Abstract

Background: Traditional approaches to research can sometimes face difficulties in engaging participants, allowing flexibility and ultimately eliciting data about people's experiences. When this occurs researchers should be more innovative with research design. Visual methods are an alternative approach to interview based qualitative research, where images (often photographs) are used as stimuli and/or structure within the interview. However, little has been published in the nursing literature to guide nurse researchers in applying and evaluating this method.

Aim: To increase nurse researchers' awareness of visual methods and their potential, to enable them to make informed choices about methods in health research.

Discussion: Visual methods with a particular focus on methods which use photographs within health research are introduced. The benefits of using photographs in health research, such as reducing the gap between researcher and participant; and facilitating expression of meaningful data, are discussed along with ethical, analytical and practical difficulties. Discussion points are illustrated with reflections from health research, and a comparison of interviews with and without the use of photographs is also presented

Conclusion: Using photographs offers a good alternative to more traditional approaches but the exact benefits are difficult to evidence because of the complexities of the research interaction.

Implications for practice: this detailed discussion of visual methods and the associated methodological issues should increase nurse researchers' awareness of the method, assist them in making informed choices about research methods, and encourage their use in health research.

Introduction

A fundamental aspect of research is to determine how best to propose and answer questions (Packard, 2008). Traditional approaches to research can sometimes face difficulties in engaging participants, allowing flexibility and ultimately eliciting data about people's experiences to address the research question. When this occurs researchers have the opportunity to be more innovative with design and methodologies (Edmondson, 2013) to ensure a tailored approach (Matthews, 2007). Visual methods (e.g. photo-elicitation and photo-voice) are alternative approaches to interview based research, where images (often photographs) are used as stimuli and/or structure within interviews. Over the last decade, the use of visual methods in nursing research has progressed from "being a waif on the margins" (Harper, 2002) and disregarded due to subjectivity (Riley and Manias, 2004), to an alternative method with potential to reveal more data than traditional interviews (Balmer et al., 2015). Consumer led research and promotion of participatory methods has facilitated the increased popularity of visual methods (Wiles et al., 2008). However, little has been published to guide nurse researchers in applying and evaluating this method (Miller, 2015, Wiles et al., 2008, Riley and Manias, 2004). This article aims to increase nurse researchers' awareness of visual methods and their potential, to enable them to make informed choices about methods in health research.

What do we mean by 'visual' methods?

The 'visual' is a vital part of how the majority of people understand the world and there are numerous ways research could incorporate visual elements. Utilising photographs, images, paintings, video and drawings within research can enrich methods traditionally focussed on verbal or written communication (for detailed examples of using visual methods in psychology see Reavey (2011)). This article will focus on the 'photo elicitation' and 'photovoice' methods; where photographs are the main visual element.

Photo elicitation was first used in the 1950s by Collier et al to investigate psychological stress (Harper, 2002). The main application of this method involves participants taking photographs and the researcher using these as a stimulus during subsequent interviews (Harper, 2002).

Photovoice, previously known as photo novella, developed in the 1990s by Wang and Burris (1997), is also a method where photographs are taken by the participant (or researcher) to enable them to think critically about their community and discuss the different influences on their lives, through a group process. It is referred to as a Community Based Participatory Research (CBPR) method whereby groups identify issues in the community, select photographs based on those issues, participate in group meetings to describe the photos and explore meanings, and exhibit the

66 photographs and narratives to stakeholder groups to influence policy makers (Wang
67 and Burris, 1997).

68 Unlike the group action approach used in photovoice (Wang and Burris, 1997), photo-
69 elicitation seeks individualised accounts (Harper, 2002). Application of these methods
70 enables the creation of knowledge closely focussed on the experience of participants
71 and their interaction with their environment (Lal et al., 2012). Participation is
72 expanded beyond the traditional interview and a more active participant role is
73 encouraged (Meo, 2010), see table 1. For example, 'auto driving' is a technique
74 within visual interviewing which emphasises and encourages the participant, to 'drive
75 the interview' (Frith et al., 2005: p.190).

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77 **How have visual methods been used in health research?**

78 Historically visual methods have been more commonly used within sociology,
79 psychology, geography, but their use is increasing within health research (Lal et al.,
80 2012, Pain, 2012). For example, in a wide range of health topics such as cancer
81 (Balmer et al., 2015); chronic disease (Drew et al., 2010); end of life care (Tishelman
82 et al., 2016); self-harm (Edmondson et al., 2018); and mental health (Han and Oliffe,
83 2015). It has also been used in diverse age groups including; children (Whiting,

2015), young people (Wells et al., 2012), adults (Balmer et al., 2015) and older people (Wiersma, 2011) .

Several reviews of visual methods in health research have highlighted areas of benefit, as well as where more information is required (Catalani and Minkler, 2010, Lal et al., 2012, Pain, 2012, Riley and Manias, 2004, Balmer et al., 2015). Pain (2012) concluded researchers would benefit from comparisons of visual methods with other approaches to help make informed choices about methodology. Riley et al (2004) suggested the method be promoted in nursing to enrich traditional forms of data collection and provide different approaches to research. Gaps in the literature included further examination of the ethical, methodological (Lal et al., 2012) analytical and confidentiality issues (Balmer et al., 2015), related to the method. Along with the key benefits and difficulties associated with using visual methods, these identified gaps in the literature are discussed to help nurse researchers make informed choices about methods, and applied examples from the authors research are used throughout: 'Teenager's experiences of continued education following a diagnosis of cancer' (Pini, 2014) and 'Listening with your eyes: Using pictures and words to explore self-harm' (Edmondson, 2013) .

Key benefits of using visual methods in health research

The key benefits of visual methods have been shown in three areas; with participants who may find it **difficult to verbally express** themselves (Pink, 2004); to explore **sensitive subject areas** such as cancer (Pini, 2014) and self-harm (Edmondson et al., 2018); to **engage young people** in research, for example to explore chronic disease self-management (Drew et al., 2010).

Underpinning visual methods are two main perceived benefits: reducing the gap between researcher and participant: and facilitating expression of meaningful data.

Reducing the gap between researcher and participant

It is well documented that visual interview methods help establish rapport with participants (Smith et al., 2012). They have been described as a bridge building method, helping to bring together the worlds of participant and researcher (Packard, 2008, Drew et al., 2010). The way the method is conducted, both prior to and during the interview, can facilitate participant comfort and encourage their engagement. Interviews can be daunting and unfamiliar, especially when difficult experiences are discussed. The method allows participants to prepare for the interview by giving them time to consider and take photographs, prior to the interview, which they would like

to discuss. Enabling them to feel more in control of the pending research encounter. The unfamiliarity is also reduced by the time spent in contact with the researcher before the interview (Edmondson, 2013). It can be beneficial for researchers to meet participants and speak over the telephone prior to interviews to discuss themselves and their interest in the topic area, but also to provide some coaching on the method. This approach can help participants engage with the process and build a rapport with the researcher, especially in a longitudinal design (Pini, 2014).

The photograph itself provides a concrete starting point for the participant to begin conversations:

> *"It's quite a good thing because if like if you were just to say come in and talk about it, I wouldn't know where to start or anything and it's a good like, it's a talking point like the picture you can say I've taken this picture because…" (participant quote, Edmondson, 2013)*

Discussing the meaning of photos during the interview facilitates the sense of working something out together (Harper, 2002). Enabling participants to use their own photographs to set the agenda (which photographs to discuss, in what order, for how long) can result in feelings of empowerment (Packard, 2008). There is an implicit message that the participant has an important perspective to share (Drew et al., 2010)

and many studies have also found using photographs to explore meanings and memories as a cathartic, positive, rewarding experience for participants (Balmer et al., 2015, Edmondson et al., 2018).

Facilitating expression of meaningful data

The inclusion of photographs facilitates extensive and holistic accounts of participant experience (Balmer et al., 2015). The photograph can take the researcher into different environments (place of work, home, bedroom, hospital), with different people (family, friends, colleagues) and add an emotional layer, which may be difficult to verbalise (Balmer et al., 2015). Going into the world of the participant can offer access to unpredictable information (Meo, 2010, Pyle, 2013) and unlocked stories (Leibenberg, 2009), providing a rich narrative (Pyle, 2013, Thomson, 2012). The polysemic properties of photographs enable unexpected meanings to emerge, see figure 1. In a similar way, Balmer (2015) reported how the same photograph (of a spouse) revealed discussions about very different aspects of the participants' experience with cancer, for example; expectations and reality of support, body image alterations and changes to sexuality, communication difficulties, relationship breakdown and guilt about the impact of cancer on others. They referred to Barthes 'obvious' and 'obtuse' meanings of photographs, the latter being more personal and

emotional and more likely to disrupt the reading of a photograph (Barthes, 2003). This introduction of multiple meanings within interviews can bring about enhanced or different understanding of the phenomena of interest (Edmondson, 2013).

Figure 1 about here.

Different parts of the brain are used to process visual and verbal information, therefore responses to words and pictures can be different (Harper, 2002). Visual information evokes a deeper level of consciousness, which can result in different information being elicited (Harper, 2002). Responding to visual stimuli is said to elicit more emotional responses than verbal questioning alone, which can enrich the interview content (Prosser, 2006) and highlight significant issues (Harrison, 2002). The visual element is said to promote self-understanding, expression, communication and focus during interviews (Drew et al., 2010), thus facilitating more comprehensive interviews (Harper, 2002). Rather than fitting experiences to pre-determined questions, the active process of using participant photographs enables better expression and encourages participants to consider - what is important to them, how might they visually represent that and then reflect on the meaning of their photograph(s) using their own words (Harper, 2002, Wells et al., 2012).

Using photographs reduces difficulties they might have understanding research led questions (Lachal et al., 2012). In so doing a diverse range of people can be empowered to take part in research (Balmer et al., 2015), that is enjoyable (Edmondson et al., 2018) and " better than just a normal survey" (Drew et al., 2010).

Photographs are also helpful in introducing difficult subject matter (Lachal et al., 2012) and communicating experiences that are difficult to express verbally (Harrison, 2002). They can reinforce the "truthful nature of the verbal tale" (Johnson, 2004 p.432) and help participants feel confident in their expressions. They can also facilitate discussions by providing something both researcher and participant can look at, which can reduce awkwardness about eye contact or knowing where to look (Pini, 2014), see figure 2. The act of looking at the photograph can also create a sense of distance between the participant and their experience (Balmer et al., 2015), enabling them to opt in/out of direct personal association and talk about an issue more broadly (Harrison, 2002).

Figure 2 about here.

Photographs can also serve as a memory aid during the interview (Pyle, 2013) and an anchor for narratives by providing something physical that can be referred back to if the participant needs to re-orientate themselves (Pini, 2014):

> *the [photographs] were good because it gives like something to talk about which I'd probably forget if I was just talking like this so... it was like a reminder to tell you whatever it was" (participant quote, Pini, 2014)*

Comparing interviews with /without photographs

Collier (1957), who first named the photo elicitation method, was also the first to compare it to non-visual interview methods. He reported how photographs facilitated recall; aided understanding and enabled richer, more emotional discussions, compared to interview alone (cited in Harper, 2002). Meo (2010) also compared interviews with and without photographs and reported similar results – more detailed and enjoyable interviews; a closer examination of whom and what was important; emergence of unexpected topics; and enhanced participation and control for participants.

Table 1 details a number of different objectives researchers strive for when conducting qualitative research, and compares how interviews, with and without photographs, meet those objectives.

Table 1 about here

Key difficulties with using visual methods

This approach does not appeal to all (Frith and Harcourt, 2007) and there are well-documented challenges for the researcher and the researched and include ethical, analytical and practical concerns.

Ethical difficulties

Although ethical guidelines apply to all research, visual methods specifically lack a history of ethical practice (Balmer et al., 2015). Ethical issues relating to anonymity, consent, and copyright are common challenges. Lack of knowledge of the method disadvantages studies in gaining approval from committees who are simply unfamiliar (Wiles et al., 2008). Both Miller (2015) and Pitt (2014) urge scholars to purposefully state their reasons for using visual methods, detailing the range of advantages, in order to break this cycle.

Once approval is obtained, researchers inevitably strive to protect participants through anonymising any identifiable data in the photographs and transcripts. Removing identifiable data before publication / presentation is necessary, but often difficult to completely anonymise photographs (Tishelman et al., 2016). Pixelating photographs is an option, but can feel contradictory when participants aim to express themselves.

To include photographs of others, participants are (ethically) required to seek written consent from that person. In this situation participants may either ignore the consent procedure because they find it awkward or unnecessary, or they do not capture the photographs they would like to (Pini, 2014).

Complexities and strategies with regards to consent have been discussed in the literature. Davies (2008) focused on issues of informed consent for visual researchers and, amongst other recommendations, suggested offering participants the choice to consent to use of individual photographs, rather than consent to use all of the data.

Copyright can present as an issue. In most cases the participant owns the image and the consent process obtains permission for the researcher to use data. Participants may however take photographs of art work, images in a magazine or from the internet. Ascertaining the copyright owner can prove difficult and even impossible in some cases (Edmondson, 2013).

Analytical difficulties:

There is limited guidance for analysing combined images and transcripts (Frith and Harcourt, 2007, Gleeson, 2011). Instead, authors typically present an analysis of the textual data only. This is perhaps due to the dearth of literature/explicit guidance on how to handle visual data with systematic rigour and transparency (Gleeson, 2011) and the view that the images are used as a stimulus, rather than as "containing" data in their own right (Warren, 2005).

Polytextual thematic analysis has therefore been developed as a method of analysis (Gleeson, 2011) that enables researchers to include visual data in the analysis. The method follows the same key stages as a thematic analysis, as described by Braun and Clarke (2006), but applies the stages to working with photographs as data. For example, the first step is to familiarise with the photographs (view each photograph separately and note thoughts and feelings that emerge. Note details of the specific content of the photograph that evoked thoughts/feelings - use of colour, placement, and content). This process is then repeated whilst viewing all of the photographs together to generate initial codes. The data is then managed as one source (a list of codes which consist of images and text) for the remaining stages of the analysis (searching, reviewing, defining and naming themes).

Practical difficulties:

To ensure a complete execution of the method the participant requires equipment to collect data; instructions / guidance (motivation) to collect data, and the researcher requires equipment for sharing photographs (between participant and researcher) and viewing them (in print /electronically). Although most mobile phone devices feature a camera, this is not always the most practical or preferred choice because participants may not want sensitive photos on their own phone. Using study cameras however is not without risk (or resistance). Disposable cameras are not advisable because they can be seen as an out-of-date medium (Drew et al., 2010) which can restrict the amount of data collected and options for viewing/ deleting photographs.

The offer of instructions / guidance around the content or number of photos can also inadvertently restrict data collection. For example, when provided with examples and guidance participants tended to produce images that were very closely linked to the examples, which likely reduced the level of individual authenticity (Pini, 2014).

Without restriction participants can explore all different aspects of their experience and the researcher avoids restricting access to data, however, no restrictions can be overwhelming and appear more burdensome. An abundance of photographs can prove difficult to work with during the interview and the analysis phase (Edmondson, 2013)

and can disrupt the flow of discussion; (Packard, 2008). Also, during the analysis and listening to the audio recordings, it isn't always obvious which photographs are being discussed. Meo (2010) suggested numbering each photograph and referring to the number throughout the interview.

There is no guidance on the optimal number of photographs or the time between data collection and interview. This balance needs to be carefully considered and adapted to the needs of individual projects.

Finally, the researcher needs to prepare for participants who present without photographs. This can happen for many reasons, such as difficulty with the concept of capturing elements of their experiences visually (Drew et al., 2010) or practical difficulties in capturing certain images (Edmondson, 2013). Researchers can respond by developing an interview guide featuring a discussion of the practical and emotional difficulties the participant has encountered in trying to capture images and what might be missing from the photographs they present (Edmondson et al., 2018, Edmondson, 2013).

Conclusions:

It is left to the researcher to consider whether the benefits of using visual methods outweigh the disadvantages (Packard, 2008). Using this method offers a good

alternative to more traditional approaches, but the exact benefits of the methods are difficult to evidence because of the complexities of the research interaction (Pain, 2012). Therefore, as with any interview based research (or clinical work), the skill of the interviewer and the relational aspects remain of fundamental importance (Packard, 2008).

This detailed discussion of visual methods and the associated methodological issues will facilitate nurse researchers' awareness of the method, assist them in making informed choices about research methods and encourage their use in health research to enrich data and promote understanding. Employing visual methods in future nursing research will contribute to the growing awareness and popularity of visual methods.

References

BALMER, C., GRIFFITHS, F. & DUNN, J. 2015. A review of the issues and challenges involved in using participant-produced photographs in nursing research. *J Adv Nurs,* 71**,** 1726-37.

BARTHES, R. 2003. *Extracts from 'Camera Lucida'. In The Photography Reader,* Oxford, UK, Routledge, Oxford, UK.

BRAUN, V. & CLARKE, V. 2006. Using Thematic Analysis in Psychology. *Qualitative Research in Psychology,* 3**,** 77-101.

CATALANI, C. & MINKLER, M. 2010. Photovoice: a review of the literature in health and public health. *Health Educ Behav,* 37**,** 424-51.

COLLIER, J. 1957. Photography in anthropology: a report on two experiments. *American Anthropologist,* 59**,** 843-859.

DAVIES, K. 2008. Informed consent in visual research. *Real life methods.* University of Manchester: ESRC National Centre for Research Methods.

DREW, S., DUNCAN, R. & SAWYER, S. 2010. Visual Storytelling: A beneficial but challenging method for health research with young people. *Qualitative Health Research,* 21**,** 1677-1688.

EDMONDSON, A. J. 2013. *Listening with your eyes: Using pictures and words to explore self-harm.* PhD, University of Leeds.

EDMONDSON, A. J., BRENNAN, C. & HOUSE, A. O. 2018. Using photo-elicitation to understand reasons for repeated self-harm: a qualitative study. *BMC Psychiatry,* 18**,** 98.

FRITH, H. & HARCOURT, D. 2007. Using Photographs to Capture Women's Experiences of Chemotherapy: Reflecting on the Method. *Qualitative Health Research,* 17**,** 1340-1350.

FRITH, H., RILEY, S., ARCHER, L. & GLEESON, K. 2005. Editorial. *Qualitative Research in Psychology,* 2**,** 187-198.

GLEESON, K. 2011. Polytextual Thematic Analysis for Visual Data. *In:* REAVEY, P. (ed.) *Visual Methods in Psychology.* Psychology Press.

HAN, C. & OLIFFE, J. 2015. Photovoice in mental illness research: A review and recommendations. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine,* 20**,** 110-126.

HARPER, D. 2002. Talking about pictures: a case for photo elicitation. *Visual Studies,* 17**,** 13-26.

HARRISON, B. 2002. Seeing health and illness worlds – using visual methodologies in a sociology of health and illness: a methodological review. *Sociology of Health & Illness,* 24**,** 856-872.

JOHNSON, G. C. 2004. Reconceptualising the visual in narrative inquiry into teaching. *Teaching and Teacher Education,* 20**,** 423-434.

LACHAL, J., SPERANZA, M., TAÃ¯EB, O., FALISSARD, B., MORO, M.-R. & REVAH-LEVY, A. 2012. Qualitative research using photo-elicitation to

explore the role of food in family relationships among obese adolescents. *Appetite*.

LAL, S., JARUS, T. & SUTO, M. J. 2012. A scoping review of the Photovoice method: Implications for occupational therapy research. *Canadian Journal of Occupational Therapy,* 79**,** 181-190.

LEIBENBERG, L. 2009. The visual image as a discussion point: increasing validity in boundary crossing research. *Qualitative research,* 9**,** 441-467.

MATTHEWS, S. H. 2007. A Window on the 'New' Sociology of Childhood. *Sociology Compass,* 1**,** 322-334.

MEO, A. I. 2010. Picturing Students' Habitus: The Advantages and Limitations of Photo-Elicitation Interviewing in a Qualitative Study in the City of Buenos Aires. *International Journal of Qualitative Methods,* 9**,** 149-171.

MILLER, K. 2015. Dear critics: Addressing concerns and justifying the benefits of photography as a research method. *Forum Qualitative Sozialforschung,* 16.

PACKARD, J. 2008. 'I'm gonna show you what it's really like out here': the power and limitation of participatory visual methods. *Visual Studies,* 23**,** 63-77.

PAIN, H. 2012. A literature review to evaluate the choice and use of visual methods. *International Journal of Qualitative Methods,* 11**,** 303-319.

PINI, S. 2014. *The education engagement, coping and well-being of teenagers with cancer.* PhD, University of Leeds.

PINK, S. 2004. Visual Methods. *In:* SEALE, C., GOBO, G, GUBRIUM, J, SILVERMAN, D (ed.) *Qualitative Research Practice* Sage.

PITT, P. 2014. 'The project cannot be approved in its current form': feminist visual research meets the human research ethics committee. *The Australian Educational Researcher,* 41**,** 311-325.

PROSSER, J. 2006. *Image-based research: a sourcebook for qualitative researchers* London, RoutledgeFalmer.

PYLE, A. 2013. Engaging young children in research through photo elicitation. *Early Child Development and Care***,** 1-15.

REAVEY, P. (ed.) 2011. *Visual Methods in Psychology*: Psychology Press.

RILEY, R. G. & MANIAS, E. 2004. The uses of photography in clinical nursing practice and research: a literature review. *Journal of Advanced Nursing,* 48**,** 397-405.

SMITH, E. F., GIDLOW, B. & STEEL, G. 2012. Engaging adolescent participants in academic research: the use of photo-elicitation interviews to evaluate school-based outdoor education programmes. *Qualitative Research,* 12**,** 367-387.

THOMSON, P. 2012. Children and young people: Voices in visual research. *Doing visual research with children and young people***,** 1-19.

TISHELMAN, C., LINDQVIST, O., HAJDAREVIC, S., RASMUSSEN, B. H. & GOLIATH, I. 2016. Beyond the visual and verbal: Using participant-produced photographs in research on the surroundings for care at the end-of-life. *Social Science & Medicine,* 168**,** 120-129.

WANG, C. & BURRIS, M. A. 1997. Photovoice: concept, methodology, and use for participatory needs assessment. *Health Educ Behav,* 24**,** 369-87.

WARREN, S. 2005. Photography and voice in critical qualitative management research. *Accounting, Auditing & Accountability Journal,* 18**,** 861-882.

WELLS, F., RITCHIE, D. & MCPHERSON, A. 2012. ˜It is life threatening but I don't mind". A qualitative study using photo elicitation interviews to explore adolescents' experiences of renal replacement therapies. *Child: Care, Health and Development*.

WHITING, L. S. 2015. Reflecting on the use of photo elicitation with children. *Nurse Researcher,* 22**,** 13-17.

WIERSMA, E. 2011. Using Photovoice with people with early-stage Alzheimer's disease: A discussion of methodology. *Dementia,* 10 203-216.

WILES, R., PROSSER, J., BAGNOLI, A., CLARK, A., DAVIES, K., HOLLAND, S. & RENOLD, E. 2008. Visual ethics: Ethical issues in visual research.