# Is Film as a Research Tool the Future of Public Health? A Review of Study Designs, Opportunities, and Challenges

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#### Abstract

Among public health researchers, there is growing interest in film methods due to their ability to highlight subtleties in practices, capture emotions, engage hard-to-reach populations, and advocate for social change. Still, little is known about strengths and challenges associated with using film methods in public health. This review synthesizes peer reviewed, public health research studies that apply film methods, and describes opportunities and challenges. Of the 3,431 identified articles, 20 met the inclusion criteria. Fifteen different film methods were found that offer numerous methodological strengths, including the ability to provide rich descriptions, capture emic perspectives, increase comfort in participation, empower participants, and be used for advocacy. Future studies may explore engaging participants throughout the entire research process and using visuals created in the study to communicate findings. Keeping in mind their challenges, film methods are long overdue in public health and provide unique opportunities to capture sensory data.

#### Keywords

visual methods; film; video; media advocacy; arts-based research methods; multisensory; health; qualitative research; scoping review

### Introduction

Several disciplines including sociology (Cary, 1982), education (Mitchell, 2008), criminology, and psychology (Nassauer & Legewie, 2018) have successfully incorporated visual methods into research studies. Although visual methods are widely used within anthropology and sociology (Pink, 2007), their use in public health research is relatively limited. However, some public health researchers are beginning to recognize the benefits of embracing creative visual methods. These include, but are not limited to, photography, film, video diaries, and drawings (Murray & Nash, 2017). These visual methods are often used to study abstract concepts and contexts (Murray & Nash, 2017), highlight subtleties in agency and practices, capture emotions (MacDougall, 1998; Suhr & Willerslev, 2012), engage hard-to-reach populations (Milne, Mitchell, & de Lange, 2012; Pain, 2012), raise awareness, and advocate for social change (Catalani et al., 2012; Gubrium, Hill, & Flicker, 2014).

Sensory data, or data that include sound (Bates, 2013), environmental context (MacDougall, 1998), and body language and expressions (Grimshaw & Ravetz, 2009; Pink, 2007), are not often captured with conventional public health research methods (e.g. surveys) (Murray & Nash, 2017; Pink, 2014). While it is widely recognized that health decisions and outcomes are influenced by social, cultural, and environmental factors, research methods for capturing contextual details and nuances are limited. This highlights a missed opportunity to use film, which can narrow in on cultural and social understandings to gain a deeper, holistic understanding of health and illness, and to collect details that may have been overlooked using other research methods (Chalfen, 1999). For these reasons, developing alternative ways of capturing and communicating knowledge, beyond traditional interviews, focus groups, and participant observation, is essential (Pink, 2014). This is an opportune time to explore the application of film methods in public health, given their long history in other disciplines, and the rise in user-friendly technology that makes such methods even more accessible (Miller Scarnato, 2019; Schwab- Cartas & Mitchell, 2014; Treffry-Goatley, Wiebesiek, de Lange, & Moletsane, 2017).

One of the most popular visual methods in public health, Photovoice, emerged as a research method in the mid-1990s (Lal, Jarus, & Suto, 2012; Wang & Burris, 1997). Photovoice is a community-based participatory research (CBPR) method (Musoke, Ndejjo, Ekirapa-Kiracho, & George, 2016; Thomas, Owens, Friedman, Torres, & Hebert, 2013) that engages participants in capturing their own photographs to reflect their emic experiences (Strack, Magill, & McDonagh, 2004; Wang & Burris, 1997). The photographs are then used to engage in reflection and dialog with participants, resulting in community-driven data and photographs that can be used as powerful tools to reach policymakers (Wang & Burris, 1997; Wang & Redwood-Jones, 2001). Photovoice is known for "marking an important turn in engaging communities in a deeper examination of social conditions and

structural inequities for advancing the health of communities through participatory action" (Evans-Agnew & Rosemberg, 2016, p. 1019). The method has since been adopted globally to study a wide range of social and health issues from cancer decision-making (Thomas et al., 2013) to autism (Ha & Whittaker, 2016), and has been applied in many populations, from youth (Musoke et al., 2016) to elderly populations (Catalani & Minkler, 2010).

While this growth in novel, visual research methods within public health research is notable, little is known about the strengths and challenges associated with using film methods specifically. Film methods expand beyond the visual alone to capture movements, gestures, and sounds. In their introduction to the 2016 special double issue in Global Public Health on participatory visual methodologies, Mitchell and Sommer (2016) highlight the "power of the visual to represent what is not easily put into words" (p. 521) and note that they had not anticipated the "groundswell of interest" (p. 522) they received in response to the associated call for submissions. The articles in that double issue address the strengths of visual methods in revealing important details about human behavior and their applicability as research tools (Mitchell & Sommer, 2016), yet notably only a few focused on the role of film in particular. The purpose of this scoping review is to identify and synthesize existing published peer-reviewed studies that have used film methods in public health research. Doing so will allow public health researchers, especially those with an interest in exploring complex and sensitive topics using creative and sensory methods, to build upon the successes and challenges noted in the literature. Note the broader term "film" is used to refer to works of either film or video, where filmmaking refers to the art of storytelling with moving images, music, and words.

# Method

Scoping reviews are commonly used to explore and clarify definitions, and to understand the conceptual boundaries of a topic or field (Arksey & O'Malley, 2005; Khalil et al., 2016; Levac, Colquhoun, & O'Brien, 2010; M. D. Peters et al., 2015). This study was designed using the established scoping studies framework (Arksey & O'Malley, 2005; Colquhoun et al., 2014; Khalil et al., 2016; M. D. Peters et al., 2015) and followed the PRISMA Extension for Scoping Reviews checklist for reporting results (Tricco et al., 2018).

Inclusion criteria were the following: include primary data collection, explore a public health issue, include a visual component in the research process, and be published between 2008 and 2018 in the peer-reviewed literature in English. The authors limited the time frame to focus on recently published literature given the changing landscape of technology and film, such as the rise of user-friendly, digital filmmaking equipment. Exclusion criteria were the following: not considered research studies; public health was not the primary research interest; primary focus was on medical technology and clinical advances (e.g. medical imaging); scoping reviews, systematic reviews, or commentary articles; and film methods as interventions as opposed to data collection tools (e.g. screening an educational film). Film methods were defined as those using film or video in the research study design. Public health was defined as relating to disease outcomes, encounters with the health system, preventive measures, and/or health-related behaviors and behavior change.

A broad search of synonyms for visual research methods was developed by the team librarian in Scopus (Elsevier Science). The search was adapted for PubMed (National Library of Medicine), Web of Science Core Collection (Clarivate Analytics), CINAHL (EBSCOhost), Academic Search Premier (EBSCOhost), and CABI Global Health (Ovid).

Search results were imported into DistillerSR, a systematic review management software, which was used throughout the review process. At each of the three levels of data extraction, manuscripts were reviewed by a minimum of two independent reviewers (see Figure 1 in the Supplemental Material for details). The 20 articles that met the inclusion/exclusion criteria were split between two reviewers for data extraction related to the research questions of interest (see Box 1 in the Supplemental Material). The lead author reviewed all data extraction forms for completeness and accuracy. Finally, content analysis was completed to describe the range of film methods, implementation details, population, and challenges and strengths uncovered (see Table 1 in the Supplemental Material).

# Results

# **Study Characteristics and Film Methods**

The most common public health topics studied using film methods were adolescent health (40%), followed by mental health (20%), environment and neighborhood effects on health (15%), asthma (10%), and immigrant and refugee health (10%) (see Table 1 in the Supplemental Material). Notably, 25% of the studies explored sensitive public health topics such as sexual assault, HIV/AIDS, and leprosy stigma. Study populations ranged from youth to elderly and included both men and women. Of the 15 film research methods identified, Videovoice, Video diaries, Video Intervention/Prevention Assessment (VIA), and Autovideography were the most common. Videovoice trains lay community members in videography and outreach (Catalani et al., 2012), and participants choose where and when to film when using the Video diaries technique (Lundström, Ekborg, & Ideland, 2012), whereas in VIA patients use cameras to explain experiences to clinicians (Chung, Sherman, Goodman, Bickham, & Rich, 2013), and Autovideography hands cameras over to participants without researcher involvement (Linz, Hanrahan, Decesaris, Petros, & Solomon, 2016) (full descriptions of all methods can be found in Table 1 in the Supplemental Material). Many projects lasted between 8 and 12 weeks (25%), but there were also several shorter projects lasting between 1 and 6 weeks (25%).

A total of 40% of the studies included a film screening, in which the films created were shown to those outside of the study. In one example, films were screened with teachers, municipality representatives, nonprofit organization representatives, parents of the participants, and girls from a nearby village (Treffry-Goatley et al., 2017). In another study, films were screened at a fundraising event (Linz et al., 2016), and a third study screened films with community leaders and policymakers before releasing them on YouTube (Catalani et al., 2012).

# Data Analysis Approaches Used for Film Methods

Over one-third of studies (35%) supplemented film data with other forms of data (e.g., discussions, drawings, participant observations) for triangulation. For example, Catalani and colleagues (2012) studied participants' environmental footage, in-depth interviews, and discussion sessions, which "allowed (researchers) to confirm or disconfirm findings" (p. 22). Film screenings were also important in the triangulation process. For example, reactions to film screenings provided a source of validity checking, in which participants watched the films to ensure their stories were being portrayed accurately (Catalani et al., 2012). Similarly, in another example by R. M. H. Peters, Zweekhorst, van Brakel, Bunders, and Irwanto (2016), the authors drew upon six qualitative methods during analysis (i.e., interviews, informal discussions, participant observation, photos and videos of the process, researcher notes, and written reflections by research assistants). The authors expressed, "triangulation by using a range of methods helped to enhance validity" (R. M. H. Peters et al., 2016, p. 672). In other studies, authors solicited responses from film producers/participants to understand how participants reacted to viewing their own productions (Treffry-Goatley et al., 2017).

Three of the studies (15%) included participants in the analysis process, whether through interviews, group discussions, or describing key themes in the films (Catalani et al., 2012; Moletsane et al., 2009; Vega, Gutiérrez, Rodríguez, & de Iturbe, 2015). Grounded theory was used for guiding analysis in 20% of the studies; NVivo and Atlas.ti were commonly used data management softwares (30% and 20% respectively).

# Presentation of Film Methods and Results

Nearly all studies (95%) presented results via a narrative with key themes and illustrative quotes. Results sections of articles included various details about the films (e.g. range, average length), filmmaking locations, mode of filming (e.g. participant held the camera aimed at his or her face), quality of the films (e.g. raw, unrehearsed), and participants' perceived comfort level with camera. A few manuscripts included a range of support material to describe the results such as a script (Moletsane et al., 2009), storyboards (Treffry-Goatley et al., 2017), still film frames with associated quotes (Vieira, O'Rourke, Marck, & Hunter, 2014), photographs of the recording process (Treffry-Goatley et al., 2017), and tables for describing participant demographics (Norton, Thomas, Lomax, & Dudley-Brown, 2012).

# **Film Methods Strengths**

Provide rich descriptions. Film methods facilitated capturing uniquely detailed descriptions of behavior, environment, interactions, sound, space, and movement. In one study, the authors described the power of film to capture what interviews alone could not:

Videography is unique in its ability to capture voluminous details and nuances of interactions, events, and settings in real time—all of which can be reviewed multiple times to enable in-depth analysis unmatched by field notes, audio files, or transcripts alone (Petros, Solomon, Linz, DeCesaris, & Hanrahan, 2016, p. 416).

Capture emic perspectives. Authors who used Autovideography described the data as largely participant generated (Linz et al., 2016), and Videovoice was used to capture insider perspectives aimed to prioritize public health issues (Catalani et al., 2012). Authors of a video diary study expressed that the method encouraged intimacy with the participants where the camera was a tool for participants to express themselves in ways that they could not do directly with people (Gibson et al., 2016).

Increase the level of comfort in participation. In a Videovoice study, the use of media with its emphasis on storytelling and multimedia communication was attributed to facilitating the engagement of community partners (Catalani et al., 2012). The authors explained that some community partners may have been less comfortable with text or numeric data, but multimedia approaches helped to facilitate and encourage engagement (Catalani et al., 2012). Similarly, in a study using video-elicitation, participation was greater than what researchers experienced in previous studies using interviews alone (Vieira et al., 2014).

Empower participants. In one study, authors discussed the strength of VIA to empower patients to express themselves: "Applying this method reduces the power dynamic between the patient and clinician by giving participants control of clinically relevant information" (Akre, Light, Sherman, Polvinen, & Rich, 2015, p. 9). In another study, authors expressed that they observed confidence, capacity to handle equipment, and communication skills improve (R. M. H. Peters et al., 2016). Advocacy empowerment, where participants felt significantly more empowered to act and effect change within their community during the film project period, was also found (Warren, Dyer, Blumenstock, & Gupta, 2016).

Can be used as advocacy tools. Multimedia products created during the study could be disseminated beyond traditional academic publications to reach audiences of diverse educational backgrounds and those with little experience with academic research (Catalani et al., 2012). In addition, another added benefit of participant-generated film projects is their authenticity, as they were created directly by participants (Linz et al., 2016).

# **Film Methods Challenges**

Ethical concerns. Three studies (15%) discussed the importance of film ethics, in which issues of protection, privacy, and ownership needed to be carefully considered. Film is powerful in its ability to share visuals and voices directly from participants; however, protection of participants from unnecessary risk, including embarrassment and potential negative effects of showing personal images and voices in public, must be addressed in study designs. In one study, participants interested in screening their footage in public completed a secondary consent process to give permission to screen their film outside of the study team, where participants decided which parts of their films could be used for advocacy and educational purposes (Linz et al., 2016). Similarly, another study used layers of consent, where participants could choose to be filmed, but were not required to display their work publicly (Sagan, 2012). Additional ethical considerations arose around the sensitive nature of content captured. In one study focusing on sexual violence, re-traumatization from the filmmaking process needed to be carefully considered when preparing participants (Treffry-Goatley et al., 2017).

In contrast, a different type of ethical dilemma can arise if participants desire to be named and recognized for their work. Moletsane et al. (2009) explain, "ethical considerations include the need for anonymity of the participants. However, with visual methodologies, there is also a strong need to acknowledge the authors of the texts, particularly in the case of women" (p. 327). In one study, participants agreed upon a group name to be acknowledged at the screening, giving them recognition for their work, while also protecting individual identities (Treffry- Goatley et al.,

2017). Similarly, Treffry-Goatley et al. (2017) also noted that confidentiality was a challenge when it came to screening films publicly, but they were able to find a solution: "Rather than having individuals present their own work, we asked them to nominate a spokesperson to present the productions on the group's behalf" (p. 58). At the screening, researchers clarified that the visual material was created as a group and did not represent the views of any one participant (Treffry-Goatley et al., 2017). Thus, the researchers were able to protect individuals from potential negative reactions, while also giving them a platform to share their opinions and voices.

Social desirability bias. Like many research methodologies, social desirability bias was raised as a limitation. Although participants appeared to speak openly and honestly in films, authors acknowledged that responses may have been influenced by knowing their films could be viewed by others (Catalani et al., 2012). Similarly, others expressed that "informants may present themselves in accordance with what is expected of them, but also how they want to be perceived in relation to those expectations" (Lundström et al., 2012, p. 218). Authors worked to address this through triangulation, the involvement of multiple stakeholders at all stages of the research process, and verification of findings with community members during film screenings.

Time. Challenges related to time were raised, and often related to implementing necessary trainings and collecting data. Additionally, another study discussed the time intensive process of film data analysis, but compared it to similar challenges faced in conducting qualitative studies (Vieira et al., 2014). Finally, keeping participants interested throughout film production can also be challenging, as one study described the multimedia aspects as a draw for participants, but "engendering interest and continued involvement in the program proved to be the most challenging issue" (Gupta et al., 2013, p. 231).

Equipment. In one study, three participants did not make films beyond the initial film produced with the research assistant due to technical challenges with recording (Linz et al., 2016). In another study with leprosy patients, the authors and participants had different challenges:

For those whose hands were impaired, it was challenging to learn to operate the devices. . . There was a need for more than the anticipated number of sessions to acquire the basic skills . . . ultimately all participants could use the equipment. (R. M. H. Peters et al., 2016, p. 677)

## Discussion

This study is the first known systematic scoping review to explore and summarize existing research on the use of film methods in public health research. The results provide a foundation for researchers to build upon as they explore the relevance and application of film methods in study designs. This scoping review revealed a variety of film methods used across a range of populations and public health topics.

The benefits of film methods summarized in this review are consistent with existing reviews of other visual methods used in public health research. For example, a systematic review of Photovoice studies similarly found that the method was successful to empower and engage marginalized communities in an action-oriented manner (Catalani & Minkler, 2010). Similar to Photovoice, film methods also offer numerous strengths such as the opportunity to use the products created in advocacy efforts (Catalani et al., 2012; Gupta et al., 2013; Linz et al., 2016; Moletsane et al., 2009; R. M. H. Peters et al., 2016; Vieira et al., 2014; Warren, Knight, Holl, & Gupta, 2014). Furthermore, the findings from this review echo the strengths found in a review of creative, arts-based methodologies, including participant engagement, reflection, and the ability to collect spatial experiences and multisensory data (Jellema, Annemans, & Heylighen, 2019), while also revealing a number of gaps and opportunities that require further exploration.

This review of film methods revealed that ethical considerations are a key area that requires substantial attention when designing film research studies. Developing ethics protocols and working closely with institutional review boards to determine best approaches for navigating this new area of research using film in public health research are processes that must not be overlooked. Each study has its own unique challenges, but it is recommended that decisions regarding anonymity and ownership be discussed directly with participants, keeping in mind unique social and cultural contexts when it comes to privacy. Furthermore, it is recommended that the consent process be an ongoing discussion throughout the research study, recognizing that feelings regarding involvement can change over time. Following up with participants after a public screening is also an area that can be further explored, to better

understand how a public screening affects participant experiences of and feelings about the topic being studied, and to ensure participants consent to future screenings.

Interestingly, only three out of the 20 studies used a visual product created during the study to support the study findings in peer-reviewed manuscripts, such as visuals from the study or screen shots from films (Moletsane et al., 2009; Treffry-Goatley et al., 2017; Vieira et al., 2014). This highlights a missed opportunity to harness the power of visuals to communicate study findings. For example, the authors of a visual storytelling study highlight the power of images to communicate findings: "In presenting the images, we as researchers become less of a conduit between raw data and final interpretations because audience members can quickly become engaged in viewing, assessing, and analyzing the data themselves" (Drew, Duncan, & Sawyer, 2010, p. 1685). Future studies should consider how powerful imagery created by participants can best support the communication of findings, especially with the rise of academic journals that provide opportunities to support text with supplementary visuals online.

Considering the fact that filmmaking is naturally collaborative, it was also unexpected to find only three studies that engaged participants throughout the research process. Engagement ranged from Autovideography that hands the camera over to participants with little direction, to other approaches that provided participants with guiding questions and prompts, such as VIA. Although different approaches may be appropriate for exploring different research questions, a review of Photovoice studies found the strongest studies were those that incorporated participants throughout all phases of the study (Catalani & Minkler, 2010). This is consistent with findings from CBPR that notes numerous benefits of engaging participants in all steps of the research process, including increasing the validity and quality of the research and enhancing the usefulness of the results (Israel, Schulz, Parker, & Becker, 1998). Future studies should continue to explore appropriate ways to engage participants throughout the research study process, especially in the analysis stage and dissemination of the films. Finally, researchers may consider building upon the findings of this scoping review by exploring the use of film methods in all health-related disciplines (e.g., nursing, medicine, social work).

This scoping review uncovered valuable information about the use of film methods in public health, yet there are select limitations worth noting. It includes peer-reviewed studies published only in English from the past decade and gray literature was excluded. However, to mitigate the risk of overlooking key studies, the authors ran multiple exploratory searches to identify keywords, synonyms, authors, and journals in which visual public health studies are typically published. Additionally, although a detailed definition of public health was refined with piloting, it is possible the study team may have overlooked studies that appeared to be medical or unrelated to public health based on titles and abstracts. However, given the multiple rounds of pilot searches and independent reviewers, the authors are confident that this review captures the scope of empirical research articles that applied film methods in public health.

# Conclusion

The use of film research methods has been relatively limited in public health, but their benefits, keeping in mind their unique challenges, suggest that more widespread use of such methods is long overdue. The findings of this review highlight numerous strengths of film methods, such as their ability to provide rich descriptions, capture emic perspectives, increase the level of comfort in participation, empower participants, and be used as advocacy tools. However, studies applying film as a research method in public health must closely consider ethical challenges, social desirability bias, time commitment, and equipment challenges. Future studies are needed to explore missed opportunities, such as engaging participants throughout the entire research process and incorporating visuals created by participants into manuscripts and developing supplemental visual materials to support study findings. Keeping in mind associated challenges, film methods provide unique opportunities to capture sensory data in the field of public health.

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