ARTICLE
Evaluation of Lebanon’s National Helpline for Emotional Support and Suicide Prevention: Reduction of Emotional Distress among Callers

FIELD REPORT
Programming to Address Suicidal Behaviour among Unaccompanied Refugee Minors in a Camp Setting: A Field Report from Ethiopia

PERSONAL REFLECTION
Suicide Prevention & Response among Refugees: Personal Reflections on Self-Care for Frontline Mental Health and Psychosocial Support Workers

ARTICLE
Mental Health Interventions in Complex Political Contexts

INCLUDING A SPECIAL SECTION ON SUICIDE PREVENTION AND RESPONSE
Supporting and Sustaining Nonspecialists to Deliver Mental Health Interventions in Low- and Middle-Income Countries: An Umbrella Review

Mary Bunn1, Nicole Gonzalez2, Idan Falek3, Stevan Weine4 & Mary Acri5
1PhD, LCSW, Department of Psychiatry, Center for Global Health, University of Illinois Chicago, Chicago, Illinois, USA, 2MPH, Center for Global Health, University of Illinois Chicago, Chicago, Illinois, USA, 3BS, Department of Child and Adolescent Psychiatry, NYU School of Medicine, New York, USA, 4MD, Department of Psychiatry, Center for Global Health, University of Illinois Chicago, Chicago, Illinois, USA, 5PhD, Department of Child and Adolescent Psychiatry, NYU School of Medicine, New York, USA

Abstract

This umbrella review used a systematic approach to examine the state of the evidence regarding the nonspecialist health worker (NSHW) workforce in mental health and psychosocial services in low- and middle-income countries (LMICs). Seventeen review articles were included in this analysis. Most reviews defined nonspecialists by their lack of formal mental health experience. Less than half of the reviews reported their qualifications and roles. Findings indicated that NSHWs were trained and supervised in a range of skills with variability in approaches, duration, format and topical focus. The evidence supporting NSHW-delivered interventions was mixed but mainly favourable, particularly for depression, anxiety and posttraumatic stress disorder; additionally, studies identified implementation challenges with the nonspecialist workforce. In conclusion, NSHWs are widely used in LMICs to address mental health needs and some indicators suggest the interventions they deliver are beneficial, yet little is known about their needs and requirements. Further work is needed to prioritise nonspecialists as a critical workforce in global mental health. This includes developing best practice models, new policies and investments and conducting further research.

Keywords: low- and middle-income, mental health, nonspecialist, psychosocial, supervision, training

Key implications for practice

- Though nonspecialist health workers (NSHWs) are used widely in low- and middle-income countries (LMICs) for mental health and psychosocial service delivery, there are major gaps in knowledge about the nonspecialist workforce including roles, definitions, training and supervision approaches and compensation.
- Additional investments are needed to strengthen mental health systems in LMICs, with policies that clearly identify the roles and responsibilities of NSHWs and fair compensation within the broader mental health service delivery system.
- Future research is needed that focuses on understanding the varying needs and requirements of NSHW in LMICs and developing best practice approaches that provide adequate support that can sustain nonspecialists in the long-term.

Introduction

Depression, anxiety and other common mental health disorders are a leading cause of disability worldwide (Patel et al., 2018), with approximately 30% of the global population experiencing one or more during their lifetime (Steel et al., 2014). Additionally, there are an estimated 26 million people with severe and persistent mental illnesses such as schizophrenia and other psychotic disorders globally (Wainberg et al., 2017). There are enormous gaps in mental health resources and infrastructure, particularly in low- and middle-income countries (LMICs; World Health Organization (WHO), 2017). As a result, only a small percentage of people have access to mental health treat-
ment, with an estimated 90% treatment gap in some low-resource settings (Tomlinson et al., 2009). In the absence of adequate care and resources, mental health conditions persist and worsen, leading to increased functional impairment and premature morbidity and mortality (Patel et al., 2018).

One well-established approach to address the mental health service shortage in LMICs is task sharing. Task sharing is defined as “a process of delegation whereby tasks are moved from highly specialized to less specialized health workers” (WHO, 2008, p. 7). Typically, this includes shifting tasks from specialised mental health professionals to other highly skilled but differently trained health providers. In mental health services, this approach has also been extended to include allocation of tasks to lay and peer providers such as community health workers and lay counsellors. To date, nonspecialist health workers (NSHWs) have been used to deliver a range of interventions including but not limited to individual and group psychotherapies (Singla et al., 2017), maternal mental health interventions (Rahman et al., 2013), psychosocial services (Barbui et al., 2020) and mental health promotion interventions (Barry et al., 2013).

Several systematic reviews have been conducted to synthesise the evidence on NSHW-delivered mental health and psychosocial support (MHPSS) interventions in LMICs. Existing reviews primarily focused on assessing the effectiveness of various evidence-based interventions and found these interventions are promising for alleviating common mental disorders, with less evidence for treating severe mental illnesses (Vally & Abrahams, 2016; van Ginneken et al., 2013). However, contextualizing the state of the evidence is hindered by a lack of focus on the nonspecialist workforce utilised to implement MHPSS interventions. This includes understanding which characteristics and experiences of NSHW is optimal for serving in this capacity, effective approaches for training and supervising NSHW to ensure ethical and competent care and integrating NSHW into broader health systems and policy. Though existing reviews have touched on these issues, they were rarely a central focus of analysis and this information was not synthesised across MHPSS intervention types and contexts. This information is important because the provider is integral to intervention delivery (Spedding et al., 2014) and can help guide the development and implementation of similar programmes, including selection of the nonspecialist workforce and standardizing training, supervision and integration processes.

The aim of this umbrella review, therefore, was to synthesise the available data on NSHW used for mental health and psychosocial service delivery. In doing so, we intended to summarise the current state of knowledge regarding the NSHW workforce, approaches to supporting and sustaining NSHW in LMICs and highlight opportunities to strengthen NHSW and their essential role in MHPSS.

### Methods

#### Overview

Umbrella reviews examine the body of information available for a given topic and address research questions which are broader in scope than those examined in individual systematic reviews (Pollock et al., 2016). We followed Aromataris et al. (2015) guidelines for an umbrella review which include the following steps: (a) a priori research questions; (b) detailed inclusion criteria including intervention, population, context and outcomes of interest; (c) identifying relevant studies; (d) selecting eligible studies; (e) formal process of data extraction and (f) summary and synthesis of findings.

Our review was guided by the following five research questions:

1. What are the characteristics of NSHW including types, definitions and qualifications?
2. Where and with whom are NSHW-delivered interventions used?
3. In what capacities and for what types of interventions are NSHW used?
4. What are the approaches to support NSHW in delivering such interventions including training, supervision, compensation and policy?
5. How effective are NSHW-delivered interventions in addressing mental health outcomes and what implementation challenges are encountered in delivering mental health interventions?

#### Search Strategy

To identify relevant studies for our review, we followed the Cochrane guidelines (Pollack et al., 2021). Our search encompassed:

1. Computer searches of PsycINFO, PubMed and CINAHL, which were chosen in collaboration with a research librarian for their extensive coverage of the topic in question. We developed search terms based on the three conceptual domains of NSHWs, mental health and LMICs; both controlled vocabulary (e.g. MeSH) terms and keywords were used to describe each of these domains. Additionally, search filters were added to identify systematic reviews, limit to English language and exclude child-only studies. To develop a comprehensive search for nonspecialist provider types, the search also drew from an empirically informed taxonomy for community health workers developed by Taylor et al. (2017).

2. A supplemental targeted search was also conducted in Google Scholar (GS) for articles with “review” or “meta” in the title, “mental” and “low and middle income” in required fields and at least one variation on these concepts: “peer”, “task”, “nonspecialists”, “lay providers” or “community”.

#### Inclusion and Exclusion Criteria

Peer reviewed systematic reviews written in English were included. To be as comprehensive as possible, we did not restrict the date of publication. We included systematic...
reviews of nonspecialist interventions that: (a) included adults in the sample, (b) took place in an LMIC as defined by the World Bank (n.d.), (c) targeted common mental disorders or severe mental illness and (d) included information regarding the NSHW workforce such as qualifications used to select NSHW, training, supervision and compensation or policy guiding the use of NSHW. The first author (MB) and a consulting research librarian carried out the search of the databases and GS between January and February 2020. This search yielded 5760 citations; after removing duplicates, the final number of citations was 5487.

Citations were split among four of the authors (authors 1, 2, 3 and 5) to determine whether each article met inclusion criteria based upon its title and abstract. This resulted in the removal of 5378 articles due to nonrelevance to our eligibility criteria and 109 remaining articles that were once again divided among the four authors. To enhance the rigor of the review, the first author conducted a second review of the abstracts to confirm decisions for retention based on inclusion and exclusion criteria. Any discrepancies between the initial review by the four authors and the second review were discussed and resolved during weekly meetings. This resulted in the removal of four additional reviews. The authors reviewed the full-text articles for inclusion, followed by a second review by the first author to ensure the systematic application of inclusion criteria. The full-text review process resulted in the exclusion of 92 of the 109 articles due to nonrelevance to the context, population, focus or article type of this review, resulting in a final sample of 17 articles. Figure 1 presents the results from the search at each stage.

**Data Analysis**

To analyse the reviews, we developed a standardised data extraction tool which tracked information about the NSHW workforce (definition, type, qualifications, characteristics, roles) and strategies to support nonspecialists (training, supervision, compensation, policy). We also extracted data available on mental health outcomes and implementation experiences specific to the nonspecialist workforce. The data extraction tool was pilot tested with an initial set of articles, refined and finalised through discussion among the authors.

Data were extracted verbatim. To analyse the data, we drew on tabulation and summative content analysis techniques, analysing the frequency of particular phenomenon across reviews to reflect the extent to which certain processes were more or less described (Hsieh & Shannon, 2005). We also used conventional content analysis techniques to analyse narrative text, which is an inductive approach where categories are not defined a priori but identified through immersion in the data (Elo & Kyngäs, 2008).

We conducted descriptive analyses to examine where, with whom and for what mental health issues, NSHWs were utilised. To analyse intervention types, we conducted an in-depth examination of findings reported in each review article and categorised them into primary intervention types. Our analysis of the characteristics of NSHW focused on four key areas including the a priori definitions of such providers, NSHW types, workforce characteristics and qualifications. Our examination of training, supervision, compensation, policy and implementation experiences focused on those reported in the findings and discussion of the reviews. Finally, to examine the effectiveness of NSHW-delivered interventions, we analysed the mental health outcomes under investigation and outcomes associated with NSHW-delivered interventions as reported in the tables for studies employing a randomised controlled trial (RCT), nonrandomised or pre/post design. To reduce bias resulting from substantial duplication of original studies across systematic reviews, we conducted this analysis at the study level (see Cochrane guidelines in Pollack et al., 2021, refer to Appendix Table 2). We clustered the data by...
the study design and examined the effectiveness of such interventions by primary mental health outcome and, where possible, by NSHW type. Given the heterogeneity in outcome measures and coding and extraction strategies used in the reviews, we conducted a narrative summary of findings.

**Results**

Table 1 provides an overview of the 17 reviews included in the final analysis.

**What are the Characteristics and Types of NSHW?**

**Definitions**

Fourteen reviews (82%) provided a definition of NSHW (see Table 2). Ten of these reviews characterised NSHW as individuals without specialised mental health training who received training to deliver a mental health intervention. Thus, NSHW was a broad category variously referred to as community health workers, lay health workers, lay providers, teachers, nonformal providers and allied health professionals such as doctors, nurses, midwives and health social workers. A small number of the reviews also defined NSHW by the roles they filled (e.g. outreach, education, promoting adherence, etc.; n = 2, 12%); where they worked (e.g. in the community, within or outside of the healthcare system, etc.; n = 23, 12%) and their education and/or literacy level (n = 2, 12%). Shahmalak et al. (2019), for example, defined NSHWs as individuals who carried out healthcare delivery functions, were trained in some way and usually had no formal professional or paraprofessional certification or tertiary education.

**Qualifications**

Eight reviews (47%) specified the qualifications of NSHWs, of them, the most common qualification was having good interpersonal or communication skills (n = 4, 50%) and speaking and in some cases reading the local language (n = 4, 50%). Singla et al. (2017), for example, identified language proficiency including fluency in local dialects and communication skills as the most common qualification for non-specialist providers delivering psychological interventions in LMICs. Three of the eight reviews (n = 3, 38%) stated NSHWs were selected based on personal characteristics (e.g. gender, marital status). Two (25%) noted NSHWs were selected because of their position in the community, previous experience (e.g. community volunteers; n = 2, 25%) and shared life experiences (e.g. mothers, HIV+; n = 2, 25%). Focusing on interventions for postnatal depression, Dixon and Dantas (2017)

Table 1: Characteristics of Included Reviews

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Study population</th>
<th>World region</th>
<th>Primary MH area</th>
<th>NSHW type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chowdhary</td>
<td>2014</td>
<td>Women and children</td>
<td>SSA, SA, EAP, LAC, ECA</td>
<td>Perinatal mental disorders</td>
<td>Nonspecialist</td>
</tr>
<tr>
<td>Dixon</td>
<td>2017</td>
<td>Women and children</td>
<td>SSA, SA, LAC, ECA</td>
<td>Postnatal depression</td>
<td>Not defined</td>
</tr>
<tr>
<td>Glenton</td>
<td>2013</td>
<td>Women and children</td>
<td>SSA, SA, EAP, LAC, MENA, ECA, NA, AUS</td>
<td>Maternal and/or child health</td>
<td>Lay health worker</td>
</tr>
<tr>
<td>Huang</td>
<td>2018</td>
<td>Adults and children</td>
<td>SSA, SA, EAP, LAC, MENA, EAP</td>
<td>Mental health services and care</td>
<td>Lay health worker</td>
</tr>
<tr>
<td>Javadi</td>
<td>2017</td>
<td>Adults and children</td>
<td>SSA, SA, EAP, LAC, MENA</td>
<td>Mental health services and care</td>
<td>Lay health worker</td>
</tr>
<tr>
<td>Joshi</td>
<td>2014</td>
<td>Adults</td>
<td>SSA, SA, EAP</td>
<td>Not specified</td>
<td>Nonspecialist</td>
</tr>
<tr>
<td>Kaminer</td>
<td>2018</td>
<td>Adults</td>
<td>SSA</td>
<td>Common mental disorders</td>
<td>Not defined</td>
</tr>
<tr>
<td>Munodawafa</td>
<td>2018</td>
<td>Women</td>
<td>SSA, SA, EAP</td>
<td>Perinatal mental disorders</td>
<td>Not defined</td>
</tr>
<tr>
<td>Mutamba</td>
<td>2013</td>
<td>Adults and children</td>
<td>SSA, SA, LAC</td>
<td>Mental, neurological and substance-abuse disorders</td>
<td>Lay health worker</td>
</tr>
<tr>
<td>Nguyen</td>
<td>2019</td>
<td>Adults</td>
<td>SSA, SA</td>
<td>Severe mental illness</td>
<td>Informal community care provider</td>
</tr>
<tr>
<td>Padmanathan</td>
<td>2013</td>
<td>Adults</td>
<td>SSA, SA</td>
<td>Common mental disorders</td>
<td>Not defined</td>
</tr>
<tr>
<td>Petersen</td>
<td>2014</td>
<td>Adults</td>
<td>SSA</td>
<td>Not specified</td>
<td>Lay health worker</td>
</tr>
<tr>
<td>Rahman</td>
<td>2013</td>
<td>Women and children</td>
<td>SSA, SA, EAP, LAC</td>
<td>Perinatal mental disorders</td>
<td>Not defined</td>
</tr>
<tr>
<td>Shahmalak</td>
<td>2019</td>
<td>Adults and children</td>
<td>SSA, SA, ECA</td>
<td>Common mental disorders</td>
<td>Lay health worker</td>
</tr>
<tr>
<td>Singla</td>
<td>2019</td>
<td>Adults</td>
<td>SSA, SA, EAP, LAC, MENA</td>
<td>Common mental disorders</td>
<td>Nonspecialist</td>
</tr>
<tr>
<td>van Ginneken</td>
<td>2013</td>
<td>Adults and children</td>
<td>SSA, SA, EAP, LAC, MENA, ECA</td>
<td>Common mental disorders, Mental, neurological and substance-abuse disorders</td>
<td>Nonspecialist, allied health professionals</td>
</tr>
<tr>
<td>Verhey</td>
<td>2020</td>
<td>Adults and children</td>
<td>SSA, SA, EAP, MENA</td>
<td>Common mental disorders, Mental, neurological and substance-abuse disorders</td>
<td>Nonspecialist</td>
</tr>
</tbody>
</table>

Note. SSA, Sub-Saharan Africa; SA, South Asia; EAP, East Asia and Pacific; LAC, Latin America and Caribbean; ECA, Europe and Central Asia; MENA, Middle East and North Africa; NA, North America; AUS, Australia.
<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Definition of NSHW</th>
<th>NSHW qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chowdhary</td>
<td>2014</td>
<td>Healthcare practitioners (e.g. doctors) and nonprofessionals (e.g. lay providers)</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Dixon</td>
<td>2017</td>
<td>Not described</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Glenton</td>
<td>2013</td>
<td>No formal paraprofessional, professional, or tertiary certificate or degree; provide care for range of issues</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Huang</td>
<td>2018</td>
<td>Community health aides; not trained health professionals; selected and trained to work in own community</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Javadi</td>
<td>2017</td>
<td>Those with or without basic literacy or some postsecondary education with informal or formal preservice training</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Joshi</td>
<td>2014</td>
<td>A lay healthcare worker with no formal medical training or nurses</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Kaminer</td>
<td>2018</td>
<td>Nurses, lay counsellors or volunteers</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Munodawafa</td>
<td>2018</td>
<td>Lay health workers, lady health workers and midwives</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Mutamba</td>
<td>2013</td>
<td>Someone working as part of a community-based programme who: carried out healthcare delivery, trained for the intervention, had no professional or paraprofessional education</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Nguyen</td>
<td>2019</td>
<td>Non-MH professionals including general doctors, nurses, paraprofessionals, teachers and community-level workers</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Padmanathan</td>
<td>2013</td>
<td>Not described</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Petersen</td>
<td>2014</td>
<td>Lay health workers, no formal professional or paraprofessional qualifications and trained to provide health-related services</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Rahman</td>
<td>2013</td>
<td>Not described</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Shahmalak</td>
<td>2019</td>
<td>Those carrying out healthcare delivery; trained for the intervention; usually no formal professional or paraprofessional education</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Singla</td>
<td>2017</td>
<td>Anyone who provides MH care with no specialised professional clinical training in a closely related MH field</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>van Ginneken</td>
<td>2013</td>
<td>First-level providers with general rather than specialist MH training including professionals (e.g. doctors) and nonprofessionals (e.g. lay providers)</td>
<td>✓✓✓✓</td>
</tr>
<tr>
<td>Verhey</td>
<td>2020</td>
<td>No specialised MH training but can deliver interventions under the supervision and training of more specialised providers</td>
<td>✓✓✓✓</td>
</tr>
</tbody>
</table>

Note. NSHW, nonspecialist health worker.
summarised articles that selected women who were mothers or raised children themselves to deliver a home-visiting intervention for postnatal depression in Chile and South Africa. Alternatively, a study conducted in Zimbabwe highlighted the provider’s position within the community as an important criterion for selection as a nonspecialist (see Verhey et al., 2020). In this case, older women were selected as they were observed as respected and trusted members of the community (see Chibanda et al., 2016, 2017).

**NSWH Types**

Drawing on available descriptions and qualifications of NSHWs used across studies, we categorised NSHWs into six primary types including: (1) community workers, (2) health professionals, (3) peers, (4) other nonhealth professionals, (5) traditional healers and helpers and (6) trained family members.

**Community Workers**

Community workers, also referred to as a lady health worker, community leader, community health worker, village-based health worker or health coach, were among the most common type of NSHWs utilised, identified in 12 of the reviews (71%). These individuals were from and/or worked within the target community. In some cases, community workers were already staff within the established systems of health or social care (e.g. lay health workers, see Verhey et al., 2020). In other cases, they were drawn from the community more generally (e.g. local women, see Javadi et al., 2017). In some studies, community workers had previous training and/or professional experience (e.g. lady health workers). They delivered diverse types of MHPSS interventions targeting common mental disorders and severe mental illness. For example, community workers delivered individual and group psychotherapy and psychosocial interventions to adults with depression (Rahman et al., 2008); multicomponent home visiting services (Rotheram-Borus et al., 2015); community-based group psychosocial services to women with or at risk of maternal depression (Rahman et al., 2009); mental health awareness and education services to internally displaced persons (Yeomans et al., 2010); psychotherapy to refugees (Bolton et al., 2014) and community-based multicomponent MHPSS care for individuals with severe mental illness (Chatterjee et al., 2014).

**Health Professionals**

Health professionals were included in 10 reviews (59%). They were specially trained health providers with no previous mental health background or training and included but were not limited to nurses, midwives and village doctors. Health providers delivered facility- and community-based care and were often utilised independently (Chetty & Hoque, 2013) or as part of a collaborative care intervention (Araya et al., 2003). Health providers delivered a range of MHPSS services including psychosocial and mental health awareness and education interventions for maternal depression (Rojas et al., 2007), individual therapy interventions for substance use (Mertens et al., 2014) and screening and treatment of CMDs in primary-care settings (Adams et al., 2012).

**Peers**

Peers were identified in nine of the reviews (53%) and were individuals selected at least in part for their shared cultural and linguistic background and life experiences including but not limited to mental health problems or experiences as a mother or primary caregiver, with forced migration or with HIV. Providers’ status as a peer was not always explicit. Peers were referred to variously as peers, mothers, mentor mothers, recovered service users, survivors and lay community health workers, and they were utilised to deliver care within and outside of the existing health system. In certain instances, peers had previous experience (Dixon & Dantas, 2017); in others, they were selected with no prior MHPSS experience. Several studies utilised peers to deliver interventions for maternal depression including multicomponent home-visiting interventions (Rotheram-Borus et al., 2015). Peers also delivered individual psychotherapy interventions for refugees (Bolton et al., 2014) and forced migrants (Neuner et al., 2008) and psychosocial interventions for persons living with HIV (Moosa & Jeenah, 2012).

**Other Nonhealth Professionals**

Other nonhealth professionals such as NGO workers, high school teachers and social workers were included in five reviews (29%). These were professionals working in other nonhealth sectors trained to deliver MHPSS services. In this review, other nonhealth professionals were utilised, for example, to deliver psychotherapy and psychosocial interventions to persons and families with severe mental illness (Van Ginneken et al., 2013; Nguyen et al., 2019), intimate partner violence (IPV) survivors (Tiwari et al., 2010) and postpartum women (Chowdhary et al., 2014).

**Traditional Healers and Helpers**

Traditional healers and helpers were included in three reviews (18%). These were individuals who were skilled in a traditional, culturally relevant forms of helping or healing such as a traditional healer, traditional birth attendant or traditional village midwife. For example, traditional healers were utilised as part of a multicomponent intervention for severe mental illness (Abbo, 2011) and to support maternal mental health (Huang et al., 2018).

**Trained Family Members**

Trained family members were the least represented group, identified in only one review (6%). They were family members trained to deliver MHPSS to another family member. In this review, family members were trained to support medication adherence and relapse prevention for family members with severe mental illness (Huang et al., 2018).

There were a number of other NSHWs identified in the reviews which we were unable to categorise due to the
absence of information about selection criteria or qualifications, often times distinguished only by the absence of any mental health background or training (e.g. paraprofessional, lay counsellor, minimally trained counsellor).

**Where and With Whom are NSHW Interventions Used?**

**Study Descriptives**

As described in Table 1, most reviews ($n = 15$, 88%) included studies exclusively conducted in rural and urban contexts in LMICs, some of which also included protracted humanitarian crisis settings. The remaining two (12%) included studies in both LMICs and high-income countries. LMICs spanned multiple regions as defined by the World Bank (2020), including Sub-Saharan Africa ($n = 15$, 88%), South Asia ($n = 14$, 82%), East Asia and Pacific ($n = 10$, 59%), Latin America and Caribbean ($n = 8$, 47%), Middle East and North Africa ($n = 5$, 29%) and Europe and Central Asia ($n = 3$, 18%). A total of 44 countries were represented, the most common of which were Pakistan ($n = 12$, 71%), followed by India ($n = 10$, 59%), South Africa ($n = 9$, 53%) and Uganda ($n = 8$, 47%).

All of the reviews included a focus on adults (per the inclusion criteria); however, almost two-thirds ($n = 101$, 6159%) also included children and adolescents. Most focused on the general adult population, but five reviews (298%) focused solely on women during the perinatal and postpartum periods (see Table 1).

**In What Capacities and for What Interventions are NSHWs Used?**

**Interventions and the Roles of Nonspecialists**

Thirteen reviews (76%) included studies that utilised NSHW to deliver psychotherapy interventions. Nine different interventions were identified including, most commonly, cognitive behavioural therapy (CBT) followed by problem-solving therapy and nonspecific counselling (see Supplemental Table). Singla et al. (2017), for example, reviewed a group-based interpersonal psychotherapy (IPT) intervention for depression by Bolton et al. (2003) that included weekly 90-minute sessions for 16 weeks led by a local person who received 2 weeks of training from two of the study authors.

Nine reviews (53%) summarised interventions involving NSHW in the delivery of psychosocial interventions that included a range of different components including, for example, home visits or social or emotional support. In one review (Kaminer et al., 2018), NSHWs delivered a group-based craft intervention for women on antidepressants and measured whether it positively impacted participants’ depression scores (see Chetty & Hoque, 2012). Another review by Chowdhary et al. (2014) described an intervention which combined an existing peer-mentoring programme, mothers2mothers, with a culturally adapted cognitive-behavioural intervention from the United States. HIV-positive pregnant women participating in the intervention were paired with mentor mothers who were also HIV-positive, had a child recently, used prevention of mother-to-child transmission of HIV services, and were coping positively (see Futterman et al., 2010).

Nine reviews (53%) included interventions in which nonspecialists provided case management and outreach interventions. Most commonly, this included ensuring uptake and/or adherence to treatments, referrals to care and screening for mental health problems. Joshi et al. (2014), for example, described nonspecialists who could successfully screen individuals for common mental health disorders and provide either direct therapy or referrals to a general practitioner or psychiatrist (see Patel et al., 2011).

Finally, eight reviews (47%) included interventions with mental health awareness and education components. Such interventions most commonly included psychoeducation on a range of topics including symptoms, causes and consequences of mental health disorders; available treatments; treatment adherence and support; relapse prevention; problem-solving and providing information on additional resources. These interventions also included reducing stigma or improving social inclusion. One review (Munodawafa et al., 2018) described a participatory learning and action cycle intervention with a psychoeducational element led by female community health workers (see Rath et al., 2010). For a summary of primary intervention types, see Table 3.

**What are the Approaches to Supporting and Sustaining NSHWs in Delivering Mental Health Interventions?**

**Training**

All but one review ($n = 16$, 94%) included one or more studies that addressed training for NSHW (see Table 4). Of those, half (50%) described the training content of at least some of the studies, which included counselling skills, general content on mental health and technical skills specific to the intervention being studied. Five (31%) of the 16 reviews provided specifics on the delivery of training content; modalities included role plays, lectures and in vivo or field experience. For example, the review of community health worker interventions by Huang et al. (2018) indicated that lectures given by teachers or experts were the most common learning approach for community health workers, yet they also identified the use of in-class and group discussions, role-plays and web-based training. Additionally, 10 of these reviews (63%) reported on the duration of training for NSHW, which ranged from 2 hours to 4 months across reviews. Finally, three of the reviews ($n = 3$, 19%) described characteristics of the trainers and primarily described them as mental health personnel including psychiatrists, clinical psychologists or licensed professionals though one was identified as a teacher and another as a member of the research team.

**Supervision**

Over three-quarters of the sample ($n = 14$, 82%) reported that some form of supervision was provided to NSHW (see Table 5). Of those, half ($n = 7$, 50%) provided some details on the content of supervision, which included discussion of
challenges, solutions and cases, providing support and guidance, or reviewing records. Four (29%) described the format of supervision such as individual, group, in-person or web-based. Seven reviews (50%) described the frequency of supervision, which ranged from ad hoc to monthly. For example, lady health workers in Pakistan who delivered a 16-session home-visiting, perinatal depression intervention received monthly half-day supervision throughout the 10 months of the intervention (Rahman et al., 2013), though no additional details about supervision were included.

Eleven reviews (79%) provided specifics on supervisor characteristics. In nine of these reviews, supervision was provided by specialised mental health professionals (n = 9, 82%), followed by other nonspecialists or peers (n = 4, 36%), health professionals (nurses, midwives; n = 4, 22%), public health personnel (n = 4, 36%) and research team members (n = 2, 18%). Glenton et al. (2013), for example, indicated that nurses and nurse midwives from the health facility provided supervision to lay health workers delivering perinatal depression interventions. In their review of mental health interventions for severe mental illness, Nguyen et al. (2019) found that psychiatrists commonly supervised NSHW or were part of a broader programme of supervision.

Compensation

Nine reviews (53%) reported on remuneration for the services NSHWs provided (see Table 6). In all but one review (89%), some NSHWs received payment, whereas others were unpaid volunteers. Payment included an allowance, stipend or compensation for travel. In their review of task shifting for mental health, Javadi et al. (2017) identified studies where lay providers were referred to as volunteers to indicate that did not receive compensation whereas others were paid.

Policy

Only one review (6%) included details pertaining to policy guiding the utilisation of NSHWs in LMICs. Several studies in the review by Huang et al. (2018) identified the integration of NSHWs into the formal health system or policy and ministry structures as important for formally establishing NSHWs and increasing their acceptability and credibility.

How Effective are NSHW-delivered Interventions in Addressing Mental Health Outcomes and What Implementation Challenges are Encountered?

Twelve of the 17 reviews described outcomes associated with the studies included in their reviews (see Table 7). In total, 116 studies were extracted across the 12 reviews; after removing duplicates (see Appendix Table 1), 70 unique studies were reviewed.

Outcomes Under Investigation

Depression was the primary mental health outcome under investigation (n = 48, 70%). Other mental health outcomes that were investigated include anxiety (n = 5, 7%, e.g. Bolton et al., 2003; Patel et al., 2011), mixed anxiety/depression (n = 4, 6%; e.g. Ali et al., 2003; Yeomans et al., 2010), posttraumatic stress disorder (PTSD; n = 7, 10%; e.g. Neuner et al., 2008), serious mental disorders (n = 4, 6%; e.g. Chatterjee et al., 2014) and substance use (n = 10, 10%; e.g. Mertens et al., 2014). Across studies, the primary outcome under investigation was symptom remission (see Appendix Table 2).

RCT Designs and Mental Health Outcomes

A total of 55 unique RCTs were reviewed. As a whole, the RCT evidence supporting NSHW-delivered interventions was favourable, particularly for depression; positive
### Table 4: Training Nonspecialists

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Training provided</th>
<th>Training duration</th>
<th>Type of trainer</th>
<th>Overall training approach</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Teachers</td>
<td>Experts</td>
</tr>
<tr>
<td>Chowdhary</td>
<td>2014</td>
<td>✓</td>
<td>12 hours–4 months</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Dixon</td>
<td>2017</td>
<td>✓</td>
<td>1 day–4 months</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Glenton</td>
<td>2013</td>
<td>✓</td>
<td>Few days–3 months</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Huang</td>
<td>2018</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Javadi</td>
<td>2017</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Joshi</td>
<td>2014</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Kaminer</td>
<td>2018</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Munodawafa</td>
<td>2018</td>
<td>✓</td>
<td>2–5 days</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Mutamba</td>
<td>2013</td>
<td>✓</td>
<td>1 week–4 months</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Nguyen</td>
<td>2019</td>
<td>✓</td>
<td>4–6 weeks</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Padmanathan</td>
<td>2013</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Petersen</td>
<td>2014</td>
<td>✓</td>
<td>5 days–1 year</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Rahman</td>
<td>2013</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Shahmalak</td>
<td>2019</td>
<td>✓</td>
<td>2 days–2 months</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Singla</td>
<td>2017</td>
<td>✓</td>
<td>3 hours–2 months</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>van Ginneken</td>
<td>2013</td>
<td>✓</td>
<td>2 hours–2 months</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Verhey</td>
<td>2020</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

### Author Year Training Topics Training Method

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Basic counselling skills</th>
<th>Topical MH info</th>
<th>Technical skills</th>
<th>Screening, assessment &amp; diagnosis</th>
<th>Managing CMD/SMI</th>
<th>Theoretical approaches</th>
<th>Role plays</th>
<th>In-vivo/field work</th>
<th>Lecture</th>
<th>Group discussion</th>
<th>Case review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chowdhary</td>
<td>2014</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Dixon</td>
<td>2017</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Glenton</td>
<td>2013</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Huang</td>
<td>2018</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Javadi</td>
<td>2017</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Joshi</td>
<td>2014</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Kaminer</td>
<td>2018</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

(Continued)
outcomes favouring the intervention arm were found for depressive symptoms in the majority of studies and across diverse interventions (e.g. individual psychotherapy, case management, collaborative care) and NSHW types (e.g. health professionals, community workers, peers). For example, a study reviewed by Rojas et al. (2007) found that a multicomponent collaborative care intervention delivered in primary care settings to mothers in Chile resulted in significant decreases in depression compared to treatment as usual. Significant decreases in anxiety, mixed anxiety and depression, PTSD and common mental disorders were also found among individuals in the experimental arm versus comparison groups, though many fewer RCT studies examined these outcomes compared to depression (see Appendix Table 2). For example, CBT delivered to Burmese refugees by peer providers in Thailand resulted in significant decreases in depression, anxiety and posttraumatic stress compared to those on the waitlist control (see Bolton et al., 2014 in Singla et al., 2017).

However, several studies also found significant improvements in depressive symptoms across both the experimental and comparison/control groups (e.g. Hughes, 2009; Lara et al., 2010; Pradeep et al., 2014). Others found benefit in the treatment group, though results were not significant (e.g. Cooper et al., 2009). For example, a study by Moosa and Jeenah (2012) found similar and significant decreases in depression among HIV patients who received IPT or pharmacotherapy at primary care clinics in South Africa. Yeomans et al. (2010) found no significant change in PTSD, anxiety or depression among Burundian internally displaced persons who received a trauma healing workshop with PTSD psychoeducation delivered by para-professionals compared to those who received the workshop alone. Overall, there was limited rigorous evidence on the effectiveness of NSHW-led interventions for severe mental illness, with only one study identifying an overall and significant reduction on symptoms of schizophrenia (Chatterjee et al., 2014).

Finally, findings were mixed for NSHW-intervention targeting substance use. Out of 10 RCT studies, three identified positive outcomes for reducing alcohol use and one for reducing substance use (e.g. Sutcliffe et al., 2009). Noknay et al. (2010), for example, found significant decreases in alcohol use among adults in Thailand who received a brief counselling intervention from a health professional compared to those who received the workshop alone. Overall, there was limited rigorous evidence on the effectiveness of NSHW-led interventions for severe mental illness, with only one study identifying an overall and significant reduction on symptoms of schizophrenia (Chatterjee et al., 2014).

Nonrandomised Studies and Mental Health Outcomes

Six studies utilised nonrandomised designs to examine the effectiveness of NSHW-led interventions on depression outcomes. Three studies had favourable findings, resulting in significant decreases in depressive symptoms (e.g. Futterman et al., 2010; Vijayakumar & Kumar, 2008).
<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Frequency</th>
<th>Format described (e.g., group, in-person)</th>
<th>Supervisor type</th>
<th>Supervision content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chowdhary</td>
<td>2014</td>
<td>Weekly or monthly</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Dixon</td>
<td>2017</td>
<td>Fortnightly, weekly or monthly</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Glenton</td>
<td>2013</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huang</td>
<td>2018</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Javadi</td>
<td>2017</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joshi</td>
<td>2014</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kaminer</td>
<td>2018</td>
<td>Weekly for 2 months, then monthly</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Munodawafa</td>
<td>2018</td>
<td>Half a day a month</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mutamba</td>
<td>2013</td>
<td>Weekly, monthly or ongoing</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nguyen</td>
<td>2019</td>
<td>Weekly, monthly or ongoing</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Padmanathan</td>
<td>2013</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petersen</td>
<td>2014</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rahman</td>
<td>2013</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shahmalak</td>
<td>2019</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Singla</td>
<td>2017</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>van Ginneken</td>
<td>2013</td>
<td>Ad hoc, every 2 weeks, weekly or monthly</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verheyn</td>
<td>2020</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Petersen et al. (2012), for example, demonstrated a significant reduction in depressive symptoms on completion of a 12-week group-based IPT intervention as well as 24 weeks postbaseline compared to the control (control intervention unknown). The remaining three studies found benefits for both intervention and control groups (e.g. Ali et al., 2010) or results were not significant (e.g. Cooper et al., 2002; Morris et al., 2012).

Pre/Post test Design and Mental Health Outcomes
Nine studies utilised a pre/post test design to examine the effectiveness of NSHW-led interventions on depression ($n=6$) and severe mental illness ($n=3$). For depression, four studies identified favourable results, with depression scores decreasing over the course of the intervention (e.g. Adams et al., 2012; Zámbori et al., 2002). For example, Chibanda et al. (2011) identified a reduction in mean depression scores following delivery of problem-solving therapy to adults in Zimbabwe. One study, however, found comparable benefits between the intervention and control (e.g. Tezel & Gözüm, 2006) and one found no change in depression scores (e.g. Thurman et al., 2014). Three studies identified reductions in symptoms of severe mental illness (e.g. Lund et al., 2013; Padilla et al., 2015). Abbo (2011), for example, found improvements in symptoms of schizophrenia and mania among adults in Uganda who were screened and received care from a traditional healer.

Implementation Challenges Related to NSHWs
Nine reviews ($n=9, 53\%$) cited various challenges with NSHW roles and capacity. These were related to the NSHW work environment ($n=6, 67\%$) such as poor role definition, increased work pressure, lack of professional advancement opportunities and challenging work conditions which, in turn, negatively affected NSHW motivation. Challenges were also noted with the relationship between the NSHW and target population ($n=4, 44\%;$ e.g. boundaries, confidentiality) and problems in the working relationship between NSHW and health professions ($n=2, 22\%;$ e.g. lack of appreciation for the role of NSHW, skepticism regarding their capacity). For example, community health aids in Jamaica described difficulties performing multiple tasks over and above their standard clinic duties (Baker-Henningham et al., 2005). The Petersen et al. (2014) review also summarised challenges related to lay counsellors feeling excluded from the professional hierarchy and negative perception of lay counsellors by other healthcare staff.

A number of challenges related to training NSHWs were also identified ($n=7, 41\%$), such as the need for more training ($n=3, 43\%$) or for peer supervision and networking. For example, psychosocial counsellors and managers in Nepal expressed a need for advanced counsellor training, regular supervision and networking opportunities with

<table>
<thead>
<tr>
<th>Table 6: Compensation of Nonspecialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author Year</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>Unpaid</td>
</tr>
<tr>
<td>Chowdhary 2014</td>
</tr>
<tr>
<td>Dixon 2017</td>
</tr>
<tr>
<td>Glenton 2013</td>
</tr>
<tr>
<td>Huang 2018</td>
</tr>
<tr>
<td>Javadi 2017</td>
</tr>
<tr>
<td>Joshi 2014</td>
</tr>
<tr>
<td>Kaminer 2018</td>
</tr>
<tr>
<td>Munodawafa 2018</td>
</tr>
<tr>
<td>Mutamba 2013</td>
</tr>
<tr>
<td>Nguyen 2019</td>
</tr>
<tr>
<td>Padmanathan 2013</td>
</tr>
<tr>
<td>Petersen 2014</td>
</tr>
<tr>
<td>Rahman 2013</td>
</tr>
<tr>
<td>Shahmalak 2019</td>
</tr>
<tr>
<td>Singla 2017</td>
</tr>
<tr>
<td>van Ginneken 2013</td>
</tr>
<tr>
<td>Verhey 2020</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 7: Challenges with Implementation by Reviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author Year</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>Chowdhary 2014</td>
</tr>
<tr>
<td>Dixon 2017</td>
</tr>
<tr>
<td>Glenton 2013</td>
</tr>
<tr>
<td>Huang 2018</td>
</tr>
<tr>
<td>Javadi 2017</td>
</tr>
<tr>
<td>Joshi 2014</td>
</tr>
<tr>
<td>Kaminer 2018</td>
</tr>
<tr>
<td>Munodawafa 2018</td>
</tr>
<tr>
<td>Mutamba 2013</td>
</tr>
<tr>
<td>Nguyen 2019</td>
</tr>
<tr>
<td>Padmanathan 2013</td>
</tr>
<tr>
<td>Petersen 2014</td>
</tr>
<tr>
<td>Rahman 2013</td>
</tr>
<tr>
<td>Shahmalak 2019</td>
</tr>
<tr>
<td>Singla 2017</td>
</tr>
<tr>
<td>van Ginneken 2013</td>
</tr>
<tr>
<td>Verhey 2020</td>
</tr>
</tbody>
</table>
other counsellors (see Jordans et al., 2007 in Padmanathan & De Silva, 2013). In their review, Shahmalak et al. (2019) described lay health workers feeling that insufficient information was given during training and not enough time allowed for training regarding mental health issues.

Other challenges related to training included the lack of any formal or standardised training approach \( (n = 2, 29\%) \), lack of assessments to determine the nonspecialist’s competence \( (n = 2, 29\%) \), low fidelity to training models \( (n = 1, 14\%) \) and low competence levels despite training \( (n = 1, 14\%) \). For example, Glenton et al. (2013) identified the lack of assessment methods in a lay health worker maternal and child health intervention as a major challenge in determining NSHW competence and quality of intervention delivery.

Half of the reviews \( (n = 8, 47\%) \) described supervision challenges for the field as a whole including the need for ongoing, structured supervision and, relatedly, the high cost of maintaining supervision. Singla et al. (2017) described such issues as barriers to the wider adoption of NSHW-delivered psychological treatments. They identified an ongoing reliance on face-to-face methods of supervision and discussed alternative approaches including digital technologies, standardised competency tools and strengthening evidence on peer supervision as important areas in need of attention and evaluation.

Four reviews \( (22\%) \) highlighted the necessity of attending to issues of burnout, work-related stress and managing emotional wellbeing as part of supervisory practices for NSHWs but indicated such topics are notably absent in the studies reviewed. The review by Petersen et al. (2014) included the only study that specifically included stress reduction techniques and coping to help manage job-related stress (see Fourie et al., 2008).

Finally, nine of the reviews \( (53\%) \) described macro-level challenges related to scaling up NSHW interventions \( (n = 4, 44\%) \) and system-related barriers \( (n = 5, 56\%) \) such as leadership and infrastructure, integrating NSHW into health systems where they did not previously operate, and national, political and socioeconomic factors. Studies in the review by Petersen et al. (2014), for example, described the need for policy to guide the integration and scale up of NSHW-delivered interventions, including specific labour protection laws for lay counsellors. Specifically, they describe the absence of such policies as demoralizing for lay counsellors and leads to poor work motivation, stress and drop out.

**Discussion**

The purpose of this review was to summarise the current state of knowledge regarding approaches to supporting and sustaining NSHWs in LMICs and highlight opportunities to strengthen NSHW and their essential role in MHPSS. Consistent with the emphasis on task shifting as an important strategy for closing the treatment gap in LMICs, studies in this review encompassed all major regions of the world. Most studies focused on the use of NSHWs for depression with a subset focused specifically on peripostnatal depression. We found less literature on the use of NSHWs for other common mental disorders (e.g. anxiety, PTSD, substance use) and very limited literature focused on severe mental illness, highlighting the need to strengthen the evidence in this area. Our analysis of RCTs indicated NSHW-delivered interventions were found to be effective, particularly for reducing depression. These findings highlight the potential of a diverse range of MHPSS interventions delivered by various NSHW providers to affect meaningful change.

Further, NSHWs delivered a diverse range of mental health interventions. From within the broader categories of interventions, we found NSHWs implemented a wide variety of tasks including direct provision of a range of individual-, group- and family-level mental health care; psychosocial support through methods including home visitation, mentoring and case management; and providing psychoeducation or engaging in activities to reduce stigma and increase mental health awareness. NSHW also implemented interventions in a range of contexts including in healthcare, home and community settings. These findings suggest multiple pathways for integrating NSHW into MHPSS interventions or as part of a larger task sharing strategy to address gaps in mental health care.

Additionally, there were a range of potentially important qualifications for NSHWs including personal traits, interpersonal skills and shared life experience, some of which were thought to facilitate greater integration, acceptability and trust with target populations (e.g. Huang et al., 2018; Javadi et al., 2017; Munodawafa et al., 2018; Padmanathan & De Silva, 2013; Verhey et al., 2020). Moreover, we detected six different NSHW groups utilised in MHPSS. This typology can inform future research and move forward consensus building efforts around NSHW types, definitions and qualifications. The descriptions of training and supervision also provide a range of possible approaches, topics and competencies that NSHW needed to develop, which were likely not exhaustive. This included the importance of general, technical and administrative skills, utilising diverse formats to convey information to adult learners, and task-focused and supportive supervision approaches.

However, the results of this review also revealed significant gaps in need of urgent attention. This includes a need for greater specificity regarding the NSHW workforce, strengthening the empirical evidence on how to train, supervise and compensate nonspecialists, and understanding how to integrate NSHWs into health systems and policies. Moreover, as some robust studies indicated promising findings, others did not find any discernible differences in common mental disorder outcomes compared to the comparison/control condition, or that the intervention group fared worse. Additionally, the evidence base was very mixed for substance use and quite limited for severe mental illness. Several findings warrant additional explanation.
First, there was significant heterogeneity of language used to characterise and name NSHWs, including community health worker, paraprofessional and lay provider. We found both an overall lack of description for categorizing NSHW and their qualifications and no clear consensus among the reviews on these issues, which makes it difficult to ascertain which qualifications contributed to successful implementation of NSHW interventions. On the basis of this review, we conclude the term NSHW or other similar umbrella terms (e.g. lay providers) is too broad and limits the advancement of NSHW interventions. In lieu of this, we advocate for use of specific NSHW types (e.g. peers, community workers) building on what has been identified in this review and which are tied to meaningful definitions, qualifications and core competencies (Xiong et al., 2019). There are some important initiatives underway that focus on identifying core competencies and methods for evaluating the skills of NSHWs who deliver evidence-based psychotherapy and psychosocial interventions (Kohrt et al., 2020). In this review, however, we found that nonspecialists also deliver interventions focused on mental health awareness and education, and function in case management and outreach roles. Building on these efforts, additional research is required to map these intervention types to specific roles and core competencies which can serve as a framework for the MHPSS field more broadly. Such a framework can also inform development of standards for training and supervision that are needed to support NSHW and ensure competent service delivery.

Second, the descriptions of training were inconsistent and limited and the current state of the literature limits conclusions regarding necessary components for training and the relative effectiveness of these approaches. Further, though supervision is recognised as an essential component in a provider’s skill development (Kemp et al., 2019), details pertaining to supervision were also limited and highly variable, and are frequently not addressed in intervention delivery (IFRC, n.d.). Several authors identified this as a major limitation in the global mental health field (e.g. Dixon & Dantas, 2017; Javadi et al., 2017). To address these gaps, researchers must include robust details about the specific NSHW workforce in their studies, their roles in interventions and how they are trained, supervised and supported (Singla et al., 2017). Such details will contextualise study findings and enhance understanding about what is required to achieve meaningful outcomes. Moreover, this will allow for the development of an evidence base by NSHW subgroup, and eventually comparisons of effectiveness between NSHW subgroups. Beyond descriptions of what is already being done, we can also leverage implementation science, testing the impact of diverse training and supervision approaches, for example, alongside questions of effectiveness (Betancourt & Chambers, 2016; Theobald et al., 2018). Along these lines, we also identified very little specific attention to issues of self-care, burnout and secondary trauma (Padmanathan & De Silva, 2013). This is surprising given that NSHWs are often, by definition, drawn from the same communities as service recipients and thus likely share similar vulnerabilities. Moreover, working in mental health in LMICs poses unique challenges to providers, including exposure to stressors, stigma and trauma, which can lead to or exacerbate mental health problems, traumatisation and burnout (Ager et al., 2012; Curling & Simmons, 2010). As there is limited research specific to MHPSS in LMICs, existing best practices recommend ongoing assessment of staff wellbeing and suggest a combination of individual- and organisational-level supports may produce the most beneficial and long-lasting results (Awa et al., 2010). An increased focus on nonspecialist wellbeing and integration of such strategies is critical for the long-term health of NSHWs and the sustainability of these interventions.

Third, although a number of studies identified the integration of nonspecialists into policy and health systems as necessary for NSHW programmes (e.g. Javadi et al., 2017; Petersen et al., 2014), our findings reveal limited attention to such issues in research. As such, there is a clear need for system-level thinking especially policy work and investments that incorporate NSHW into health systems (Woodward et al., 2021). This requires governments and ministries of health to build and develop mental health systems more broadly, including NSHWs as a critical mental health workforce, clarifying their role in the bigger picture of mental health service delivery, and outlining guidelines for compensation. In other health sectors, integration of community health workers into the health system allowed these programmes to be sustained in times of political upheaval or shifting donor priorities (Scott et al., 2018). At the provider level, formal integration has been found to increase acceptability of nonspecialist workers and facilitate better collaboration between nonspecialists and other healthcare staff. Unfortunately, there are few examples of this kind of integration in the mental health sector in LMICs (Maes & Kalofonos, 2013; Pathare et al., 2018). Such initiatives must emphasise the local context including the voices of nonspecialists, researchers and health leaders in LMICs (Ostrow & Adams, 2012; Puschner, 2018).

Finally, although many of the studies utilised rigorous research designs and found favourable outcomes across common mental disorders, the lack of specificity as noted above precludes a complete understanding of the effectiveness of these interventions. In fact, these findings raise additional questions about the critical ingredients needed to utilise NSHW in addressing mental health needs across LMICs. Cited implementation challenges pertaining to a lack of structure around training and supervision and barriers to inclusion of NSHW within existing health systems, coupled with a lack of policy directives, suggest the need for NSHW has in many ways outstripped our knowledge about the most effective ways to develop, implement and sustain NSHW-delivered interventions.

**Limitations**

As is true with any review, our study is limited by the information available in articles. In many cases, information related to the roles, qualifications, training and supervision, compensation and policy pertaining to nonspecialists was not available in review articles, perhaps...
because they were not described in the original studies. Though we sought to characterise the effectiveness of NSHW interventions, only 12 of the 18 reviews reported on mental health outcomes and we were only able to provide a narrative synthesis of findings due to diversity of outcomes, interventions and available data. Moreover, in focusing on the empirical literature, this study does not account for information available in the grey literature (e.g., agency evaluations) which may offer additional nuance about workforce development issues and approaches for NSHW. This is an important area for future research.

Conclusion

Task sharing to nonspecialists is the primary strategy in global mental health for bridging the divide between widespread mental health needs and limited access to care and treatment. Without a nonspecialist workforce, there would be little to no MHPSS interventions in LMICs. Yet, evidence from this review demonstrates that nonspecialists have evidence far too little attention, despite the fact that the task sharing enterprise rests so heavily upon them. Moving forward, we must better understand the varying needs and requirements of NSHWs and develop best practice approaches to provide adequate support that can sustain them in the long-term. This requires starting with a common language for NSHWs and a framework that specifies nonspecialist types, qualifications, roles and core competencies. It also requires investments that aim to strengthen mental health systems in LMICs, with policies that clearly identify the roles and responsibilities of NSHWs and fair compensation within the broader mental health service delivery system. Additional research is also needed that focuses on the development and evaluation of new training, supervision and support models.

Authors’ contributions

MB takes responsibility for the integrity of the work as a whole from inception to published article and is designated as guarantor. The manuscript has been read and approved by all the authors and represents honest work. Additional details about author’s contributions are as follows:

(1) Conception or design of the work – MB, MA, SW
(2) Data collection – MB, NG, IF, MA
(3) Data analysis and interpretation – MB, NG, IF, MA
(4) Drafting the article – MB, MA, SW
(5) Critical revision of the article – MB, MA, SW

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

Chetty, D., & Hoque, M. E. (2012). Effectiveness of a volunteer-led crafts group intervention amongst mild to moderately depressed Indian...
Bunn et al.: Supporting nonspecialists to deliver mental health interventions in LMICs


## Appendix Table 1: Studies Included in Multiple Reviews

<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Chowdhary</th>
<th>Dixon</th>
<th>Javadi</th>
<th>Joshi</th>
<th>Kaminer</th>
<th>Munodawafa</th>
<th>Mutamba</th>
<th>Nguyen</th>
<th>Petersen</th>
<th>Rahman</th>
<th>Singla</th>
<th>van Ginneken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aracena et al. (2009)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araya et al. (2003)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baker-Henningham et al. (2005)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bolton et al. (2003)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bolton et al. (2014)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chatterjee et al. (2014)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chen et al. (2000)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooper et al. (2009)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooper et al. (2002)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dybdahl (2001)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fritsch et al. (2007)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gao et al. (2010)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gao et al. (2012)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hirani et al. (2010)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ho et al. (2009)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lund et al. (2013)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuner et al. (2008)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patel et al. (2010)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patel et al. (2011)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petersen et al. (2012)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rahman et al. (2009)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rahman et al. (2008)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rojas et al. (2007)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terel et al. (2006)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tiwari et al. (2010)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tripathy et al. (2010)</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yeomans et al. (2010)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix Table 2: Mental Health Outcomes by Study

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Sample</th>
<th>Intervention</th>
<th>Provider</th>
<th>NSHW Type</th>
<th>Measure</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Randomised Control Trial (RCT): Depression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araya</td>
<td>2003</td>
<td>Women ages 18–30 years in Chile w/ persistent depression; majority were housewives from deprived areas</td>
<td>Multicomponent &amp; collaborative care (IP, MHAE)</td>
<td>PC physician and group leaders (nonmedical worker)</td>
<td>Health professional &amp; community worker</td>
<td>HDRS; GHQ-12</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Baker-Henningham et al.</td>
<td>2005</td>
<td>Mothers of undernourished children enrolled in nutrition clinics in government health centres in Jamaica</td>
<td>MH awareness &amp; education</td>
<td>Community worker</td>
<td>Community worker</td>
<td>CES-D</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Bolton et al.</td>
<td>2003</td>
<td>Adults w/ depressive symptoms from 15 villages in Uganda</td>
<td>Psychosocial intervention</td>
<td>Group leader (9/10 who completed training)</td>
<td>Community worker</td>
<td>HSCL; Mollica DSM-IV algorithm for A, C and E criteria</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Bolton et al.</td>
<td>2014a</td>
<td>Survivors of systematic violence</td>
<td>Individual psychotherapy</td>
<td>Not described</td>
<td>N/A</td>
<td>Unknown</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Bolton et al.</td>
<td>2014b</td>
<td>Burmese refugees who are survivors of violence</td>
<td>Individual psychotherapy</td>
<td>Lay counsellors</td>
<td>Peers</td>
<td>Unknown</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Chen et al.</td>
<td>2000</td>
<td>Mothers in Taiwan at 2–3 days postpartum</td>
<td>Psychosocial intervention</td>
<td>Registered nurse</td>
<td>Health professional</td>
<td>Taiwanese BDI</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Chetty</td>
<td>2012</td>
<td>30 Indian South African women on antidepressants</td>
<td>Psychosocial intervention</td>
<td>Volunteers</td>
<td>Undetermined</td>
<td>BDI</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Chetty</td>
<td>2013</td>
<td>30 Indian South African women on antidepressants</td>
<td>Psychosocial intervention</td>
<td>Psychiatric nurses</td>
<td>Health professional</td>
<td>BDI</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Chibanda et al.</td>
<td>2013</td>
<td>Postpartum mothers</td>
<td>Psychosocial intervention</td>
<td>Not described</td>
<td>N/A</td>
<td>Unknown</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Cooper et al.</td>
<td>2009</td>
<td>Women in their third trimester</td>
<td>Case management &amp; outreach</td>
<td>Lay community health workers</td>
<td>Peer (all were mothers selected in consultation with the local community council)</td>
<td>SCID; EPDS</td>
<td>Significant decrease in symptoms within the experimental group at 6 months, no significant findings at 12 months +/*</td>
</tr>
<tr>
<td>DeKlerk</td>
<td>2004</td>
<td>White Afrikaans-speaking males scheduled for coronary artery bypass surgery</td>
<td>Individual psychotherapy</td>
<td>Not described</td>
<td>N/A</td>
<td>BDI-II; POMS</td>
<td>Significant decrease in BDI scores within the experimental group; no difference in POMS scores +/*</td>
</tr>
<tr>
<td>Fritsch</td>
<td>2007</td>
<td>Chilean women w/ depression living w/ a child ages 6–16</td>
<td>Collaborative care (CMO, MHAE)</td>
<td>Generalist doctors/GP (1 per practice) and nonprofessional trained staff from 5 clinics</td>
<td>Health professional &amp; community worker</td>
<td>Diagnosis of depression: MINI; severity of symptoms: HDRS</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Gao et al.</td>
<td>2010</td>
<td>New mothers (28.4; 21–35)</td>
<td>Group interpersonal therapy</td>
<td>Not described</td>
<td>N/A</td>
<td>EPDS, GHQ-12 and SWIRS</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Sample</th>
<th>Intervention</th>
<th>Provider</th>
<th>NSHW Type</th>
<th>Measure</th>
<th>Findings</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gao et al.</td>
<td>2012</td>
<td>Middle-class first-time mothers under age of 35 w/ uncomplicated pregnancies, PPD symptoms and no family history of psychiatric illness</td>
<td>Individual psychotherapy</td>
<td>Midwife educator</td>
<td>Not described</td>
<td>EPDS</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Ho et al.</td>
<td>2009</td>
<td>Married women ages 20-25 who had a spontaneous vaginal delivery</td>
<td>Individual psychotherapy</td>
<td>Not described</td>
<td>Not described</td>
<td>EPDS</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Hughes</td>
<td>2009</td>
<td>Women in their third trimester who speak English or Konkani</td>
<td>Multicomponent (MHAE, CMO)</td>
<td>Not described</td>
<td>Not described</td>
<td>N/A</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>Le Roux</td>
<td>2009</td>
<td>Adults less than 26 weeks pregnant and completed primary school</td>
<td>Multicomponent (MHAE, PI)</td>
<td>Not described</td>
<td>Not described</td>
<td>N/A</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Mao et al.</td>
<td>2012</td>
<td>Adults with single pregnancy</td>
<td>Individual psychotherapy</td>
<td>Lay health worker</td>
<td>Community worker</td>
<td>N/A</td>
<td>Not described</td>
<td></td>
</tr>
<tr>
<td>Pradeep</td>
<td>2014</td>
<td>Adults with depression</td>
<td>Multicomponent (MHAE, CMO)</td>
<td>Community health workers</td>
<td>Community worker</td>
<td>SCAN</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Rahman</td>
<td>2007</td>
<td>Depressed mothers of boys aged 17-40 in their perinatal period</td>
<td>Individual psychotherapy</td>
<td>Lay health worker</td>
<td>Community worker</td>
<td>N/A</td>
<td>Not described</td>
<td></td>
</tr>
<tr>
<td>Rahman et al.</td>
<td>2008</td>
<td>Married Pakistani women in their third trimester w/ perinatal depression</td>
<td>Multicomponent (MHAE, PI)</td>
<td>Lady health workers</td>
<td>Community worker</td>
<td>N/A</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Rahman et al.</td>
<td>2009</td>
<td>Married women ages 17-40 in the third trimester who registered w/ a lay health worker</td>
<td>Multicomponent (MHAE, PI)</td>
<td>Lay health worker</td>
<td>Community worker</td>
<td>N/A</td>
<td>Not described</td>
<td></td>
</tr>
<tr>
<td>Rath</td>
<td>2010</td>
<td>Adults with depression</td>
<td>Multicomponent (MHAE, CMO)</td>
<td>Community health workers</td>
<td>Community worker</td>
<td>SCAN</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Rahman</td>
<td>2007</td>
<td>Depressed mothers of boys aged 17-40 in their perinatal period</td>
<td>Individual psychotherapy</td>
<td>Lay health worker</td>
<td>Community worker</td>
<td>N/A</td>
<td>Not described</td>
<td></td>
</tr>
<tr>
<td>Rahman et al.</td>
<td>2008</td>
<td>Married Pakistani women in their third trimester w/ perinatal depression</td>
<td>Multicomponent (MHAE, PI)</td>
<td>Lady health workers</td>
<td>Community worker</td>
<td>N/A</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Rahman et al.</td>
<td>2009</td>
<td>Married women ages 17-40 in the third trimester who registered w/ a lay health worker</td>
<td>Multicomponent (MHAE, PI)</td>
<td>Lay health worker</td>
<td>Community worker</td>
<td>N/A</td>
<td>Not described</td>
<td></td>
</tr>
<tr>
<td>Rahman</td>
<td>2010</td>
<td>Adults with depression</td>
<td>Multicomponent (MHAE, CMO)</td>
<td>Community health workers</td>
<td>Community worker</td>
<td>SCAN</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Rahman</td>
<td>2012</td>
<td>Adults with single pregnancy</td>
<td>Individual psychotherapy</td>
<td>Lay health worker</td>
<td>Community worker</td>
<td>N/A</td>
<td>Not described</td>
<td></td>
</tr>
<tr>
<td>Rahman et al.</td>
<td>2014</td>
<td>Adults with depression</td>
<td>Multicomponent (MHAE, CMO)</td>
<td>Community health workers</td>
<td>Community worker</td>
<td>SCAN</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Rahman</td>
<td>2007</td>
<td>Depressed mothers of boys aged 17-40 in their perinatal period</td>
<td>Individual psychotherapy</td>
<td>Lay health worker</td>
<td>Community worker</td>
<td>N/A</td>
<td>Not described</td>
<td></td>
</tr>
<tr>
<td>Rahman et al.</td>
<td>2008</td>
<td>Married Pakistani women in their third trimester w/ perinatal depression</td>
<td>Multicomponent (MHAE, PI)</td>
<td>Lady health workers</td>
<td>Community worker</td>
<td>N/A</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Rahman et al.</td>
<td>2009</td>
<td>Married women ages 17-40 in the third trimester who registered w/ a lay health worker</td>
<td>Multicomponent (MHAE, PI)</td>
<td>Lay health worker</td>
<td>Community worker</td>
<td>N/A</td>
<td>Not described</td>
<td></td>
</tr>
<tr>
<td>Rahman</td>
<td>2010</td>
<td>Adults with depression</td>
<td>Multicomponent (MHAE, CMO)</td>
<td>Community health workers</td>
<td>Community worker</td>
<td>SCAN</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Rahman</td>
<td>2012</td>
<td>Adults with single pregnancy</td>
<td>Individual psychotherapy</td>
<td>Lay health worker</td>
<td>Community worker</td>
<td>N/A</td>
<td>Not described</td>
<td></td>
</tr>
<tr>
<td>Rahman et al.</td>
<td>2014</td>
<td>Adults with depression</td>
<td>Multicomponent (MHAE, CMO)</td>
<td>Community health workers</td>
<td>Community worker</td>
<td>SCAN</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Rahman</td>
<td>2007</td>
<td>Depressed mothers of boys aged 17-40 in their perinatal period</td>
<td>Individual psychotherapy</td>
<td>Lay health worker</td>
<td>Community worker</td>
<td>N/A</td>
<td>Not described</td>
<td></td>
</tr>
<tr>
<td>Rahman et al.</td>
<td>2008</td>
<td>Married Pakistani women in their third trimester w/ perinatal depression</td>
<td>Multicomponent (MHAE, PI)</td>
<td>Lady health workers</td>
<td>Community worker</td>
<td>N/A</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
<tr>
<td>Rahman et al.</td>
<td>2009</td>
<td>Married women ages 17-40 in the third trimester who registered w/ a lay health worker</td>
<td>Multicomponent (MHAE, PI)</td>
<td>Lay health worker</td>
<td>Community worker</td>
<td>N/A</td>
<td>Not described</td>
<td></td>
</tr>
<tr>
<td>Rahman</td>
<td>2010</td>
<td>Adults with depression</td>
<td>Multicomponent (MHAE, CMO)</td>
<td>Community health workers</td>
<td>Community worker</td>
<td>SCAN</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
</tr>
</tbody>
</table>

Appendix Table 2 (continued)
<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Sample</th>
<th>Intervention</th>
<th>NSHW Type</th>
<th>Provider</th>
<th>Measure</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rojas et al.</td>
<td>2015</td>
<td>Pregnant women and mothers ages 15–49</td>
<td>Health professional &amp; community health workers</td>
<td>Peer</td>
<td>Female community health workers</td>
<td>EPDS</td>
<td>Significant decrease in symptoms within the experimental group</td>
</tr>
<tr>
<td>Singh et al.</td>
<td>2015</td>
<td>Mothers with children &lt;3 years</td>
<td>Multicomponent (MHAE, CMO)</td>
<td>Peer</td>
<td>Pediatric hospital staff</td>
<td>EPDS</td>
<td>+</td>
</tr>
<tr>
<td>Tripathy et al.</td>
<td>2014</td>
<td>Mothers with children ages 15–49</td>
<td>Psychosocial intervention</td>
<td>Peer</td>
<td>Mental health nurses</td>
<td>EPDS</td>
<td>+</td>
</tr>
<tr>
<td>Weiss et al.</td>
<td>2013</td>
<td>Women undergoing early medical abortion</td>
<td>Individual psychotherapy</td>
<td>Not described</td>
<td>Community health nurses</td>
<td>EPDS</td>
<td>+</td>
</tr>
<tr>
<td>Bass et al.</td>
<td>2013</td>
<td>New mothers (24, 21–35)</td>
<td>Psychosocial intervention</td>
<td>Not described</td>
<td>Community health nurses</td>
<td>EPDS</td>
<td>+</td>
</tr>
<tr>
<td>Ali et al.</td>
<td>2003</td>
<td>124 lower-middle class Pakistani women ages 60–70</td>
<td>Individual psychotherapy</td>
<td>Not described</td>
<td>Community health workers</td>
<td>EPDS</td>
<td>+</td>
</tr>
<tr>
<td>Gao et al.</td>
<td>2010</td>
<td>New mothers</td>
<td>Multicomponent interpersonal therapy</td>
<td>Not described</td>
<td>Community health workers</td>
<td>EPDS, GHQ-12, SWIRS</td>
<td>+</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Sample</th>
<th>Intervention</th>
<th>Provider</th>
<th>NSHW Type</th>
<th>Measure</th>
<th>Findings</th>
<th>Findings</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yeomans et al.</td>
<td>2010</td>
<td>Burundi adults in internally displaced camps</td>
<td>MH awareness &amp; education</td>
<td>Burundian facilitators</td>
<td>Community worker</td>
<td>Hybrid HSCL-25 &amp; −58; HTQ-IV w/ HTQ-b</td>
<td>No significant findings *</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Bass et al.</td>
<td>2013</td>
<td>Female survivors of sexual violence</td>
<td>Multicomponent (IP, PI)</td>
<td>Not described</td>
<td>N/A</td>
<td>N/A</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Bolton et al.</td>
<td>2014a</td>
<td>Survivors of systematic violence</td>
<td>Individual psychotherapy</td>
<td>Not described</td>
<td>Peers</td>
<td>N/A</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Bolton et al.</td>
<td>2014b</td>
<td>Burmese refugees who are survivors of violence</td>
<td>Individual psychotherapy</td>
<td>Not described</td>
<td>Peers</td>
<td>N/A</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Dybdahl</td>
<td>2001</td>
<td>Bosnian displaced mother-child dyads</td>
<td>Psychosocial intervention</td>
<td>Not described</td>
<td>Peers</td>
<td>N/A</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Neuner et al.</td>
<td>2008</td>
<td>Adults in a refugee settlement in Uganda</td>
<td>Individual psychotherapy</td>
<td>Not described</td>
<td>Peers</td>
<td>N/A</td>
<td>Significant decrease in symptoms within the experimental group</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Weiss et al.</td>
<td>2015</td>
<td>Torture survivors</td>
<td>MH awareness &amp; education</td>
<td>Burundian facilitators</td>
<td>Community worker</td>
<td>Hybrid HSCL-25 &amp; −58; HTQ-IV w/ HTQ-b</td>
<td>No significant findings *</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Patel et al.</td>
<td>2010</td>
<td>Adults in India who have difficulty w/ hearing, speaking or cognition</td>
<td>Multicomponent (IP, MHAE)</td>
<td>Not described</td>
<td>N/A</td>
<td>N/A</td>
<td>Questionnaire developed by the researchers</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Rotherham-Borus</td>
<td>2014</td>
<td>Adults in South Africa who drink at informal alcohol serving shops</td>
<td>Psychosocial intervention</td>
<td>Not described</td>
<td>N/A</td>
<td>N/A</td>
<td>Questionnaire developed by the researchers</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Burnhams</td>
<td>2015</td>
<td>Municipal workers</td>
<td>Psychosocial intervention</td>
<td>Not described</td>
<td>N/A</td>
<td>N/A</td>
<td>Questionnaire developed by the researchers</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Kalichman et al.</td>
<td>2008</td>
<td>Adults in South Africa who drink at informal alcohol serving shops</td>
<td>MH awareness &amp; education</td>
<td>Primary healthcare nurses</td>
<td>Health professional</td>
<td>AUDIT</td>
<td>Significantly lower alcohol use in both groups in experimental group</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Marais</td>
<td>2011</td>
<td>Pregnant women</td>
<td>Individual psychotherapy</td>
<td>Primary healthcare nurses</td>
<td>Health professional</td>
<td>ASSIST</td>
<td>Significantly lower alcohol use in both groups in experimental group</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Mertens</td>
<td>2014</td>
<td>Public health clinic patients</td>
<td>Individual psychotherapy</td>
<td>Primary healthcare nurses</td>
<td>Health professional</td>
<td>ASSIST</td>
<td>Significantly lower alcohol use in both groups in experimental group</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Sample</th>
<th>Intervention</th>
<th>Provider</th>
<th>NSHW Type</th>
<th>Measure</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noknoy</td>
<td>2010</td>
<td>Adults in Thailand w/ AUDIT score ≥ 8</td>
<td>Individual psychotherapy</td>
<td>Nurses</td>
<td>Health professional</td>
<td>AUDIT; health survey questionnaire</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Papas</td>
<td>2011</td>
<td>Kenyan adults enrolled in AMPATH HIV outpatient attending the Eldoret clinic meeting substance use criteria</td>
<td>Individual psychotherapy</td>
<td>CBT counsellor</td>
<td>Undetermined</td>
<td>Unknown</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Peltzer</td>
<td>2013</td>
<td>Tuberculosis patients at public health clinics</td>
<td>Individual psychotherapy</td>
<td>Nurses and lay HIV counsellor</td>
<td>Health professional</td>
<td>AUDIT</td>
<td>No significant findings *</td>
</tr>
<tr>
<td>Pengpid</td>
<td>2013a</td>
<td>392 hospital outpatients</td>
<td>Individual psychotherapy</td>
<td>Assistant nurse counsellors</td>
<td>Health professional</td>
<td>AUDIT</td>
<td>No significant findings *</td>
</tr>
<tr>
<td>Pengpid</td>
<td>2013b</td>
<td>152 university students</td>
<td>Individual psychotherapy</td>
<td>Assistant nurse counsellors</td>
<td>Health professional</td>
<td>AUDIT</td>
<td>No significant findings *</td>
</tr>
<tr>
<td>Sutcliffe et al.</td>
<td>2009</td>
<td>152 university students</td>
<td>MH awareness &amp; education</td>
<td>Peer educators</td>
<td>Peer</td>
<td>Unknown</td>
<td>Significant decrease in behaviours of interest within the experimental group +</td>
</tr>
<tr>
<td>Chatterjee et al.</td>
<td>2014</td>
<td>Those ages 16-60 years with the primary diagnosis of schizophrenia Nonrandomised controlled study: Depression</td>
<td>Multicomponent (IP, MHAE)</td>
<td>Community health worker</td>
<td>Undetermined</td>
<td>PANSS; IDEAS</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Ali et al.</td>
<td>2010</td>
<td>102 postpartum women w/ depression, w/ children ages 0–30 months</td>
<td>Individual psychotherapy</td>
<td>Women CHWs</td>
<td>Community worker</td>
<td>AKUADS</td>
<td>Significant decrease in symptoms in experimental and control groups +</td>
</tr>
<tr>
<td>Cooper et al.</td>
<td>2002</td>
<td>Two groups of women-infant dyads recruited in late pregnancy from defined areas of Khayelitsha</td>
<td>Case management &amp; outreach</td>
<td>Community workers</td>
<td>Community worker</td>
<td>SCID; EPDS</td>
<td>No significant findings, but prevalence of depression lower in experimental group *</td>
</tr>
<tr>
<td>Futterman</td>
<td>2010</td>
<td>Pregnant women attending maternity health clinics who were HIV*</td>
<td>Psychosocial intervention</td>
<td>Mentors who were HIV*, had a child recently, used PMTCT services, and were coping positively</td>
<td>Peer</td>
<td>CES-D</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Morris et al.</td>
<td>2012</td>
<td>Mothers at feeding centres w/ moderately or severely malnourished infants ages 6–30 months</td>
<td>Multicomponent (IP, PI)</td>
<td>Nonmental health specialists</td>
<td>Peer</td>
<td>Kitgum Maternal Mood Scale</td>
<td>No significant findings *</td>
</tr>
<tr>
<td>Petersen et al.</td>
<td>2012</td>
<td>Not described</td>
<td>Psychosocial intervention</td>
<td>Lay counsellors</td>
<td>Undetermined</td>
<td>BDI</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Vijayakumar &amp; Kumar</td>
<td>2008</td>
<td>Nonmigrant adults who lost a close family member</td>
<td>Psychosocial intervention</td>
<td>Volunteers</td>
<td>Undetermined</td>
<td>BDI; GHQ; WHO-5; scale developed using PTSD diagnostic criteria</td>
<td>Significant decrease in symptoms within the experimental group +</td>
</tr>
<tr>
<td>Pre- and posttest assessment: depression Adams</td>
<td>2012</td>
<td>Not described</td>
<td>Nurses</td>
<td>Healthcare provider</td>
<td>PHQ-9</td>
<td>Significant decrease in symptoms within the experimental group +</td>
<td></td>
</tr>
</tbody>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Sample Description</th>
<th>Intervention Details</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chibanda et al.</td>
<td>2011</td>
<td>Not described</td>
<td>Multicomponent (IP, CMO)</td>
<td>+</td>
</tr>
<tr>
<td>Lyketsos</td>
<td>1999</td>
<td>Adults w/ childbearing potential</td>
<td>Health worker</td>
<td>+</td>
</tr>
<tr>
<td>Tezel et al.</td>
<td>2006</td>
<td>Women w/ major depression symptoms at risk of postpartum depression</td>
<td>Nurse researcher</td>
<td>+</td>
</tr>
<tr>
<td>Thurman et al.</td>
<td>2014</td>
<td>Children and caregivers</td>
<td>Lay volunteers and trained paraprofessionans</td>
<td>-</td>
</tr>
<tr>
<td>Zambori</td>
<td>2002</td>
<td>Hungarian adults attending general practice of psychiatrists</td>
<td>GP</td>
<td>+</td>
</tr>
<tr>
<td>Bunn et al.</td>
<td>2015</td>
<td>672,260 population of province studied &gt; 7 years</td>
<td>Community-based health worker</td>
<td>+</td>
</tr>
</tbody>
</table>

**Key**

- CMO, case management and outreach
- IP, individual psychotherapy
- MHAE, mental health awareness and education
- PI, psychosocial intervention
- AKUADS, Aga Khan University Anxiety and Depression Scale
- ASSIST, Alcohol Smoking and Substance Involvement Screening Test
- AUDIT, Alcohol Use Disorders Identification Test
- BAI, Beck Anxiety Inventory
- BDI/BDI-II, Beck Depression inventory
- CES-D, Center for Epidemiological Studies Depression Scale
- CIDI, Composite International Diagnostic Interview Schedule-Revised
- DIS, Diagnostic Interview Schedule-Revised
- EPDS, Edinburgh postnatal depression scale
- GHQ/GHQ-12, 12-item General Health Questionnaire
- GAF, Global Assessment of Functioning
- HDRS, Hamilton depression rating scale
- IESR, Impact of Event Scale-Revised
- K10, Kessler Psychological Distress Scale
- MINI, Mini International Neuropsychiatric Interview
- PANSS, Positive and Negative Syndrome Scale
- PHQ 9, Patient Health Questionnaire
- POMS, Profile of Mood States
- PDS, Posttraumatic Diagnostic Scale
- SCID, Structured Clinical Interview for DSM-IV
- WHODAS 2.0, WHO Disability Assessment Schedule
- WHO-5, WHO-5 Well-Being Index
- WHOQOL-BREF, WHO Quality of Life

**Notes**

- CMO, case management and outreach
- IP, individual psychotherapy
- MHAE, mental health awareness and education
- PI, psychosocial intervention
- AKUADS, Aga Khan University Anxiety and Depression Scale
- ASSIST, Alcohol Smoking and Substance Involvement Screening Test
- AUDIT, Alcohol Use Disorders Identification Test
- BAI, Beck Anxiety Inventory
- BDI/BDI-II, Beck Depression inventory
- CES-D, Center for Epidemiological Studies Depression Scale
- CIDI, Composite International Diagnostic Interview Schedule-Revised
- DIS, Diagnostic Interview Schedule-Revised
- EPDS, Edinburgh postnatal depression scale
- GHQ/GHQ-12, 12-item General Health Questionnaire
- GAF, Global Assessment of Functioning
- HDRS, Hamilton depression rating scale
- IESR, Impact of Event Scale-Revised
- K10, Kessler Psychological Distress Scale
- MINI, Mini International Neuropsychiatric Interview
- PANSS, Positive and Negative Syndrome Scale
- PHQ 9, Patient Health Questionnaire
- POMS, Profile of Mood States
- PDS, Posttraumatic Diagnostic Scale
- SCID, Structured Clinical Interview for DSM-IV
- WHODAS 2.0, WHO Disability Assessment Schedule
- WHO-5, WHO-5 Well-Being Index
- WHOQOL-BREF, WHO Quality of Life

**+** Significant decrease in symptoms within the experimental group

**+,-** Significant decrease in symptoms within the experimental and control groups

**−** No significant findings

**−** Negative impact

**+** Benefit for intervention group

**+,-** Benefit for intervention and control groups

**−** No significant benefit

**−** Negative impact