Applying a Social Justice Framework to Photovoice Research on Environmental Issues: A Comprehensive Literature Review

By: Meredith C.F. Powers and Darcy A. Freedman

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The need to address the environmental crisis is becoming more urgent. The consequences of unsustainable environmental practices are detrimental to the wellbeing of people globally as well as the environment. This is of concern to social workers as they recognize their role in responding to the environmental crisis and resulting social injustices. This literature review explores how the photovoice technique is being used in environmental research. By applying a social justice framework in a content analysis of the literature (N=17), we describe how photovoice is being used to promote environmental and social justice through its research processes and outcomes.

Keywords: photovoice | social justice | environmental crisis | environmental sustainability

Article:

***Note: Full text of article below

Applying a Social Justice Framework to Photovoice Research on Environmental Issues: A Comprehensive Literature Review

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Abstract

The need to address the environmental crisis is becoming more urgent. The consequences of unsustainable environmental practices are detrimental to the wellbeing of people globally as well as the environment. This is of concern to social workers as they recognize their role in responding to the environmental crisis and resulting social injustices. This literature review explores how the photovoice technique is being used in environmental research. By applying a social justice framework in a content analysis of the literature (N=17), we describe how photovoice is being used to promote environmental and social justice through its research processes and outcomes.

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Existing research confirms a link between human behavior and the environmental crisis, which broadly includes issues such as contaminated water, soil, and air, the depletion of non-renewable natural resources, and global warming (Coates, 2003; Estes, 1993; Minkler, Vasquex, Tajik, & Petersen, 2008). Responding to the environmental crisis has become more urgent globally as the consequences of unsustainable environmental practices are becoming increasingly detrimental to the wellbeing of humans and the ecological systems in which they live (Coates, 2005; Commission on Social Determinants of Health (CSDH), 2008; Hoff & McNutt, 1994; Humphreys & Rogge, 2000; Solomon, 2007). Over the past five decades increasing attention has been given to approaches humans can take to respond to the environmental crisis and the social injustices that are inextricably linked (Besthorn & Meyer, 2010; Coates, 2005; Estes, 1993; Hoff & Rogge, 1996; Humphreys & Rogge, 2000; Mary, 2008; United Nations World Commission on Environment & Development (UNWCED), 1987). Examples include insufficient and unsafe access to food and water due to human-made toxins in the soil and water supplies; these, in turn, cause additional ecological problems such as mass migration, displacement, and overcrowding (Besthorn & Meyer, 2010). The environmental crisis disproportionately affects vulnerable, marginalized, and oppressed people and their ecological systems (Bullard, 1994; Coates, 2010; Hoff & Rogge, 1996). Consequently, social workers are increasingly recognizing their role in responding to the environmental crisis (Besthorn & Meyer, 2010; Coates, 2005; Hoff & McNutt, 1994; Humphreys & Rogge, 2000).

Along with the profession's strong dedication to promoting social justice, social workers are also concerned with how people adapt to and succeed within their environments. Historically, based on person-in-environment theories, social workers have typically worked to help individuals, families, and communities adapt to and improve social, political, and economic environments. Yet they have not focused as much on natural environments or ecological systems. Recently, however, social workers have expanded person-in-environment frameworks as they seek to preserve and enhance the social and ecological environments in which people are situated (Coates, 2005; Hoff & McNutt, 1994; Humphreys & Rogge, 2000).

Background

Community-based Participatory Research

Community-based participatory research (CBPR) methods are particularly promising for researchers focused on promoting social justice in research processes as well as in outcomes (Foster-Fishman, Nowell, Deacon, Nievar, McCann, 2005; Hergenrather, Rhodes, Cowan, Bardhoshi, & Pula, 2009), and have even been found effective for research related to environmental justice (Minkler et al., 2008). Researchers using CBPR approaches play the roles of "collaborator" and "facilitator" as they consider community members as experts and seek to engage them in each stage of the research process as well as dissemination of findings and social change efforts (Israel, Schulz, Parker, & Becker, 1998). Photovoice is one example of a CBPR approach that has great potential to incorporate social justice in its research processes as well as its outcomes (Malloy, 2007).

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Photovoice

Developed by Wang and Burris (1997) as a CBPR technique, photovoice draws upon documentary photography, feminist theory and critical consciousness theory. The photovoice technique puts cameras in to the hands of community participants and empowers them to guide data collection efforts by documenting their observations about various phenomena through photography and developing narratives about the photographs. Building on feminist theory, photovoice seeks to empower community members to be the "experts" of their own lives and experiences, and treats participants as co-investigators rather than the subjects of research. Wang and Pies (2008) also note that photovoice provides an opportunity for community members, who are often marginalized populations, to refocus and redefine their identities, which oftentimes involves the development of counter-narratives that challenge hegemonic views about particular populations and social positions. Participants are also encouraged to engage in critical dialogue with others, and to educate non-participants to join in consciousness rising and create social change. Through the promotion of reflection and dialogue, photovoice aims to raise critical consciousness about the topics under investigation and ultimately yields a visual tool to help give voice to community concerns and reach a broader audience, including policy makers, with the ultimate goal of influencing social change (Carlson, Engebretson, & Chamberlain, 2006; Wang & Burris, 1997; Wang, Burris, & Xiang, 1996). Thus, photovoice has the capacity to promote social justice as it engages community participants in the research processes, as well as working towards socially just outcomes through individual and collective action (Malloy, 2011).

The photovoice technique has been used in an array of research projects including those with Chinese village women (Wang, Burris, & Xiang, 1996), homeless populations (Dixon & Hadjialexiou, 2005), people with intellectual disabilities (Jurkowski, 2008), African American women who have survived breast cancer (Lopez, Eng, Randall-David, & Robinson, 2005), and refuge populations (Dumbrill, 2009). The number of scholarly, peer-reviewed articles on photovoice projects is growing each year, with a noticeable surge in 2007. In the past two years, two literature reviews on photovoice research were published; the reviews provide important insights about photovoice as it relates to public health and disabilities research (Catalani & Minkler, 2010; Hergenrather et al., 2009). Though still limited, photovoice is increasingly being utilized across the globe in research related to a variety of environmental issues and related social justice concerns.

Research Purpose

In this review we will look specifically at literature reporting on photovoice research that is being utilized to develop knowledge and affect social and environmental change related to the environmental crisis. To our knowledge this type of literature review has not been conducted. The findings of this review are relevant for social work researchers and practitioners as well as scholars in other fields who are interested in identifying and implementing research methods that are socially just in their processes and can produce social change outcomes that will address social injustices and the environmental crisis. The goal of this review is to discover: 1) if and how photovoice is being implemented in the research process in ways that promote social justice, and 2) if and how photovoice is being used to promote environmental and social justice

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outcomes. We will do this by applying a social justice framework to a content analysis of both the processes and outcomes reported in the literature.

Methods

This literature review included any scholarly, peer-reviewed journal articles published prior to July 2011 that reported on photovoice research projects related to environmental issues. These articles were limited to those available in English. A systematic and exhaustive effort was employed to find articles that fit these criteria. Initial articles were found using the Google Scholar search engine, as well as the University of South Carolina's Gamecock Power Search that searched multiple databases at once (e.g., JSTOR, Social Work Abstracts, and Web of Science). To ensure that we captured all eligible articles we initially used broad search terms: "photovoice" OR "photo voice" OR "photostory" AND "environment"; those not specifically addressing the natural environment were excluded (e.g., the emotional or social environment). These broad searches resulted in over 2,000 items (e.g., books, presentations, and articles), through extensive and careful review we were able to narrow these to scholarly, peer-reviewed articles and identified those that were not focused on environmental themes or photovoice and omitted them from the study. This resulted in 15 published articles that met our inclusion criteria.

Following these broad searches, three subsequent search methods were then employed using the initial 15 articles found to identify any other articles pertinent to this literature review. First, the references of the initial articles were reviewed to find additional photovoice studies. Second, a forward search using each article's citation was employed with the Web of Science database using the "cited reference" search tab (e.g., any article citing C. Wang). Finally, the journals in which such articles were located were searched in their entirety. Two additional articles were discovered using these three subsequent search methods. Thus, this analysis is based on 17 articles, pertaining to 14 separate photovoice research projects that fit the search parameters for this review (see Table 1).

Table 1

Description of Sample

Reference by First Author (year)	Article Title	Environmental Issue/Research Focus	Setting & Population	Participant Sample
Baldwin (2010)	At the water's edge: Community voices on climate change.	Climate change; rising sea levels; collective action; assessment of capacity of PV	Locals, artists, & visitors at Environmental Art Symposium in Noosa Biosphere Reserve, Australia	N= 16

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Bell (2008)	Photovoice as strategy for community organizing in the central Appalachian coalfields.	Coal mining; community organizing	Women's group in Central Appalachian Mountains of West Virginia, USA	N= 15
Bosak (2008)	Nature, conflict and biodiversity conservation in the Nanda Devi biosphere reserve.	Social aspects of conservation issues in biosphere reserve	Devi Biosphere Reserve in Himalayas, India	N= 10
Castleden (2009)	Hishuk Tsawak' (everything is one/connected): A Huu-ay-aht worldview for seeing forestry in British Columbia, Canada.	Unsustainable forestry management practices; indigenous worldviews	Huu-ay-aht First Nation territory, British Columbia, Canada	N= 45
Castleden (2008)	Modifying photovoice for community-based participatory Indigenous research.	Capacity of CPBR/PV to engage indigenous populations	Huu-ay-aht First Nation territory, British Columbia, Canada	N= 45
Garcia (2007)	Air, water, land: Mexican-Origin adolescents' perceptions of health and the environment.	Environmental risks and assets; health assessment & promotion in nursing	Latino youth in urban city in Midwestern state, USA	N= 14

Harper (2009)	Using photovoice to investigate environment and health in a Hungarian Romani (GYPSY) community.	Environmental injustices & related health problems; collective action	Youth in Romani (Gypsy) community, Hungary	N= 6
Harper, et al. (2009)	Environmental justice and Roma communities in Central and Eastern Europe.	Environmental injustices & related health problems; collective action	Youth in Romani (Gypsy) community, Hungary	N= 6
Healey (2010)	Community perspectives on the impact of climate change on health in Nunavut, Canada.	Climate Change; health	Indigenous communities, Nunavut, Canada.	N= 6
Keremane (2011)	Using PhotoStory to capture irrigators' emotions about water policy and sustainable development objectives: A case study in rural Australia.	Water conservation policy; sustainable farming & development	Rural farmers, Australia	N= 26
Kerstetter (2009)	Exploring Fijian's sense of place after exposure to tourism development.	Meaning of place; loss of cultural and natural assets; need for sustainable tourism	Villagers of Yasawas Islands, Fiji	N= 16

Lardeau (2011)	The use of photovoice to document and characterize the food security of users of community food programs in Iqaluit, Nunavut.	food security; climate change	Indigenous users of community food programs in Iqaluit, Nunavut	N= 8
Maclean (2009)	Research methodologies for the co-production of knowledge for environmental management in Australia.	Water governance; participatory research methodologies	Aboriginal group Kuku Nyungkal, Australia	N/R
Sands (2009)	A photovoice participatory evaluation of a school gardening program through the eyes of fifth graders.	Assess value of school garden program on child learning	Fifth graders in school garden program, Western Massachusetts, USA	N= 16
Thompson (2009)	"I am a Farmer": Young women address conservation using photovoice around Tiwai Island, Sierra Leone.	Water management and conservation	Young women in Tiwai Island, Sierra Leone	N= 28

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Thompson (2011)	Picturing gendered water spaces: A textual approach to water in rural Sierra Leone.	Water management and conservation	Villagers in Tiwai Island, Sierra Leone	N= 28
Zackey (2007)	Peasant perspectives on deforestation in Southwest China.	Unsustainable deforestation; villagers' perspectives and motivations	Villagers in Northwest Yunnan Province, Southwest China	N/R
Note: "N" is reported number prior to attrition. N/R = Not Reported. PV= photovoice. CBPR= Community-based, participatory research				

Analysis

In order to address our specific research aims we needed a framework of social justice to apply to the literature under review. Although social justice is a core value of social work, the definition of social justice is contested in the scholarly literature. While some have sought to define it, others debate that such definitions are situated in specific contexts and thus no definition should be considered definitive (Bonnycastle, 2011; Finn & Jacobson, 2003; Miley, O'Melia, & DuBois, 2009; Saleebey, 1990). The term "social justice" may be nebulous and no authoritative framework exists, however, there are several common attributes of the concept found in the literature that may be used to understand its meaning. Thus, through inductive content analysis of multiple sources of social work literature relevant to social justice (Bonnycastle, 2011; Coates, 2005; Finn & Jacobson, 2003; Hoff & Rogge, 1996; International Federation of Social Workers (IFSW), 2004; Miley et al., 2009; National Association of Social Workers (NASW), 2008; Saleebey, 1990) we developed a social justice framework (see Table 2). In developing this framework we first compiled an extensive list of any statements and definitions found in these sources, then using pile sorting techniques, and drawing from at least two or more sources for each attribute we synthesized them into three major domains with eight subsequent key attributes. We operationalized the framework in the form of a codebook which included code names, definitions, and dimensions for each key attribute. Using Atlas Ti® software, an initial target comparative review of the literature by both authors was conducted. Then, subsequent articles were analyzed by one author and the final results reviewed by both. The content analysis of each article was performed using an iterative process. Each article was examined deductively by applying our social justice framework in order to systematically search for key attributes of social justice in both the research processes and outcomes reported in the literature.

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Table 2

A Social Justice Framework: Domains and Key Attributes

Domain	Key Attribute	Definition
Value & Worth		All humans are recognized and affirmed to have equal value and worth.
	Solidarity	Working for social change with and on behalf of vulnerable and oppressed individuals and groups of people. Challenging "social conditions that contribute to social exclusion, stigmatization or subjugation, and to work towards an inclusive society" (NASW, 2008, section 4.2).
	Inclusion	All people, including those from culturally/ethnically diverse groups are included in decision making in meaningful ways. Their voices are recognized, and are not excluded or silenced based on prejudices or discrimination. Cultural pluralism and cooperation exist.
	Ethical Treatment	All people are treated in an ethical manner according to formal ethics guidelines, and not oppressed or mistreated for any reason.
Distributive Justice		The fair allocation of not only resources, but also risk/burden across all humanity.
	Rights to Access, Allocation, Opportunities	All members of humanity are ensured equal access to information, opportunities, resources, service delivery networks and social and ecological benefits. These are considered rights and thus are protected and enforced by law, and compensated when unfairly hampered. Also, the burden of waste is distributed fairly.
	Welfare	All members of humanity are able to meet their basic needs with self-sufficiency and under healthy conditions. The welfare of all humans is considered a higher priority over political and social agendas for development. "The enriching of human experience [is] the essential goal" (Saleebey, 1990, p. 37).
	Power & Exchange Dynamics	All humanity has equal share of power and can make exchanges based on equal position of power.

Call to Action		Social Justice requires active change efforts and capacity building to pursue social change. This involves actively promoting equality and opposing oppression/ negative discrimination and challenging unjust policies and practices. It also includes promoting the shifting/redistribution of resources towards more socially just outcomes.
	Social Change	Social Change is the goal of research. This involves acknowledging that goal, promoting social change in the outcomes of the research, and dissemination of findings to those who can assist with social change. This social change leads to expansion of access to information, opportunities, resources, service delivery networks and social and ecological benefits for vulnerable and oppressed populations.
	Sense of Urgency	The need for social change is conveyed with a sense of urgency as research topics are framed and urgent calls to action are issued as a result of research.
Note: All attributes were derived deductively from at least two or more social work sources (Bonnycastle, 2011; Coates, 2005; Finn & Jacobson, 2003; Hoff & Rogge, 1996; Miley, O'Melia, & DuBois, 2009; Saleebey 1990; IFSW, 2004; NASW, 2008).		

Explanation of the Social Justice Framework

Equal value and worth. Social justice requires that all humans are recognized and affirmed to have equal value and worth (Miley et al., 2009; NASW, 2008). Thus, research which honors this social justice value attends to solidarity building and the inclusion of marginalized or oppressed people and the ethical treatment of research participants in the processes and outcomes of a study. **Solidarity** means working for social change with and on behalf of vulnerable and oppressed individuals and groups of people (Finn & Jacobson, 2003; NASW, 2008); challenging "social conditions that contribute to social exclusion, stigmatization, or subjugation, and to work towards an inclusive society" (NASW, 2008, section 4.2). **Inclusion** connotes that all people, including those from culturally or ethnically diverse groups are included in decision making in meaningful ways (Coates, 2005; Hoff & Rogge, 1996; Miley et al., 2009; NASW, 2008). Their voices are recognized, and are not excluded or silenced based on prejudices or discrimination. Cultural pluralism and cooperation exist (NASW, 2008). **Ethical treatment** specifies that all people are treated in an ethical manner according to formal ethics guidelines, and not oppressed or mistreated for any reason (Miley et al., 2009; NASW, 2008).

Distributive justice. Social justice also requires that there is distributive justice, meaning the fair allocation of not only resources, but also risk and burden across all humanity (Bonnycastle, 2011; Hoff & Rogge, 1996; IFSW, 2004; NASW, 2008; Saleebey, 1990). Research processes and outcomes honoring this social justice value attend to human rights regarding access, allocations, and opportunities, the welfare of the people, as well as power and

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exchange dynamics of the contexts in which research participants live. All members of humanity are ensured equal access to information, opportunities, resources, service delivery networks and social and ecological benefits (Finn & Jacobson, 2003; IFSW, 2004; Miley et al., 2009; Saleebey, 1990). These are considered **rights** and thus are protected and enforced by law, and compensated when unfairly hindered (Bonnycastle, 2011; Saleebey, 1990). Also, the burden of waste is distributed fairly (Hoff & Rogge, 1996). **Welfare** means that all members of humanity are able to meet their basic needs with self-sufficiency and under healthy conditions (Bonnycastle, 2011; Coates, 2005; Miley et al., 2009; NASW, 2008). The welfare of all humans is considered a higher priority over political and social agendas for development (Saleebey, 1990). **Power and exchange dynamics** are recognized in the political, social, economic, and environmental contexts in which participants live, this includes acknowledging that some peoples' distributive justice rights are being violated and oppression or discrimination are central factors for consideration (Coates, 2005; Finn & Jacobson, 2003; Hoff & Rogge, 1996; IFSW, 2004; Saleebey, 1990).

Call to action. Finally, social justice requires active change efforts and capacity building to pursue social change (Bonnycastle, 2011; Coates, 2005). **Social change** involves actively promoting equality and opposing oppression or negative discrimination and challenging unjust policies and practices (Coates, 2005; NASW, 2008). It also includes promoting the shifting or redistribution of resources towards more socially just outcomes (IFSW, 2004). Consequently, research which honors this social justice value in its processes and outcomes has a **sense of urgency** calling for real social change at policy and practice levels, rather than merely considering social justice as an ideal (Bonnycastle, 2011). Such social change leads to expansion or assurance of access to information, opportunities, resources, service delivery networks, and social and ecological benefits for all humanity (Finn & Jacobson, 2003; Miley et al., 2009).

Results

The literature reviewed focused on an array of environmental topics including: climate change, environmental health risks, environmental justice, sustainable management, the conservation of ecosystems and natural resources (e.g., forests, water), and food security. These photovoice studies took place in 14 community settings all over the world in countries such as Australia, Canada, Fiji, Sierra Leone, and the United States. The number of photovoice participants in each project ranged from 6 to 45, with 16 being the most commonly reported. The remaining results will explore how each of the social justice attributes explained in the above section have been applied in both processes and outcomes of photovoice research studies examined in this literature review.

Equal Value and Worth

Solidarity. Researchers that demonstrated the social justice attribute of solidarity did so by acknowledging the expertise that photovoice participants bring to the research process, and by considering participants not as the subjects of research or as target populations, rather as collaborators in the research (Castleden, Garvin, & Huu-ay-aht First Nation, 2008; Harper, 2009; Maclean & Cullen, 2009). Often the researchers reported that they would take on more of a facilitator role, thereby allowing the participants' local knowledge, language, and priorities to

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emerge (Bell, 2008; Castleden et al., 2008; Harper, Steger, & Filčák, 2009; Keremane & McKay, 2011; Sands, Reed, Harper, & Shar, 2009; Zackey, 2007). Keremane and McKay (2011) also noted the importance of the researchers' attitudes as the key factor in participatory research for fostering trust and promoting solidarity.

Several researchers also noted that they promoted a sense of ownership of the photovoice project by involving the community and/or study participants throughout the research process (Castleden et al., 2008; Harper, 2009; Lardeau, Healey, & Ford, 2011; Sands et al., 2009). For instance, Zackey (2007) noted that the photovoice project allowed participants "to dictate which issues were important to them and gave them agency to direct the focus of the study" (p.153). Others noted how the participants owned not only the research process, but the data as well and thus gave copies of the photos to the participants for them to keep (Castleden et al., 2008; Garcia & Medeiros, 2007; Lardeau et al., 2011). Healey et al. (2010) stated, "a goal is that research participants and collaborators should 'own' the research process and use its results to improve the quality of life in the community" (p. 91). Finally, as a way to promote solidarity and foster trust, a few authors reported that it was essential to develop partnerships with local groups to gain entrée to a community and attain approval of local community leaders before beginning any research (Castleden et al., 2008; Keremane & McKay, 2011; Maclean & Cullen, 2009).

Inclusion. Researchers that attended to the social justice attribute of inclusion did so primarily by ensuring that typically marginalized and oppressed individuals were included in the photovoice projects, that they were involved in meaningful decision-making throughout the research process, and that their voices were heard and not silenced. Many authors introduced the photovoice technique and their selection of this method due to its demonstrated capacity to include vulnerable and oppressed individuals and groups of people to ensure their voices are heard. For instance, some noted that photovoice is effective in gaining the voices and perspectives of groups which are normally excluded from traditional research such as women (Thompson, 2009), indigenous groups (Castleden et al., 2008; Maclean & Cullen, 2009), ethnic minorities (Harper, 2009), migratory or transient populations (Lardeau et al., 2011), people limited in their abilities to read and/or write (Kerstetter & Briker, 2009), and youth (Harper, 2009; Sands et al., 2009).

The literature reported varying levels of inclusion of participants in meaningful decision making throughout the research process ranging from active and full participation by participants to researchers controlling more of the processes. Prompts for photo data collection usually allowed for participants to interpret broadly the focus of the study thereby allowing them to collect the data that they considered meaningful. For example, Thompson (2011) asked participants, "what do you have in this place (community, culture, and environment) that is important to protect for future generations?" (p. 44). Some studies also reported that the participants themselves selected either individually or as a group the photos that would be discussed and included to represent themes in the photovoice project (Castleden et al., 2008; Garcia & Medeiros, 2007; Healey et al., 2010; Keremane & McKay, 2011; Thompson, 2011). Keremane and McKay (2011) even noted that they allowed a miscellaneous category for any photos not fitting into the studies' themes, thereby allowing for any and all photos to be included if they were deemed meaningful to participants. The degree of meaningful decision-making and participation also varied in the different stages of dissemination of findings such as selecting

venues, planning, and coordination (Harper, 2009; Healey et al., 2010; Keremane & McKay, 2011; Lardeau et al., 2011; Sands et al., 2009).

Studies also varied on the range of reported measures to ensure that participants' voices were heard and not overshadowed by the researcher's voice or other participants' voices during data collection and analysis. For instance, some studies had participants write their own titles and captions for their photos (Garcia & Medeiros, 2007; Harper, 2009; Thompson, 2011), and in another, researchers created the captions and narratives for the photos from the participants' interviews and journals (Sands et al., 2009). Researchers also reported other ways to ensure that participants' voices were heard including the use of professional interpreters for accuracy in interviews (Garcia & Medeiros, 2007), allowing the participants to tell the "hidden stories behind the images" (Harper et al., 2009, p.261), allowing for individuals to privately discuss photos about sensitive issues that they would not feel open to doing in a larger group (Lardeau et al., 2011), and checking with participants to ensure that they agree with the thematic analysis, priorities and/or findings (Castleden et al., 2008; Lardeau et al., 2011). Sometimes more extensive data analysis was conducted by the researcher, but a few reported that they sought to keep the original voices of the participants in the analysis (Garcia & Medeiros, 2007; Thompson, 2009). Thompson (2009) explicitly noted, "I strive to maintain a rural Sierra Leonean voice. I resist translating the women's local, indigenous, emotional knowledge into a standard, linear summary" (p.66).

Finally, some noted that the photovoice technique allowed for participants' perspectives and world views to be heard and therefore contribute to the conversations and solutions of the environmental issues being researched (Baldwin & Chandler, 2010; Castleden, Garvin, & Huu-ay-aht First Nation, 2009).

Ethical considerations. The social justice attribute of ethical treatment was demonstrated in the literature as researchers acknowledged potential threats of ethical mistreatment of research participants, attainment of ethical review board approval to conduct their study, use of informed consent with their study participants, and by training participants regarding the ethical treatment of subjects in photos (e.g., humans, nature) and some even requiring participants to attain informed consent from human subjects in photos. Some researchers acknowledged that research collected by the use of photography can lead to unintended consequences (Castleden et al., 2008; Kerstetter & Briker, 2009; Lardeau et al., 2011). In one of these articles, the authors even noted that "the act of taking pictures in any community is a political act" (Castleden et al., 2008, p.1396).

A little over half of the literature reviewed reported on one or more ethical consideration (Castleden et al., 2008; Harper, 2009; Healey et al., 2010; Keremane & McKay, 2011; Kerstetter & Briker, 2009; Lardeau et al., 2011; Sands et al., 2009; Thompson, 2011). However, of these articles, only a few reported that they sought and attained approval from traditional research councils for their studies, each of these studies were working with indigenous populations; these also reported that they sought approval from the indigenous group's council as well (Castleden et al., 2008; Healey et al., 2010; Lardeau et al., 2011). It was also reported that photovoice is a culturally appropriate tool, especially when working with indigenous populations (Castleden et al., 2008).

Distributive Justice

Rights. The majority of researchers attended to the social justice attribute of human rights as they acknowledged the lack of rights and/or access to natural resources in their own communities (Baldwin & Chandler, 2010; Bell, 2008; Bosak, 2008; Castleden et al., 2009; Harper, 2009; Healey et al., 2010; Keremane & McKay, 2011; Kerstetter & Briker, 2009; Lardeau et al., 2011; Thompson, 2011; Zackey, 2007). Some even noted that marginalized people included in the research were forced to break laws related to natural resources in order to survive (Harper, 2009; Zackey, 2007). Others reported environmental injustices related to the unequal burden of waste and unequal access to infrastructure (e.g., public sanitation) (Harper, 2009; Harper et al. 2009) as well as unequal environmental health risks related to gender inequalities (Thompson, 2011).

Welfare. The social justice concept of welfare was demonstrated in the literature as researchers acknowledged the welfare conditions of participants and their communities, often noting that not all are able to meet their basic needs. Some of those reported included: threats to culture, identity, worldviews, place, and indigenous ways of life (Castleden et al., 2009; Kerstetter & Briker, 2009), food insecurity (Lardeau et al., 2011), and health disparities such as limited access to medical facilities (Healey et al., 2010), higher exposure to environmental toxins (Garcia & Medeiros, 2007; Harper, 2009), lack of access to safe drinking water sources and water-borne illnesses (Harper, 2009; Thompson, 2011), lack of access to safe recreation (Garcia & Medeiros, 2007), limited access to public infrastructure such as waste disposal and sewage treatment facilities (Harper, 2009; Kerstetter & Briker, 2009), and lower life expectancies (Harper, 2009). Additionally several noted economic strains due to lack of sustainable livelihood, high rates of unemployment, and out migration in the research communities (Castleden et al., 2009; Harper, 2009; Harper et al., 2009; Healey et al., 2010; Kerstetter & Briker, 2009; Lardeau et al., 2011).

Power and exchange dynamics. Again, the majority of the literature acknowledged the social justice attribute of power and exchange dynamics related to ownership or legal protection over natural resources and priorities for management and conservation (Baldwin & Chandler, 2010; Bell, 2008; Bosak, 2008; Castleden et al., 2009; Harper, 2009; Healey et al., 2010; Keremane & McKay, 2011; Kerstetter & Briker, 2009; Lardeau et al., 2011; Thompson, 2011; Zackey, 2007). Others noted the power and exchange dynamics between participants and researchers and sought to create equal relationships in the research process (Castleden et al., 2008; Harper, 2009; Maclean & Cullen, 2009). Castleden et al. (2008) even noted the importance of selecting photovoice as a CBPR research method, stating: "an overarching set of goals prevails in CBPR: to equalize power differences, build trust, and create a sense of ownership in an effort to bring about social justice and change" (p. 1394).

Call to Action

Social change. Some researchers reported the pursuit of the social justice attribute social change through active change efforts and capacity building. For instance, a few researchers noted immediate social change actions that addressed specific concerns documented in the photovoice

projects such as cleaning up graffiti and fixing unsafe streets (Bell, 2008; Castleden et al., 2008). Many studies identified capacity building outcomes of the photovoice projects and its contribution to individual and collective action at local and community levels (Baldwin & Chandler, 2010; Bell, 2008; Castleden et al., 2009; Harper, 2009; Harper et al., 2009; Healey et al., 2010; Sands et al., 2009). For example, participants were able to learn new skills in documentary photography, observation, critical thinking, research, leadership, activism, and presenting (Harper, 2009; Sands et al., 2009). Some were even trained so that they could conduct their own photovoice research in the future (Bell, 2008; Healey et al., 2010). Additionally, it was reported that participants gained social capital, experienced changes in consciousness related to the research topics, gained confidence in using their voice and using their research skills, enjoyed recognition as artists and experts in the research process, helped to challenge stereotypes they face, and developed self-efficacy and collective-efficacy to respond to the environmental and social justice concerns (Baldwin & Chandler, 2010; Bell, 2008; Castleden et al., 2009; Harper, 2009; Harper et al., 2009; Maclean & Cullen, 2009). A few even noted that the photovoice study findings led to grant applications, community based interventions, and further participatory research (Bell, 2008; Castleden et al., 2008; Harper, 2009; Harper et al. 2009).

Other researchers explicitly evaluated their photovoice projects by asking for participants' perspectives, and in one case the audiences' perspectives, on the effectiveness of the photovoice as a research process and its capacity to achieve outcomes (Baldwin & Chandler, 2010; Castleden et al., 2008; Keremane & McKay, 2011). Each of these found that photovoice was effective; one study even reported that 69% of their audience was encouraged to take action as result of seeing images and captions in the photovoice project (Baldwin & Chandler, 2010). Another noted that "photovoice effectively balanced power, created a sense of ownership, fostered trust, built capacity, and responded to cultural preferences" (Castleden et al., 2008, p.1393).

Sense of urgency. Often researchers acknowledged an urgent call to action for social change rather than merely considering social justice as an ideal. For instance, many of the researchers framed the environmental issues studied as they related to environmental and social change and acknowledged the goal of the research was to reach the community at large and policymakers to engage in active discussions of the photovoice project outcomes (Baldwin & Chandler, 2010; Harper, 2009; Healey et al., 2010; Keremane & McKay, 2011; Lardeau et al., 2011; Maclean & Cullen, 2009; Sands et al., 2009). Often they did this with a sense of urgency, knowing that the welfare of participants and their communities are in dire need of social and environmental change. For example, Harper (2009) made a strong call to action stating: "through our work together, we sought to assess and improve environmental and public health conditions for the community, to gain access to decision-making, and to organize individual and collective actions toward a more livable, just and sustainable future" (p. 10). One study even reported that "call to action" was an emergent theme itself in photovoice project (Healey et al., 2010, p. 91). Additionally, some researchers concluded their articles with calls for action primarily in the form of recommendations for improving policies and practices (Garcia & Medeiros, 2007; Healey et al., 2010; Lardeau et al., 2011; Zackey, 2007). These were largely focused on the need for more holistic approaches to problem identification and solutions, which look not only at singular issues, rather are multidimensional and are addressed on all socio-ecological levels.

Finally, there were varying levels of dissemination that attended to the sense of urgency for social change. Many disseminated findings in ways that reached the broader community, policy-makers, and other researchers. For example, public exhibitions (Baldwin & Chandler, 2010; Harper, 2009; Healey et al., 2010; Keremane & McKay, 2011; Lardeau et al., 2011; Sands et al., 2009), newspapers (Harper et al., 2009), electronic presentations (Sands et al., 2009), online websites (Baldwin & Chandler, 2010), and/or photo books (Keremane & McKay, 2011). One photovoice project was even presented to a United Nations committee in connection to their evaluation of human rights reports (Harper, 2009).

Discussion

There has been a rise in research aimed at identifying the best avenues to reach individuals and communities to promote collective action to respond to the environmental crisis and resulting social injustices. Methods that are community-based and participatory, such as photovoice, are particularly promising because they seek to engage participants in the identification of problems and solutions related to their environment. We recognize that there may be other CBPR methods that could be applied to social justice research related to the environment; however, we focused specifically on the photovoice technique as it has great potential to incorporate social justice in its research processes as well as its outcomes, and because it is increasingly being used in research related to the environment.

We strove to develop a comprehensive social justice framework to use as a codebook during analysis, however, we acknowledge that social justice is a dynamic and contested concept and thus ours is not a final interpretation. By applying a social justice framework in a content analysis of the literature we depicted how photovoice is being implemented in the research process in ways that promote social justice, and how photovoice is being used to promote environmental and social justice outcomes. While no single article reported on all of the key attributes of social justice, exemplars were found and presented for each of the eight key attributes in our social justice framework.

Those that attended to building solidarity acknowledged participants as experts and collaborators in the research process, fostered trust by building rapport, and promoted a sense of ownership of the research processes and outcomes by the participants. Researchers' attitudes on their roles as facilitators and partners in the research process were key in building solidarity. The key attribute of inclusion was reported the most broadly across the literature, perhaps demonstrating the participatory capacity of photovoice to recruit participants from groups typically marginalized, oppressed, and excluded from research processes, to include them in meaningful decision-making, and to ensure their voices were heard. The data analysis phase, however, was identified as an area with greater potential risks for the researchers' voices to overshadow participants' voices, thus caution should be taken in this phase to ensure participants' voices are truly heard. Although over half the studies reported on ethical considerations, only a few reported that they sought and attained approval from traditional ethics review boards for their studies. Interestingly, of the ones that did report this were researchers who were working with indigenous populations; these also reported that they sought approval from ethical review boards of traditional research councils as well as from the indigenous

group's council (Castleden et al., 2008; Healey et al., 2010; Lardeau et al., 2011). When conducting research projects with any human subjects, especially with marginalized and/or oppressed populations it is not only essential, but also socially just to seek and attain ethical review board approval. We would also encourage researchers to work in partnership with communities to develop an agreement for conducting ethical research that is ethical not only to traditional ethical review board standards but also for the community's standards.

Almost all of the literature reported on the lack of human rights and/or (in)access to natural resources by marginalized and/or oppressed people. In addition, a few noted specific environmental injustices, unequal burden of waste, and the necessity of some community members to break laws related to natural resources simply to survive. Over half acknowledged at least one aspect of welfare status of the participant populations, including cultural, social, political, economic, and health. Most researchers noted the power and exchange dynamics of the marginalized and/or oppressed populations that participated in their studies. A few also attended to the potential for imbalances in power in the research relationships, thus, it is important for researchers to acknowledge and seek to create equal relationships throughout the research process.

Few social change outcomes were reported in the literature though multiple examples of capacity building were found. This may be due to the incremental nature of change and that perhaps researchers published findings too early to report such social changes. It would be beneficial if future studies built in measures for the evaluation of the capacity of photovoice itself and any resulting social change outcomes of the photovoice projects. Most studies reported that the goal of the photovoice project was to seek social justice with a sense of urgency for social change rather than merely treat it as an ideal. Many policy and practice suggestions were presented to local and global communities and policymakers through various dissemination efforts. However, few documented any actual policy or practice changes as a direct result of the photovoice projects. Future researchers should report on any impacts created by implemented policy and practice changes related to their photovoice projects.

Implications for Research and Practice

This analysis is important to the multidisciplinary field of scholars and researchers who are responding to the environmental crisis and want to incorporate social justice values into their research practices. It is particularly relevant to social work as the profession is becoming increasingly concerned with finding solutions to the environmental crisis as a way to address social injustices. Future researchers could be diligent in attending to all eight key attributes in the social justice framework throughout implementation of photovoice research processes and outcomes. This review found that the photovoice technique is promising in its capacity to promote social justice in the research process on environmental issues. However, more studies need to be conducted in regards to the social justice outcomes that may occur incrementally and were not reported in the current literature. Future studies may also benefit from insight that can be found in non-English sources and non-peer reviewed formats, especially since non-academic, publicly accessible channels for dissemination may be more aligned with the CBPR approach of photovoice. Finally, future research could also provide further data on additional research methods that professional social workers are using to respond to the environmental crisis and to promote social justice.

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References

Baldwin, C., & Chandler, L. (2010). At the water's edge: Community voices on climate change. *Local Environment: The International Journal of Justice and Sustainability, 15*(7), 637-649.

Bell, S. E. (2008). Photovoice as strategy for community organizing in the central Appalachian coalfields. *Journal of Appalachian Studies, 14*(1&2), 34-48.

Besthorn, F. H., & Meyer, E. E. (2010). Environmentally displaced persons: Broadening social work's helping imperative. *Critical Social Work, 11*(3), 123-138.

Bosak, K. (2008). Nature, conflict and biodiversity conservation in the Nanda Devi biosphere reserve. *Conservation Society, 6*, 211-24.

Bonnycastle, C. R. (2011). Social justice along a continuum: A relational illustrative model. *Social Service Review, 85*(2), 267-295

Bullard, R. (Ed.). (1994). *Unequal protection*. San Francisco, CA: Sierra Club.

Carlson, E. D., Engebretson, J., & Chamberlain, R. M. (2006). Photovoice as a social process of critical consciousness. *Qualitative Health Research, 16*(6), 836-852.

Castleden, H., Garvin, T., & Huu-ay-aht First Nation (2008). Modifying photovoice for community-based participatory Indigenous research. *Social Science & Medicine, 66*(6), 1393-1405.

Castleden, H. Garvin, T., & Huu-ay-aht First Nation (2009). Hishuk Tsawak' (everything is one/connected): A Huu-ay-aht worldview for seeing forestry in British Columbia, Canada. *Society and Natural Resources, 22*(9), 789-804.

Catalani, C., & Minkler, M. (2010). Photovoice: A review of the literature in health and public health. *Health Education Behavior, 37*(3), 424-451.

Commission on Social Determinants of Health [CSDH]. (2008). *Closing the gap in a generation: Health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health.* Geneva, World Health Organization. Retrieved from http://whqlibdoc.who.int/publications/2008/9789241563703_eng.pdf

Coates, J. (2003). Exploring the roots of the environmental crisis: Opportunity for social transformation. *Critical Social Work, 4*(1), 1-15.

Coates, J. (2005). *Ecology and social work: Toward a new paradigm*. Black Point, NS: Fernwood Publishing.

Dixon, M., & Hadjialexiou, M. (2005). Photovoice: Promising practice in engaging young people who are homeless. *Youth Studies Australia, 24*(2), 52-56.

Dumbrill, G. (2009). Your policies, our children: Messages from refugee parents to child welfare workers and policymakers. *Child Welfare, 88*(3), 145-168.

Estes, R. (1993). Toward sustainable development: From theory to praxis. *Social Development Issues, 15*(3), 1-29.

Finn, J., & Jacobson, M. (2003). Just practice: A social justice approach to social work. Peosta, IA: Eddie Bowers.

Foster-Fishman, P., Nowell, B., Deacon, Z., Nievar, M., & McCann, P. (2005). Using methods that matter: The impact of reflection, dialogue, and voice. *American Journal of Community Psychology, 36*(3-4), 275-291.

Garcia, C., & Medeiros, M. (2007). Air, water, land: Mexican-origin adolescents' perceptions of health and the environment. *Electronic Journal of Nursing, 9*(4), 574-587. Retrieved from http://www.fen.ufg.br/revista/v9/n3/v9n3a02.htm

Powers & Freedman

Harper, K. (2009). Using photovoice to investigate environment and health in a Hungarian Romani (GYPSY) community. *Practicing Anthropology, 31*(4), 10–14.

Harper, K., Steger, T., & Filčák, R. (2009). Environmental justice and Roma communities in Central and Eastern Europe. *Environmental Policy and Governance, 19*, 251–268.

Healey, G.K., Magner, K.M., Ritter, R., Kamookak, R., Aningmiuq, A., Issaluk, B., Mackenzie,K., Allardyce, L., Stockdale, A., & Moffit, P. (2010). Community perspectives on the impact of climate change on health in Nunavut, Canada. *Artic, 64*(1), 89-97.

Hergenrather, K., Rhodes, S., Cowan, C., Bardhoshi, G., & Pula, S. (2009). Photovoice as community-based participatory research: A qualitative review. *American Journal of Health Behavior, 33*(6), 686-698.

Hoff, M., & McNutt, J. (Eds.). (1994). *The global environmental crisis: Implications for social welfare and social work*. Brookefield, VT: Avebury.

Hoff M. D., & Rogge, M. E. (1996). Everything that rises must converge: Developing a social work response to environmental injustice. *Journal of Progressive Human Services, 7*(1), 41-57.

Humphreys, N., & Rogge, M. (2000). Environmental policy. *National Association of Social Workers, Social Work Speaks: NASW Policy Statements*, 101-108.

International Federation of Social Workers [IFSW]. (2004). *Ethics in social work, statement of principles*. International Federation of Social Workers and International Association of Schools of Social Work. Retrieved from http://www.ifsw.org/f38000032.html

Israel, B.A., Schulz, A., Parker, E., & Becker, A.B. (1998). Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health, 19*, 173-202.

Jurkowski, J. (2008). Photovoice as participatory action research tool for engaging people with intellectual disabilities in research and program development. *Intellectual and Development Disabilities, 46*(1), 1-11.

Keremane, G. B., & McKay, J. (2011). Using photostory to capture irrigators' emotions about water policy and sustainable development objectives: A case study in rural Australia. *Action Research, 9*(4), 405-425.

Kerstetter, D., & Briker, K. (2009). Exploring Fijian's sense of place after exposure to tourism development. *Journal of Sustainable Tourism, 17*(6), 691-708.

Lardeau, M-P., Healey, G., & Ford, J. (2011). The use of Photovoice to document and characterize the food security of users of community food programs in Iqaluit, Nunavut. *International Electronic Journal of Rural and Remote Health, 11*(2), 1-17. Retrieved from http://www.rrh.org.au

Lopez, E. D. S., Eng, E., Randall-David, E., & Robinson, N. (2005). Quality-of-life concerns of African American breast cancer survivors within rural North Carolina: Blending the techniques of photovoice and grounded theory. *Qualitative Health Research, 15*, 99-115.

Maclean, K., & Cullen, L. (2009). Research methodologies for the co-production of knowledge for environmental management in Australia. *Journal of the Royal Society of New Zealand, 39*(4), 205-208.

Malloy, J. K. (2007). Photovoice as a tool for social justice workers. *Journal of Progressive Human Services, 18*(2), 39-55.

Mary, N. (2008). *Social work in a sustainable world*. Chicago, IL: Lyceum Books, Inc.

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Minkler, M., Vasquex, V.B., Tajik, M., & Petersen, D. (2008). Promoting environmental justice through community-based participatory research: The role of community and partnership capacity. *Health Education & Behavior, 35*(1), 119-137.

Miley, K. K., O'Melia, M. W., & DuBois, B. L. (2009). *Generalist social work practice: An empowering approach* (6th ed.). Boston, MA: Allyn and Bacon.

National Association of Social Workers [NASW]. (2008). *Code of Ethics of the National Association of Social Workers*. Washington, DC. Retrieved from http://www.socialworkers.org/pubs/code/code.asp

Saleebey, D. (1990). Philosophical Disputes in Social Work: Social Justice Denied. *Journal of Sociology and Social Welfare, 17*(2), 29-40.

Sands, C., Reed, L.E., Harper, K., & Shar, M. (2009). A Photovoice participatory evaluation of a school gardening program through the eyes of fifth graders. *Practicing Anthropology, 31*(4), 15–20.

Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K.D., Tignor, M., & Miller, H.L. (Eds.). (2007). *Climate change 2007: The physical science basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.* Cambridge, ENG: Cambridge University Press.. Retrieved from http://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html

Thompson, J. (2009). "I am a Farmer": Young women address conservation using photovoice around Tiwai Island, Sierra Leone. *Agenda, 23*(79), 65-69.

Thompson, J. (2011). Picturing gendered water spaces: A textual approach to water in rural Sierra Leone. *Agenda, 25*(2), 45-53.

Wang, C. C., & Burris, M. A. (1997). Photovoice: Concept, methodology, and use for participatory needs assessment. Health Education and Behavior, 24(3), 369-387.

Wang, C. C., Burris, M. A., & Xiang, Y. P. (1996). Chinese village women as visual anthropologists: A participatory approach to reaching policymakers. *Social Science & Medicine, 42(*10), 1391-1400.

Wang, C. C., & Pies, C. A. (2008). Using photovoice for participatory assessment and issue selection: Lessons from a family, maternal, and child health department. In M. Minkler & N. Wallerstein (Eds.), *Community-based participatory research for health: From process to outcomes* (pp.183-197). San Francisco, CA: Jossey-Bass.

United Nations World Commission on Environment & Development [UNWCED]. (1987). *Our Common Future.* New York, NY: Oxford University Press.

Zackey, J. (2007). Peasant perspectives on deforestation in Southwest China. *Mountain Research and Development, 27*(2), 153-161.