken together, results point to the need for future research comparing interventions delivered by supervised lay providers vs those that are unsupervised.

Moreover, there remains a need to identify which supervisory practice(s) are most effective in improving client clinical outcomes in humanitarian settings. Murray et al. [49] described using an apprenticeship model for supervision with weekly, in-person, or remote individual supervision for lay providers, with time spent in the field providing direct observation and feedback. Supervisors also received remote support and supervision from foreign experts. This latter supervisory format, with its emphasis on supervisor training and support, had previously been proposed by Murray et al. [54] as a particularly useful method for training inexperienced lay providers and supervisors in LMICs. However, and despite most humanitarian emergencies taking place in LMICS, Murray et al. [54] did not specifically focus on humanitarian contexts. Further research is therefore warranted to examine whether the apprenticeship model is the most appropriate and feasible modality to use in fragile states.
Though this systematic scoping review aimed to identify the impact of supervision on health service efficiency, none of the included studies assessed this specific outcome. However, the influence of supervision on service sustainability was examined by several articles. Horn et al. [43] found that supervision was qualitatively reported as a key factor to ensure continued service delivery, especially given the brevity of their training sessions. They reported that “where supervision was not possible, the PFA [psychological first aid] approach became diluted and confused” [43]. This finding was also reported by McLean et al. [44] who found that inexperienced lay providers, trained and supervised using an apprenticeship model, continued to provide MHPSS services even two years later, compared to a prior group who had been taught without supervision. In humanitarian contexts, where lay providers are often trained rapidly and briefly to provide services, ongoing supervision and support is thus thought to be positively associated with sustained service delivery.

In terms of the effect of supervision on lay health worker well-being, only four of the eleven studies included emotional support to lay providers as part of their supervision package. This is despite the widespread recognition that lay providers operating in humanitarian emergencies are at high risk for burnout, secondary traumatisation, and poor service delivery [18]. McLean et al. [44] reported that “during post-training interviews, participants cited family and financial problems and related personal emotional distress as barriers to engaging in [mental health and psychosocial services] MHPSS services for others”. Likewise, lay providers who had received emotional support from their supervisors reported improved motivation, self-confidence, as well as decreased depression, anxiety, and stress [32,44,47]. Though their findings were not empirically evaluated, Wong and Leung [45] highlighted what they considered to be key features of emotional support during supervision: mood assessments, education regarding self-care and burnout, promoting optimism and self-efficacy, as well as building a relationship based on trust and collaboration. Finally, Rahman et al. [41] evaluated their supervisees’ workload, and while they did not measure the impact of workload on well-being, the act of monitoring workload has previously been shown to help prevent supervisees from being overburdened, thereby decreasing their risks for burnout and improving their mental health [55].

Though staff performance was not part of this review's main research objectives, three studies found that supervision improved staff competence, knowledge, and performance [32,41,49]. McLean et al. [44] further provided some evidence of improved staff knowledge and competence among those who had received supervision, compared to those who had not. One must consider however, that these groups differed in several ways including in size, demographics, experiences, and timing of intervention, limiting their comparability. Future research dedicated to comparing lay worker performance measures across those with and without supervision within emergency contexts should therefore compare groups with similar characteristics.

The absence or presence of supervision is not the only important factor to consider when evaluating the impact of supervision on staff, client, and service parameters. The quality of supervision provided is also essential, whereby suboptimal supervision has been shown to be as detrimental as no supervision [56]. Accordingly, the WHO highlights three essential areas for effective supervision, or “the three main Rs of an effective supportive supervision system”, as the right supervisors, the right tools, and the right resources [56]. Despite this recommendation, and consistent with previous studies [23,28-30], studies included in this review also found that supervision was often irregular and/or unsupportive. For example, distance, transportation challenges, and security risks were noted to impinge on the consistency of supervision provided [14,42]. Likewise, heavy workloads and competing demands resulting in absentee supervision were also reported [32]. Several studies described 15 to 20 supervisees assigned to one supervisor as excessive, consistent with the recommended number of six supervisees per supervisor reported elsewhere [57]. When coupled with the logistical challenges of distance and transportation in a humanitarian crisis, supervisors were not able to meet with each of their assigned supervisees regularly.

In addition to the frequency and consistency of supervision, some studies reported demotivating and unsupportive supervisory alliances. In one study, supervisees noted tension with their supervisors due to supervisees being viewed as competition [32]. They also described experiencing negative attitudes and behaviours from their supervisors, negatively impacting their work [32]. Another study discussed that supervisors were often inadequately trained for supervision, making supervisors poor sources of effective feedback and knowledge [42]. These findings demonstrate that further efforts are needed to prioritise and standardise the supervision of lay providers delivering health care in humanitarian emergencies by selecting the most qualified supervisors (or training potential supervisors properly), investing in the tools and resources to facilitate the success of supervision, and choosing a supervisory format based on the needs of the supervisees and with due consideration for their cultural context. For example, in certain contexts, it is important to consider whether a mixed-gender supervisory pairing is suitable [49]. Flexibility with, among other things, the format of supervision is also necessary within humanitarian contexts, where conditions can change acutely. The use of remote
supervision may therefore be more beneficial in these circumstances. As demonstrated by Rahman et al. [41], technology-assisted supervision produced similar supervisee competence as traditional in-person supervision, at lower costs. Using an online platform could therefore help to circumvent some of the logistical barriers of distance, transportation, and security concerns characteristic of humanitarian emergencies, as well as increase the ability to scale-up services provided by lay providers in resource-limited settings.

Limitations

The current review is not without limitations. First, only studies conducted in English were included in the review. Since humanitarian emergencies tend to occur predominantly in LMICs, where English is not necessarily the primary language, key information regarding supervision could have been missed. In addition, none of the studies systematically evaluated supervision against a control, nor, with the exception of Rahman et al. [41], did they compare different types of supervision modalities to one another.

CONCLUSIONS

While the articles retained in this review generally support the use of supportive supervision for improved client clinical outcomes, health service sustainability, lay health worker well-being and lay health worker performance in humanitarian emergencies, none of the studies explicitly evaluated the effect of supervision on health service efficiency. In dynamic fragile states, where effective and expedient health care services are paramount and resources are limited, evaluating the relation between supervision and service efficiency therefore represents an important area for future research. Moreover, future research should aim to identify which supervisory practice(s) are most effective to achieve these outcomes within humanitarian contexts. Finally, the results of this review reiterate the challenges to providing consistent and motivating supervision within complex humanitarian contexts. More efforts are therefore needed to prioritise supportive supervision within task-shifting frameworks, and to provide the resources, tools, and appropriately trained supervisors required for supervision to take place within humanitarian emergencies. Standardised guidelines for how to best supervise lay providers in humanitarian emergencies would represent an important step towards these efforts.

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Additional material

Online Supplementary Document

REFERENCES


Supervision of lay healthcare providers in humanitarian emergencies


