Using photovoice to inform and support health systems to reach marginalised populations: experiences from six low- and middle-income countries

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Abstract

Photovoice methodology centralizes the voices of marginalised populations within health systems using photography and critical dialogue to record, reflect and communicate community health issues. This paper presents findings from applying photovoice to explore and document the lived experiences of groups of marginalised populations in six low- and middle-income countries: Cambodia, Ghana, Nepal, Sierra Leone, Uganda and Zambia. The strengths of using photovoice included: creating safe spaces for communication; community solidarity and stakeholder engagement; community ownership of actions and advocacy; developing new soft skills and confidence; capturing hidden community challenges; and taking collective action. Suggestions for use in future photovoice studies include: providing space for the exploration of contextual factors before implementation; developing a capacity strengthening plan to ensure participants have the competencies required to effectively take part in research and dissemination; considering the use of non-visual methods alongside photovoice when needed; and having in place partnership structures between researchers and participants that facilitate power sharing, agency, empowerment and joint decision making. Lastly, we present recommendations that have the potential to strengthen the value and use of photovoice as more than a participatory method but also a vehicle for individual, relational and health systems improvements.

Keywords: photovoice, lived experiences, strengths, challenges, low- and middle-income countries, health systems

Introduction

The Alma Ata declaration emphasized the importance of community participation in service delivery (WHO, 1978). Forty years on, community involvement in people-centered health systems remains critical (WHO, 2013) in helping realize Universal Health Coverage and meeting health targets highlighted in the Sustainable Development Goals. Effective community partnerships help in strengthening local resilience (George et al., 2016) in health systems especially among marginalized populations in low- and middle-income countries (LMICs). Despite recognition of the need to actively involve communities in health initiatives, community participation in the research process is still limited (Brear et al., 2018).

Participatory research methods are an effective way to engage and empower communities including disadvantaged and marginalised populations (Bisung et al., 2015). Participatory research methods such as photovoice have been used in development, implementation and dissemination of research for health improvement that prove to be effective in marginalized communities in low resource settings (Wallerstein & Duran, 2010). Additionally, photovoice can promote critical reflection, dialogue and mutual learning, which leads to capacity strengthening, trust and empowerment of underserved populations (Castleden & Garvin, 2008). Photovoice is an increasingly popular approach for health research including for preventing and controlling public health challenges (Nykiforuk et al., 2011). First developed by Wang and Burris (1997), photovoice puts cameras into the hands of participants to assist in documenting, reflecting and communicating issues of concern with a deliberate intention of promoting social change (Budig et al., 2018). It enables participants to use photography, and stories about their photos to identify and represent issues of importance to them, which further enables researchers to have a greater understanding of underlying issues in communities (Nykiforuk et al., 2011). Participants in

photovoice research become equipped with skills of problem identification and analysis through the use of photography (Bisung et al., 2015).

Photovoice enables people to record and reflect on their community, facilitating critical dialogue and knowledge on community concerns, and to reach key stakeholders, often through exhibition of the photos (Wang & Burris, 1997). The methodology is associated with the feminist theory which aims to empower vulnerable groups and recognizes local expertise that cannot be fully realized by outsiders (Budig et al., 2018; Castleden & Garvin, 2008). In photovoice research, an assumption is that participants are experts on issues in their local context, and that they should be actively involved in producing knowledge (Bisung et al., 2015; Dassah et al., 2017). Researchers have found the use of visual images effective in conducting research with teams and communities with varied levels of education and research training (Dassah et al., 2017). Photovoice has been used among a variety of disadvantaged groups in LMICs, including women, people with disabilities, adolescents, students, youth, elderly and children to explore a variety of health-related issues (Catalani & Minkler, 2010; Jurkowski & Paul-Ward, 2007).

There has been an increase in the use of photovoice in health systems research (McCollum et al., 2019; Musoke et al., 2018; Steege et al., 2018) which can be attributed to the many benefits it provides to the stakeholders involved. The past Global Symposia on Health Systems Research have seen an increase in research using the photovoice methodology, with the largest health based photovoice exhibition held at the symposium in Liverpool in 2018. In addition, there is substantial evidence of research using the photovoice methodology including in public health (Catalani & Minkler, 2010; Hergenrather et al., 2009; Suprapto & Sunarti, 2020). However, there is limited literature on the experiences of using photovoice in health systems research from the perspective of both researchers and participants, and from different contexts. Indeed, much of the

literature on photovoice experiences is from single countries, and focuses on specific issues (Capous-Desyllas & Forro, 2014; Labbé et al., 2021; Musoke et al., 2016). By bringing together learning from a range of contexts and participant groups, we provide lessons for enhancing the use of photovoice in health systems research. This paper therefore presents our experiences, including strengths, benefits and challenges, of using photovoice in six LMICs (Cambodia, Ghana, Nepal, Sierra Leone, Uganda and Zambia) to inform future studies using this methodology to instigate change within health systems.

Methodology

Study design and settings

The studies presented in this paper were carried out in six LMICs of Cambodia, Ghana, Nepal, Sierra Leone, Uganda and Zambia (Table 1). All the studies used photovoice as a method to explore and document the lived experiences of groups of Community Health Workers (CHWs), Community Drug Distributors (CDDs), youth and people living with disability (PLWD). These studies were part of projects related to health systems, community health and social programmes in the respective countries. The studies presented in this paper aim to reflect the various applications of using photovoice to influence social change in varying contexts across Africa and Asia, including in fragile and post-conflict settings. The authors came together during a Visual Methods Workshop at the 5th Global Symposium on Health Systems Research (2018) in Liverpool, UK.

[Table 1 here]

Participants

The participants from studies in Cambodia, Zambia and Sierra Leone were CHWs, while in Nepal they were PLWD, and CDDs in Ghana. In Uganda, the first study was among youth while the second involved CHWs. Studies among CHWs and CDDs focussed on experiences and roles in supporting health service delivery, and their capacity to identify health problems and design interventions to address them across a variety of contexts. In Uganda, the first study assessed the contribution of youth in supporting maternal health, while in Nepal, general experiences of PLWD during and after earthquakes were explored. The number of participants that were involved in the studies ranged from five in Ghana to fifteen in Zambia and Sierra Leone. Participants in the various studies were mainly recruited with the help of community leaders and health authorities, except for Nepal where some PLWD were selected from those that had participated in an earlier phase of the study. During selection of participants in the studies, consideration was given to diversity including age, gender, culture, environment, geography and education, such as education (Uganda), gender and nature of the disability (Nepal), and cultural (Muslim and Khmer communities - Cambodia). To ensure that photovoice was inclusive and accessible for participants who were blind or had severe vision impairment in Nepal, they chose to buddy with another participant who did not have the same impairment. Power balance and autonomy about choosing what photograph to take was discussed among the participants during the training.

Participant training and photography

In all studies, participants were trained for one day in the photovoice methodology as well as the study aim, use of cameras, and ethics in photography. In Cambodia, one camera was issued per pair of participants, while in other countries, one camera was used per person. Unlike participants in other countries, smartphones were used in Nepal and Sierra Leone. In Uganda and Ghana, study participants were also given notebooks to record experiences, reflections and situations of interest that were not captured on cameras especially in scenarios where consent to take photos was not granted. Study participants were given time to take photos for a period that varied from one week in Zambia and Ghana, to five months in Uganda (Table 1). Follow-up meetings by the researchers after commencement of photography across all studies were used to clarify issues related to participants' use of cameras, study objectives, and consent process. Participants in all studies sought written or verbal consent from the people whose photographs were taken.

Discussion of photographs and dissemination

Photographs taken by study participants were presented and discussed in meetings or participatory workshops in all settings. In Ghana, Uganda and Sierra Leone, the photos were projected on a screen to facilitate discussions while in Zambia, physical photos were displayed to facilitate story telling. The meetings / workshops lasted on average two to three hours, and discussions of the selected photos were guided by questions in all studies. In Uganda, Zambia, Nepal and Ghana, all photos taken by participants that were related to the study focus were discussed. In Sierra Leone and Cambodia, participants selected the most appropriate photographs to be discussed (10 per participant in Sierra Leone, and 50 across all participants in Cambodia).

The number of meetings / workshops held to discuss photos varied between studies based on the duration of photography (Table 1). Discussions from the meetings / workshops in some studies were audio recorded such as in Sierra Leone, Ghana and Uganda, while in Cambodia and Zambia note taking and flip charts were used by participants. Findings from several studies including in Sierra Leone and Uganda were disseminated to the community where the participants shared and discussed some of their photographs. Further dissemination of findings from the studies was done in various ways including development of booklets in Sierra Leone and Uganda, photo exhibition in Zambia, as well as conference presentations in Nepal, Ghana and Cambodia.

Data synthesis

We reviewed the results of the six country photovoice studies and in particular the experiences and lessons learned in using the photovoice methodology from the perspective of both authors and participants. Participant reflections were captured by the researchers during the country studies which were initially presented at the 5th Global Symposium on Health Systems Research in Liverpool (UK). During the synthesis process, we critically reviewed the results identifying similarities and differences, as well as comparisons in context and approach. In addition to the results, the country authors used personal reflections from their respective country studies to inform the data synthesis process. Studies that had already been published such as in Uganda (Musoke et al., 2016) and in Cambodia (Ozano & Khatri, 2018) were also included. Following the data synthesis, themes emerged inductively from the six country studies regarding the strengths and challenges of using photovoice. These themes were discussed and agreed by the authors and are presented in this paper.

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Ethical considerations

All studies received ethical approval from their respective country and affiliated academic institutional review committees. Participants in all studies received both verbal and written information about the research including potential risks and benefits, and they provided voluntary written informed consent before participating. In all studies, participants were informed during the training that they needed to obtain written or verbal consent from community members before they took their photographs. All research data collected from participants in all studies were handled confidentially. No photographs taken as part of the studies were to be used for any form of dissemination (including this publication) without the consent of both the photographer and any individual(s) appearing in them.

Results

The use of photovoice across all six countries was a learning experience for both the study teams and participants. It created a platform for CHWs, CDDs and youth photographers to learn from each other's lived experiences of their everyday lives in Sierra Leone, Ghana and Uganda. It also allowed CHWs to demonstrate the reality of their lives and efforts in how they interacted with their surroundings and communities in Cambodia and Zambia. In Nepal, it provided PLWD with a new skill for advocacy. The photographs taken served to situate the research into a real-world context, and also facilitated the visual representation of challenges faced across the different communities. Drawing on key reflections across the six country studies, we present the strengths and challenges of using photovoice.

Strengths of using photovoice

Creating safe spaces for communication, community solidarity and stakeholder engagement

Across all six country studies, the photovoice process provided participants who often felt uneasy about speaking out, a safe space for communication in the community. Verbal discussions of the issues raised from the photos enabled participants to clearly communicate what was happening in the community. Photovoice created a group atmosphere where sharing of experiences enabled participants to learn from each other, question and validate existing experiences, and inspired them to be role models for others (Figure 1). In addition, photovoice, guided by the images, enabled the discussions to stay focused and not deviate from the topics being discussed. The discussion process also facilitated a sense of solidarity between the participants in each individual study. Moreover, CHWs in Cambodia reported a sense of ease while voicing challenges posed by a lack of government services within a historical and current political climate of oppression, fear and severe consequences for speaking out.

Participants reported that taking photos, as well as discussing and displaying them in the local setting, gave better community exposure and understanding to their issues. For example, CHWs in Cambodia used photographs as a visual way to prioritise public health issues, speak with local leaders to assist in making changes, and to communicate the changes they had implemented in their villages after issues had been addressed. Many participants in Nepal expressed the photovoice experience as therapy sessions that helped them to process and share built up frustration and emotion in a productive manner. The sessions were not intended to be therapy (despite the participants relating the sessions to therapy from their own experience in relation to the earthquake experiences and being able to share them with others). In Sierra Leone, CHWs

voiced the issues faced by vulnerable abandoned women and pregnant schoolgirls within their community and advocated for positive change by making links with key stakeholders such as chiefs, elders, council officers, religious leaders, government officials, non-governmental organisations (NGOs) and aid agencies. Similarly, in Zambia, CHWs communicated visuals of the challenges faced in their day-to-day voluntary services to relevant stakeholders who had the potential to support them. In Ghana, CDDs not only expressed their challenges as volunteers but also individual initiatives to support implementation of mass drug administration in their communities. Visual evidence from the photovoice studies were reported to be an enabler in stimulating interaction amongst community members and local stakeholders about the issues presented. This finding was reported to lead to clearer understanding of health and wellbeing promotion messages, redirecting funds to address some of the issues shared, making links with different stakeholders in the community, and longer-term changes in attitudes and behaviours.

[Figure 1 here]

Participants co-leading and setting the research agenda

Another strength of using photovoice was that, although the researchers had initiated the photovoice studies, use of this method enabled the participants to co-lead and subsequently play an active role in setting the agenda including dissemination. For example, in one of the Uganda studies, the researchers initially planned to explore the role youth could play in improving access to maternal health services in the community. As the study evolved, participants took photographs focusing on maternal health as a broad theme and not merely on access to maternal

health care services hence broadening the scope of the study. Photographs taken in this study highlighted several social determinants and other multi-sectoral concerns affecting maternal health in their communities which were not initially anticipated by the researchers.

The photovoice process not only led to new findings, but also shifted power to enable more equitable partnerships between researchers and participants. In Zambia, CHWs decided to communicate with the public and the local government about the health and development issues their communities faced. In Sierra Leone and Ghana, participants expressed their role in the study as data collector or co-researcher rather than mere participants, and took responsibility for seeking consent from others before taking photos and collecting evidence to ensure rigor and validity. PLWD in Nepal decided to use the photos and findings as banners and posters during public events to engage local communities and key stakeholders to raise awareness and advocate for change. They expressed feeling included and being heard as equals when their preference to use images and themes from photovoice instead of the original method of case study design as evidence of advocacy was agreed. In addition, participants in Nepal explained that as co-researchers, they raised important issues related to their lived experiences.

Gaining new skills and boosting confidence

Across all studies, participants reflected that while participating in the photovoice research, they gained new skills that boosted their sense of confidence. CHWs in Zambia and CDDs in Ghana were trained and empowered with photography and storytelling skills which they used to share their experiences during the studies. Youth photographers in Uganda innovatively linked the skills learnt through photovoice and the photos they had taken to share health information with community members. CHWs in Sierra Leone reported that skills of understanding what they

observed in their communities through discussion with their peers, learnt through the photovoice study, enabled them to identify and present the issues that reflected local community needs. For example, sharing their images of "*tippy tap*" (a local handwashing facility), "makeshift dish drainers" and "drying lines for clothes" with fellow CHWs and other stakeholders as evidence of how these promoted better hygiene practices in their communities. Being involved in the photovoice study enabled these CHWs to take on leadership responsibilities and become role models which enhanced their engagement with communities. In Nepal, PLWD reported to have developed new skills of advocacy, reflexivity about their experiences, as well as generation and use of evidence for impactful lobbying. In Cambodia, CHWs gained skills in facilitating participatory sessions which they could do even in the absence of the researchers (Figure 2).

Inclusion of their voices and appreciation of the evidence they had collected, enhanced participants' confidence in many of the studies. Researchers' positionality and the ways that they engaged with participants contributed to this increased self-assurance. A more balanced power dynamic was reported between the researchers and participants in all six country photovoice studies which fostered better trust and rapport. For example, in Uganda and Zambia, strengthened relationships was attributed to the process of meeting regularly and discussing the photos participants had taken. This process boosted self-esteem and enabled participants to speak more openly in public including with key stakeholders, and present findings from the research during community dissemination.

[Figure 2 here]

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Capturing hidden community challenges and collective action

Researchers and participants from all six country studies reflected that the use of photovoice helped them to capture hidden experiences that other qualitative methods would perhaps not have been able to reach. Taking photos, discussing them, and critically reflecting on the process drew out some of the hidden experiences as well as challenges in communities. In Sierra Leone, several photos identified challenges in the environment that had not been explored before. For example, motorcycle riders refused to carry pregnant women on poor roads to health facilities, or demanded a large amount of money which women could not afford, which resulted in women either walking long distances to the health facility or not accessing any services. In Nepal, participatory analysis of photos enabled participants with disabilities who beg for a living have their experiences of resilience and feeling less trauma from earthquakes to be documented. In addition, the process of participant selection in Ghana, led to the discovery of some hard to access communities that had been left behind in terms of mass drug administration for more than five years. On the other hand, photovoice helped bring out positive experiences and other community benefits. For instance, in Zambia, a CHW shared their experience where they mobilised community members to work together in improving the road to the health facility which then improved access to health services (Figure 3). Another CHW shared their story of the satisfaction they experienced after following up on a family who had a child with diarrhoea, who had then been treated and was later found well and playing in the field.

When CHWs in Cambodia were presented with the opportunity to capture images of public health issues they faced daily, participants took photos of what mattered to them leading to a different set of priorities from those initially discussed. They identified health issues faced by rural communities, most of them being structural, environmental and related to the wider social

determinants of health instead of those targeted by vertical health programmes being implemented in the area. Similarly, when CDDs in Ghana were tasked to take pictures related to their challenges during mass drug administration for neglected tropical diseases, they displayed pictures highlighting integration with other initiatives. For example, they took pictures of items that enhance their work such as spoons, bags, towels, soaps and pens which they had received from other programmes.

[Figure 3 here]

Challenges of using photovoice

Eliciting trust from participants and community members

Despite its benefits, all six country studies reported that using photovoice had its challenges. One of the challenges was eliciting trust from the community because of taking and using visual images. In Uganda, youth who participated in the study revealed that community members at the beginning did not trust their motives of taking photos, and at times expected direct returns including financial in exchange for the photographs. Similarly, in Sierra Leone, CHWs were seen as spies within their communities when they initially started taking photos. This suspicion was reportedly aggravated by the influx of donor aid following an earlier mudslide in Freetown. Nonetheless, through continued discussions with the communities and further dialogue on the aim of the study, participants overcame this challenge and gained trust of the community members.

In Nepal, participants were concerned about where and how their images would be utilised and gave examples of how images and stories had previously been used falsely in social media. Participants developed trust only after two photovoice workshops that discussed research aims and ethics, providing several opportunities to practice taking photos, and reflecting on the process (Figure 4). In addition to gaining trust from community members across all studies, participants reported learning how to seek consent from those they wanted to photograph, and how to judge what should be photographed. In some instances where photos were challenging to take, youth photographers in Uganda noted down the scenarios that could not be captured on camera, or took photos that would not identify faces of community members for example by taking them from a distance.

[Figure 4 here]

Ethical concerns

Across all countries, researchers faced ethical challenges during the planning or implementation of the photovoice studies. In Uganda for example, ethical approval of one of the studies was delayed as photovoice was a relatively new methodology for the ethics review committee. This led to many questions being asked mainly regarding use of photography in research including how consent to take photos would be obtained. As a participatory method, photovoice researchers are meant to involve participants from the research design stage. However, ethics review committees may not allow researchers to approach participants before getting ethical approval. This was found to restrict utilisation of photovoice as a participatory method especially

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for cross-cultural settings. For example, during the discussion about ethics in initial workshops, and final sessions in Nepal, participants asked questions such as: who decides what represents participants' voices? how can researchers claim to empower participants but at the same time tell them what they can and cannot include? and how do researchers know what is meaningful to the participants?

Other ethical challenges reported by participants were family interference in the photo taking process including wanting to see what photos had been taken. In Sierra Leone, some family members would sometimes take the participants' phones, invading their privacy and taking random photos (Figure 5). Researchers also reported the challenge of managing participants' expectations especially while collecting photos. Although the participants in Cambodia were informed of no incentive for participating in the study, it was evident during the photo collection process that some CHWs viewed external researchers as a group that brought funds to improve health. This is linked to the history of aid dependency and community perceptions of researchers from high-income countries having access to a lot of funds.

[Figure 5 here]

Technological challenges

A unique challenge of using photovoice in low-income settings was related to technology. For example, participants in Uganda and Ghana were not able to charge the digital cameras or smart phones due to power cuts. In addition, researchers often had to resort to using laptops for the

discussion of photos instead of projected photos due to lack of electricity for the projector. Some participants in Sierra Leone and Ghana were unfamiliar with or unable to learn how to use smart phones or digital cameras. Generally, younger participants picked up the skills more quickly, while older participants who were less accustomed to using phones and cameras required more support and training. To avoid this technological challenge, half of the participants in Nepal preferred to use their own camera phones instead of learning to use the digital camera provided. However, other participants preferred using digital cameras because the photo transferring process did not require internet connection on their phone. In Zambia, simple disposable cameras were used instead of digital cameras or smartphones.

Discussion

This paper presents a multi-country reflection of applying photovoice in six countries across a variety of contexts, health issues and with different community population groups. The findings from the studies highlight the value of photovoice as more than just a methodology. Rather the photovoice methodology as a process embedded within wider research programmes is aligned with community based participatory research (CBPR) cycles of explore, plan, act, observe and reflect. Photovoice also acted as an instrument for identifying and addressing health systems challenges related to service design and implementation. These challenges ranged from neglected tropical diseases in Ghana, maternal health in Uganda, and fragility in Sierra Leone. We examine our reflections from the photovoice studies using a CBPR lens as a paradigm for people centered research that aims to bring marginalised populations closer to health systems (Belone et al., 2016; Wallerstein et al., 2019). Although several publications focus on the strengths and

challenges of using photovoice as a method, few discuss its use regarding health systems strengthening and promoting learning across different contexts. In our paper, we discuss how photovoice can stimulate context specific partnerships through systematically generating structural, individual and relational group dynamics leading to the development of people centered solutions that inform and drive improvements in health systems.

This discussion applies an adaptation of the conceptual model for CBPR evaluation by Wallerstein et al. (2008) which offers a systematic framework for assessing partnerships, processes and outcomes in community engaged research (Ortiz et al., 2020). This model provides a more rigorous structure to identify the core processes and pathways to systems and capacity changes using participatory research. We found this model to be a useful tool to examine the findings from our collective reflections from the photovoice studies across the six countries as others have (Nykiforuk et al., 2011). However, we have introduced some adaptations that allow for a greater focus on health systems and people centered research. In this paper, we focus on four adapted dimensions: 1) Context; 2) Group dynamics; 3) People centered solutions; and 4) Intervention and policy changes (Figure 6) in relation to photovoice research. Within each of these domains we make recommendations that build on our own reflections and literature which have the potential to strengthen the value and use of photovoice as more than a participatory method but as a vehicle for individual, relational and health systems change.

[Figure 6 here]

Context

Within the Wallerstein et al. (2008) model, context refers to the social, historical and structural factors that influence community engaged research. For example, the variety of contexts across each study in our article determined how photovoice was interpreted, implemented, managed and utilised by participants and researchers. Although all studies took place in low resources settings, the variety of participants engaged in the research reflected local culture, health systems and community structures including geography, age, gender, religion and education. Photography followed by dialogue as carried out as part of the photovoice process enabled community partners to capture their everyday lived realities and the environmental, political and historical contexts in which health problems and potential solutions were embedded. In Uganda, photographs highlighted social determinants and other multi-sectoral concerns which impacted on maternal health (Musoke et al., 2016). In Cambodia, historical and ongoing political oppression had implications for CHWs who were hesitant to speak openly about government services that were absent or not functioning (Ozano & Khatri, 2018). Through photographs and descriptions of what was captured, participants revealed these contextual considerations with minimal risk of negative consequences. The contextual challenges that emerged through dialogic processes and trusting partnerships created by undertaking the photovoice methodology provided the space to understand and explore the impact of context on health issues which may not have been visible through dialogue alone.

Researchers and photovoice participants, as co-researchers in our studies took time to address these contextual concerns through listening, answering questions, generating discussion, and engaging in critical reflexivity, a key requirement of participatory research. Historical and current contexts of international collaboration, colonisation and research partnerships between

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researchers and participants was evident from our reflections using photovoice. Addressing these was dependent on funding conditions, researcher positionality, and processes for establishing trust. For example, a culture of aid dependency led to CHWs in Cambodia reflecting international aid priorities rather than their own perceptions. However, when provided with the mechanism of photography, they communicated wider health issues that were relevant to their local context (Ozano & Khatri, 2018; Ozano et al., 2018). Similarly, in Sierra Leone an influx of donor aid following a mudslide led to suspicion of outsiders' values, and in Nepal the presence of social media and misuse of images had created mistrust of photography.

Photovoice literature often lacks descriptions of how context was discussed at the beginning of studies when taking, analysing and situating dialogue related to photographs and health systems functions. Reports tend to start with selection or training of participants on photovoice or with discussions about the health issue being explored (Wang, 2006). However, understanding and critically examining context early in the photovoice process emerged as a key feature in our reflections. This feature helped to inform the studies in terms of limitations, opportunities, dialogic processes, technical decisions, health systems/services strengths and challenges and ethical considerations. Likewise, our discussions highlighted the importance of facilitating critical reflection on the positioning of lived experiences within larger social, political, and historical structures in order to establish an understanding of why certain social phenomena within specific communities exist (Liebenberg, 2018). In addition, some photovoice studies have found that undertaking interviews or having focus groups discussions prior to engaging in photovoice helps to understand context and adds valuable information about the participants perspectives on their community (Nykiforuk et al., 2011). Barlow and Hurlock (2013) added that safe spaces where photographs and stories are told must be collaboratively created in order to

promote meaningful contextualisation. We therefore argue that understanding and exploring context should be an embedded step of photovoice studies from the beginning and throughout, as this will add value to the longer-term research aspirations. To facilitate this process, photovoice studies would benefit by becoming familiar with and applying the CBPR principles outlined by Israel et al. (2017). Two of these principles would require an understanding of context that: emphasizes public health problems of local relevance and ecological perspectives that attend to the multiple determinants of health and disease; and addresses issues of race, ethnicity, gender and social class and embraces cultural humility (Nykiforuk et al., 2011).

Group dynamics: individual factors, relational factors and partnership structures

A key consideration of generating safe communicative spaces is to understand group dynamics. Within the CBPR model, group dynamics relate to individual factors, relational factors, and partnership structures.

Individual factors relate to the motivation(s) to participate, cultural identities and humility, and capacity strengthening. In community based research, the individual learning journey and changes in values, motivation and practice of individuals are not always captured, but hold important information about process outcomes and sustained social changes (Guldberg et al., 2019). For example, in our reflection from the photovoice studies, individual factors included: positive emotional impacts that came from sharing and processing experiences such as releasing built up frustrations and negative emotions; having an opportunity to amplify voices and community issues; being part of a change process; and learning new skills. New capacities included storytelling, photography, advocacy, reflexivity and critically evaluating issues that

impact on health and wellbeing. Once these skills had been acquired, photovoice participants expressed a sense of 'joy and pride' from being able to directly impact on the health of community members and the popularity that came from having more knowledge. These individual factors were also reported to influence relational factors and to contribute towards constructing a shared identity. Such factors from photovoice research are crucial in CBPR to achieve the desired health outcomes particularly among marginalised communities such as those involved in our country studies.

However, there are challenges of developing suitable methods for evaluating the wider social learning in photovoice research that might arise from combining academic with community knowledge and understanding (Roux et al., 2006). Applying knowledge transfer frameworks such as the 'Value Creation Framework' proposed by Wenger-Trayner and Wenger-Trayner (2020) is one method. The framework has both a theory of change regarding how social learning can make a difference in the world and a rigorous method for assessing learning in a community (Guldberg et al., 2019). The model emphasises the experience and identity of learners, on relationships and interactions, rather than just knowledge, skills or curriculum, and applies value creation stories as a way to collect data about outcomes from planning and action (Guldberg et al., 2019; Wenger-Trayner & Wenger-Trayner, 2020). Although none of the six country studies employed any theoretical frameworks, we recommend the use of such frameworks in future photovoice research to capture the learning journey.

Relational factors refer to the group dynamics among and between photovoice participants and broader community members, such as trust, mutual learning and dialogue. As all community researchers resided or worked in the places where they undertook the research in the various countries, there were relational issues of trust which had to be navigated by both researchers and

participants (Musoke et al., 2016; Ozano & Khatri, 2018). Overall, there was evidence that photovoice enhanced relations between participants and community members by stimulating interactions and discussion of images presented at community level. For example, in the case of Sierra Leone, CHWs felt that the process helped them gain leadership and role model status which enhanced community relations. However, trust issues emerged as communities wondered why photos were being taken and what they would be used for which had to be navigated by participants. Flexibility in methodology helped this process, as found by participants in Uganda who noted down scenarios which could not be captured more ethically through images (Musoke et al., 2016). Ensuring flexibility within photovoice has the potential to support participants to make ethical decisions when capturing sensitive or personal issues, and is likely to widen the scope of data collection. We therefore recommend using non-visual methods such as note-taking, audio notes or storytelling which could supplement photovoice images when ethical issues arise.

Evolution of power, decision making and leadership

Partnerships structures consider the complexity and diversity of relationships and levels of shared power, agency, decision making and empowerment that can be evidenced through formal agreements, resource sharing, and shared values and principles (Ortiz et al., 2020). The photovoice studies in our article were initiated by researchers who held more power at the beginning of the studies. However, the partnership structures allowed for evolution of that relationship as seen in many of the countries. There was also evidence that capacity strengthening, together with a collective deeper critical consciousness of the circumstances which generated local health inequities increased agency, confidence and ability to take

leadership in decisions. For example, over time there was a shift in power and leadership evidenced through: participants' decision making about research design, funds allocation, communication techniques, and dissemination of findings. Participants also demonstrated leadership within discussion workshops by having an active role in setting the research agenda and by bridging social capital with public, government and social groups which all indicate power sharing values and structures. However, our studies did not explicitly capture the partnership structures that facilitated these changes such as formal agreements, sharing of resources or coalition characteristics that led to these outcomes, a gap found in other community engaged studies (Ortiz et al., 2020) and one which would have enhanced the learning process. We recognise this as a limitation to the studies in our article and recommend future photovoice research to clearly capture partnership structures that facilitate power sharing.

People centered solutions developed from applying photovoice

People centered health systems is an approach that consciously adopts the perspectives of individuals, families and communities, situating them as partners in health systems functioning as well as beneficiaries (WHO, 2016). In order to develop people centered solutions that address health systems gaps or implementation challenges, the views of communities must be represented. However, health systems methods for engaging marginalised groups often do not respect cultural, traditional, indigenous mechanisms of communication that are valued within communities. In the photovoice studies in our article, participants chose what images they captured, what was important to share, and more importantly the solutions that would be appropriate for them and their communities. Whilst the technology aspects of photography may have been new in some contexts for example in Nepal and Uganda (Musoke et al., 2016), the

images easily represented belief cultures and values. Participants expressed how the display of images allowed for better community exposure and understanding of the health issues being explored, supporting the idea that the mechanism for communication translated across contexts. Such understanding also led to community owned interventions targeting the identified problems as seen in Zambia while improving a bad road. A key strength of photovoice is the opportunity it provides to participants to use the findings to facilitate social change in the community (Baquero et al., 2014) as demonstrated in our findings.

Photovoice was reported to facilitate a focus on a particular health issue and minimise deviation into other topics. This could be positive in that health issues within communities can be so wide and varied that communities are overwhelmed by the challenges and struggle to identify priorities. When supporting participants to generate people centered solutions, managing expectations is a crucial step and a challenge within action research approaches (Lehmann & Gilson, 2014). Initial statements or terms of reference can help to manage expectations whilst still supporting partners to develop attainable context-specific person centered solutions (Ozano et al., 2020). In addition, working with partners to develop a 'shopping list' of solutions which can be used in different ways to make change, is useful. Assessing feasibility of implementing each item on the 'list' can support managing expectations in photovoice studies.

Intervention and policy change stimulated through the photovoice process

Through the process of taking photographs and discussing them as a group, photovoice participants critically evaluated their own context, identifying what contributed to health inequities, and deciding actions to stimulate change. They demonstrated capacity to generate people centered solutions which could be easily communicated to stakeholders who had the

power to make change. In most contexts, this included communication of service gaps, priority areas and actions for improved health, and personal challenges to delivering the services. As part of the photovoice process, participants took a leadership role in selecting stakeholders to influence including chiefs, elders, council officers, religious leaders, government officials, NGOs and aid agencies. The ability of photovoice participants to address community inequities and health systems challenges was attributed to the capacity strengthening and development of critical consciousness that occurred as part of the process. Rather than external researchers collecting and presenting data, participants were embedded in data collection, analysis and dissemination and so were ideally placed to have meaningful discussions with stakeholders which is a key strength of photovoice (Liebenberg, 2018). Other studies using participatory action research approaches in Liberia and Nigeria have recommended that participants are supported to present findings to health systems actors and to share learning in different forums (Ozano et al., 2020). This dissemination process embeds relational practices that lead to new political forms of participation and inquiry within health systems. This process developed organically in our studies as participants gained agency and displayed empowerment through direct communication with key stakeholders.

Photovoice studies do not always capture capacity strengthening or consider what competencies are required to support participants to take on leadership for change (Andrews et al., 2012). For example, many of the actions taken by community actors in our reflections were related to policy advocacy at multiple levels of the health system. However, existing models of policy advocacy that emphasize the active engagement of community members, lack a focus on capacity strengthening. Skills for policy advocacy include the ability to identify and mobilise individuals and organisations, frame a message to engage different constituencies, and organise activities to

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gain media coverage (Israel et al., 2010). Our reflections from using photovoice show that there was an organic nature to capacity strengthening, as researchers and participants exchanged skills and knowledge. However, this capacity strengthening could be enhanced by a more systematic planning and evaluation approach. Studies using photovoice to instigate social change would benefit from initial capacity mapping with the aim of embedding capacity strengthening activities throughout the process to increase 'partnership readiness' for CBPR type projects, as indicated by Andrews et al. (2012). We have summarised our recommendations that other researchers could adopt while using photovoice for strengthening health systems (Table 2).

[Table 2 here]

Conclusion

Our experiences of using photovoice in the six country studies demonstrate key benefits of the methodology in health systems research particularly in LMICs. Developing new skills and capabilities by participants, identifying unexplored community challenges and addressing them, reaching various stakeholders to influence change, and participants taking an active role in the research emerged from using the photovoice methodology. From our multi-country paper, suggestions for use in future photovoice studies include: exploring contextual factors before implementation; developing a capacity strengthening plan for participants; considering using non-visual methods alongside photovoice; and having in place partnership structures between researchers and participants that facilitate power sharing, empowerment and joint decision making. Finally, this paper provides a robust critical reflection of applying photovoice across diverse countries and studies, drawing together significant learning that contributes to literature

on the use of photovoice for social change in communities and health systems. By applying the CBPR evaluation framework as a tool to evaluate collective experiences, we were able to draw out key knowledge for others using this method to improve health conditions and services within different health systems.

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Table 1. Overview of study objectives, participants and duration of the various studies

Objective	*Location / country*	*Participants*	*Duration of photography*	*Number of meetings / workshops held to discuss photos*
To identify and prioritise key public health issues faced by rural CHWs and their communities.	Kratie province, Cambodia	Study 1: 10 CHWs (5 male, 5 female) Study 2: 8 CHWs (6 female, 2 male)	Study 1: 1 – 2 weeks Study 2: 3 days	2
To explore lived realities of CDDs in implementing control programmes for neglected tropical diseases.	Ellembele district, Ghana	5 CDDs (2 male, 3 female)	1 week	3
To explore experiences of PLWD during and post-earthquakes.	Kathmandu valley and surrounding municipalities, Nepal	21 people with different disabilities (11 female, 10 male)	1 month	1
To identify how CHWs can be better supported to play an effective and long-term role as part of the broader health system in fragile contexts.	Kenema and Bonthe districts, Sierra Leone	15 CHWs (9 female, 6 male)	2 months	1
Study 1: To explore the potential of youth to improve access to maternal health services. Study 2: To explore issues of gender and ethics among CHWs	Wakiso district, Uganda	Study 1: 10 youths (5 male, 5 female) Study 2: 10 CHWs (5 male, 5 female)	5 months	5

so as to understand how they impact health systems in rural communities.				
To showcase the work being done by CHWs in health care delivery by highlighting the realities of their work through photos and stories.	Chongwe district, Zambia	15 CHWs (8 male, 7 female)	1 week	1

Table 2. Recommendations for photovoice studies aiming at strengthening health systems

Recommendation	Approach
Embed CBPR principles in the photovoice process as a quality measure.	Share CBPR principles with community partners and discuss what they mean and how they can be immersed in the project. Use reflexivity sessions at key points in the project to monitor alignment to principles.
Add a clear step within the photovoice process for the exploration of contextual factors at the local, regional and national level before focusing on the project area.	Employ other exploratory methods (formal/informal) such as interviews or focus groups with community members before photovoice begins that explore social, historical and structural factors that influence community engaged research and health systems.
Develop a capacity strengthening plan with community partners to ensure they have the competencies required to effectively communicate findings with policy makers or to make changes more directly to services or health.	Undertake a capacity assessment and co-develop a list of competencies and training needs that could be supported through training, mentorship or through harnessing local assets.
Consider and capture the partnership structures that facilitate power sharing, agency, empowerment and joint decision making such as formal agreements, sharing of resources and coalition characteristics.	Co-develop and formalise partnership structures that promote shared decision making and support the transfer of power to community partners over the timeframe of the project. Co-develop qualitative and qualitative indicators/measures that can track these values.
Apply knowledge transfer frameworks to capture the learning journey such as the value creation framework.	Value creation storytelling.
Add in a mechanism to manage expectations of community partners, openly acknowledging potential restraints to people centered solutions within health systems.	Co-analyse potential constraints to solutions at various time points and create a 'shopping list' of solutions that can be assessed in terms of feasibility within the health system.
Consider the use of non-visual methods alongside photovoice which can be applied by community members when needed for example when an image may be unethical or sensitive in nature.	Discuss and decide what methods can be used alongside photovoice and how these should be applied for data collection that is still trustworthy.
Embed in-depth discussions about the research aims and objectives, why the	Within initiation workshops add in communicative spaces to explore what the

images are being collected and how they could potentially be used.	research involves.

Figure 1. Youth participants taking part in a discussion together with the research team in Uganda.

Figure 2. CHWs in Cambodia gained confidence and facilitation skills thorough their involvement in photovoice workshops.

Figure 3. CHWs mobilized the community to improve the road for better access to the health facility in Zambia.

Figure 4. **A photovoice workshop in Nepal where the participants reflected on the photovoice process including ethical concerns.**

Figure 5. **A personal photo taken by a family member of a study participant in Sierra Leone having gained access to the phone without permission.**
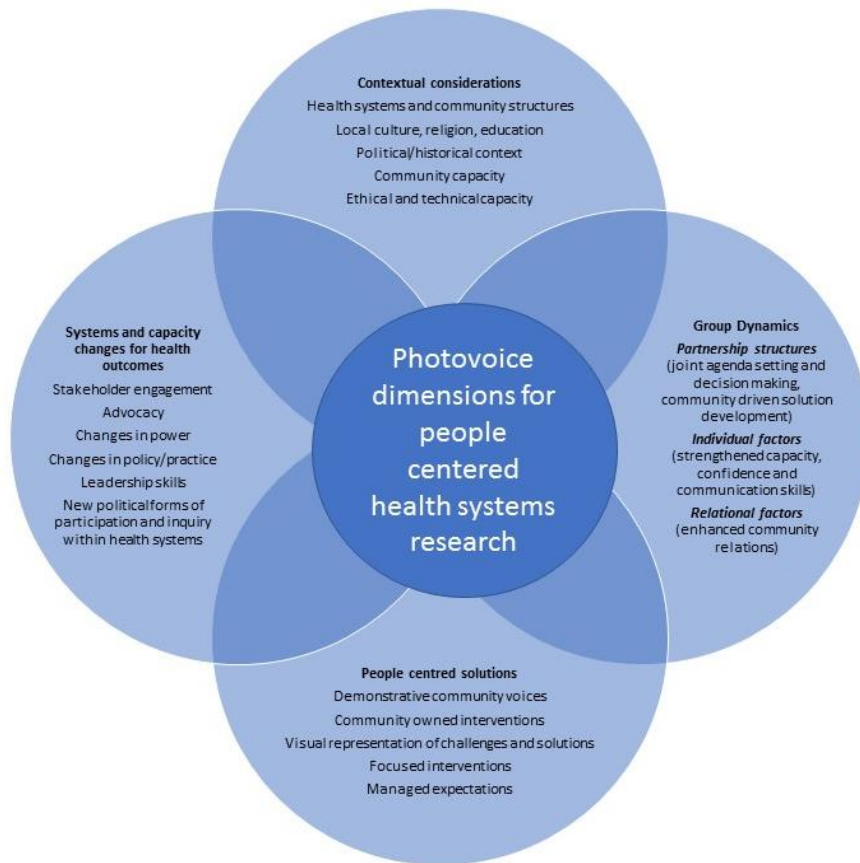
Figure 6. Photovoice dimensions for people centered health systems research