Original Article

Audiovisual recordings of patients: developing an ethical guideline in Iran

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Abstract

Widespread use of smartphones among healthcare professionals necessitates the availability of accessible ethical guidelines that consider cultural and social contexts. This study aimed to develop an ethical guideline for the use and documentation of audiovisual recordings of patients in Iran.

The study was conducted in three phases: (I) a literature review, (II) focus group discussions, and (III) expert panel sessions. Participants were selected based on their willingness to participate in focus group meetings and a minimum of five years of experience in the field. Conventional content analysis was used for the focus group discussions, while directed content analysis was applied to the expert panel sessions.

The guideline comprises two sections: "general ethical considerations", which includes 43 items, and "specific ethical considerations", which contains 18 items. The "general ethical considerations" section addresses ethical issues to be considered before, during, and after making audiovisual recordings of patients. The "specific ethical considerations" section focuses on ethical principles related to audiovisual recordings involving children and adolescents, cadavers, and patients with impaired decision-making capacity.

This ethical guideline aims to address emerging ethical and legal challenges and to ensure that healthcare professionals' behaviors align with established ethical principles and societal expectations. Furthermore, it can serve as a valuable resource for developing assessment tools and training students in clinical settings.

Keywords: *Audiovisual media; Patient; Ethics; Guideline.*

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Received: *30 May 2023*
Accepted: *4 Jun 2024*
Published: *25 Dec 2024*

Citation to this article:
Khabaz Mafinejad M, Kouhnavard M, Asghari F, Salari P, Kadivar M, Parsapour A, Riahi H, Zolfaghari M. Audiovisual recordings of patients: developing an ethical guideline in Iran. J Med Ethics Hist Med. 2024; 17: 16.

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Introduction

Recent advances in digital technology and the widespread use of smartphones among healthcare professionals have made audiovisual recording of patients an integral component of patient care (1). Audiovisual recordings, including clinical photography and video recordings, provide immediate visual assessments of pathologies or injuries, document changes over time, and assist clinicians in making timely diagnoses while facilitating accurate communication within healthcare teams (2, 3). Moreover, video-recorded consultations have been widely utilized and are recommended as an effective method for enhancing doctor-patient communication (4, 5). These recordings offer valuable support for virtual consultations and telemedicine, particularly during the COVID-19 pandemic, when physical distancing was necessary, and patients faced logistical challenges or geographical barriers to accessing care (6, 7). Despite the undeniable benefits of clinical audiovisual media, emerging ethical, legal, and social issues must be addressed to ensure responsible usage (8, 9).

These concerns are justified, as current practices in clinical photography and video recording pose significant risks to patient confidentiality and present legal challenges for physicians (3, 10–12). Additionally, it has been suggested that healthcare professionals often lack sufficient awareness of the legal considerations surrounding clinical photography (13). Consequently, the development of practical and easily accessible ethical guidelines has become essential (14, 15).

For instance, Henken K. et al., in the Netherlands, highlighted that despite established principles in Western law regarding the video recording of patients, the practical application of these principles in healthcare settings remains inadequate (16). Similarly, Magowan et al. reported that 88% of surgeons were unaware of any official guidelines governing audiovisual recordings made by patients (17). Furthermore, Solimini et al. underscored the importance of addressing the ethical and legal challenges associated with the use of telemedicine, particularly during the COVID-19 era (18).

To address these concerns, several ethical guidelines have been developed globally, emphasizing critical aspects such as obtaining consent, managing picture transfer, ensuring secure storage, conducting audits/retention, and addressing breaches, particularly in the context of

smart-device clinical photography (19). However, reviews indicate that these guidelines are often challenging to access or entirely unavailable (20, 21).

Although cultural and social considerations specific to each country have been incorporated into guideline development, evidence suggests that most guidelines are not applicable to the secondary use of audiovisual media in research, teaching, and patient counseling (22-24). Moreover, it is consistently recommended to conduct further studies using mixed methods to identify ethical considerations related to the use and documentation of audiovisual recordings of patients (25). Evidence also highlights the importance of involving interdisciplinary teams in the development of ethical guidelines for a comprehensive approach to this issue (26). This study aimed to develop an ethical guideline for the use and documentation of audiovisual recordings of patients.

Methods

This study was conducted in three phases at Tehran University of Medical Sciences between 2017 and 2019. In the first phase, a literature review was performed using the keywords "ethics," "professionalism," "ethical codes," "codes of conduct," and "audiovisual," along with their Persian equivalents, across the databases PubMed, Magiran, and SID. Studies were included if they: (1) addressed ethical considerations in the use or documentation of photo or video recordings, (2) were related to the field of health professionals, and (3) reported a guide or framework for audiovisual recordings of patients. Papers unrelated to the health sciences were excluded. Data extraction was carried out using conventional content analysis (27).

Qualitative approach

Focus group discussions (FGDs) were conducted to brainstorm and explore participants' perspectives.

Researcher characteristics and reflexivity

Two out of the eight researchers were male. At the time of the study, all researchers were academic members of Tehran University of Medical Sciences. MKa and MKo were a neonatologist and a pediatrician, respectively. MKh and MZ specialized in medical education, while AP and HR were ethicists. FA and PS held MD and PharmD degrees, respectively. The research team aimed to identify challenges associated with audiovisual recording to achieve a more comprehensive understanding and inform targeted interventions. The final guideline aims to guide healthcare

professionals toward a more ethical approach when recording or using patients' records.

Context and sampling strategy

The participants were selected based on their willingness to participate and having a minimum of five years of experience in education or research related to the subject. Efforts were made to maximize variation in gender and disciplines during the invitation process. The focus group discussions lasted between 90 and 120 minutes

Ethical issues pertaining to human subjects

The aim of the study were presented to the study participants and they were assured that they could withdraw from the study at any time. Prior to the study, all participants gave their informed consent and the recording of the interviews started after their consent. Participants privacy and data confidentiality were respected by restricting data access to the principal investigator. Ethical approval was issued by the Research Ethics Committee of the Tehran University of Medical Sciences (IR.TUMS.REC.1395.2627).

Data collection instrument

The literature review in the first phase of the study explored various dimensions of the subject and guided the development of the study questions. At the beginning of the meeting, the coordinator (MKM) raised a general question about the ethical standards and requirements for audiovisual recording of patients. Based on the participants' interactions and discussions, more specific questions were then posed regarding education, research, and clinical aspects. To build trust and facilitate open discussion, the coordinator, acting as a facilitator, listened to the participants' statements without judgment and encouraged the exchange of opinions by asking open-ended questions. Another research team member was responsible for taking notes and audio recording the session. The content analysis of the focus group discussions was conducted by two research team members (MK, MKM) using the directed content analysis method (27). In the third phase, based on the codes extracted from the literature review and focus group discussions, the research team developed a draft of the guideline. Expert panel meetings were then held to obtain consensus from experts on each item and to review the guideline. The participants were selected based on their experience in teaching or researching audiovisual recordings of patients. Four expert panel sessions were conducted to evaluate the drafted guideline in terms of its comprehensiveness, clarity, importance, and applicability in daily practice.

Data collection methods

Focus group discussions (FGDs) and expert panel sessions were conducted for data collection and compilation. Each FGD and expert panel session lasted an average of 2 hours and was recorded. The summary of the study steps is presented in Figure 1.

Units of study

Thirteen experts (Female = 9, Male = 4) from the fields of medical education (n = 2), medical ethics (n = 5), and clinical departments (n = 6) participated in the second phase. Eight experts (Female = 5, Male = 3) from the fields of internal medicine, forensic medicine, pediatrics, anesthesiology, dermatology, surgery, medical ethics, and medical education participated in the third phase of the study.

Data processing, analysis, and confirmation

Content analysis was conducted using a general deductive approach. After each FGD, the transcriptions were coded until completion. Initially, the codes were generated and categorized into two themes. Similar codes were merged, and the themes were further refined. The primary draft of the guideline was then presented to the expert panels for further discussion and finalization. Ultimately, two themes and 61 codes were obtained as the final draft of the guideline.

Techniques to enhance trustworthiness

To assess the comprehensiveness, importance, clarity, and applicability of each item on the guideline, the moderator read each item aloud, and the experts' opinions were collected qualitatively. After the necessary revisions were made, the final version of the guideline was sent back to the same experts via e-mail for final corrections. Once approved by the expert panel, the final version was disseminated through the website of Tehran University of Medical Sciences. Additionally, to ensure a common understanding of the professional terms used in the guideline, an appendix with keywords and their definitions was included.

Reporting

The study is reported according to the “Standards for Reporting Qualitative Research” (SRQR) guideline (28).

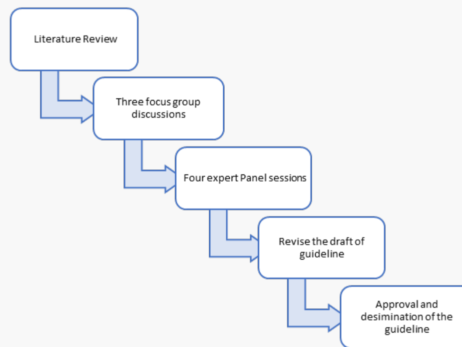

Figure 1. Summary of the study steps

Results

The literature review and focus group discussions generated 50 and 11 items, respectively. After the expert panel sessions, the revised version of the guideline consisted of 43 items under "general ethical considerations" and 18 items under "specific ethical considerations."

Theme 1: General considerations

The "general considerations section" covered considerations before (n=17 items), during (n=6 items), and after (n=20 items) audiovisual recordings of patients. The details of the general ethical considerations for using and documenting audiovisual recordings of patients are presented in Table 1.

Table 1. General ethical considerations for using and documenting audiovisual recordings of patients by healthcare professionals

	Before audiovisual recording of patients
1	Before audiovisual recording, attention should be paid to the privacy and dignity of patients, as well as their decision-making rights and participation in decisions that affect their conditions.
2	Obtain patients' consent before audiovisual recording for primary[1] or secondary[2] purposes.
3	After obtaining the patient's consent, medical imaging should be conducted by personnel of the same gender. In exceptional cases where personnel of the same gender are unavailable, imaging must be performed with coordination from the responsible unit.
4	Obtain written consent from the patient for audiovisual recording prior to starting the recording, and attach it to the patient's documents.
5	Obtain the patient's consent regarding the inclusion of their name in the recorded file documentation, particularly in cases involving prosecutions related to trauma or misconduct in vulnerable populations and special groups, before starting the medical audiovisual recording.
6	When obtaining consent from the patient for medical audiovisual recording, provide all necessary information, including a description of the purpose, the process for withdrawing consent, the duration of storage, the type of media,

[1] *The primary purpose is to prepare audiovisual recordings of patients as part of their care and to help evaluate the examination and treatment process, which is recorded as the patient's medical history.*
[2] *The secondary purpose is to prepare audiovisual recordings of patients for non-therapeutic purposes, including education, research, consultation, etc.*

	the location and method of storage, the recycling of information, the security of the recorded information, and any other relevant details.
7	When presenting information to the patient to obtain consent for medical audiovisual recording, specify who is permitted to access the recordings.
8	Provide clear, transparent, and unbiased information regarding the purpose of recording the sound or imaging.
9	In the case of audiovisual recording of the patient for secondary purposes, ensure that the necessary arrangements for copyright are made before recording.
10	The patient should be assured that refusing consent for audiovisual recording will not impact the quality of care provided.
11	In the following cases, the necessary consent for audiovisual recording is implicitly obtained from patients through the consent form received for examination or treatment, provided that the confidentiality of the patient's identity is maintained. No separate consent is required: - Sample images of internal body tissues - Images of pathology slides - Laparoscopy and endoscopy images - Ultrasound images - Radiographic stereotypes, MRI, CT scan
12	In the imaging of tissue samples, such as the autopsy of aborted fetuses and deformed organs, special attention should be given to preserving human dignity in the images.
13	Ensure that patients are not subjected to any pressure when providing consent for audiovisual recording, and respect their freedom and choice in the decision-making process.
14	When audiovisual recordings of the patient are made for secondary purposes and may be shared with individuals outside of the medical staff, clearly inform the patient that the recorded information may be disclosed to people who are not directly involved in their care.
15	Obtain written consent from the patient for audiovisual recording intended for use in the media.
16	Considering the sensitive nature of medical telephone conversations, it is important to ensure that callers are informed about the recording of their calls.
17	While recording telephone conversations between patients and medical staff, for legal reasons such as forensic purposes, staff training, and audits, it is crucial to ensure that all necessary precautions are taken to inform the callers about the recording.
	During audiovisual recording of patients
1	While conducting audiovisual recordings, prioritize the interests of the patient and ensure that the information obtained is not used for personal benefit.
2	While conducting audiovisual recordings, observe the necessary limits according to cultural and social values and norms.
3	If the patient wishes to stop the recording for any reason, the recording must be halted immediately.
4	If the patient feels uncomfortable during the audiovisual recording, they may stop the recording.
5	Ensure that audiovisual recordings of patients are conducted in a way that respects the confidentiality of the patient, their family, and medical staff. - Before using or disclosing the recorded files for the intended purposes, ensure the sounds/images/videos are coded and do not include the patient's name. - At all stages of audiovisual recording, remove all identifying information about the patient and details of the hospital/environment where the recording took place.
6	If any colleagues take images or videos without permission, the patient must be informed that their confidentiality has been violated and their rights disregarded, and steps must be taken to protect the patient's rights in this regard.
	After audiovisual recording of patients
1	Ensure the necessary security measures are in place for storing, maintaining, accessing, and publishing recorded works to the greatest extent possible.
2	To ensure the security of the release of images, sounds, or videos of patients, it is important to act responsibly.
3	The person who obtains the consent is responsible for republishing any information and must be mindful of their responsibilities, acting cautiously and carefully when publishing recorded images, sounds, or videos.
4	In case of an issue with publishing the recorded documents of patients, the responsible individual must accept accountability and take action to resolve the situation.
5	Publishing images, recorded sounds, or videos of patients is prohibited, except in the cases specified in the informed consent.
6	The recorded document related to the patient's care, which forms part of their medical record, is stored in the same manner as other medical information, with full awareness of the responsibility for the use of these recorded documents.
7	The recordings should be anonymized or coded when the image/sound/video is initially recorded as part of the patient's medical care, but later used for secondary purposes.
8	To use the archive of images/sounds/videos for purposes other than those stated in the initial consent form, obtain consent from the patient again.

9	If the patient agrees to use the recorded documents for secondary purposes, the confidentiality of the individuals' information must be respected, and any cases that could lead to the disclosure of the patient's identity must be removed.
10	In cases where the patients disagree with viewing or using the recorded items, the files must be deleted without review.
11	Photo negatives must be stored and cataloged properly, maintaining their transparency and clarity.
12	When using and publishing images/sounds/videos of patients, ensure that all identity information and distinguishing features, such as writings on the margins of radiographs, tests, etc., are removed.
13	The image or video of the patient must not be manipulated to avoid obtaining their consent. - Blurring the patient's eyes or removing their eyes and face in the images or videos is not an acceptable method for bypassing the confidentiality of the patient's identity during the recording process.
14	When archiving, include the date and time of the recording, as well as the allowed storage period, to clearly identify the sound/image/video.
15	Before any storage or use of recorded documents of patients, the patient is given enough time to review the recorded file before it is displayed. At this stage, the patient has complete freedom and authority to withdraw consent.
16	Provide the necessary information to the patient regarding obtaining copies of the recorded versions and the number of copies.
17	A decision is made regarding the precise duration of storage of the recorded copies, and after the completion of the audiovisual recording process and showing it to the patient, the duration of storage, the storage method, and the storage location are again explained to the patient.
18	Avoid publishing a copy to individuals outside the authorized access group, as it may violate the principle of information confidentiality.
19	The recorded content from mobile phones is transferred to a secure electronic medical record-keeping system and immediately deleted from the mobile phone.
20	To record and document the information obtained from audiovisual recordings of patients, follow the existing protocols and forms of the institution if specific units in the university hospital are involved.

Specific considerations

The "specific ethical considerations" include ethical principles on audiovisual recordings of children and adolescents, cadavers, and patients with impaired decision-making capacity, such as unconscious patients, patients with decreased levels of consciousness, patients with intellectual disabilities, or those suffering from psychological disorders (Table 2).

Table 2. Specific ethical considerations for using and documenting audiovisual recordings of patients by healthcare professionals

	Dead body
1	In the dissection hall, avoid taking any pictures or videos of cadavers.
2	Imaging the body for secondary purposes is done only with permission obtained before the person's death, with approval from the head of the institution's dissection hall.
3	If the patient's consent to record sound/image/video before death is limited to specific purposes, such as research or education, the use of recorded files is allowed only according to the patient's consent.
4	If the patient has died before obtaining consent for imaging or sound recording, it should be done only after obtaining the necessary approvals from their guardian.
5	In the case of forensic post-mortem examinations, obtain the necessary permits from the prosecutor or forensic organization before imaging tissue for purposes other than those licensed.
6	In the case of imaging the deceased body for purposes not specified in the existing permits, a separate consent must be obtained for the desired purposes.
	Children and adolescents
1	For children under the age of 14 who are unable to understand the purpose and possible consequences of audiovisual recording, written consent from their guardian or legal representative is required.

2	If the child or teenager is mentally capable of understanding the purpose and potential consequences of sound recording or imaging, both the consent of the guardian or legal representative and the assent of the child or teenager are required. The purpose of the imaging or sound recording must first be explained in simple, age-appropriate language.
3	In emergency cases, such as child resuscitation, the camera should be positioned in a way that only captures the image of the child and their therapeutic interventions, ensuring the anonymity of the child's family and the medical staff.
4	In special cases, such as the possibility of unintentional (or intentional) injury to the child or suspected child abuse, audiovisual recording must be conducted without the need for consent from the child or guardian, or with permission obtained from the relevant authorities in accordance with regulations and rules.
Patients lacking decision-making capacity	
1	Before determining whether patients have decision-making capacity, all practical and appropriate steps should be taken to empower patients in making decisions; for example, by using simple language or slang, with the assistance of treatment staff or family members.
2	To take pictures and record sounds of patients with mental disabilities or psychiatric problems who are unable to make decisions, obtain the consent of their guardian or legal guardian, and the patient's assent if possible.
3	When the patient is not competent to make a decision, the decision regarding audiovisual recording of the patient for secondary purposes should be made based on the following conditions: - According to the guardian's or legal guardian's opinion, audiovisual recording is necessary and beneficial for the patient. - Accessing the secondary purposes of audiovisual recording in another way that does not limit the rights and choices of the patient is not possible
4	For secondary purposes, despite obtaining the consent of the legal guardian, attention should be given to the opposition or non-consent of the mentally disabled patient.
5	Sounds, images, and videos are used for research purposes in accordance with the guidelines for research involving vulnerable groups.
6	Audiovisual recordings of anesthetized patients in the operating room may only be made if the patient has given consent prior to the operation.
7	Audiovisual recording of patients with a reduced level of consciousness in the emergency department for primary purposes should be performed only if it is beneficial to the patient.
8	In patients with a reduced level of consciousness, audiovisual recording for secondary purposes must be preceded by obtaining the consent of the decision-maker, followed by obtaining the patient's consent once they regain consciousness.
9	In cases where the patient's consent cannot be obtained immediately due to anesthesia, the patient's consent must be obtained as soon as possible after the operation. If consent is not obtained, the recorded file must be deleted.

Discussion

Despite the undeniable benefits of clinical photography and video recording in improving documentation, medical education, and communication, the creation and use of audiovisual recordings of patients pose significant risks to their autonomy, privacy, and confidentiality (2, 29).

To address this issue, the current study developed an ethical guideline for the use of audiovisual recordings of patients by healthcare professionals. This guideline includes 43 items under "general ethical considerations"—covering the period before, during, and after audiovisual recordings—and 18 items under "specific ethical considerations" for children and teenagers, cadavers, and patients with impaired decision-making capacity, including unconscious patients, patients with reduced consciousness, patients with intellectual disabilities, or those suffering from psychological conditions. Evidence has highlighted the importance of developing an ethical guideline for the use and documentation of audiovisual recordings of patients (30, 31). A recently published national report on the codes of

conduct for medical professionals in Iran placed particular emphasis on the use of photography and filming of patients for educational or research purposes, special case reporting, movie making, documentaries, and news reporting (32).

Europe has made significant progress in addressing the ethics and legality of videos and photographs in medicine, developing models for physicians across all fields to follow (33-35). In addition to the guidelines set out by regulatory bodies such as the AMA (American Medical Association) and GMC (General Medical Council of the United Kingdom), individual organizations may have their own local policies (36).

General ethical considerations before, during, and after audiovisual recordings

Based on our results, obtaining patient consent for clinical photography and audiovisual recording is an ethical necessity that must be carried out by healthcare professionals before any photographs are taken or videos are recorded. Other studies have reported that obtaining written consent is strongly required (2, 3). During the consent process, the purpose of the photography or video recording, the consequences of refusing consent, and the security and confidentiality of the photographs or videos should be clearly explained. A plausible reason for this is that it is crucial for the patient to be aware that refusal of consent will not affect their treatment and that they have the right to withdraw consent at any time. Furthermore, every effort should be made to ensure patient de-identification (2), although it may be difficult to determine the patient's identifying characteristics. Based on our results, modifying a photograph by blocking the patient's eyes is not acceptable, which is consistent with previous research findings (29). On the other hand, in emergency situations where there is no time to obtain patient consent and the patient's condition could have educational value, an ethical tension arises between audiovisual recording for educational purposes and the patient's autonomy, privacy, and confidentiality. According to our results and the guideline, recording is permitted, and patient consent should be obtained whenever possible; otherwise, the recordings should be discarded. Establishing patient consent or permission at the earliest convenient opportunity before using the images is highly recommended (37- 39).

Specific ethical considerations in audiovisual recordings

Special considerations are required when the patient is a minor or lacks the capacity to give consent. The results of our study showed that for vulnerable patients who lack the capacity to

consent, including children and teenagers, greater attention should be given to whether the video recording or clinical photography holds significant importance. These findings align with prior research, which emphasizes that consent should be sought from a parent or guardian for children, or a surrogate for adults without decision-making capacity (40). Furthermore, in patients with temporary lack of capacity, consent must be obtained for the use of recordings once the patient regains capacity (33). Additionally, when minors reach the age of majority or patients attain capacity, they retain the right to withdraw consent at any time (29). Video recording of resuscitation is a sensitive issue that may cause anxiety for both families and staff. To protect the anonymity of the patient, family members, and staff, the camera position should be adjusted to capture only the body, the forearms of the staff, and the interventions performed. However, parental permission must be obtained prospectively. If parents refuse to give consent, the recording must be erased without review (41). Images or videos of deceased bodies could be useful for research and education and may also have financial value when used for textbooks or online education. However, it remains unclear whether the use of images of donated cadavers aligns with donor expectations, societal norms, and cultural boundaries (42, 43). According to the results of this study, taking any pictures or videos of cadavers is not permitted. Additionally, if images are used for research or educational purposes as secondary applications, informed consent from the donors is required. Other studies have suggested that the use of cameras and mobile devices in dissection rooms should be prohibited to respect the dignity of donors and uphold medical professionalism (44).

Conclusion

In this study, an ethical guideline for using and documenting audiovisual recordings of patients, with respect to social and cultural considerations, was developed to address the emerging ethical and legal issues. It is expected that this guideline can be further enhanced with assessment tools to support coaching for students in the clinical setting. Providing physicians, students, and staff with well-developed and easily applicable guidelines is essential to address the emerging ethical, legal, and social issues in this area. Once the recordings are made in accordance with the related codes of conduct and ensure that patients' dignity is respected, it is hoped that the patients will accept audiovisual recording as part of their ethical care

and trust that these recordings will be used appropriately.

Support and Funding

Part of this study was funded by the Policy Research and Development Center of Tehran University of Medical Sciences (TUMS) under code 35322. This project was approved by the Ethics Committee of TUMS (IR.TUMS.NIHR.REC.1396.4500)

Acknowledgement

The authors would like to thank Dr. Arghavan Azizpour, Dr. Ehsan Bastanhagh, Dr. Nazafarin Ghasemzadeh, Dr. Fatemeh Khoshnava Fomani, Dr. Ardeshir Sheikhazadi, Dr. Alireza Sima, and Dr. Taha Yahyavi for their cooperation, and also Dr Hoomayoon Amini for his great support.

Conflict of interests

The authors declare they have no possible conflicts of interest to disclose.

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