



The use of participatory visual methods with community health workers: A systematic scoping review of the literature

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ABSTRACT

With the need to design and evaluate Community Health Worker (CHW) programmes from a more human-centred perspective, researchers and programme managers are exploring the role of participatory visual methodologies (PVMs). This review identifies, maps, and assesses the quality of current literature that describes the use of PVMs with CHWs. It includes material from the grey literature and 10 major databases between 1978-2018. A Critical Appraisal Skills Programme (CASP) Qualitative checklist was used to assess the overall quality of the included studies. 12 original studies met the inclusion criteria. The studies were located in North America ($n=9$) or sub-Saharan Africa ($n=3$), with photovoice ($n=6$) and digital storytelling ($n=5$) being the most commonly used forms of PVMs. The overall quality of the evidence described in these articles was high, but it was notable that seven studies did not fully report the ethical considerations of their work. The studies revealed that PVMs can help assist CHWs' reflective practice and understanding of complex health issues, as well as identifying key issues in the community to potentially leverage social action.

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Introduction

By 2030, it is estimated that there will be a shortage of 15 million health workers worldwide (Liu, Goryakin, Maeda, Bruckner, & Scheffler, 2017). Community Health Workers (CHWs) represent one potential solution to address this gap in human resources for health (Alamo et al., 2012). Although their roles are highly dependent on context, CHWs are broadly defined as lay people, working within their own community in a health promotion, prevention, and delivery capacity (Olaniran, Smith, Unkels, Bar-Zeev, & van den Broek, 2017). Given their local knowledge, CHWs are uniquely placed to help bridge the gap between the formal health sector and the communities in which they work and live (Theobald et al., 2016).

Over the past several years, many attempts have been made to evaluate the effectiveness of CHW programmes (Ballard & Montgomery, 2017), with a strong focus on clinical and financial outcomes (Braithwaite et al., 2013; Seidman & Atun, 2017; Vaughan, Kok, Witter, & Dieleman, 2015). Although these measures are important, there is also the need to evaluate the roles and experiences of CHWs from a human-centred perspective (Bazzano, Martin, Hicks, Faughnan, & Murphy, 2017). Over-reliance on the more positivist, technical approaches to evaluation

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risks neglecting the views of those at the community level, while simultaneously creating a narrow knowledge base from which decisions are made. **As such, there is a danger that researchers might** fail to acknowledge the contextual complexity in which many CHW programmes take place (Lewis, 2018). **This has led to calls to advance the evidence base for CHW programmes with context-specific methods** (Scott et al., 2018).

Historically, many CHW programmes have been designed, implemented, and evaluated through a top-down approach, resulting in the omission of feedback from the end-users (Thondoo et al., 2015). When community engagement has taken place, it has traditionally been in the form of focus groups or surveys, which only provide a partial insight into the views and concerns of CHWs (Smith & Blumenthal, 2012). As a result, the introduction of new programmes or interventions for CHWs may reflect the structure of the organisation that designed them, rather than the experiences of the individuals involved (R. Braun, Catalani, Wimbush, & Israelski, 2013). This model could pose a challenge to a programme's longevity and acceptance by CHWs, especially if there is a misalignment between the views and values of different stakeholders (Kangovi et al., 2014).

An approach that has been suggested to involve CHWs more deeply in the design, implementation, and evaluation of healthcare programmes is the use of participatory research methods (Lantz, Viruell-Fuentes, Israel, Softley, & Guzman, 2001; Peacock, Issel, Townsell, Chapple-McGruder, & Handler, 2011). Broadly, these approaches can be defined as methods that are 'geared towards planning and conducting the research process with those people whose life-world and meaningful actions are under study' (Bergold & Thomas, 2012). Central to participatory methods is that of a relativist approach, focusing on health equity (Loewenson et al., 2011; Sitter, 2017). This approach involves the inclusion of persons who have often been marginalised within the decision-making process of implementing health programmes. Participatory research can also help promote a trusting environment between the end-user and research partners (Israel, Schulz, Parker, & Becker, 1998) and its use in healthcare has consequently increased over the past decade (Ingram et al., 2015; Knettel, Slifko, Inman, & Silova, 2017; Peacock et al., 2011; Steyn et al., 2016).

One noteworthy group of such methods are participatory visual methods (PVMs), which include, but are not restricted to, participatory photography, film, digital storytelling, mapping, and drawing (Richards, 2011). In general, these methods encourage participants to document and reflect on their personal experiences using visual methods (C. Wang & Burris, 1997). The purpose of using these methods is to help bring the ideas, images, and voices of marginalised groups into the wider public forum and to try to re-centre the priorities of the research, so that it aligns more closely to the needs of those that it is intended to benefit (Hergenrather, Rhodes, Cowan, Bardhoshi, & Pula, 2009; C. C. Wang & Redwood-Jones, 2001). Certain PVMs, such as photovoice, also aim to encourage dialogue between those undertaking research and policy makers.

The use of PVMs in global health (C. M. Mitchell & Sommer, 2016) and with various marginalised groups, such as refugee women (McMorrow & Saksena, 2017) and homeless individuals (Ritterbusch, 2016; Walsh, Rutherford, & Kuzmak, 2010), has been published, but there has been no systematic review to date that assesses their use with CHWs. The gap in the academic literature persists despite the growing interest in the role of CHWs and the use of participatory methodologies for use in programme design and evaluation (Schneider, Okello, & Lehmann, 2016).

The specific aims of this review are:

- (1) To identify the current literature regarding the use of PVMs with CHWs;
- (2) To determine how PVMs have been used with CHWs;
- (3) To determine the quality of evidence regarding the use of PVMs with CHWs.

Methods

Review approach

We conducted a systematic scoping review on the role of PVMs with CHWs. A scoping review addresses an exploratory research question through mapping key concepts, types of evidence, and gaps in research by systematically searching, selecting, and synthesising existing knowledge (Colquhoun et al., 2014). Scoping reviews typically address broad research questions, providing an overview and organisation of existing knowledge, rather than a narrow synthesis of a predefined research question (Arksey & O'Malley, 2005; Miake-Lye, Hempel, Shanman, & Shekelle, 2016).

A scoping literature review was chosen for this study, as it enabled us to review a broad body of literature and map the current ways that PVMs are used with CHWs across a variety of different geographic and culturally heterogenic contexts. A review protocol was not published, and the study was not registered with PROSPERO, as these mechanisms are not applied to scoping reviews (Arksey & O'Malley, 2005; Colquhoun et al., 2014). Nonetheless, our scoping review followed explicit and transparent research steps to explore the research evidence for the use of PVMs with CHWs, as shown below.

Search strategy and selection criteria

To establish the need for this review, The Cochrane Library, The Campbell Collaboration, The International Prospective Register of Systematic Reviews (PROSPERO), and grey literature were searched to identify available or on-going systematic reviews pertaining to the role of PVMs with CHWs. No previous or on-going relevant reviews were identified.

A sensitive search strategy was designed to identify relevant studies for inclusion in the analysis and synthesis process. The search was developed with and reviewed by a university librarian to ensure completeness. Relevant search terms for 'Community Health Workers' and 'participatory visual methodologies' were developed. These terms were combined using the AND boolean operator to develop a master search string. Where appropriate, each index-linked MeSH term was exploded to contain all relevant subheadings. In addition, synonyms were searched for each key term, along with wildcards and truncation for free text words. A full record of the search strategy, including a full list of search terms for each database, is provided in the Supplemental Online Material (see Online Supplement, Table 1).

The following databases were searched to identify primary, peer-reviewed studies published from 12th September 1978, up to and including April 1st 2018: Global Health, Allied and Complementary Medicine Database (AMED) via Ovid, Excerpta Medica database (EMBASE) 1974 to April 2018, Ovid Medline 1946 to April Week 1 2018, Cumulative Index of Nursing and Allied Health Literature (CINAHL) via Ebsco, Scopus, Anthropology Plus, British Education Index, Education Resources Information Center (ERIC), Applied Social Sciences Index and Abstracts (ASSIA) via Proquest.

We searched Global Health, AMED, EMBASE, Ovid Medline and CINAHL in order to capture the relevant literature from the field of medical sciences and global health. We wanted to ensure coverage of the social sciences as well as medical sciences, hence including ASSIA, Scopus and Anthropology Plus. Finally, we used BEI and ERIC in order to capture literature relevant to the field of education.

The 12th of September 1978 was chosen as a cut-off date because it marks the publication of the Alma Ata Declaration, which identified CHWs as 'one of the cornerstones of comprehensive primary health care' (The World Health Organization, 2007).

Despite issues relating to data quality, we included non-peer reviewed additional literature, which was identified through the e-theses online service (ETHoS) and Google Scholar. This decision was made to encapsulate a broad overview of the literature pertaining to the role of PVMs with CHWs. We also conducted a hand search of grey literature databases (e.g. OpenGrey), in addition to a review of websites of research institutions, charities, government departments, and international

agencies (see Online Supplement, Table 2). Finally, we searched the reference lists of all relevant papers identified, using snowball sampling.

Inclusion and exclusion criteria

Studies were included if the primary participants were CHWs and if they discussed the role of PVMs with CHWs. Studies were excluded if the primary focus was health care professionals other than CHWs – for example, doctors, medical students, nurses, or allied healthcare professionals, such as midwives. They were also excluded if there was a lack of sufficient information contained within the full text of the study regarding PVMs or if the study was not an original, full text, or research study. For example, commentaries, letters, opinion pieces, study protocols, training needs assessments, and conference proceedings with only an abstract available, were all excluded. We also only included full-text studies, so that we would have sufficient information from which to base the quality analysis using the CASP tool (Critical Appraisal Skills Programme, 2018). Studies did not require a comparison group for inclusion, nor were they restricted based on geographic location or language.

Outcomes: No studies were excluded based on the measured outcomes.

Population: Although the nomenclature given to CHWs varies across the literature, for the purpose of this study, we referred to the commonly accepted 1987 WHO definition (Lewin et al., 2010), which states:

- They should live in the area they serve
- Are based primarily in the community (as opposed to a health facility)
- Belong to the formal health system (i.e. are managed by a government or an implementing NGO)
- Perform tasks related to healthcare delivery
- Have received some organised training, but may not necessarily have a formal certification or tertiary education degree

For the purpose of this review, we included both salaried and volunteer CHWs. Given the wide ranging nomenclature that is used to identify and describe individuals that work as CHWs, we adapted search terms from a recent 2018 case study that listed 69 different terms used to describe the role of a CHW within different geographical contexts (Ballard et al., 2018).

Intervention: Studies had to focus on the role of PVMs with CHWs. For this review, 'Participatory Visual Methods' is used as an umbrella term, which could include, but is not limited to, the use of photographic methods (such as Photovoice), participatory video, digital storytelling, and participatory mapping or drawing (Richards, 2011). We purposely aimed to encapsulate a broad range of visual methods, to better understand the current state of this relatively under-researched field.

For the purpose of this review, we have broadly defined the participatory methods as follows:

Participatory photography

Broadly, participatory photography (which includes techniques such as Photovoice) involves placing cameras into the hands of participants to encourage the capture of photographic images on issues that are important to them. This method can be partnered with a subsequent discussion that is centred around their experiences (C. Wang & Burris, 1997). In addition, this method is grounded in the Freirian concept of 'education for critical consciousness' (Freire, 1973). The results of this process are then shared with key stakeholders to formulate a plan for locally relevant social action (Baquero et al., 2014).

Digital storytelling

Digital storytelling is an artistic process that includes visual, oral, and written communication. In the creation of three to five minute videos, the author uses a range of multimedia (i.e. personal

photographs, drawings, audio recordings) to communicate personal or community stories in a visual narrative (Gubrium, 2009; Lal, Donnelly, & Shin, 2015).

Participatory video-making

Participatory video-making involves the participant carrying out all the production, videoing, and editing (Sudbury, 2016). Kindon suggests that this method has the potential to address imbalances in power relationships and carry out work *with* participants, rather than *on* them (Kindon, 2003).

Participatory mapping

Participatory mapping involves participants mapping out a location, concept, or issue as they see it. Central to participatory mapping is the act of drawing, which encourages the participant to focus attention on a particular feature of the map they create (Emmel, 2008; Sletto, 2009).

Participatory drawing

Participatory drawing involves participants drawing images to reflect their views and experiences. This activity is often followed by an analysis and discussion around the drawn images, which has the 'potential of revealing a more nuanced depiction of concepts, emotions, and information in an expressive, empowering, and personally relevant manner' (Ioana, 2013).

Study selection and data analysis

All papers identified by database searching were exported into EndNote 7.1 and duplicate references removed. Titles and abstracts of all publications identified in the search were screened by two authors to determine whether they would be considered for a full text review. Those that were clearly irrelevant to the topic of this study were discarded at this stage. The full text of all relevant papers was retrieved and reviewed in full against the inclusion and exclusion criteria. At all stages, disagreements between the review authors were resolved via discussion. For studies that met the inclusion criteria, the relevant data was systematically extracted and tabulated using a Microsoft Excel spreadsheet. Where necessary, the corresponding authors were contacted by email to clarify aspects of their work prior to final inclusion. Data from each study were thematically analysed using the six step process described by Braun and Clarke (V. Braun & Clarke, 2006).

Quality assessment

Each study included in this review has been critically appraised by two researchers using the ten point Critical Appraisal Skills Program (CASP) Qualitative Study checklist (Critical Appraisal Skills Programme, 2018). The two reviewers undertook an individual quality assessment screen of papers using the CASP tool and then compared results. Where a different grade had been assigned, an agreed consensus was reached following discussion. The purpose of the checklist was to help inform judgments, rather than encourage mechanistic approaches to quality assessment. No studies were excluded on the basis of quality – instead, the checklist was used to compare the quality of selected studies, identify possible limitations, and help us to better understand the quality of available evidence.

Results

The initial search of both the peer-reviewed and grey literature yielded 4188 articles, which was reduced to 3041 after removal of duplicates. After initial screening of titles and abstracts, 3020

studies were excluded and the full text of the remaining 21 studies was obtained. A further 9 papers were excluded after full text review, leaving 12 studies that met the inclusion criteria (see Online Supplement, Table 3). These papers were (Baquero et al., 2014; Briant, Halter, Marchello, Escareno, & Thompson, 2016; Cueva et al., 2013; Cueva, Kuhnley, Revels, Schoenberg, & Dignan, 2015; Cueva, Kuhnley, Lanier et al., 2016; Cueva, Kuhnley, Revels et al., 2016; de Lange & Mitchell, 2016; Mayfield-Johnson, John, & Butler III, 2014; C. Mitchell, DeLange, Moletsane, Stuart, & Buthelezi, 2005; Moletsane et al., 2009; Perez et al., 2016; Postma & Ramon, 2016). Further details are included in the PRISMA flowchart (Figure 1).

Study characteristics

Across the 12 studies, five different terms were identified as alternatives to the term 'CHW', with variations being noted in terms of cadre roles and responsibilities (see Online Supplement, Table 4). Commonly, CHWs had multiple responsibilities, including health promotion, prevention, and delivery, ranging from acute medical disorders to mental health.

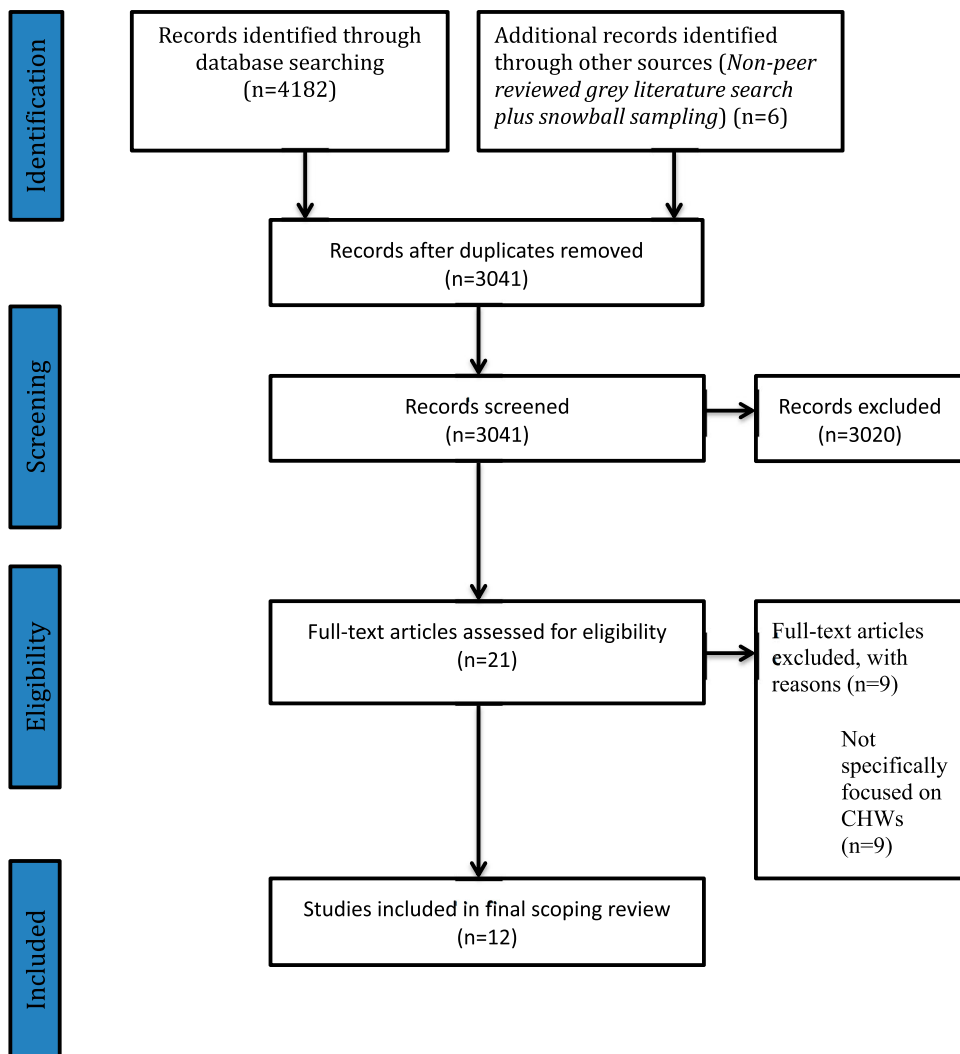


Figure 1. PRISMA diagram. The PRISMA diagram details our search and selection process applied during the scoping review.

The majority of studies have taken place since 2012 ($n = 10$), with no studies occurring prior to 2005. This could be due to the relatively late emergence of PVMs as a method, with the seminal study describing Photovoice by Wang and Burris only being published in 1997 (C. Wang & Burris, 1997). In terms of geographic location, all of the identified studies took place either in North America ($n = 9$), or Southern Africa ($n = 3$). Despite our search strategy aiming to encompass a range of PVMs, only three types were reported in the literature we identified; photovoice ($n = 6$), digital storytelling ($n = 5$) and participatory video ($n = 1$) (see Online Supplement, Table 4).

Uses of PVMs

We found two major uses of PVMs with CHWs, which were: (1) Facilitating understanding and self-reflection and (2) Social Action.

Facilitating understanding and self-reflection

Eight studies outlined how PVMs were a useful tool to help CHWs facilitate community understanding regarding health issues or to assist in their own reflective practice (see Table 1).

In a study by Briant et al., CHWs in Washington State known as *promotores* learnt how to create digital stories (Briant et al., 2016). After this training, they held three digital storytelling workshops, which were open to the community. These workshops were two-hour long weekly meetings, held over five weeks where participants created their own digital stories. *Promotores* provided feedback guidance through the process. One participant involved in the workshop stated:

... there were tears in my heart and in my eyes ... because finally I learned what it meant to live with a chronic disease and how difficult it was ... it helped me so much to create a digital story (Briant et al., 2016).

Similarly, a participant in the study by Cueva et al., stated that digital stories created by CHWs were easy to understand:

A lot of natives have a better understanding of cancer from other natives and the wording is so much easier to understand than all the medical language that providers use (Cueva, Kuhnley, Revels et al., 2016).

In this study, CHWs in Alaska created digital stories using computer software. They scripted a story and recorded it, focusing on cancer risk reduction and prevention. The digital stories were then shared with community members. The community members with whom these stories were shared stated how they felt the messages within digital stories were culturally relevant and could potentially be shared among other communities:

I like how the digital stories relate to people in our region, local people telling their stories (Cueva et al., 2015).

Table 1. Uses of PVMs with CHWs.

	Facilitating understanding and self reflection	Social Action
(Baquero et al., 2014)	No	Yes
(Briant et al., 2016)	Yes	No
(Cueva et al., 2016)	Yes	No
(Cueva et al., 2015)	Yes	No
(Cueva et al., 2016)	Yes	No
(Cueva et al., 2013)	Yes	No
(de Lange & Mitchell, 2016)	Yes	No
(Mayfield-Johnson et al., 2014)	Yes	No
(C. Mitchell et al., 2005)	No	Yes
(Moletsane et al., 2009)	Yes	No
(Perez et al., 2016)	No	Yes
(Postma & Ramon, 2016)	No	Yes

This table documents the most common uses of PVMs with CHWs following analysis of each of the included studies.

The thing about it is that it is really nice that you can watch it anywhere at any time with the technology we have now ... I think it's amazing ... because you can reach so many new people and the presentation is so much more impactful when it's in digital video format (Cueva et al., 2015).

Two of these studies also described how PVMs were an engaging way to assist CHWs with their own on-going education (Cueva et al., 2013; Cueva, Kuhnley, Revels et al., 2016). The CHWs involved in these studies described how the process of creating digital stories helped them to update their knowledge regarding cancer and helped to support reflection.

The whole experience of cancer education and digital storytelling was very uplifting and it made me more aware of how cancer affected me in my decisions for myself and how I want to convey my message to my family about how they feel about it (Cueva et al., 2013).

Social action

Four of the studies specifically described how PVMs could be used as a tool for social change and provided clear examples of this phenomenon (see Table 1). In the study by Baquero et al., CHWs organised a community forum to share the results of a photovoice project pertaining to sexual and reproductive health (Baquero et al., 2014). Over 40 people were in attendance, including members of the local media, policy makers, and public health professionals. At the end of the forum, key action steps were identified for CHWs to act upon and, to address some of the issues uncovered during the photovoice project. In another study by Postma et al., six community health promoters undertook a photovoice project with the aim of building community capacity in supporting affordable housing among a disenfranchised population of farmworkers in Washington State, USA. The photographs were used to create a 13-minute multimedia video in English and Spanish, which was presented to two civic groups. The project resulted in farmworker representation on a state-level housing initiative (Postma & Ramon, 2016).

For the full characteristics and findings from the included studies, please refer to Table 4 in the Online Supplementary Material.

Quality of the included studies

Since the CASP tool does not provide guidance on scoring the quality of studies (Critical Appraisal Skills Programme, 2018), we have not provided a quantifiable score or grade regarding the overall quality of studies. Rather, we have presented CASP grading results from the eight individual domains in a table (see Table 5, Online Supplement).

Based on the use of the CASP tool, the overall quality of the studies can be regarded as subjectively high. However, there were notable omissions or ambiguities regarding documentation of the relationship between the researcher and participants in five studies and, regarding ethical considerations in six studies. In these particular studies, no mention was made regarding any ethical considerations, such as obtaining informed consent, the ethical review process or concepts such as accountability and transparency to the participants involved in PVM projects. Even when authors such as De Lange et al. raised issues around ownership and access to images, there was a lack of detail as to how this had been considered in existing projects. It is also important to note that given the visual nature of PVMs, extra consideration should be given to issues surrounding confidentiality. This is especially important when the project is regarding a sensitive issue such as HIV, since this might have unintended repercussions for individuals or communities (Wiles, Clark, & Prosser, 2011).

Discussion

Despite the low number of studies, those identified in this review suggest that PVMs are a feasible, culturally relevant, and acceptable set of methods to assist CHWs in their role as health

promoters, educators, and advocates. Importantly, this study revealed two major uses of PVMs with CHWs.

Facilitating understanding and self-reflection

The first major role for PVMs was as a culturally relevant way of facilitating understanding and self-reflection for CHWs and for the wider communities they serve. Kolb's theory hypothesises that learning styles may vary between different cultures (Aktaş, 2012; Yamazaki, 2005). Aktaş (2012), argues that individuals who have greater collective values (as opposed to individualist values) prefer experiencing learning through modes of reflective observation (Aktaş, 2012). Many of the studies included within this review suggested that PVMs have the potential as a means for CHWs to **help inform** community members about sensitive health topics, especially in areas where story telling or visual imagery is a common part of a culture (Cueva et al., 2013, 2015; Cueva, Kuhnley, Lanier et al., 2016; Cueva, Kuhnley, Revels et al., 2016). Haigh and Hardy have previously stated that 'importance of storytelling as the foundation of human experiences cannot be overestimated' (Haigh & Hardy, 2011), yet the role for telling stories as a means for positive health-behaviour change has been relatively under-researched. Furthermore, Briant et al. demonstrated how CHWs were able to use digital storytelling as a health education tool, especially in a setting where text or numeric information may be less well understood due to the low levels of literacy and numerical skills amongst the population (Briant et al., 2016). This idea represents an important avenue for future research into the role of PVMs with CHWs.

This review has also demonstrated that PVMs have the potential to help CHWs reflect on their own practice. Given that PVMs, such as digital storytelling, place strong emphasis on understanding issues from the viewpoint of the participants, these methods may represent one way to assist 'authentic reflection of traditional ways of knowing' (Briant et al., 2016), and might help to provide an alternative way by which to understand the experiences of CHWs. Indeed, Winters et al. suggest that greater levels of participation from marginalised communities through reflective methods can potentially help to 'address the multiple disadvantages that poor communities face regarding their lack of influence on the form, content and mechanisms of measurement applied to them' (Winters, Oliver, & Langer, 2017).

Social action

The second major role identified in this review was the use of PVMs to increase awareness of local issues and thus facilitate social action (Baquero et al., 2014; Mayfield-Johnson et al., 2014; C. Mitchell et al., 2005; Perez et al., 2016; Postma & Ramon, 2016). One PVM naturally aligned to this mission is the use of Photovoice (C. C. Wang, Morrel-Samuels, Hutchison, Bell, & Pestronk, 2004). The 'D' of the SHOWED acronym used in many Photovoice projects stands for 'What can we Do' and, is specifically designed to encourage the participants of photovoice projects to think about promoting a dialogue around social action. Several of the studies included in this review outlined how the use of PVMs helped to raise awareness of local issues, which resulted in action being taken to address them.

Limitations of PVMs

It is important to note that PVMs are not without their limitations. Several studies described that digital stories were shared at community forums (Baquero et al., 2014; Perez et al., 2016; Postma & Ramon, 2016), in which the creators of the videos and images were known personally by community members who attended these meetings. This makes it difficult to understand what the impact of sharing these visuals might be on people who do not know the individuals included in these digital vignettes.

Second, certain PVMs, such as digital storytelling, are reliant on the use of technology. This reliance may be problematic in resource-poor areas, or where CHWs do not know how to use the technology. To address this issue, researchers should include digital literacy training for CHWs or consider alternative PVMs, such as mapping and drawing, which do not rely on technology (Baquero et al., 2014).

Third, as described by Black et al., it is important to ensure informed consent is obtained from individuals who might appear in images when using PVMs (Black, Davies, Iskander, & Chambers, 2018). Therefore, training for CHWs on how to take informed consent and how to navigate potential ethical issues should take place prior to deploying such methods. This training is important because, throughout the process of gathering photos and videos, the views of participants must be adhered to and respected. For example, if an individual does not consent to appearing in a photo, CHWs should be able to successfully navigate the tensions that might arise during such a discussion in a respectful and understanding manner. It is also important that vulnerable populations understand how their images might be used for training and teaching, or how they may be archived online.

Fourth, our review has demonstrated that, while some authors of studies encourage using PVMs to promote social action and change, there has been little long-term follow-up to investigate the long-term impact of such initiatives. We therefore advocate for donors who fund PVM research processes to consider allocating funds for longer-term evaluation of their impact, especially for research that is aimed at changing policy.

Finally, although some studies claimed that 'documentary photography ... will have a lasting impact and reach policymakers' (C. Mitchell et al., 2005), it is important to caution against overclaiming with regards to the potential of PVMs, thus raising unrealistic expectations amongst community members (Johnston, 2016). Although most PVM-based projects have a built-in 'research as social change orientation', it is unclear as to how successful these projects have been at influencing policy or systems level change. Indeed, such challenges have been documented previously (Postma & Ramon, 2016). This shortcoming is likely due to multiple factors, including the complexity of policy making processes, competing interests, changing actors with different priorities, and the 'usefulness' of such evidence for policy makers. Previous studies using participatory approaches have noted how policy makers state 'we can't use this, it's not in a form we recognise,' or 'we can't trust this, it's not proper data, just anecdotes' (Lewis, 2018). Rather, when considering their role in social action, PVMs might be more useful at a grassroots level to bring about local change and be considered as an alternative means of data representation to compliment more metrics-based outputs.

Methodological limitations

Since there is no one fixed definition of CHWs or PVMs, some exclusions may be contested. For example, the term 'Community Care Worker' was not included in our search strategy, since it did not appear in the list of terms used to describe CHWs from which we based the design of our search strategy (Ballard et al., 2018). As a result, it was brought to our attention by the reviewers that we missed potentially useful studies such as that by Bivens et al., which described a case study where PVMs were used with Community Care Workers in South Africa (Bivens, Hartnack, Waltz, & Wheeler, 2017). In addition, we did not explicitly search for studies focusing on participatory theatre or drama. This represents a weakness of our review, which should be acknowledged by those interpreting our findings, since we cannot claim to have captured all relevant literature. Second, it is difficult to draw direct comparisons between studies given the heterogeneity of the field and the contextualised nature of the projects in question. Third, there are existing projects utilising PVMs with CHWs that we are aware of, but have yet to be published; therefore they are not included in this analysis (Musoke, 2017). Fourth, one third of the papers included in the analysis were published by the same research group (Cueva et al., 2013, 2015; Cueva, Kuhnley, Lanier et al., 2016; Cueva, Kuhnley, Revels et al., 2016). This not only narrows the evidence base, but it limits the scope of

the methodologies (as the PVM used in each of these studies was digital storytelling), uses of PVMs and health themes considered in the synthesis process. It is also worth noting that although the CASP assessment tool provides guidance for scoring, its use requires an element of subjectivity. Finally, although the uses of PVMs discussed in this paper were agreed upon by general consensus between two authors, other researchers may have found additional themes depending on their interpretation of the literature.

Limitations of included studies

Importantly, several studies mentioned how PVMs ‘empower’ CHWs, however from a critical standpoint, only one study by Mayfield-Johnson et al. referred to the existing theoretical literature on empowerment and explored in the methodology how empowerment could be conceptualised. Other studies, such as that by Cueva et al. (2013) briefly discussed Freire’s theory of empowerment with regards to digital storytelling, however there was a failure to link the findings of the study to the theoretical framework. Rather, they simply stated that digital stories ‘empowered (CHWs) to provide cancer education and support community wellness to decrease cancer risk’, without actually explaining how empowerment occurred.

Similarly, the majority of studies failed to articulate how they defined empowerment and did not make it clear how it was being measured. This runs the risk of using empowerment as a ‘buzz word’ and failing to consider the complexity of the concept (Cornwall & Brock, 2005). We would therefore encourage other researchers to carefully consider the language they use and clearly articulate what they mean by such terminology. Furthermore, authors who attempt to demonstrate how empowerment is taking place should be aware of the challenges this poses, since many indicators developed for measuring empowerment often represent instrumental rather than genuine empowerment (Ruottinen, 2014).

Rather than use the term empowerment, it may have been more appropriate for the authors to state how PVMs were a way of helping to democratise the research process. For example, Mayfield-Johnson et al., revealed how images captured by CHWs were one way of sharing expertise, knowledge, and life experiences in a culturally respectful manner (Mayfield-Johnson et al., 2014). Involving CHWs in a more participatory way may help us to think of alternative approaches towards global community health research, which at times has been described as bordering on neo-colonial due to the exclusion of participants’ views (Horton, 2013). As a result, there has been a greater call for a more human-centred, participatory-based approach to health programme design (Searl, Borgi, & Chemali, 2010).

Finally, the use of the CASP tool revealed omissions around ethical discussions and participant-researcher relationships found within several of the studies. Future researchers conducting similar studies should aim to avoid such ambiguities or omissions in their work. Particular attention should be given to considering who owns the images generated as part of a project using PVMs and how to deal with sensitive topics that might be raised during such projects.

Conclusion

The use of PVMs with CHWs appears to be feasible and culturally acceptable. From the literature, we find that using PVMs with CHWs may be particularly effective when employed for evaluations that place emphasis on participant reflection and an understanding of complex socio-cultural systems. Avenues for future research could investigate how these methods supplement and enrich more popular outcome metrics prevalent in many CHW programmes, and evaluate a wider range of PVMs, such as participatory theatre and drama, given the relatively narrow existing evidence base.

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