Discover Health Systems

Research

'Of' the community but not 'of' the health system: Translating community health workers' knowledge into credible advice in Aceh, Indonesia

Madeleine Randell[1] · Mu Li[1] · Cut Novianti Rachmi[2] · Hafizah Jusril[2] · Seye Abimbola[1] · Andi Yoga Tama[3] · Tira Aswitama[3] · Natassya Phebe[3] · Sulasmi[4] · Neeloy Ashraful Alam[1] · Joel Negin[1] · Sarah Bernays[1]

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Abstract
Community health workers (CHWs)—or 'cadres' as they are known in Indonesia—are intermediaries between the health system and the community, providing maternal and child health services at a village level. However, systemic and contextual factors inhibit CHWs from realising their potential impact. Training is essential for improving CHW performance; however, there is a need to understand whether and how this affects the care communities receive. This paper explores how communities in Aceh Province, Indonesia, receive care from cadres and the extent to which training interventions of CHWs influence this care. Semi-structured interviews were conducted remotely with 10 cadres in two districts in Aceh between June and July 2021, and five focus group discussions were conducted face-to-face with 21 caregivers of young children in one district in September 2021. Data were iteratively and thematically analysed throughout data collection. Cadres were seen as 'of' the community but not 'of' the health system. Cadres found training valuable. However, training did not adequately address the contextual challenges cadres face. From the caregivers' perspective, cadres' enhanced knowledge did not translate into credible guidance. Their proximity to the community and perceived distance from the health system undermined caregiver perceptions of cadres' credibility. Infrastructural limitations of *Posyandu* inhibited CHW's perceived ability to perform their roles effectively. To maximise the potential of their role, there must be more investment in enhancing the credibility of cadres within their communities—and programmatic factors such as training must better account for and adapt to the local context.

1 Introduction

Community health workers (CHWs) play an integral role in healthcare delivery at the community level. CHWs are lay individuals who are members of their community and receive a shorter duration of training than other health professionals. Their roles are diverse and can include the delivery of clinical or diagnostic services, collection and recording of data, support referral processes and the provision of health education or behaviour change motivation within their communities [1, 2]. They are increasingly recognised on a national and global level for their potential in achieving increased equitable access to services, as well as delivering key preventive and curative health services [3–6]. There is a

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✉ Madeleine Randell, madeleine.randell@sydney.edu.au | [1]School of Public Health, University of Sydney, Sydney, Australia. [2]Reconstra Utama Integra, Jakarta, Indonesia. [3]UNICEF Indonesia, Banda Aceh, Aceh, Indonesia. [4]Provincial Health Office, Banda Aceh, Aceh, Indonesia.

growing body of evidence on optimising the design and performance of CHW programs [6]. Underpinning these is the importance of adapting strategies to fit local contexts [6]. In order to maximise their potential, CHW programs need to be both integrated into the health system whilst also embedded in and supported by their community [3]. Their important position as intermediaries between the health system and community does however, present unique challenges to CHWs in complex and context-specific ways [3, 7]. There is a need to understand how local systemic and contextual factors can affect CHW performance and community relationships. These include programmatic design factors such as supervision, training or incentives as well as contextual factors such as socio-cultural gender norms and local governance structures [5, 8].

CHW performance has been described as a transactional social process, which is dependent on building trusting relationships with both the community and the health system [8]. Critical to this is a CHW's social capital, which is assumed to underpin a CHW's perceived credibility and legitimacy within their community [3]. Social capital is a resource that can be used by an individual or community in connection with a social network and has been suggested to positively link to a community's health outcomes due to the way it creates bonds within communities and links them to formal health systems [9, 10]. Contextual factors such as social norms and power structures play a pivotal role in how these connections are shaped [3, 11]. As highlighted by Kane et al., 'CHW interventions are complex interventions embedded within complex health and social systems and contexts.' (pg. 2) [12]. Success or failure of CHW interventions may have more to do with these context-specific relational dynamics than individual skill sets or other metrics of CHW performance [3]. In the context of CHW programs implemented with beneficiaries who valued services and had unmet needs, interventions have been found to work if they triggered mechanisms such as a sense of value in the community as well as credibility and legitimacy [12].

In Indonesia, CHWs are known as cadres, or *kader*. Cadres are community volunteers, selected by village leadership and usually funded by a village fund (*Dana Desa*), a nation-wide funding mechanism designed to support village development activities [13]. They play an important role in village-level healthcare,, supporting promotive and preventive services including routine essential child health and nutrition services like growth monitoring, nutrient supplementation and immunisation [14]. One of their primary responsibilities is providing these services through the monthly community-based *Posyandu*., Ministry of Health regulations specify that cadres must be supported at the *Posyandu* by a staff member from their local primary health centre (*Puskesmas)* [15]. It is a key health service for pregnant women and children under five at a village level. With child malnutrition remaining a key area of concern for Indonesia, there is a clear need for cadres in the provision of community-level health care in Indonesia. Aceh Province in particular, continues to experience high rates of child stunting and anaemia [16]. A 2018 cross-sectional study in eight districts found that around 75% of children aged between one and three years were anaemic and 29% were stunted [16]. Official findings from the national 2022 Nutrition Status Survey (*Survei Status Gizi Indonesia*) reported a stunting prevalence of 33.2% in Aceh Province [17].

As members of their communities, cadres have the potential to exert considerable influence however, are often constrained by programmatic challenges which affect their performance and service delivery. These include challenges with funding, resourcing, infrastructure and lack of training on specific topics related to maternal and child health [20]. As Indonesia has a decentralised health system, these challenges can vary between villages or districts [21, 22]. The systemic and structural challenges in service delivery faced by cadres and other health workers involved in *Posyandu* services (e.g. village midwives) can result in community dissatisfaction with *Posyandu* services, leading to attrition from the service and decreased access to this essential care [23]. While the causes of issues such as stunting are multifactorial and well beyond the remit of cadres alone [24], it nevertheless suggests a need to strengthen the capacity of cadres to support efforts to improve maternal and child health in the community.

Training is one component of CHW program strengthening that has the potential to help improve capacity of cadres [1]. Cadre training interventions have been found to improve knowledge and confidence, the implementation of activities related to trainings, community awareness and behaviour as well as the management of the *Posyandu* [21, 22]. Challenges have been noted however, including the number of cadres trained, the frequency of these trainings and gaps in the topics covered [22, 25]. All cadres should receive a standard orientation training on commencement of their role. This can be provided by a number of agencies or services at a local level, such as the Centre for Community and Village Empowerment [26]. Additional 'on-the-job' education and trainings can be provided from a number of sources, such as the District Health Office, local *Puskesmas* or external agencies such as UNICEF [13, 22]. The intended outcome of these is that cadres will share their knowledge within their community through activities such as counselling and information sessions. This is however, underpinned by the assumption of this knowledge transfer being a linear process. While there has been considerable attention paid to the value of training in improving the performance of CHW, there has been less attention paid to the contextual influences which shape how this knowledge is received by the community.

There is a need to better understand how programmatic design factors such as training are shaped by community contexts. Does CHW training enhance the construction of cadres as valuable and credible sources of information in their community? This study synthesises cadre and caregiver perspectives from Aceh, Indonesia, to understand the context of how communities receive care from cadres and how cadre training interventions interact with this context.

2 Methods

2.1 Study setting

The study took place in two districts in Aceh Province, Indonesia. The western-most province in Indonesia, Aceh had a population of approximately 5.3 million as of 2021 [18]. Aceh province has one of the highest proportions in Indonesia of people living in poverty; at 14.8% in 2022, this is higher than the national level of 9.6% [19]. These two districts were selected to represent two different populations amongst the eight intervention sites in terms of geography, population size and socio-economic factors. Researchers and participants' safety as well as accessibility of districts during the COVID-19 pandemic were also taken into consideration. These are referred to as District 1 and District 2 to ensure anonymity. In 2021, District 1 had a population of just under 130,000 with 20.4% living below the poverty line. By comparison, District 2 had a population of over 41,000 with 15.3% living below the poverty line [27, 28].

2.2 Study design

We used qualitative approaches to explore experiences of delivering and receiving care at a community level as part of a broader evaluation of a multisectoral child wellbeing intervention conducted by UNICEF. The intervention was conducted between January 2019 and December 2021 in eight of Aceh's 23 districts with package of activities targeting multiple agencies engaged in child health and wellbeing at the district level (e.g., strengthening governance processes). Semi-structured in-depth interviews (IDIs) were conducted with cadres in District 1 and District 2 and focus group discussions (FGDs) were conducted with caregivers of young children in District 1. IDIs were used to understand the experiences of cadres in delivering care within their community; the perceived child wellbeing problems in their area, experience of capacity building through trainings and challenges in providing care. IDIs were used to allow privacy for diverse opinions regarding cadre experiences (see Supplementary file 1). FGDs with caregivers included topics such as expectations of their healthcare services, trust in and reasons they access those services as well as any suggestions on improvement (see Supplementary file 2).

2.3 Sample

Selected cadres and caregivers who attend the *Posyandu* were invited to participate. Within the two study locations (District 1 and 2), we adopted a purposive sampling strategy to identify and recruit participants. Cadres were identified through their training history. UNICEF provided a list of cadres from each district who had ever received training from UNICEF, regardless of the frequency or length of training. The research team then randomly selected cadres from this list. Cadres who refused to participate or had never received training were excluded. In order to gain a diverse range of perspectives, years of experience as a cadre was not considered as an inclusion or exclusion criteria. In District 1, recruitment of caregivers took place in the same village to the cadres who participated from this district. We used gatekeepers to support the recruitment of caregivers; cadres (not involved in IDIs) helped the research team identify potential participants amongst caregivers. They were then purposively selected based on the immunisation status of their child under two. This served as a proxy for attendance to local health services. Details on who was contacted and recruited was kept confidential.

2.4 Data collection

Semi-structured IDIs were conducted with cadres between June and July 2021. Due to the high case-load of COVID-19 in Indonesia at this time and travel restrictions, in-person data collection was not feasible. Instead, remote interviews were conducted using online video platforms such as Zoom, as well as WhatsApp or mobile phone depending on signal and coverage in the participant's location. This method of data collection limits the control that the researcher has over the

interview context [29]. It constrained our ability to ensure an interview location that guaranteed privacy to the participant. To minimise potential issues, participants were encouraged prior to participating to find a private space for their interview. The questions in the topic guides were not on sensitive topics where any violation of privacy would increase risk to the participant. No issues with the interview context were noted during data collection.

The interview guide was designed to answer broader evaluative questions of an intervention, so trainings were not a primary focus of the interviews. Cadres were however, asked to recall trainings received in the two years prior to data collection, delivered by UNICEF or other agencies. The interview guide was tested with cadres in other locations and revised based on the pre-test results. Interviews were conducted in pairs by CNR, HJ, GP and ENT.

Five FGDs were conducted in September 2021 in District 1. The logistical challenges of conducting group discussions with limited internet and mobile connectivity meant that virtual FGDs were unlikely to produce high-quality and inclusive discussions. Due to COVID-19 related travel restrictions, it was not feasible to conduct in-person FGDs in District 2. As a result, no FGDs were conducted in this district. In District 1 it was possible to conduct in-person FGDs under restricted conditions in two villages (provision of masks, observing social distancing, no eating or drinking during FGD and an open-air venue). ENT facilitated the FGDs in-person, with virtual support provided by CNR, HJ and GP. Each FGD had either four or five participants. All IDIs and FGDs were conducted in Bahasa Indonesia or local Acehnese language and averaged one hour in length.

2.5 Ethics

All participants provided verbal informed consent prior to their participation. They also provided additional verbal consent to have the interviews audio-recorded. For remote interviews, we explained the study again, including asking for their verbal consent to be audio-recorded, which they gave at the start of the recording. Some caregivers refused to participate on the grounds that it was prohibited by their husband.

Ethical approval for this research was granted by the University of Sydney Human Research Ethics Committee (2019/758) and the University of Atmajaya Ethics Committee [No: 0323A/III/LPPM-PM.10..05/04/2021] in accordance with the 1964 Declaration of Helsinki and the National Statement on Ethical Conduct in Human Research 2007 [30].

2.6 Data analysis

Data analysis was iterative, with researchers meeting regularly via Zoom during data collection to discuss completed interviews and to refine the topic guides for interviews and FGDs. CNR and HJ provided a summary of recently conducted interviews and FGDs, with a focus on key points of interest that may shape the direction of questions in future interviews/FGDs. These meetings' notes were written up by one researcher (MR) as memos which served as a reflection of the analytic process and shaped later analysis. All interviews and focus group discussions were transcribed verbatim, translated into English and reviewed by the Indonesian research team for fidelity between the Bahasa Indonesia and English versions. Any Acehnese language in the transcripts was reviewed by a team member fluent in the language to ensure translation was accurate. Translated interview transcripts were first read through carefully to become familiar with the detail. Several experienced researchers were involved in the coding, analysis and interpretation of data. Analysis took a deductive approach, building on regular team discussions, analytic memos and iterative analytical discussions to generate and refine themes. Microsoft Excel was used in analysis..

3 Results

In total, 10 cadres and 21 caregivers participated. Cadres had between three and 25 years of experience in the role and represented 10 *Posyandu* across the two districts. Years of experience as a cadre was not found within our analysis to be influential to the findings in this study. Caregivers had between one and 10 children and all had at least one child under the age of six. All participants in this study were women. This reflects the gendered nature of childcare and healthcare provided by volunteer CHW in these communities. Cadres recalled receiving training on a range of topics including infant and young child feeding, growth monitoring, additional food provision (*Pemberian Makanan Tambahan*) sanitation and correct completion of a child's health card (*Kartu Menuju Sehat*). There was no suggestion that cadres had not received the orientation training. Our qualitative analysis highlights the complexity of knowledge transfer from cadres to caregivers in their community, and what may act to disrupt this process.

3.1 You are just like us, not like healthcare workers

The source of information received by caregivers in this study played an important role in how they valued that information. Caregivers named healthcare providers such as midwives or doctors among their most trusted sources of information, but did not explicitly name cadres as a trusted source. Proximity to the community shaped the value of this information, but had differential effects depending on the information source. Such proximity was highly valued in village midwives; as a local member of the community, caregivers felt '…at ease, I can say anything, tell her anything.' (Caregiver, FDG 4). This proximity was however, perceived as a detriment by cadres. They felt that this impeded them from providing valued and credible information to caregivers 'since we are also just ordinary members of the community.' (Cadre IDI, District 2).

The value ascribed to the degree of 'otherness' was a mediating factor which meant proximity to the community elevated the value of information provided by village midwives but diminished the value of cadres'. Namely, village midwives occupied a position both 'of' the community and 'of' the health system, which allowed them to maintain a degree of 'otherness' from their community. Cadres however, were perceived by both themselves and caregivers as 'of' the community alone, and not 'of' the health system. This perception was reinforced by the roles traditionally played by cadres versus other healthcare workers such as doctors or midwives:

'The cadres are residents of this village. [They] will come first and once they've arrived, we do the weighing…The health staff will come later…' (Caregiver, FGD 5)

The engagement of health providers in complex or curative care such as child birth or acute childhood illnesses bolstered their value and credibility because it elevated perceptions of their skills and experience. Cadres on the other hand, do not have the opportunity to demonstrate their value in the provision of this kind of care as it is traditionally seen as outside their remit. Their role has generally been limited to basic tasks within a service whose main purpose as seen by caregivers, is to have their child weighed, to socialise, to receive supplementary foods or to engage in government programs. A hierarchy of responsibilities in the *Posyandu* further undermined the experience and performance of cadres by positioning them as more of a basic resource to healthcare providers such as midwives, rather than as co-providers of care working alongside them.

'…the patient arrives, and we take note of the name, and then weigh their body weight, measure their body height, and record that data in the KMS [child growth monitoring card], if they're BGM [below the red line] or BGT [under the middle line], then it's reported to the midwife, and then the midwife handles them…' (Cadre IDI, District 1)
'Not an argument. But they [cadres] just didn't make it clear, and they did the weighing haphazardly. "That cannot do, we want experienced ones", we said.' (Caregiver, FGD discussion 4)

The perceived position of cadres within their community and health system was not fixed, however. There were tangible signifiers which allowed cadres to leverage the value and credibility associated with the health system. These elevated their value as a source of information by placing them as 'health system adjacent'. Standardised information booklets used when delivering counselling to caregivers acted as a valuable mechanism to bridge gaps in value and credibility because it shifted the locus of the source of that information. The source became the health system or agencies such as UNICEF, with cadres acting as a conduit for that source of information. Similarly, the provision of operational regulations in the *Posyandu* as mandated by local government was seen by cadres as a way in which they could set clear expectations about service delivery to caregivers. Imparting more authority to the cadres through regulations had the potential to increase perceptions of value because it repositioned cadres as representatives of the health system.

'Yes, but if we didn't bring that book, "Hmmph, you're a know it all. As if you're a midwife," they'll likely say something like that.' (Cadre IDI, District 1)
'I think it's important, since with such a letter, we cadres can explain to the people: "Oh this is not allowed", "That is not allowed," "This is what the regulation says"…' (Cadre IDI, District 2)
'If we just give the information through verbal communication, without a piece of paper, they might think that our information is not true.' (Cadre IDI, District 1)

3.2 Judging a cadre by their *Posyandu*

The *Posyandu* as the place that caregivers received information from cadres played a role in how this information was valued. Both caregivers and cadres mentioned challenges with *Posyandu* infrastructure and facilities; from a lack of amenities such as adequate seating or a toilet, or unhygienic facilities, to faulty or missing equipment. These challenges diminished the credibility of information or advice received from cadres because it limited cadres' ability to effectively perform the key tasks of their role. It also created immediate visual impressions that the *Posyandu* and by association, cadres, lacked the kind of professionalism expected of services seen as 'of' the health system, such as doctors' clinics.

'But [at our Posyandu] can't say whether that child is suffering from stunting …because we don't have the equipment … to measure infants and under-five children.' (Caregiver, FGD 1)
'Truthfully, since my child was 2 years old, until he turned 5, I never had him weighed. The smell of the cloth,[1] it makes me want to throw up.' (Caregiver, FGD 1)

The detrimental effect that these operational challenges had for the value of information provided by cadres was evidenced by caregiver attendance to the *Posyandu*. Oftentimes, caregivers attended the *Posyandu* service for the bare minimum of time required, or in some cases preferred to not attend at all. As a standard in *Posyandu* operation, education and counselling is usually delivered to caregivers as one of the last services. Attrition from the service prior to this was a barrier to improved perceptions of value and credibility because it resulted in missed opportunities for cadres to showcase the greater potential and value of their role.

'Basically, we arrive, we go to the weighing station, the child is weighed, we are given one snack, then that's it. We go home.' (Caregiver, FGD 3)
'Sometimes we haven't provided the service yet, but they go home already.' (Cadre IDI, District 1)

Factors which increased the comfort of caregivers and their children while they waited had the potential to improve perceptions of cadres as a valuable source of information because they incentivised attendance and retention. These factors included the provision of adequate, high-quality supplementary food for children as well as support from other government organisations or village government to provide items such as chairs or toys for children to play with.

3.3 Trainings improved knowledge, but not influence

Cadres had received trainings covering a range of topics related to service provision in the *Posyandu*, including cadre orientation, infant and young child feeding, growth monitoring, additional food provision and sanitation. Cadres found the content of training highly acceptable as it increased their personal knowledge on these topics. However, there was inadequate attention to addressing contextual factors which can elevate or diminish perceptions of cadre value and credibility. This hindered the translation of that knowledge from cadres to caregivers.

While information gained in training was being provided to caregivers, cadres still experienced challenges in how caregivers received the information provided by them. Despite increased knowledge, cadres felt that other healthcare providers such as doctors, or health staff from the *Puskesmas* should deliver counselling because of their superior experience and community trust. Increased knowledge on its own was inadequate and required additional context-driven factors to impart a greater sense of legitimacy among cadres as a valued and credible source of information.

'But sometimes we also will have difficulty in giving information. Sometimes they do not want to listen to us because we are… we are… "They are actually common people like us," it's like that.' (Cadre IDI, District 1)
'The doctor should be the one who keeps visiting them…the doctor should be the one who counsels the family. If a cadre does it, the impression is like the cadre is patronising them.' (Cadre, District 1)

Uneven distribution of training materials diminished opportunities to create broader perceptual change regarding how communities viewed cadres' skills and experience. One cadre per *Posyandu* attended a given training and was expected to share knowledge gained with their peers however, this did not adequately ensure the collective capacity of cadres. This was done in a more incidental rather than systematic way, with a reliance on personal motivation for cadres to share knowledge. Turnover of cadres to other *Posyandu* also meant this knowledge could be lost before being

[1] This refers to a long cloth attached to a weighing device, commonly used to measure the weight of children at the *Posyandu*.

sufficiently imparted to other cadres. These factors diffused the potential effects of the training, with cadres gaining differing quality and quantity of knowledge.

'Yes, she told me about…But when it's just a brief one, we listen and then we forget. What's important was that after the seminar the knowledge was transferred. But yeah, it wasn't much that was transferred…they transferred the knowledge, but they have also left..' (Cadre IDI, District 2)

'So some cadres don't understand…I assert to the cadres "We can't make mistakes in filling out the Growth Chart…" So if possible, please provide training, specifically about filling out the Growth Chart.' (Cadre IDI, District 2)

4 Discussion

This paper sought to understand the context of how communities receive care from cadres and how cadre training interventions interact with this context. While cadres valued trainings, these were yet to make much of a difference to community perceptions of cadres as little else in the context of their healthcare delivery had changed. This paper illuminates how the proximity between cadres and caregivers, as well as where cadres provide care may undermine the construction of the information they provide as knowledge which has value and credibility. The role and position of cadres, that is, their being 'of' the community but 'not of' the health system, undermined their credibility amongst community members to effectively impart knowledge gained. This was further exacerbated by the spaces in which cadres provide care. Many *Posyandu* were not set up in a way that engendered confidence among the community nor did operational structures accommodate opportunities for effective cadre-to-cadre dissemination of trainings.

CHWs, such as cadres, work in settings where diverse contextual factors can impact on their ability to perform effectively in their roles. Cadres' proximity to their community shapes expectations and reception of information, fostering both positive perceptions as well as potential barriers such as a fear of disclosing personal information to a member of their community [4, 31–33]. Factors generally thought to increase acceptance and relatability, such as level of education, have also been found to hinder acceptability of CHWs by community members [4, 33] We did not collect information on cadres' education in interviews so did not gain insights into the possible relationship between level of education and acceptability of CHW in the community in our study. Similarly, a cadre's years of experience in their role can influence community perceptions [1, 11]. This was not evident in our study, suggesting that other contextual factors were more influential. While embeddedness is crucial, it alone is not sufficient to improve community perceptions of CHW legitimacy and credibility [4, 33]. This study underscores the necessity of support to leverage familiarity and proximity as mechanisms which enhance rather than undermine cadres' influence. Although our findings reflect the social and cultural contexts of the two districts in this study, they may well have salience for other districts in Indonesia given the resource constraints that may characterise primary care at the *Posyandu* level.

Linkage to the formal health system can support cadre legitimacy and credibility, but in this study, cadres often felt that other health workers such as midwives were better suited to deliver counselling as they had more 'experience' and knowledge. This may have stemmed from cadres' role in community-level health care, positioned on the threshold of the health system, rather than as representatives of it. CHWs can feel more recognised by their community when they provide curative services and have positive relationships with actors in the health system [1, 5, 15]. This study indicates that adherence to local government regulations, such as those governing *Posyandu* operations, provides an opportunity for cadres to bolster legitimacy. This may relate to 'perception of choice' [34]; a lack of control within program design and limited decision-space can erode CHWs self-worth and esteem. The demonstrable impact of their work (or lack thereof) along with a perceived lack of authority in *Posyandu* operation speaks to how cadres perceive themselves in their local health system; a lowly player or just 'another pair of hands' in the hierarchy [7].

Satisfaction with services has been linked to trust in CHWs [35], but tangible shortcomings of service provision can affect CHW performance. Factors such as medicine stockouts or lack of equipment are common reasons for low satisfaction or attendance rates amongst community members and can negatively affect the performance of CHW and the trust placed in them [4, 5, 36]. This remains a challenge in Indonesia; a study in Aceh found that half of 385 caregivers attended their *Posyandu* less than six times a year [23]. To enhance healthcare environments and community trust, increased investment in *Posyandu* infrastructure, facilitated by the *Dana Desa* (village fund), is crucial.

Cascade-style training as recalled by cadres in this study is a common strategy in workforce training. However, it is not without challenges. Local conditions such as lack of time and resources, inadequate facilities or inadequate institutional support have been noted as potential barriers to the effective dissemination of training [37–39].

Workforce turnover not only results in the loss of technical skills but also erodes tacit understandings of service delivery [40]. Our findings emphasise that an inadequate enabling environment can hinder the effectiveness of training in enhancing CHW credibility and legitimacy. When only one cadre benefits fully from training at a time, it may lead to perceptions of that specific cadre's knowledge as an exception rather than the norm.

Despite the high value cadres placed on training in this study, the potential for it to influence how caregivers perceive cadre value and credibility is constrained by the context of healthcare delivery in their communities [2]. This paper shows that trainings are not discrete interventions. While the content may, to an extent, be fixed, delivery of trainings and translation into positive community outcomes is highly dependent on context. Recognition of how trainings adapt to the implementing context and the necessity for them to evolve to meet contextual needs is essential. In this study, there needed to better support for cadres to enable them to convert knowledge into credible guidance. We present recommendations for how this might be approached in this context.

A clear implementation strategy for cadres to disseminate information from training to their peers may help to shape cadre credibility and legitimacy. Practices which have contributed to positive outcomes in this regard include learning teaching and facilitation techniques, development of training or knowledge dissemination plans to identify opportunities and barriers to passing information onto peers and embedding knowledge transfer into service provision [38]. More opportunities for frequent, high-quality refresher trainings and supportive supervision will be vital to retention of knowledge and breadth of cadres trained. This will allow cadres to demonstrate the value of their training and knowledge and consistently reinforce their credibility in their communities [1, 2, 4]. Co-design of training interventions can ensure that trainings are relevant to CHW practices and experiences and be effectively adapted to their local context [1, 39, 41]. As part of this, attention should be paid in the design phase to the barriers and facilitators faced by CHWs in providing healthcare in their communities and where possible, adapt the intervention to account for these.

Leveraging the position of trust that formal health workers or trusted community actors hold in the community may present opportunities to strengthen community perceptions of cadre credibility and legitimacy [1, 32, 42]. 'Community anchors' such as religious leaders, village doctors, or in this setting, village midwives, have been found to play an important role in raising community recognition and acceptance of CHWs [1].

Efforts should be made to strengthen the 'visual signifiers' of cadre legitimacy and credibility. Identifiers of a CHW's role, such as uniforms or training materials can help to 'prove' their credibility within the community health workforce [43]. Access to training aids, such as the counselling cards in this study, can increase the perceived quality of counselling as well as support recognition and improved status of CHW among caregivers and the community [1, 22, 44, 45]. Similarly, the availability of policies and regulations can also have a positive effect on CHW performance and help infer a greater sense of perceived legitimacy and credibility both amongst cadres themselves and the community [33]. Policies should be responsive to cadres' contextual needs in regard to the delivery of training and support in capacity development and community engagement. Key to facilitating and sustaining these things will encouraging local village governments to prioritise support for and investment in *Posyandu* [4]. In 2023, the Indonesian Ministry of Health launched the 'Transformation of the Health System' initiative [46]. One of the six pillars in this initiative is strengthening primary healthcare services. Under this initiative, CHWs are mandated to possess 25 fundamental competencies, encompassing responsibilities such as health education, community involvement, and advocacy for health behaviours [46]. Efforts to support cadres should engage stakeholders in community-level health systems, including external agencies such as UNICEF to incorporate key learnings as a guide for the development of future CHW training programs, evaluation and formulation of responsive policies in this initiative.

A strength of this analysis is the triangulation of cadre and caregiver perspectives to understand contextual factors which can affect CHW training outcomes. A limitation however, is that IDIs and FGDs were designed as part of a broader evaluation of an intervention. Due to the evaluation research questions and the topic guides developed, training was not the key area of focus. As such, we could not delineate details pertinent to the different types of trainings mentioned. As details of trainings were based on recall, this could have resulted in some bias to their reflections. The use of gatekeepers to recruit participants may have created selection bias which could have influenced our findings. To minimise bias in data collection, we introduced ourselves as an independent entity from UNICEF who implemented the intervention and ensured the confidentiality of the information shared by cadres and caregivers. We believe these findings do, however, warrant closer consideration of the social and system dynamics that can influence the effective training of cadres and provision of high-quality healthcare to caregivers in their community.

5 Conclusion

This study of cadres and caregivers of young children in two districts in Aceh Province, Indonesia highlights the need to expand how we understand the success or failure of discrete interventions such as CHW training. Without adequate recognition of the specific context, the value of investing in enhancing knowledge as a mechanism for behaviour change can be substantially undermined. Specifically, greater focus needs to be given to how CHW trainings interact with the context into which they are being implemented and adapted accordingly, as well to identify how to strengthen the immediate healthcare environment. While action is needed at a district level, attention and support is necessary at both a provincial and national level. This will maximise the potential of CHW to utilise the knowledge gained in these trainings and transform it into advice which is credible and valued by their communities.

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Data availability The data generated and analysed in this paper are not publicly available as individual privacy of participants may be compromised but are available from the corresponding author on reasonable request.

Code availability Not applicable.

Declarations

Ethics approval and consent to participate Ethical approval for this research was granted by the University of Sydney Human Research Ethics Committee (2019/758) and the University of Atmajaya Ethics Committee [No: 0323A/III/LPPM-PM.10.05/04/2021] in accordance with the 1964 Declaration of Helsinki and the National Statement on Ethical Conduct in Human Research 2007.

Competing interests The authors have no competing interests to declare that are relevant to the content of this article. The findings and conclusions expressed herein are those of the authors and do not necessarily reflect the views of UNICEF, the United Nations, or the other institutions with which the authors are affiliated.

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