

## EMPIRICAL STUDIES

# On photovoice—Applications and reflections to an intensive care context

Sepideh Olausson RN, CCRN, PhD, Associate Professor<sup>1,2</sup>  |Berit Lindahl RN, CCRN, Professor<sup>3</sup> 

<sup>1</sup>Institute of Health and Caring Sciences, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden

<sup>2</sup>Department of Anesthesiology and Intensive Care, Sahlgrenska University Hospital, Gothenburg, Sweden

<sup>3</sup>Faculty of Medicine, Palliative Care Knowledge Center, Institute of Health Sciences, Lund University, Lund, Sweden

**Correspondence**

Sepideh Olausson, Institute of Health Care Sciences, Sahlgrenska Academy, University of Gothenburg, Box 457, 405 30 Gothenburg, Sweden.  
Email: [sepideh.olausson@gu.se](mailto:sepideh.olausson@gu.se)

**Funding information**

None.

**Abstract**

**Background:** In this paper, we share our experiences of using ‘photovoice’ methodology as a way to generate data in intensive care units concerning the place and space of care. We have adapted and modified ‘photovoice’ in researching people’s lived experiences of ICU. Researching lived experiences in an intensive care context is challenging because of the complex nature of critical care.

**Aim:** This study aims to explore and discuss photovoice methodology in ICU as a data collection method. **Materials and Methods:** Photos and interviews collected from patients, loved ones and staff collected in a previous research project.

**Results:** Although there are challenges in using cameras and photographing the environment in the ICU, due to ethics and the voiceless patients therein, many advantages are presented to the researchers in capturing the meaning of lived experiences of various phenomena in the lifeworld in general and in the meaning of place and space. This paper offers applications and reflection over ontological, epistemological and methodological concerns and also offers a detailed approach on how to employ photovoice for successful and rich data generation.

**Discussion:** developing and adapting scientific methods and methodologies contributes to knowledge development in caring science and is therefore an important subject of matter.

**Conclusions:** Photovoice also presents a powerful tool in disseminating the findings as it opens up the closed world of ICU to the public and increases people’s understanding of the significance of place and space of caring practice.

**KEYWORDS**

hospital facilities, intensive care units, photovoice, place and space, qualitative methodology

## INTRODUCTION

The meaning of intensive care unit (ICU) patient rooms as places of care for the critically ill has been sparsely

addressed in research, especially through the eyes of the people who inhabit them. Meanwhile, the meanings of technology and its impact on care have been the subject of considerable academic discussion [1,2]. Today,

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it is recognised that the place where caring is exercised impacts nurses' caring activities [3]. Traditionally, interviews, observations or questionnaires are employed in describing ICU environments. However, the complexity of ICU environments raises questions about which methodological approaches are appropriate when evaluating high-tech environments from a caring holistic perspective. This article presents photovoice, that is, the combination of participant-generated photographs with interviews [4], as a way to generate and enrich research data in an ICU context. We hope that our description can guide research in other health care settings as well. We share our experiences by providing examples from a project that explored the meanings of the ICU patient room from the perspectives of patients, loved ones and staff [5–8]. The concept of photovoice was developed by Wang and Burris [4], who researched vulnerable and marginalised people. Photovoice is rooted in feminist theory, critical consciousness based on Freire's educational methods and documentary photography [4]. The goal of photovoice is to explicitly affect people's awareness and involve them in the process of decision-making. Photovoice is widely used for interventional purposes to empower people and help them articulate their needs. It is a powerful tool in participatory action research [9] and in health promotion within communities [10]. The aim of photovoice is to bridge the gap between research theory and practice by shifting from a conventional idea, research on people, to the concept of 'research with people' [11]. Despite its popularity as a research methodology [11], photovoice is rarely used in hospital contexts. To the best of our knowledge, no previous studies have used photovoice in the context of intensive care to examine the meaning of place and space in relation to critical illness.

In what follows, we first present a brief review of previous visual research, including its ontological, epistemological and theoretical underpinnings. Second, we share a description of photovoice as it could be used in ICU settings and offer reflections on its application.

## BACKGROUND

The use of visual data in science began in anthropology, ethnography and environmental research [12–16]. Visual methods are also common in social work research that aims to make social and political changes [16,17] and to gain a better understanding of vulnerable and marginalised people's situations [4,18,19]. A literature review by Riley et al. [20] showed that photographic methods are used in a wide range of areas in nursing practice, including therapeutic interventions and documentation, as well as in research to promote empowerment and understanding

[20]. Today, photographic methods are employed in different research areas [20–22], such as psychological research [23,24], participatory photo mapping [25], narrations of family life [26], incarcerated children and youths [27] and homelessness [28,29].

In recent decades, photographic methods have been conceptually developed, including photo-elicitation [30–32] and the photo-novella/essay [33]. In the 1990s, several projects were built upon the theoretical framework of phenomenology and hermeneutics and used photographic methods to generate data to understand the meanings of lifeworld phenomena [34–38]. Recent examples include the exploration of suffering in mental illness as well as the meanings of mental illness in everyday life [39,40]. Moreover, photovoice has been employed for illuminating spatial meanings in end-of-life care [41,42] and exploring the meanings of recovery in hospitals, with a focus on places and spaces [43]. Caroll [44] examined reflexivity and power relations in Australian ICUs through video ethnography. The author concluded that visual methods facilitated clinicians' involvement in health care improvement and in the 'co-construction of meaning and significance' (p. 260).

## ONTOLOGICAL AND EPISTEMOLOGICAL UNDERPINNINGS

Emmison [13] argued that visual refers not only to what is recorded but also to what the eye can see; that is, visual research embraces more than viewing a photograph only as a representation. Photographs can work as items that generate extensive verbal commentaries that would otherwise be missed in an interview situation. There is no consensus about what the term *visual inquiry* should comprise. Should the researcher look at visual images in an interpretive way, or should he or she follow a realist/naturalist approach and view them as merely recordings/depictions of facts? Hansen-Ketchum and Myrick [45] pointed out that photographs interact in the space between the images and the viewer. Realism, which postulates that entities exist regardless of how they are perceived, and relativism, according to which truth or false/right or wrong are contextual products, may underlie photographic methods. Papoulias claimed that visual methods have an 'ambiguous ontological status' (p. 174), as they simultaneously visualise and angle the object or situation. This makes visual methods difficult to position in the scientific landscape [46,47]. The photographic data have a twofold character. Photographs provide visual information, either with or without interpretation. At the same time, they represent a subjective

perspective and mediate social constructions (i.e. a reality that exists not only objectively but also as a consequence of interaction between people). Therefore, photographs are considered a bridge between subjectivity and objectivity [45]. We agree with the latter, and consider the photographs not only as a representation of ICU, but also as an aid in capturing the *lived experiences* of people inhabiting the patient room.

## A LIFEWORLD PERSPECTIVE AND CARING SCIENCE

In accordance with Gjengedal et al. [48], we consider people in ICUs—patients, their loved ones and staff—to be a vulnerable group. ICU patients are the most vulnerable of these in the sense of literally having a very weak voice or no voice at all due to ventilator treatment and critical illness. Critical illness converts the familiar lifeworld into an alien world, making people vulnerable, as explained later in subsequent sections of this article. Liamputtong [49] stated that researching vulnerable people's situations requires a sensible researcher and special research methodologies. She claimed that photovoice was an example of such a method because it is accessible to people who usually do not have the ability or the power to make their voices heard. It allows them to have a critical discussion with the researcher, who can then forward their messages to an audience that has the ability to make a difference. This places an ethical demand on the researcher to hear the voices of people 'who are silenced' (p. 7) [49].

Our study and choice of method has been guided by a caring science perspective [50], that is, acknowledging and wanting to do good (ethos) and recognising patients' loved ones' and staff's experiences of care [51]. Moreover, the caring science perspective holds a focus on communal and togetherness. The former relates to a human state of being, the latter means sharing and understanding, patients' and/or families' struggle in the care situations [52]. Here, we argue that the use of photographs helps to reveal the tacit and implicit meanings of existential issues of illness and to highlight people's voices in vulnerable life situations—in this case, critical illness [53]. In the depiction of the ICU patient room as lived, photographs were a great help in creating a phenomenological description when conducting the interviews. The objects, people and events captured on a photograph are not only recorded but also depict a statement that will later connect both sides in the research interview situation. Photographs invite and stimulate speech with deeper meanings. Consequently, they became a tool for addressing the lived experiences of spatial issues, as they made the place and space available to share in a special way.

## PLACE, SPACE AND ICU

ICUs are shared places in terms of being places for care, treatment, rest and recovery for the patient while also being a workplace and a visiting room [54,55]. Due to their high-tech character, ICUs can be overwhelming places. Such places are emotionally challenging to inhabit because they are connected to crisis and the tension between life and death. The ICU is a place of care, but it can also be a place to die [56,57]. This is especially relevant today due to the ongoing pandemic and the number of people who die in ICUs worldwide. Being critically ill in an ICU means experiencing an existential threat [58,59] and being totally dependent on others [60]. In such situations, patients seek meaning and attempt to understand the place to understand their experiences [61,62]. Researching patients' lived experiences of their bed spaces requires an approach that allows access to personal meanings. Considering patients' fragmented memory due to sedation, we found it necessary to use more than just interviews. Loved ones in ICUs struggle with uncertainty, stress [63] and constant waiting [64,65]. Patients have described having a loved one at the bedside as a matter of life or death [19,66]. However, the environment and design of ICUs can also be an obstacle to family interaction [54], making photovoice an appropriate approach to depict loved ones' needs because it allows their voices to be heard.

Vouzavali et al. [67] observed that the dynamic nature of caring for the critically ill poses a complex and emotional challenge. Beeby [68,69] described nurses' proximity to and presence at the bedside and patients' inability to communicate, coupled with highly technical care, as dimensions that shaped the nature of care. According to Liaschenko [70], the nurse–patient relationship is formed through the architectural design of the room and the spatio-temporal organisation of caregiving as well as the design of the hospital. She argued that the immediate proximity between the nurse and the patient is crucial for the quality of care. This proximity places the nurse at the bedside 24 hours a day, providing a unique position for securing the quality of care. Malone [71] pointed out that nursing can be distal or based on proximity. The latter is described as *physical*, *narrative* and *moral*. Physical proximity refers to the way in which patients are taken care of at a bodily level, that is, how their bodies are touched. Narrative proximity refers to how nurses respond to the patients' stories by listening, understanding and acknowledging them. Moral proximity refers to the way in which the nurse *is there* for the patient. Malone [71] argued that these dimensions are intertwined in a spatio-temporal dimension. In contrast, nursing becomes distal when care is focussed on production and placing patients in diagnostic boxes; the nurse may be in place bodily but *not there*.

Martinsen [72] argued that the architecture of hospital settings is involved in the tension between securing and preserving patients' lives and objectifying and controlling their sick bodies. Thus, the design, interiors and furnishings of the spaces are crucial when creating caring environments that promote a safe, functional and healing atmosphere.

## DESCRIPTION OF THE PHOTOVOICE PROCESS

Photovoice, as we understand it, is both a method and a research methodology. In a research review, Lal et al. [11] stated that photovoice can be applied in various stages of research—to elicit data, analyse data and disseminate the results—and it can be widely used in various research disciplines. Wang and Burris [4] offered a detailed and comprehensive description of the various stages in the research process, using photovoice as a method. They outlined several steps, which are shown in Figure 1.

Harely [73] observed that many studies using photovoice suffer from a lack of detailed descriptions of how photovoice is actually used or, more specifically, a lack of comprehensive ethical discussions. To fill this gap and further expand on earlier writings about theoretical perspectives [74] about nursing research, we present the ways in which photovoice was practically applied in our project.

## PREPARATIONS

In the following section, we present the approach for three studies in our project: illuminating the experiences of (i) patients, (ii) loved ones and (iii) staff in the ICU patient room. To fit the aims of each study [5–8], photovoice was employed in slightly modified ways. Prior to our decision to use photovoice in the data collection, readings of and reflections on the literature were useful. This encouraged the researchers to discuss and pose questions about theoretical appropriateness and to identify ways photographs

could enhance the dataset. The issues discussed are depicted in Figure 2.

After obtaining approval from the head of the actual hospital departments and the ethics committee (No: 695-10), we planned several meetings with the clinics to inform all employees in the ICUs of our plans and to ensure that the first author was known to the staff. The meetings were scheduled in accordance with the clinic's preferences and in agreement with the managers at the units. The best option for providing information was identified to be along with daily reports between shift changes in the morning and afternoon and prior to night shifts. This was repeated during a whole week at each ICU. At the meetings, the first author presented the project, the data collection procedure, ethics related to photographing and responded to questions about uncertainties. A brochure with comprehensive information about our research and contact information for the authors in everyday language (Swedish) was provided and placed at the nursing desks and in the waiting areas for the family members. A digital camera was also provided for the purpose of the research, which was not connected to the internet.

According to the Belmont report, there are three fundamental ethical aspects to consider to protect people in research: justice, respect for people's autonomy and beneficence, and doing no harm [75]. Translating these principles into research practice means providing comprehensive information about the aim of the study in both written and oral forms, providing time and adequate opportunity to consider the invitation, making participation by voluntary agreement and ensuring that the informants comprehend the information [76]. We posit that additional honest and comprehensive information about the copyrights of the photographs must be included in the information sheet and informed consent document. In our studies, the informants agreed to transfer the copyrights of their photographs to the project. There were also clear statements indicating that the photographs would be used for the purposes of research publication and not spread digitally. Voluntary participation and the right to withdraw from the study at any time without providing any reason were also included in the information sheet.

- 1) Identify and articulate the subject of concern
- 2) Recruit the participants in group meetings to discuss and involve them in the process
- 3) Photovoice training—instructing participants about the camera, the techniques of photography, the ethics involved, and the distribution of cameras
- 4) Photo assignments
- 5) Discussions
- 6) Data analysis
- 7) Presentation of findings to stakeholders
- 8) Creating plans of action

**FIGURE 1** Description of the Photovoice Process, by Wang and Burris [4]

**FIGURE 2** Questions posed in the preparation phase of the studies

- What are the goals and purposes of employing this method in the project?
- What do we want to achieve?
- How are we going to instruct the informants about it?
- What is an appropriate way of approaching the informants and asking them to photograph ICU bed spaces?
- How are we going to use the photos during the interviews?
- Should the photos be used as an open unit for the researchers' own analyses?
- Is an ethical analyse about the advantages, disadvantages, and risks of employing photovoice in an ICU context considered?
- Where and how should the photos be kept safe, and who will own the photos?
- Is the method in line with the adopted analytical approaches, such as descriptive and/or interpretative approaches?

## APPLICATION OF PHOTOVOICE IN THE ICU

Because the first study in the actual project focussed on loved ones' experiences [6], and due to the nature of critical illness, we decided to invite loved ones of patients who were in a stable treatment situation (i.e. no imminent life threat or immediate threat of cardio- and/or pulmonary failure). This was determined by the staff in charge. The loved ones were invited to photograph various aspects of the patient's room that they associated with a feeling, regardless of what that feeling was. This instruction was twofold: first, feelings guide one's experiences of a place, and second, we wished to bring the informants' attention to the phenomenon under study. Drawing upon our experiences, at least three meetings with the research participants were required to complete the data collection. The first meeting was seen as a careful invitation with the purpose of presenting the aim of the study and presenting the written study information. Following the codes of research ethics and respect for people's autonomy, the informants should be given time to consider the invitation. However, the matter of timing is crucial in the ICU due to the unpredictable nature of care. Further, organisational issues and the fact that ICU patients can be transferred from the ICU to the ward on short notice could delay and complicate the process of data collection. We regarded one to two days as appropriate for considering participation. If the loved ones consented, a second meeting was scheduled for taking photographs. Prior to photographing, the first author reminded the participants of the written information and the ethical principles involved—that is, that no pictures should be taken of patients or other people without first obtaining their consent. Then, instructions regarding how to use the camera were given. We ensured that the participants had read and understood the content by asking them about it prior to the interviews.

Informed consent was obtained and documented via signature on two copies, one for the researcher and one for the participant.

At a time approved by the staff, photographs were taken. This took only a few minutes. Here, the researcher acted as a facilitator and was present to assist the informants if needed. Because ICU patients often share rooms, this presence also served as protection for neighbouring patients and visitors, even though information about the ethical issues had been provided. Sometimes, a photo session had to be postponed because of unpredictable circumstances or patient conditions. However, a third meeting was scheduled for the research interview [77] at the same time as the photo session. We used the photographs to stimulate the production of the spoken content of the interviews. We started the open-ended interviews by asking the participants, 'Could you please tell me what this photograph is about?' This was followed by 'Why have you taken this photograph?' and 'Could you please tell me how it matters to you?' These questions are a modified version of SHOWeD, an acronym for the following questions that are usually used to critically discuss photographs in photovoice studies [4]: 'What do you **S**ee here? What is really **H**appening here? How does this relate to **O**ur lives? **W**hy does this situation, concern, or strength exist? What can we **D**o about it?' (p. 188) [4]. In this way, a detailed and rich description of the meanings of the ICU patient room was collected. We considered the use of photographs to be a facilitator in terms of maintaining focus on the research phenomenon, which was crucial for the quality of the interviews as well as the validity of the study.

At the beginning of the project, we conducted a few interviews with patients' loved ones. They did not take any photographs. It was evident that they preferred to talk about their experience of care in general and not the patient room per se. Perhaps our inability to direct the informants' attention to the study phenomenon was the reason for their low interest. However, we believe

that loved ones' stories of being in an ICU and experiencing the threat of losing someone they love should be heard. Therefore, the photographs were an aid in securing the validity of the study. Based on our experience, when the participant takes photographs it is crucial to pose no reflective questions during the photography session, to stay in the background and to only assist if needed. Otherwise, the researcher risks distracting the participants, who may begin a narration in the patient room, which we believed to be inappropriate since other people often are present there. In addition, this could potentially also impact the quality of interviews later in the process. We found that the best results were achieved when the participants took the photographs and then talked about them during the interview. This probably made it easier for the participants to maintain a natural attitude and to grasp and narrate their immediate lived experiences. Some examples are shared in Figures S1 and S2.

A second study focussed on the meaning of the ICU patient room from the perspective of patients [5]. Because the majority of patients in the ICU receive sedative medication, the first author photographically documented the immediate surroundings of the bed and tried to capture as much of the patients' views as possible from the bed. Therefore, several pictures were taken from the patients' eye angles: up, front, left and right. No photographs were taken of patients' faces or in a way that could reveal patients' identities. The first author was in the ICU for a few weeks and performed the data collection when the timing was appropriate. Moreover, the patients' loved ones were informed prior to the process of data collection, and vicarious oral consent was obtained. These images were stored digitally in a safe box until the patients were discharged from the ICU. The patients were invited to participate in the study through an information letter after approximately two months. This was the same time frame for patients' post-ICU visit. This allowed us to coordinate the invitation to the study but most importantly to ensure that the patients had survived.

Photographs were used to stimulate the interviews and to help the participants recall the room and the bed space. Informed consent was obtained prior to the interview, and oral and written information was provided. During the interviews, the participants were asked to look at the pictures and describe their experiences in the ICU patient room. The interviews started with the question, 'Could you please look at these photographs and see if you remember anything?' In our experience, the photographs worked as powerful tools for stimulating the interviews and narrating lived experiences [78]. This was especially prominent when the photographs concerned the ICU patients' perspectives, in which some memories were

blurred (Please also see the information provided above related to interview questions—SHOWED).

The example in Figure S3 illustrates the way in which we used photographs during the interviews.

We also asked patients who were not receiving any sedatives to participate. Although there were few such patients, we considered their participation to be an important and interesting contribution to this project in terms of variation. We assumed that patients who were not sedated would experience the environment in a different way compared with patients under sedation. Similar to the way in which we collected data from the loved ones, we asked these patients to take photographs of various aspects of the patient room that they associated with a feeling, regardless of what that feeling was. Prior to the process of collecting data, we ensured that the patients were not suffering from ICU delirium by using the Organic Brain Scale—OBS scale [79]. This is an important issue in research ethics [76]. These patients were contacted after being discharged from the ICU to schedule a time for the follow-up interview. One example is presented in Figure S4.

In a third study, the staff were asked to take photographs of various aspects of the ICU patient room that had any significance for their caring practice and that were associated with a feeling [7]. Our preference was to perform the data collection on a single occasion. The motives for this choice included practical issues (e.g. a lack of time and difficulties scheduling several meetings) and a desire to make the participants stay focussed and maintain a natural attitude, as described previously. Similar to previous studies, the photographs were used as an aid for reflection and to bring the ICU patient room to the forefront during interviews. Figures S5 and S6 are examples of pictures taken by the informants.

The organising of the photographs is an important issue. The photographs need to be systematically stored during the research process. All the photographs taken for the project were separately filed, named, dated and given a label to facilitate their identification later in the process. All the participants in the project were offered a copy of their images. We recommend that the results of the various studies should be disseminated to clinical practice through seminars and presentations.

## LIMITATIONS OF PHOTOVOICE IN AN ICU CONTEXT

While photovoice facilitated and ensured the validity of the studies that focused on place and space, there were limitations related to the specific context of critical care. One major issue was the *waiting time* in order to get access

to the patient rooms and areas of interest. Regardless of being a patient, family or staff member, time is filled with constant activities—or waiting; indeed, this is the nature of intensive care. The right time window needed to be identified. After assessing the patient room, sudden changes could delay the data collection process. The following example is from the researcher's field notes (personal notes; [Box 1](#)):

The matter of ethics was prominent when collecting data that engaged the patients' loved ones. The researcher had to first ensure that it was appropriate to collect the data, informing the staff and asking them not to talk about *sensitive topics* (e.g. information related to the other patients). The loved ones often wished to photograph the staff, something we did not expect. We, therefore, always asked the staff for their permission for this prior to the photographing. Sometimes they agreed, and sometimes they did not. Drawing on our experiences, a critical attitude was necessary to unfold every aspect of the phenomenon of study at the time of interviews. We asked questions about the meaning of the content of photographs but also to further explore subjects like the atmosphere, smell and sense of place, phenomena that did not reveal themselves through the photographs. Surprisingly, when the loved ones were asked to photograph the aspects of the patient room, they asked to photograph the corridors and waiting areas outside the patient room. Initially, the researcher believed this was due to a lack of clarity in the information in the invitation letter. However, later in the interviews

#### **BOX 1 Researcher's personal notes**

I was standing in front of the nurse in charge to inform her about the photo session, making sure it is okay to document the patient's bed area. While doing this, an anaesthetic nurse comes into the room. She walks past me and places herself between me and the nurse and starts to talk to her, handing over some papers. I stepped back and waited for her to leave, and at the same time an operating theatre nurse enters the patient room and walks straight to the nurse in charge and places herself in front of anaesthetic nurse (and me). While they are talking, a physician comes into the room. He walks past me and places himself in front of the anaesthetic and operating theatre nurse and starts to talk to the nurse in charge. I step back as the nurses in front of me step back. I had almost reached the door and realised that I need to come back later. No time for me to take the photos.

it appeared that the loved ones understood and defined the patient room in a different way than the researchers. For them, the patient room had broader boundaries and included the areas where the loved ones spent time and moved around.

## **REFLECTIONS ON THE THEME**

This study contributes to the ongoing discourse in the scientific literature about various theoretical frameworks and approaches related to photovoice research. We have shared a detailed description of how photovoice was employed in a project grounded in the caring sciences. Visual methods offer the possibility of moving from what *appears* to what is seen from the perspective of people themselves. This presents health care providers with a better understanding of patients' situations in a more comprehensive manner while generating narrative evidence. Our inferences are also in line with Papoulias' reflection on the value of photographic methods in health care quality improvement [46].

We agree with researchers who advocate the use of photovoice as a powerful tool in research. The photovoice method allows us to bring forth the significance of the built environment when life becomes fragile, such as in an ICU. Because ICU settings are often unknown to the broader public, photographs are one way of displaying this closed world; at least until recently, when ICUs became headlines in the media as a place of care during the pandemic. Still, the attention paid to ICUs and the environment does not reflect the essence of it for people who inhabited them. Research emphasises that the photovoice method is specifically appropriate for capturing the views of people with regard to physical environments [80]. However, to the best of our knowledge, no previous study has scrutinised the meanings of place and space in the ICU context using photovoice. Most of the studies employing this method were conducted within community research [26,28,80], and a few were conducted in the paediatric context [81,82].

There is a risk that only the visual aspects of the patient room are captured when using photovoice. Nevertheless, our data also included less tangible aspects of ICU patient rooms when the participants chose their images. During the interviews, we observed that it is essential to depict the invisible aspects that cannot be captured by the photographs, such as the atmosphere, mood and noise/voices. The challenge lies in the way in which meanings are uncovered (e.g. in a reflective dialogue), which often facilitates the mediation of personal meanings. Surprisingly, our participants suggested many creative solutions for improving ICU patient rooms and overall environments

[5–8]. Photographs are believed to contribute to the richness of narratives in qualitative studies [12,83,84]. We surmise that using photographs during an interview is not merely a matter of validity. It also provides deep insight into people's lifeworld, as images taken by the informants represent their 'voices'. Such photographs are an expression of their needs and lived experiences in a non-verbal language. However, we stress that the strength of photovoice is the fact that the people themselves interpret their images and that, in this way, rich phenomenological descriptions can be shared. Plunkett et al. [74] discussed the advantages of using photographs to elicit data in interpretive phenomenological investigations using van Manen's [85] approach. However, we argue that photovoice can also be used in descriptive phenomenological investigations, as we did in two of our studies [6,7].

Keeping diaries of patients' stays in the ICU is a common practice [86–90]. In one of the ICUs where we collected data, the staff became more critical and reflective regarding the ways in which those photographs were taken. The project inspired the staff to change the way they took the photographs. They began to take photographs from the patients' eye angles, and the photographs could then be used in a more effective way in dialogue with the patients. At that time, there was a debate about whether photographs that were often taken from staff's perspective should be attached to the diaries. Patients had expressed difficulties in seeing themselves critically ill, sedated and wired to technologies [91].

## METHODOLOGICAL CHALLENGES

While photovoice is a powerful tool, it is a time-consuming technique, and the amount of time that must be spent in ICUs to complete the photovoice process is a limitation that has to be taken into account. Harper [30] argued that the ethics of photographic research have not received as much attention as they should in the literature. It could be difficult to gain ethical approval and meet the expectations of institutional review boards regarding informed consent and the matter of anonymity. Pink [84] stressed that visual research involves many ethical issues because using images in research poses a greater risk of revealing the identity of the participants. The use of photographs may imply an unavoidable loss of personal privacy and should be an object of reflection in research. The International Visual Sociology Association (IVSA) has outlined principles for visual research [92]. These guidelines provide an extensive framework and point out the risk of 'potential privacy invasions' (p. 254). Because of the nature of ICUs and the exposure inherent in patients' sedation and shared rooms, we paid careful attention to this issue. Wang and

Redwood-Jones [93] discussed the ethics of photovoice, highlighting key ethical issues. It is obvious that ethical concerns must be addressed throughout the entire process, from preparation to the presentation and dissemination of the results. This issue was carefully considered in the assessment process of the ethical committee, as cameras cannot just be handed over to the participants; instead, a facilitator should be responsible for the way in which the camera is handled. Wang and Redwood-Jones [93] advised thoughtfulness in taking photographs and obtaining informed consent. This recommendation is highly relevant for the ICU context due to the sensitive nature of care. Ethical considerations must be integrated throughout the entire research process. The Council for International Organizations of Medical Sciences [94] defines a 'vulnerable person as someone who is unable to give consent to participate in research. Patients in ICUs are included in this category because they have a limited ability to communicate, and this fact (among others) makes this field ethically delicate. Therefore, vicarious consent is an important issue to consider, even when people are unable to give consent immediately. The ethical considerations involve not only the photo session but also the interviews. We offered the participants to contact the researchers if needed or if they had any questions after the interview session. If the researcher felt that the participant was sad, consideration was taken. We believe that the interviews were appreciated by the patients and the loved ones as none of our participants discontinued the interview but wanted to share their stories with us.

Collier and Collier [12] described cameras as instrumental extensions of the senses and useful tools in the empirical construction of knowledge. We recommend using digital cameras when collecting data in these settings. They are better choices than single-use cameras, which have been commonly used in previous photovoice research. The digital images provide the possibility of eliminating photographs that are unethical. When photovoice is introduced and employed in ICUs, it turns them into 'public' places. On the one hand, images from a closed world could risk exposing vulnerable people if such images are used in a thoughtless way. On the other hand, the use of photographs could facilitate an understanding of this very complex environment, its impact on people and its significance for nursing practice. We offered a printed copy of the images to our participants. We believe the risk of exposing or spreading images to be minimal. The researcher's presence and the fact that the images were not taken without permission decrease such risks. Despite the advantages of using photovoice to gather data and empower the interviews, a researcher using this method must be cautious and considerate regarding the specific needs of the participants.



## CLOSING ARGUMENTS

Photographs have a long tradition of alliances with the social sciences and anthropology. However, photographs can also contribute to the scientific discourse on nursing and caring, helping to develop methodological knowledge and to enrich our understanding of the meanings of place in complex care settings. Using photovoice in critical care settings means not only enriching data but also empowering vulnerable and voiceless people. While there are ethical and practical issues to consider, we suggest employing photovoice to examine the issue of place and space in hospital settings. We regard the benefits of photovoice and the knowledge generated by its use to be greater than its limitations.

## ACKNOWLEDGEMENT

We would like to thank Professor Margaretha Ekebergh at university of Borås for her support and advice on the project.

## CONFLICT OF INTEREST

None.

## AUTHORS' CONTRIBUTIONS

Hereby, the authors confirm their contribution to this paper as follows: SO and BL contributed to study conception, design, preparation and draft. SO contributed to data collection and analysis. All authors have reviewed and approved the final version of the manuscript.

## ORCID

Sepideh Olausson  <https://orcid.org/0000-0002-2246-731X>

Berit Lindahl  <https://orcid.org/0000-0002-0047-9723>

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**How to cite this article:** Olausson S, Lindahl B. On photovoice—Applications and reflections to an intensive care context. *Scand J Caring Sci*. 2022;36:1123–1133. <https://doi.org/10.1111/scs.13075>