How to Conduct a Photovoice Systematic Review: Lessons Learned and Recommendations

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Abstract

Photovoice distinguishes itself from other qualitative research methods for its visual features and participant empowerment. As a powerful tool for community-based participatory research and health promotion programs, researchers and practitioners are paying more attention to this method in recent years. Accordingly, some photovoice systematic reviews have been published and more are underway to synthesize evidence in various research fields. However, due to the exploratory nature of the photovoice method, broad research questions for photo taking, flexible steps in photo discussion and analysis, and lack of standardized qualitative review guidelines, it could be challenging to conduct a photovoice systematic review. The purpose of this paper is to provide an overview of the photovoice method, debrief the process of a previous review, summarize lessons learned, and provide suggestions to facilitate future photovoice systematic reviews. This paper may also be of benefit to researchers who intend to apply photovoice to their research topics, or plan to conduct other types of photovoice literature reviews (e.g., scoping reviews).

Keywords

photovoice, systematic review, participatory qualitative research method, community health promotion

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Photovoice distinguishes itself from other qualitative research methods for its visual features and participant empowerment. As a powerful tool for community-based participatory research and health promotion programs, researchers and practitioners are paying more attention to this method in recent years. Accordingly, some photovoice systematic reviews have been published and more are underway to synthesize evidence in various research fields. However, due to the exploratory nature of the photovoice method, broad research questions for photo taking, flexible steps in photo discussion and analysis, and lack of standardized qualitative review guidelines, it could be challenging to conduct a photovoice systematic review. The purpose of this paper is to provide an overview of the photovoice method, debrief the process of a previous review, summarize lessons learned, and provide suggestions to facilitate future photovoice systematic reviews. This paper may also be of benefit to researchers who intend to apply photovoice to their research topics, or plan to conduct other types of photovoice literature reviews (e.g., scoping reviews).

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Introduction

Photovoice is a participatory qualitative research method for community enhancement and health promotion. By involving people in the process of photo taking, photo discussion, and photo exhibition, photovoice aims to reach three main goals: (1) to let people capture and reflect community strengths and concerns; (2) to inspire critical thinking of significant community issues through large or small group discussions; and (3) to reach policymakers to solve community issues and make social changes (Wang & Burris, 1997). Photovoice was conceptualized by Caroline Wang and Mary Ann Burris based on documentary photography, feminist theory, critical consciousness, and health education, and it was first applied to Chinese women to inform policy makers about their health and community concerns (Wang & Burris, 1994, 1997; Wang et al., 1996).

Since the early 2000s, photovoice has been broadly applied to numerous studies and intervention programs aiming to explore community characteristics and prioritize community issues that affect residents' well-being and daily life, such as community violence, substance use, and disadvantaged physical environments (Bozlak & Kelley, 2010; Brazg et al., 2011; Chonody et al., 2013; Irby et al., 2018; Tanjasiri et al., 2011; Wang et al., 2004). In terms of study population, it is applicable to various groups and individuals, including children and adolescents, elderly people, people with disability, people with low literacy skills, and those with little access to policy makers (e.g., women in rural area), enabling them to deliver their voices and prepare the community for improvements (Adekeye et al., 2014; Georgievski et al.,

2018; Ghosh et al., 2016; Umurungi et al., 2008; Wang et al., 2004; Yang, 2023; Yang et al., 2022). Despite the visual nature of the photovoice method, some studies have included participants with visual impairment in their photovoice programs (Cordova et al., 2015; Shumba & Moodley, 2018).

Photovoice is widely considered as a powerful tool for community-based participatory research (CBPR) and participatory action research (PAR) to build community capacity, empower community members, and advocate for social actions (Brazg et al., 2011; Wang, 1999; Yang et al., 2020). Besides being a stand-alone qualitative approach, photovoice can be combined with other qualitative methods (e.g., in-depth interviews, focus groups) to better identify community issues and explore disadvantaged environments that impact residents' well-being and health care utility (Mmari, Blum et al., 2014; Mmari, Lantos et al., 2014). Moreover, photovoice can be part of the mixed methods approach to facilitate data triangulation in community health promotion programs (Mmari et al., 2016; Yang, 2020; Yang et al., 2023). Compared with other commonly used qualitative techniques in CBPR or PAR programs, such as in-depth interviews and focus groups, the features of photovoice include:

(1) Visual feature and flexibility: Pictures are typically more powerful than words alone. Because of the visual feature, photovoice is not constrained by languages or research topics, and thus is more appealing and applicable to certain groups of population (e.g., children and youth; Wang, 2006; Yang et al., 2020). Moreover, photovoice is participant-centered and flexible with study procedure. Therefore, it can be adapted to diverse research environments and study settings to address the unmet needs and health concerns in vulnerable populations and disadvantaged communities (Catalani & Minkler, 2010; Wang & Burris, 1997).

(2) Broad research questions: To facilitate participants' exploration of community issues that significantly impact people's well-being and need immediate attention, photovoice questions are usually broader and less specific than interview questions. For example, a photovoice program asked participants to take photos to answer the following question: "In your community, what influences local adolescents' decisions to use or not to use alcohol and other drugs?" (Brazg et al., 2011, p. 504). With this broad research question, participants could widely explore factors that contribute to alcohol/drug use and freely express their opinions using photos. Therefore, photovoice has the potential to capture nuances that are not typically covered by other qualitative approaches.

(3) Participant involvement: As a powerful tool for CBPR and PAR, photovoice provides the capacity to fully engage participants in the research process, from photo taking, photo discussion, to thematic analysis. After data collection and analysis, participants may continue to be involved in the program for results dissemination, photo exhibitions, and social actions (Wang, 1999). These activities are not commonly included in other qualitative participatory studies using individual interviews or focus groups. Because of this feature, photovoice programs usually need an extended time frame to collect data. In the meanwhile, benefiting from such feature, photovoice can better engage community members and foster a trusting relationship between the community and researchers in CBPR or PAR programs (Wang, 2006; Yang et al., 2020).

Photovoice Systematic Review

With the growing attention of photovoice as a participatory qualitative research method, literature reviews of photovoice studies and programs emerged in health and public health areas. In 2006, Wang summarized 10 photovoice projects that addressed community issues and made community change by involving youth (Wang, 2006). In later years, the first systematic review of the photovoice literature was published (Catalani & Minkler, 2010). In this review, 37 photovoice articles were identified and reviewed, with the findings that long duration of project was of benefit to improve quality of participation, facilitate social action, and build partnership between community and academic researchers (Catalani & Minkler, 2010). This review provided evidence that photovoice studies, especially those programs that highly involved participants, may contribute to a better understanding of community assets and issues (Catalani & Minkler, 2010).

In recent years, an increasing number of systematic reviews and scoping reviews on photovoice studies have been conducted and published. While a few reviews cover broad research topics (e.g., health) or the general methodology concepts (Suprapto et al., 2020), more reviews focus on the application of photovoice to specific research topics (e.g., violence, mental health) and/or specific groups of population (e.g., youth) to provide more targeted evidence on health promotion programs (Christensen, 2019; Fountain et al., 2021; Milasan et al., 2022; Yang et al., 2018; Yang et al., 2020). In addition to these published works, dozens of photovoice systematic reviews are being proposed or conducted around the world. Registered protocols of the current photovoice systematic reviews are available on the PROSPERO website, an international prospective register of systematic reviews in health, social care, education, and related fields (PROSPERO, n.d.).

Lessons Learned and Suggestions

While the three features of photovoice (mentioned above) distinguish itself from other qualitative research methods, they also increase challenges of conducting literature reviews, especially systematic reviews on photovoice studies or programs. From 2017 to 2019, together with my colleagues, I led the efforts to perform a systematic review on how photovoice had been applied to violence and related topics among youth population (Yang et al., 2020). I conducted the first round of data search, record screening, and synthesis in 2017, and then presented the preliminary results in an international conference (Yang et al., 2018). In 2019, I made an updated search to include new publications since the first search and extracted new information from those studies. The final report that combined both searches and findings were published in 2020 (Yang et al., 2020).

Since there were very few photovoice systematic reviews published when I started the process in 2017, I spent a lot of time to figure out the process, define the inclusion and exclusion criteria, prepare the proposal, and write up the final report. To facilitate future photovoice review programs, I would like to debrief the process and share my experiences. I will address the lessons learned and suggestions based on the general steps of systematic review, from protocol preparation, registration, information sources (databases), search strategies, eligibility (inclusion and exclusion criteria), study screening and selection, data extraction, synthesis and report writing, and critical appraisal (risk of bias/quality assessments). By summarizing the lessons learned in each step, I hope this paper can facilitate future photovoice systematic reviews. This paper may also be of benefit to researchers who intend to apply photovoice to their research areas, or plan to conduct other types of photovoice literature reviews (e.g., scoping reviews).

Search Previous Literature Reviews on Photovoice and Find the Research Gaps

Before conducting a systematic review, it is very important to do a literature search to see if an existing review is available and to justify the needs of a systematic review in a specific research field (Carrard, 2020; Lasserson et al., 2022). As dozens of systematic reviews have been conducted on photovoice method and more are underway, it would not be worth your time or efforts replicating a systematic review that was recently done within the same research field. For example, you may not want to do a photovoice systematic review focusing on gender-based violence, as one was just published in 2019 (Christensen, 2019). In contrast, it may be reasonable to conduct a systematic review on the advancement of photovoice method in recent years, as the first systematic review on photovoice method was published more than a decade ago (Catalani & Minkler, 2010) and some information may need to be updated to better guide the current photovoice studies.

Prepare the Review Protocol and Register it in PROSPERO

While many types of literature reviews (e.g., scoping reviews) may not need a protocol, the first step for a systematic review is to develop a protocol that predefines review questions, criteria for study eligibility, search strategies, planned review steps, and analysis methods (Lasserson et al., 2022). Although the content of a protocol may largely depend on the review questions and research topics, it is recommended to prepare the protocol following the guidelines of PRISMA-P and cover the recommended items in the checklist (Moher et al., 2015). Moreover, be sure to register your protocol in the PROSPERO database (PROSPERO, n.d.), so other researchers are informed that you are conducting a systematic review with a specific focus. PROSPERO is an international platform for systematic review registration, with the option to specify your review details, stages/timelines, and languages. My lesson learned was that although I started my photovoice systematic review in 2017, I did not register until one year later when I completed the first round of narrative synthesis and report writing. Between this gap, there were some chances that other researchers may conduct similar reviews in related fields with substantial overlaps without registration.

Define Information Source

There are lots of literature databases that can be used to search literature. Researchers are in favor of certain databases depending on their researcher areas (e.g., CINAHL as the preferred database for nurses and allied health professionals). Typically, PubMed is included in most photovoice systematic reviews and even serves as the only database (Fountain et al., 2021), given that photovoice studies are primarily conducted in the health and related fields. In my systematic review, I included five electronic databases: PubMed, CINAHL, PsycINFO, Embase, and Web of Science, to gain a broad coverage of literature in health, education, psychology, and multidiscipline (Yang et al., 2020). However, I would include Scopus as an additional literature source if I do other photovoice systematic reviews in future, because this database covers considerable literature on qualitative studies in health sciences and related disciplines. Another lesson learned is that gray literature was not included in my review, which I highlighted as a limitation (Yang et al., 2020). As many photovoice programs disseminate their results in multiple forms (e.g., technical reports) in addition to the formal peer-reviewed publications, future systematic reviews are recommended to search and screen gray literature to gain a more inclusive review sample.

Decide the Scope of Literature Search and Search Strategy

Unlike quantitative research with clear definition of outcome variables, research questions for photovoice studies are usually broad and exploratory (e.g., perceptions of community health; Brazg et al., 2011). Given this, it is important to define the scope of your review, select the concepts of the search strategy, and specify the search terms/strings corresponding to each concept. I would recommend working with a librarian for this step. Depending on the level of involvement in the review process, you may either acknowledge the librarian's contribution in the review reports or list the librarian as a co-author in your peer-reviewed publications. Moreover, it is necessary to customize the search terms/ strings for each database. For example, "MeSH" terms used in PubMed may not be applicable to Scopus. In many cases, adjustments are needed and again, engaging a librarian is highly recommended. In addition, the photovoice method was initially referred as "photo novella" (Wang & Burris, 1994) and some researchers continue to use this term (Burke & Evans, 2011; James et al., 2005). Also, certain studies use " photo elicitation" to describe their qualitative data collection process through photos and discussions (Edmondson et al., 2018; Glaw et al., 2017). To capture more photovoice programs, researchers may consider including these terms in the search strategy.

Inclusion and Exclusion Criteria

In line with the general guidelines of systematic reviews (Lasserson et al., 2022), for a photovoice systematic review, it is essential to predefine what types of studies you would like to focus on, including study population (e.g., age range, gender), setting (e.g., community, hospital, home, school), study type (photovoice, art-based approach, mixed methods), and time frame (e.g., ten-year review). While the eligibility criteria largely depend on the purpose of the review, several things specific to photovoice studies should be taken into consideration: (1) whether to include mixed methods studies, (2) whether to include other art-based methods (e.g., drawing), and (3) whether to confine study population or location. In my review, I included studies using mixed methods and other art-based techniques in addition to photovoice (Yang et al., 2020). During the full-text screening and data extraction stage, however, I found some of these studies provided too limited descriptions of the photovoice procedure and findings to assess the trustworthiness of the photovoice component. Therefore, those studies had to be excluded from the review eventually. Based on this lesson learned, I would recommend future photovoice systematic reviews, especially in the research areas with numerous photovoice studies (e.g., community health), to focus on publications that predominantly describe the photovoice method. In addition, I included photovoice studies all around the world to explore advantages and challenges when applying photovoice to the youth population (Yang et al., 2020). Since the implementation of photovoice programs heavily relies on the social contexts and environmental circumstances, future systematic reviews may consider defining study locations in a specific country to get a more homogeneous review sample. For example, a recent photovoice systematic review has focus on studies conducted in the United States (Fountain et al., 2021).

Records Screening and Selection

Typically, in a systematic review, literature records are assessed for eligibility through a series of screening process via title review, abstract review, and full-text review by multiple reviewers (Lefebvre et al., 2022). As this step may go back and forth (in most cases) between different reviewers in multiple phases, it is recommended to find a way that would work best

for the review team to manage included literature records and document the reasons for excluding certain records (Lefebvre et al., 2022). To facilitate the screening process, I managed the records in Endnote and used different groups (e.g., "duplicates removed," "included after abstract screening," "full text included") to store records that were included or excluded in each step. Although it worked, I found it was not time-efficient when a second reviewer was involved, as the two sets of records selected by the two reviewers had to be compared manually to identify discrepancies. In recent years, various software programs (free or paid) have been developed to facilitate this process. It would be worth the time to explore the software programs and select one of them for record screening within the review team. Keep in mind that although systematic reviews are predominantly performed by multiple researchers, certain photovoice systematic reviews have been conducted by a single researcher with good quality and rich information (Christensen, 2019).

Data Extraction

In photovoice systematic reviews (Fountain et al., 2021; Yang et al., 2020), spreadsheets and tables are typically utilized for data extraction to facilitate the follow-up steps (e.g., narrative synthesis, report writing). Such an approach makes it easier, faster, and more straightforward for the researchers to identify the characteristics of included photovoice programs and synthesize the main themes. Headings for the columns in the spreadsheets and tables can be predefined by the current literature, review purpose, and researchers' experiences, and then finalized by piloting data extraction of five full-text articles in the final review sample (Yang et al., 2020). As photovoice is a participatory research method, many emerging information and codes could come up that extend the current columns in the data extraction sheet. Therefore, additional space or columns are necessary to store such information. In my review, I used a "notes" column to document emerging codes in the data extraction sheet, and it was very helpful for our review team to scan the nuances of the included photovoice studies (Yang et al., 2020).

Thematic Analysis

Unlike traditional qualitative or quantitative methods that typically require researchers to conduct data analysis, many photovoice studies, especially those in the CBPR and PAR programs, rely heavily on the participants to perform thematic analysis, interpret the themes, and disseminate main findings to community members and stakeholders (Irby et al., 2018; Petteway et al., 2019). Some photovoice studies, however, may still go through the formal coding process and thematic analysis within the research team to increase the trustworthiness of the findings (Chonody et al., 2013; Mmari, Blum et al., 2014; Yang et al., 2022). Given this, in photovoice systematic reviews, it is recommended to separate participants' findings from researchers' results and make comparisons to identify overlaps and differences between them. Such approach may also help to empower participants and highlight their viewpoints, in accordance with the participatory nature of photovoice programs.

Synthesis and Report Writing

Generally, data synthesis in qualitative systematic reviews is challenging as the current guidelines and analyses are primarily focused on quantitative methods and intervention programs. As for photovoice systematic reviews, narrative synthesis of extracted data could be based on the well-documented photovoice procedure (e.g., photo taking, photo discussion, photo exhibition), followed by detailed description of included photovoice studies in specific

research topics (e.g., populations, locations, settings, main themes, outcomes, advantages, and challenges; Fountain et al., 2021; Yang et al., 2020). As for report writing, it is recommended to follow the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Page et al., 2021). Keep in mind that not all items listed in the PRISMA guidelines are applicable to photovoice studies. For example, it is almost impossible to report "effect measures" or "certainty assessment" for photovoice reviews as they are designed for quantitative studies and intervention programs.

Critical Appraisal

There is no consensus on how to conduct this step in qualitative systematic reviews (Noyes et al., 2022). Due to the subjective nature of qualitative studies, assessment of risk of bias is not considered as important as it is in the quantitative literature. Also, it is not easy to find an appropriate critical appraisal tool to assess the quality of photovoice studies, given that the photovoice method is noted for its flexibility and there is no standardized reporting guideline for photovoice studies. Some researchers utilize a general qualitative assessment scale, such as CASP (Critical Appraisal Skills Programme, 2018). In our review, we utilized the McMaster Critical Review Form (Letts et al., 2007), as it not only covered the commonly used checklist questions for critical appraisal of qualitative research, but also specified the methodological quality and study process, correspondent with our review purpose and research questions (Yang et al., 2020). To the best of my knowledge, no critical appraisal tools have been developed for photovoice reviews, so it totally depends on your research team to decide whether to include this step and which tool to be used for assessment.

In addition, there are a few general considerations that may be of benefit to researchers who plan to conduct a systematic review, regardless of whether it is relative to the photovoice method. For one thing, make sure to document every search, every step, every decision-making process, and specific reasons for exclusion of certain literature. This is a general requirement for systematic reviews to reduce bias and guarantee the quality of the review. For another, as a systematic review is typically more complicated, intensive, and time-consuming than other forms of reviews, it is important to familiarize yourself with the systematic review process before starting it. For beginners, I would recommend reading some textbooks for preparation, such as Health Sciences Literature Review Made Easy (Carrard, 2020). These textbooks may give you an overview of the review process, introduce the general steps and procedure, and provide useful resources (e.g., protocol registration, document management). For researchers with certain experiences on systematic reviews, I would recommend literature specific to the qualitative systematic review method, such as Chapter 21 (qualitative evidence) in the Cochrane Handbook for Systematic Reviews of Interventions (Noyes et al., 2022).

Implication for Future Photovoice Reviews

For researchers who plan to do a photovoice systematic review, some advancements of the photovoice method in recent years may need your attention. First, there is a trend to conduct photovoice programs from in-person to online, and the COVID pandemic accelerates such transition. Specifically, a few photovoice studies have used virtual methods (online via social media) to recruit participants and collect data before the pandemic (Yang, 2020; Yi-Frazier et al., 2015). During the pandemic, more programs must adapt photovoice to the virtual research environment and use a variety of digital learning and information sharing platforms (Breny & McMorrow, 2022; Ferlatte et al., 2022; To et al., 2022). Accordingly, new challenges emerge in the virtual implication of photovoice programs, such as technical difficulties in virtual group

meetings, weakened connections between researchers and participants, and high levels of participant disengagement in the virtual environment (Ferlatte et al., 2022; Yang et al., 2020).

Furthermore, instead of using disposable cameras, many recent photovoice studies provide digital cameras or allow participants to use their personal smart phones to take photos (Irby et al., 2018; Petteway et al., 2019; Yang, 2023; Yang et al., 2022). Moreover, besides the traditional face-to-face photo exhibitions in the community settings, photovoice programs also tend to disseminate their findings via social media and online platforms (Breny & McMorrow, 2022; Irby et al., 2018). In addition, rather than using the original SHOWeD framework for photo discussions (Wang, 1999), many studies prefer to develop their own discussion guidelines or revise the existing framework (e.g., reframing certain questions in the SHOWeD guideline) to better engage participants and community members in their photovoice programs (Ho et al., 2011; Petteway et al., 2019; Yang, 2023; Yang et al., 2022).

These new directions and developments have advanced the photovoice method, making a substantive influence on the design and implementation of current photovoice programs. To identify more details on the advancements of the photovoice method and better facilitate future studies, I would recommend researchers who plan to conduct a photovoice systematic review to specify photovoice implementation method (in-person versus online), photo taking equipment (digital cameras, personal phones, or disposable cameras), photo discussion framework (original SHOWeD framework, revised, or self-developed guidelines), and photo exhibition format (community settings versus online platforms) in their review protocols, data extraction process, narrative synthesis, and report writing.

Summary

In recent years, numerous studies and programs have applied the photovoice method for health promotion and community enhancement. Accordingly, some photovoice systematic reviews have been conducted and more are underway in various research fields. However, it can be challenging to conduct a photovoice systematic review due to the lack of standardized qualitative review guidelines, the exploratory nature of the photovoice method, broad research questions for photo taking, and flexibility in photo discussion and data analysis. By sharing my experiences, lessons learned, and suggestions, I hope this paper can provide adequate information and useful resources for researchers to prepare, conduct, and report photovoice systematic reviews.

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