

Ethical deliberations on video recording of patients in healthcare facilities– a scoping review

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ABSTRACT

Introduction: The modern healthcare landscape with the emergence of video recording, has found applications in research, training, audit, quality improvement, and safety surveillance. Notably, advancements in camera technology have led to the development of smaller, lighter devices, enabling discreet usage and enhancing usability in clinical settings. Its adoption represents more than technological advancement; it entails a complex balance between improving patient care and respecting individual rights. Ethical considerations surrounding patient privacy, ownership of recordings, patient autonomy and healthcare provider responsibilities have garnered significant attention. In Malaysia, the adoption of video recordings in clinical interactions and consultations has been accepted in research, training and several medical fields. However, recording patients during clinical practice can be challenging, as there are scarce ethical guidelines for its practice. This review aims to gather and categorise the ethical challenges associated with recording videos of patients in healthcare facilities globally and identify research gaps specific to Malaysian healthcare settings. By addressing the ethical challenges globally, we can ensure the responsible and ethical use of video recording technology to enhance patient care while respecting individual rights.

Materials and Methods: Articles from Scopus, Web of Science and PubMed databases were collected following PRISMA guidelines. Key term searches included "video recording," "ethical issues," and "patients." Inclusion criteria encompassed video and audio recording interactions between healthcare providers and patients in any clinical setting, final publications, and the English language. Exclusions were imaging or photography recording and non-clinical settings. The qualitative synthesis involved iterative reading, thematic coding analysis in Excel, and specific analysis to address the research question.

Results: Initial database search, identified 363 records. After screening, a total of 22 articles were included for analysis. Five themes were identified from the selected articles: i) privacy and confidentiality, ii) informed consent, iii) beneficence and non-maleficence, iv) integrity and professionalism and v) governance, policy and legal framework. Majority of the reviewed articles concentrate on backgrounds within the fields of psychiatry, neurology and

surgical-based medical specialities. The identified themes have demonstrated consistency across the majority of the articles analysed. Among the most frequently discussed themes, it's evident that ethical concerns extend beyond just the patient's realm to encompass the responsibilities of the healthcare provider (HCP) as well. Both patients and HCPs have their respective rights and responsibilities in ensuring the ethical use of video recording in clinical settings.

Conclusion: In conclusion, this review has highlighted the multifaceted ethical challenges surrounding the integration of video recording in healthcare settings. While video recording offers benefits for patient care, education, and quality improvement, its adoption presents complexities. Ethical dilemmas concerning patient privacy, consent, and data management must be addressed alongside practical barriers like technological limitations and resource constraints. Collaboration among healthcare providers, policymakers, and stakeholders is crucial to navigating these challenges ethically. Future research should delve into patient perspectives, develop ethical guidelines, and assess the impact of video recording on patient outcomes. By understanding these implications, healthcare can effectively leverage video recording to improve patient care while maintaining ethical standards.

KEYWORDS:

Medical ethics; video recording; clinical medicine; legal liability; digital technology

INTRODUCTION

The contemporary healthcare landscape is witnessing a profound transformation with the integration of technology. The usage of video recording has proven to be a useful tool in many aspects. The usage of video recording has been established in several medical fields, mainly, in research,¹⁻³ training and teaching,⁴⁻⁶ audit and quality improvements,^{7,8} and safety surveillance.⁹ It has also been used in various clinical contexts, such as geriatrics, neurology, neurosurgery, and niche fields like surgical endoscopy and sleep studies, to monitor symptoms, progression, and treatment effectiveness, becoming widespread with the advent of camera phones and formal consent since the late 2000s.

The integration of video technology has emerged as an indispensable tool in clinical settings. Its adoption in clinical interactions and consultations has been widely accepted. For

This article was accepted: 23 September 2024

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instance, video consultations conducted from ambulances to in-hospital physicians serve as a prime example, exemplifying how it elevates the quality of patient care.¹⁰ Recent advancements and innovations in camera technology have resulted in smaller, lighter devices. This development has enabled individuals to wear cameras discreetly, marking a significant shift that enhances usability. The adoption of body-mounted cameras has demonstrated its ability to enhance transparency and precision among personnel during the delivery of medical care.¹¹ Research has also delved into enhancing time-sensitive healthcare documentation tasks leveraging video recording as a valuable tool.¹²⁻¹⁴

However, incorporating institution-installed cameras and body-mounted cameras represents more than just technological progress. It is a complex interplay between the imperative for enhanced patient care and the preservation of individual rights. The integration of video recording in healthcare settings brings forth a spectrum of ethical considerations that demand thoughtful examination. Notably, concerns surrounding the privacy of recorded materials and the rightful ownership of such recordings have been carefully deliberated.¹⁵ The ethical debate surrounding patient autonomy and the necessity for informed consent, regardless of its applicability, has been a subject of extensive inquiry and analysis within the scholarly literature. The complexities of patient rights, including the balance between individual autonomy and the overarching responsibility of healthcare providers to ensure patient welfare have differing opinions. The decision-making process regarding informed consent for video recording is influenced by various factors, including the unique characteristics of the individual patient within a clinical setting and the intricate interplay of cultural, social, and legal dynamics at the local level.

Given the value-laden ethical issues in video recording during doctor-patient clinical interactions, we aim to gather and categorize the ethical challenges involved in recording videos of patients in healthcare facilities globally and to identify the potential research gaps in recording videos of patients in healthcare facilities that should be addressed in future studies. This review addresses two main questions: 1) What are the ethical challenges involved in recording videos of patients during clinical interactions in healthcare facilities worldwide? and 2) How do these ethical challenges apply to Malaysian medical practice?

MATERIALS AND METHODS

The articles are collected from Scopus, Web of Science and Pubmed databases dated 1 January 2014 to 31 Mac 2024. This study adheres to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.¹⁶ A key term search strategy was done using a combination of the following keywords: (i) *videorecord** OR *videotape* OR (video AND *record**) OR *camera*, (ii) *ethical* AND *issue** OR *ethical* AND *barrier** OR *ethical* AND *challenge**, and (iii) *patient**.

Articles were selected using inclusion criteria as follows: (i) video recording of interactions between healthcare providers and patients in any clinical setting, (ii) all final publication

articles (iii) English language and (iv) worldwide. We excluded articles with (i) imaging or photography recording, and (ii) recording under the following circumstances: disaster, research, and non-clinical setting recording. The inclusion criteria (i) refer to the process of capturing and storing visual and audio footage of exchanges between healthcare providers and patients during clinical consultations or treatments within a healthcare facility. This practice aims to document the details of these interactions for purposes such as enhancing patient care, education, quality improvement, and legal documentation.

The first author conducted the initial database screening, which was subsequently reviewed and verified by the second author. Following the initial screening, both authors independently assessed the listed records for eligibility. Articles not related to the research questions were excluded, such as those involving recording as part of research methodology, disaster scenarios, simulated patient training, patients' own wearable cameras, home surveillance, staff surveillance, video calls, conferences, or consultations with patients at home. In the event of uncertainty about the reason for removal, a discussion is done until a consensus is reached between the authors. Microsoft Excel was used in this screening process.

Qualitative syntheses were then conducted. Full texts of the identified articles were iteratively read by authors. Excel spreadsheets are used for thematic coding analysis. First initial coding was done, following a second axial coding and similar codes were grouped into similar themes. The results of this review aim to answer the research question (1). These findings are then extrapolated to the context of Malaysian medical practice, addressing research question (2), and are presented in the discussion section.

RESULTS

Background on selected articles

From our initial database search, a total of 363 records are identified. Out of these, 126 were removed as they were ineligible and 45 were duplicates. A total of 192 records were screened according to the title and abstract obtained. A total of 157 articles were excluded due to being irrelevant to the research objectives, leaving 35 articles to be obtained. Further 13 articles were excluded due to unrelated to the research objectives. Examples of the reasons for exclusion are recording of research participants, recording during a disaster, recording of simulated patients, patients' own wearable/installed cameras, recording as surveillance at home, recording surveillance of staff, and video calls, video conferences or online consultation with the patient at home. A total of 22 articles were included for analysis in this review. Figure 1 shows the detailed search strategy process.

Eight original articles,¹⁷⁻²⁴ two systematic reviews,^{25,26} five literature reviews,^{9,27-30} four review articles,³¹⁻³⁴ one theoretical article,³⁵ one case series³⁶ and one case report³⁷ were analysed. The majority of the reviewed articles primarily concentrate on backgrounds within the fields of psychiatry, neurology and surgical-based medical specialities (refer to Table I).

Data Analysis

There are five themes identified from the selected articles: i) privacy and confidentiality, ii) informed consent, iii) beneficence and non-maleficence, iv) integrity and professionalism and v) governance, policy and legal framework.

Privacy and Confidentiality

One of the primary ethical concerns is the protection of patient privacy and confidentiality (refer to Table I). Being recorded and monitored can infringe on their personal space and autonomy,^{17,18,37} especially if done without their knowledge.²⁵ Patients may not want their personal lives or medical conditions to be recorded without their permission. The location of the camera, whether situated in a public or private area, significantly influences the required level of privacy.⁹

The patient's specific situation also influences the necessary level of privacy. Patients expressed concerns about being recorded in their vulnerable moments which may have a potential impact on their recovery, dignity, and privacy.^{19,27,36} For instance, during a surgical procedure, only the necessary view is recorded, while other areas are appropriately covered, as with draping.³¹ Even in verbal interactions, such as sensitive doctor-patient conversations in psychiatry and psychotherapy, the content of the discussions remains confidential.^{32,36}

Apart from addressing patients' privacy concerns, some papers delve into the privacy considerations of professional staff.^{26,28,34,35} Protecting the privacy and confidentiality of healthcare providers (HCPs) involved in the recording is also important. Staff should have their privacy respected to the same level as patients, and considerations for their consent and comfort with being recorded should be addressed.

The use of technology inevitably raises additional concerns about privacy, particularly regarding potential data breaches or unauthorized access. Deidentification of recordings is a viable solution to safeguard patient privacy.^{21,23,24,29,33} In specialities or areas where patient identification is unnecessary or individual identity is not a concern, it is essential to prioritize effective deidentification of patient recordings, especially when these recordings are intended for audit, quality improvement, and educational purposes. Furthermore, additional measures should be implemented when dealing with particularly vulnerable groups, such as mental health patients and paediatric populations, to ensure their privacy and security.²¹⁻²⁴

Informed Consent

In adhering to patient autonomy, patients should be fully informed about the recording process. This includes the purpose of the recording, the type of video footage that will be captured, how it will be used, and who will have access to it. Obtaining informed consent from patients before recording any videos is essential to respect their autonomy and rights.^{25-27,29,31-33,37} In countries where it is legally mandated, patients must be informed about how their data will be used, stored, and shared, ensuring that their privacy is protected in accordance with regulations such as the General

Data Protection Regulation (GDPR) and the Health Insurance Portability and Accountability Act (HIPAA).³⁰

Patients should be informed and given the opportunity to consent, or decline being recorded.^{18,32,33} HCPs should be mindful of coercion during clinical treatment. Patients might feel pressured to agree to recording because of the authority of their HCPs. It's crucial for HCPs to recognize their influence and ensure that patients willingly consent to be recorded.^{32,36}

When video recording involves patients with diminished capacity, such as the elderly, or those who never had capacity, such as paediatric or mental health patients, informed consent must be obtained from their parents, guardians, or proxies before any recording occurs. This process includes a clear explanation of the study's purpose, how the data will be used, and any potential risks involved.^{21-24,30,37}

Obtaining patient consent for recording in emergency situations, such as resuscitation, is often impractical due to the urgency of the situation.^{34,35} Lloyd et al.³⁵ suggest employing broad consent rather than informed consent, utilizing posted signage around the emergency department (ED) to inform all visitors that video footage recorded in the Resuscitation Rooms would be utilized for audit purposes.

Appenzeller et al. have outlined the consent requirements based on the areas being recorded.⁹ While public spaces within healthcare facilities may not necessitate consent, consent is typically required for recording in private clinical spaces. The necessity of consent is closely tied to the purpose of the recording. For instance, in the case of video monitoring of patients in seclusion restraint rooms, where the benefits outweigh the risks, deferring consent may be considered acceptable.⁹

In some healthcare settings, recordings may involve third parties, such as family members, colleagues, or passersby, without their consent. Respecting the privacy and consent of all individuals involved in the recording process is crucial to prevent potential ethical issues.²⁵

Apart from considering third parties from the patient's side, it's important to also think about third parties from the HCPs. Lloyd et al. introduced video recording as an audit tool in the Resuscitation Room, where both ED staff and clinicians from other specialities work.³⁵ These non-ED clinicians would also be recorded, so they should be informed about the new recording system. The authors note that the staff must feel this initiative is happening 'with them' rather than 'to them'. In certain facilities with legal requirements that mandate the activation of a body-worn camera, obtaining consent may be optional.¹⁹ However, it is ethically justified on the necessity of adequately informing patients about their rights when such technology is utilized.

Beneficence and Non-Maleficence

In any event that there is a need to use video recording, it's essential to evaluate the balance between its benefits and potential harms before recording the patient, particularly in a patient with a complex medical background.³⁷ HCPs should

address concerns and discuss potential social implications with patients before implementing recording devices. Several benefits have been found in the usage of video recording in clinical medicine. Benefits include training and teaching,^{27,31} audit and quality improvements,^{34,35} safety surveillance^{9,17,36} and medical documentation.²⁸ Funkenstein et al. stated that a unique characteristic of video recording is that it allows for greater clarity of subtle facial expressions, gestures, and interactions for healthcare providers.³⁶

Erba et al., emphasize that relying solely on video recordings for clinical assessments can lead to misdiagnosis, thereby risking patient safety, and highlight the importance of recognizing the limitations of video evidence. Furthermore, it notes that poor video quality can adversely affect the diagnostic process, raising ethical concerns about the reliability of such assessments.²¹

Wiegandt et al. introduce the use of the Time-of-Flight camera, designed to avoid physical contact with neonates and emphasise that this approach is beneficial as it provides effective monitoring while minimising harm to vulnerable populations, such as preterm infants.²⁴

Nevertheless, there are inherent risks involved in adopting video recording. The use of video as surveillance has been shown to risk mental well-being such as it may worsen patients' fear, distrust and delusion.^{9,19} On the contrary, the article by Szabó et al. argues that the presence of cameras and the knowledge that seizures are being recorded may affect a patient's comfort and willingness to participate in the study, potentially impacting their mental health.²³

When it comes to body-mounted cameras, they may present unique risks. Despite their small and inconspicuous nature, they must still function ethically as a healthcare tool. Utilizing them covertly may not be the optimal solution, as transparency is paramount. Staff who wear them have been observed to discourage patient engagement and impede the development of therapeutic relationships.¹⁸ It may shift the focus away from care and further position staff and patients as oppositional parties that cannot trust each other. On the other hand, when patients wear them, patients might experience social stigma or discomfort.²⁵

In the use of video recording for any purpose, HCPs must balance the potential benefits with the risks to patients' physical, emotional, and psychological well-being.³¹ The risk must be carefully considered and minimized. A recording may benefit one party (for example staff for audit and learning of resuscitation from the video) while adding risks for others (the patient that was involved in the resuscitation).³³

Establishing clear and transparent patient selection criteria helps ensure that recording practices are conducted ethically and with consideration for patients' well-being and rights.³⁶ It also enables healthcare facilities to effectively manage risks and optimize the benefits of recording for various purposes. However, as all these are still at an early stage of implementation, more research is needed to ascertain the effectiveness of the recording process.^{9,17} Continuous feedback

is essential for providing constructive evaluations and facilitating improvements in video recording practices.³⁴

Integrity and Professionalism

The transparency of video recording may affect not only patients but also HCPs. Surveillance can detect abuse of professional responsibility and regulate staff behaviour.¹⁷ Staff should be able to voice out their concerns before recording system implementation.³⁵ A safe environment needs to be built so that the system can be trusted by not only patients but HCPs too.^{19,35}

The acceptance of video recording will begin with the acceptance of the staff before it can be embraced by patients. As Funkenstein et al. mentioned, by showing patients that the therapist is willing to be scrutinized and vulnerable in front of the camera, therapists set a positive example for their videotaped patients about accepting and addressing their own inevitable vulnerabilities.³⁶

Video recording allows for objective documentation of signs, such as a seizure episode, which facilitates multidisciplinary management by easing the importance of collaborative assessments between physicians and psychiatrists. Ethical practice in such contexts necessitates clear communication and shared decision-making among the healthcare team to ensure that the patient's best interests are prioritised.^{22,25,28}

Responsible data management is a foremost important discussion in applying video recording. Patients should have control over the data recorded.^{25,28} Storing recorded data has its benefits and risks. The potential benefit of stored video in future clarification and mitigating conflict may be a reason for it to be stored for documentation. A recording must receive the same care and protection as any other type of medical record.²⁸

Storing personally identifiable video recordings of vulnerable patients demands a robust security system and meticulous attention to significant data protection issues.^{9,18,19,26,27,32} Measures such as encryption, password protection, and physical security of storage devices should be implemented to safeguard patient information.²⁹ The use of data has to be done responsibly, and the recording must be done for legitimate purposes and not for personal gain or entertainment.^{31,33,34}

Despite its apparent simplicity, video recording still necessitates a certain level of training. The inconsistent and inadequate training for staff was identified as a significant barrier to the effective utilisation of video recording technology.¹⁸ Erba et al., outline that trained epileptologists can make more accurate diagnoses from video alone compared to untrained individuals.²¹ This highlights the ethical responsibility to ensure that only qualified professionals interpret video data to avoid misdiagnosis and ensure patient safety.

Despite the critical need for training to ensure adherence to policies, many staff members received minimal or no training, contributing to challenges in implementing and integrating video recording into clinical practice.

Table I: The list of articles included in this review

	First Author (Year)	Medical speciality	Article type	Brief description	Theme				
					Privacy and Confidentiality	Informed Consent	Beneficence and Non-Maleficence	Integrity and Professionalism	Governance, Policies and Legal Framework
1.	Alle M.C (2017) ²⁶	Neuro-psychology	Systemic review	An overview of the new therapeutic and research possibilities offered by wearable cameras.	✓	✓	✓	✓	
2.	Appenzeller Y.E (2020) ⁹	Psychiatry	Literature review	A narrative review of the literature on video surveillance in psychiatry.	✓	✓	✓	✓	
3.	Berridge C. (2019) ¹⁷	Geriatric/ Nursing	Original research	Anonymous online survey addressing the ethical challenges of web-connected cameras in the ageing population care workforce.	✓		✓	✓	
4.	Cumpanas A.A. (2017) ¹²	Urology	Review article	A discussion of ethical and legal issues related to live surgery.	✓	✓	✓	✓	
5.	Douglas S.L. (2021) ²⁴	Emergency Medicine	Review article	Video and audio recordings of patients in an Emergency Department.	✓	✓	✓	✓	
6.	Dumestre, D.O. (2020) ²⁸	Plastic Surgery	Original article	Evaluation of smartphone application for clinical photograph and communication.	✓	✓	✓	✓	✓
7.	Erba, G. (2016) ¹¹	Neurology	Original article	Predicted diagnosis of video-recorded epileptic patients.	✓	✓	✓	✓	
8.	Foye U (2024) ¹⁹	Psychiatry	Original research	Semi-structured interviews with patients and staff to explore their perspectives on the practical and ethical issues related to the implementation of body-worn cameras.	✓	✓		✓	
9.	Funkenstein A.B. (2014) ²⁸	Psychiatry	Case series	Examined two cases in which residents sought their patients' permission to videotape a session to explore the ethical issues unique to providing informed consent.	✓	✓	✓	✓	
10.	Gabrielli M. (2021) ¹⁷	General surgery	Literature review	Ethical and legal understanding of video recording in the operating room.	✓	✓	✓	✓	
11.	Krechichwost, M. (2022) ²²	Speech therapy	Original article	Developing a speaker model to view and analyse speech abnormalities in patients.	✓	✓	✓		
12.	Lloyd A. (2017) ²⁵	Emergency Medicine	Theoretical article	A practical guide for clinical services to navigate the challenges of embedding live video recording in an emergency department resuscitation room.	✓	✓	✓	✓	✓
13.	Quach W.T. (2023) ²⁶	General Surgery	Systemic review	Ethical and legal analysis of the integration of high-resolution video in the operating room.	✓	✓		✓	
14.	Rajwani K. (2023) ¹⁹	Psychiatry	Review article	Investigate the ethical issues related to video recording of psychedelic therapy sessions.	✓	✓	✓	✓	
15.	Simma B (2021) ²¹	Obstetrics	Review article	Discussing the ethical and medico-legal issues of the current state of delivery room video recording affecting long-term team performance or clinical outcomes.	✓	✓	✓	✓	✓
16.	Szabó, C.A. (2015) ²²	Neurology	Original article	Video recording of patient and EEG monitoring in seizure detection.	✓	✓	✓	✓	
17.	Tamune, H. (2024) ²³	Neurology	Case report	Catatonia diagnosis supported by EEG and video documentation assists in excluding other differential diagnosis	✓	✓	✓	✓	
18.	Thia B.C. (2019) ²⁹	Ophthalmology	Literature review	Current applications, methods, ethical and legal issues of video recording in ophthalmic surgery.	✓	✓	✓	✓	✓
19.	Turnbull A.M.J. (2014) ³⁰	Ophthalmology	Literature review	Ethical and legal considerations with video documentation from routine surgical recording of ophthalmic surgery.	✓	✓	✓	✓	✓
20.	van Dalen, ASHM. (2019)	Surgery	Literature review	A review of legal medical practice on the implementation of video and data recorder in the operation theatre.	✓	✓	✓	✓	✓
21.	Wiegandt, F.C. (2021) ²⁴	Pediatrics	Original article	Recording of neonates' abdominal movements in monitoring their breathing patterns.	✓	✓	✓		
22.	Wilson K. (2023) ¹⁹	Psychiatry	Original research	Exploratory online and in-person semi-structured interviews of patients, mental health staff and senior management on their perspectives on body-worn cameras.	✓	✓	✓	✓	

Governance, Policy, and Legal Frameworks

Incorporating recordings into medical records can serve as a valuable tool for comprehensive 'gold standard' medical documentation.²⁹ Maintaining recordings as part of medical records necessitates long-term storage. For legal purposes, recordings cannot remain de-identified or may require re-identification if initially de-identified. Transparency in recordings can have significant medico-legal implications. For instance, during a treatment or a procedure, complications or errors may be observed by patients or other involved parties.^{29,33}

One of the steps in the practical guideline for live video recording for resuscitation audit in ED is to seek opinions, advice and written permission from the local Guardian and Data Protection Officer, the research ethics service and the legal office.³⁵ These inputs will assist to develop and share the working framework and guidelines. Consultations with legal advisors will assist in maintaining admissible recordings that

may be useful in courts. The admissibility of recordings as evidence in court proceedings varies by consent process, ethics approval and local setting.^{29,33}

Video recordings provide objective evidence, which is more accurate and reliable than testimonies. These recordings may be used by either the defence (doctor) or the plaintiff (patient) in legal proceedings. Previous legal cases have shown that video recording can potentially prevent medical litigation by accurately documenting procedures.²⁸

DISCUSSION

All 22 articles included in this literature review were individually appraised using the Joanna Briggs Institute (JBI) Critical Appraisal Tools, which are widely recognized for their comprehensive and systematic approach to evaluating research quality and rigour. The JBI tools were selected because they provide specific criteria for assessing different

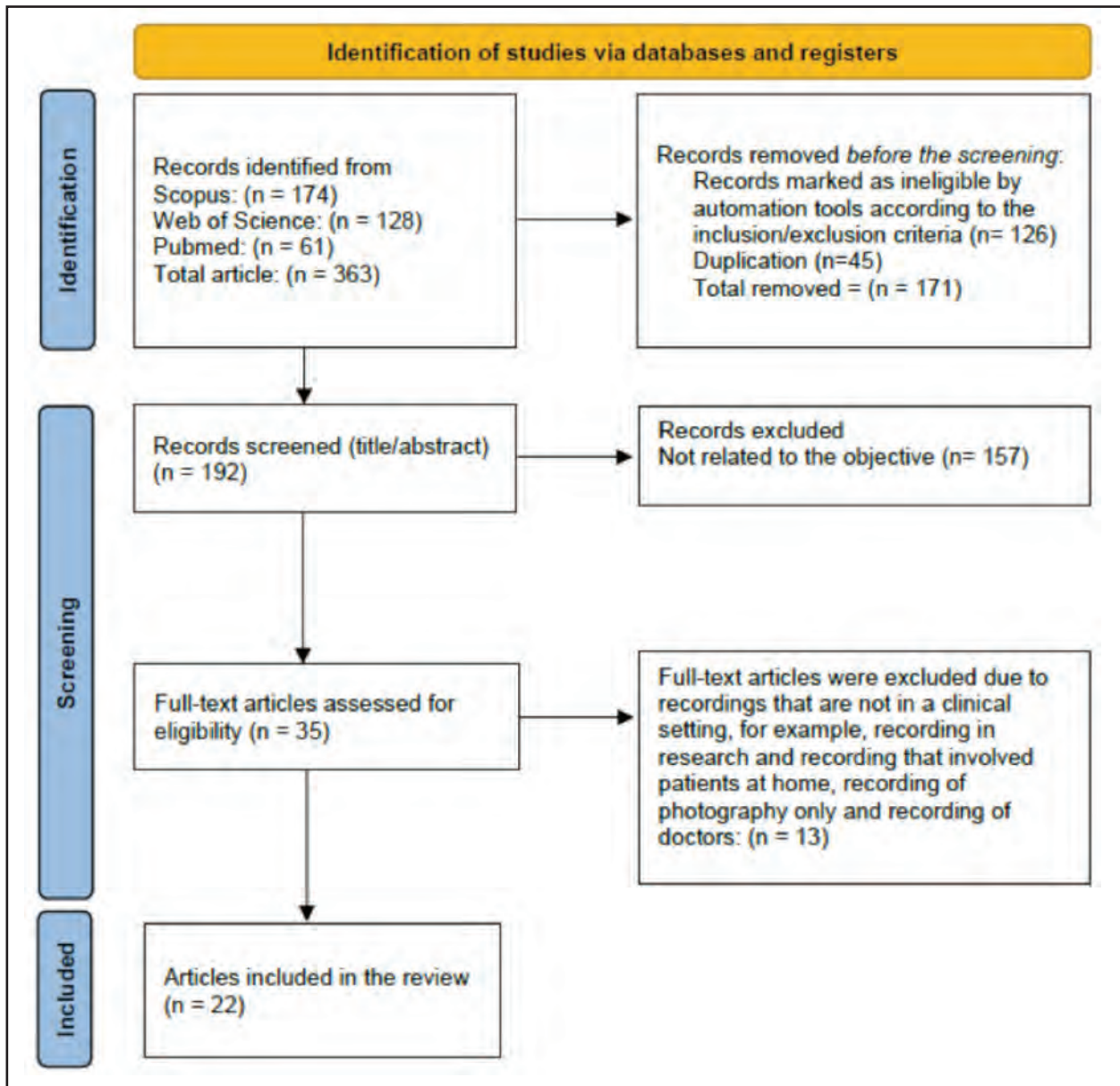


Fig. 1: Search strategy process of the study

study designs, ensuring a thorough evaluation of the methodological quality, validity, and reliability of each study. Upon appraisal, it is evident that the articles demonstrate a consistent commitment to addressing ethical considerations and methodological rigour. They cover a wide range of topics, from the importance of video recording to exploring methods for documenting the doctor-patient relationship.

The literature included in the review has clearly stated aims and the qualitative methodologies employed are appropriate for addressing the research questions. The findings are articulated and aligned with the research aims, supported by robust discussions. The articles also acknowledge their limitations, particularly concerning patient vulnerability and the potential impact of videotaping on the therapeutic relationship. Overall, the conclusions drawn are well-

supported by the findings, emphasizing the need for transparency, individualized consent processes, and ongoing ethical considerations in the use of technology in healthcare settings.

The reviewed articles reveal that while video recording finds primary application in fields like psychiatry, neurology, emergency departments, and surgical specialities, its utility extends beyond these realms as well. These sectors have extensively documented the utility of video recording, illustrating its pivotal role in enriching patient care and medical training. For instance, in psychiatry, it serves as a vital medium for capturing patient interactions, behaviours, and treatment responses, aiding in precise diagnosis and treatment planning. Likewise, within emergency departments, it facilitates the documentation of critical procedures, patient assessments, and multidisciplinary team

communication, ultimately contributing to better clinical outcomes and care quality.

This multifaceted tool not only elevates patient care but also revolutionizes medical education and training in surgical specialities. By recording and reviewing procedures and surgical techniques, it enhances the learning journey for medical students, residents, and practitioners alike. Integrating video recording into the documentation of a surgical procedure empowers healthcare providers to offer comprehensive descriptions of patient care practices.

This review has shed light on the widespread ethical dilemmas associated with the adoption of video recording across various contexts. The identified themes have demonstrated consistency across the majority of the articles analysed. Interestingly, among the most frequently discussed topics, including patient privacy, confidentiality, and the integrity of data management, it's evident that ethical concerns extend beyond just the patient's realm to encompass the responsibilities of HCPs as well. Both patients and HCPs have their respective rights and responsibilities in ensuring the ethical use of video recording in clinical settings. In Malaysia, according to the Audio and Visual Recordings Guideline 003/2023, the Malaysian Medical Council (MMC) clarifies that recordings integrated into a patient's medical records as part of their care or treatment do not necessitate separate consent if the patient has already consented to the care or treatment inclusive of such recordings.³⁸ However, these recordings, if utilized for educational, training, or research purposes, can be employed without additional consent only if the patient had previously consented as part of their care, and provided the recordings are anonymized by removing any identifying patient information beforehand. Interestingly, paragraph 19 of the same guideline introduces a caveat: practitioners are encouraged to inform patients about any secondary uses of recordings when seeking consent, documenting such discussions in the patient's medical records.

Similarly, the guideline for Making and Using Visual and Audio Recordings of Patients by the British Medical Council (BMC) reflects analogous principles.³⁹ While certain recordings, like routine clinical investigations, are implicit in the consent for treatment, practitioners are advised to inform patients about the potential secondary uses of recordings during consent discussions, especially if they involve certain procedures listed in the guidelines. Additionally, any disclosures or uses of recordings for secondary purposes must ensure prior anonymization to safeguard patient confidentiality, in alignment with regulations and guidance from relevant authorities.

BMC emphasizes the necessity of patient consent before disclosing identifiable recordings, except in cases mandated by law or deemed to be in the public interest. Anonymized or coded recordings may be disclosed for research, teaching, or healthcare-related purposes without consent, although practitioners must exercise caution to ensure complete anonymization to safeguard patient privacy, especially before publication. Conversely, the MMC adopts a stricter stance. It addresses situations where practitioners possess

recordings predating the guideline issuance, stressing the importance of anonymization if consent records are absent. MMC outlines detailed procedures for recording unexpected events, emphasizing the necessity of seeking patient consent whenever possible and promptly informing unconscious or sedated patients upon recovery. The MMC mandates that recordings must be used solely for the specified purpose agreed upon with the patient and should be erased or destroyed promptly if consent is withheld or withdrawn. This review highlights the significance of confidentiality and privacy as recurring ethical issues, yet we also want to underscore the potential variance in legal guidance across continents. Therefore, it's imperative for practitioners to thoroughly grasp the local guidelines governing video recording practices.

Looking forward, the fast-emerging technologies and innovations related to video recording systems, such as wearable cameras, telemedicine platforms, and artificial intelligence-driven analytics, have vast potential for healthcare delivery. HCPs and stakeholders must not only understand the ethical challenges but also the technical aspects of video recording to effectively manage the recording process. This preparation involves not only ensuring the availability of suitable equipment but also adhering to ethical practices outlined in local policies.

LIMITATIONS

This review has several limitations. Firstly, the majority of the literature focuses on the perspectives of HCPs, with limited studies exploring patients' views on video recording. Additionally, this paper does not analyze the topic related to patients who are recording interactions with their doctors. This aspect of the discussion may present both similarities and differences in practical and ethical considerations compared to recordings made by HCPs.

In many current clinical settings, the adoption of video recording is still in its early stages. As a result, the analysis presented may not encompass all potential ethical considerations and practical challenges associated with video recording in healthcare settings. The ethical challenges stemming from technological limitations, resource constraints, and logistical considerations have not been thoroughly examined in this analysis.

Ultimately, there may exist inherent biases in both the selection of literature and the interpretation of findings, potentially influencing the objectivity of the review. Authors might not possess in-depth familiarity with the clinical settings discussed in the articles, which could further impact the impartiality of the analysis. The review also may be influenced by the availability of published literature, potentially overlooking unpublished studies or grey literature.

CONCLUSION

In conclusion, this review has shed light on the multifaceted ethical challenges surrounding the implementation of video recording in healthcare settings. While video recording holds

promise as a valuable tool for enhancing patient care, education, and quality improvement initiatives, its adoption is not without complexities. Ethical dilemmas related to patient privacy, consent, and data management must be carefully navigated, alongside practical barriers such as technological limitations, resource constraints, and logistical considerations. It is imperative for HCPs, policymakers, and stakeholders to engage in ongoing dialogue and collaboration to address these challenges and ensure that the implementation of video recording in healthcare is conducted ethically, responsibly, and in a manner that prioritizes patient welfare.

In light of the insights gained from this review, future research endeavours should aim to delve deeper into the nuances of video recording in healthcare, including the exploration of patient perspectives, the development of robust ethical guidelines and regulatory frameworks, and the evaluation of the impact of video recording on patient outcomes and healthcare delivery. By fostering a comprehensive understanding of the ethical, practical, and clinical implications of video recording, the healthcare community can harness the potential of this technology to improve patient care while upholding the highest standards of ethical conduct and professionalism.

ACKNOWLEDGEMENTS

This work was supported by Universiti Sains Islam Malaysia with grant code PPP1/FPSK/0122/USIM/13822 dated 1st March 2022.

REFERENCES

- Dewolf P, Rutten B, Wauters L, Van den Bempt S, Uten T, Van Kerkhoven J, et al. Impact of video-recording on patient outcome and data collection in out-of-hospital cardiac arrests. *Resuscitation* 2021; 165: 1–7.
- Golembiewski EH, Espinoza Suarez NR, Maraboto Escarria AP, Yang AX, Kunneman M, Hassett LC, et al. Video-based observation research: A systematic review of studies in outpatient health care settings. *Patient Educ Couns* 2023; 106: 42–67.
- Todd AL, Roberts L, Foster K. Feasibility of video recording interpersonal interactions between patients and hospital staff during usual care. *Pilot Feasibility Stud* 2022; 8: 1–9.
- Dohms MC, Collares CF, Tibério IC. Video-based feedback using real consultations for a formative assessment in communication skills. *BMC Med Educ* 2020; 20: 1–9.
- Fein DG, Eisen LA. Video Body Cameras Bridge the Gap Between Simulation and Patient Care During Emergency Airway Management. *Chest* 2020; 158: 24–25.
- Holm-Hansen CC, Poulsen A, Skytte TB, Stensgaard CN, Bech CM, Lopes MN, et al. Video recording as an objective assessment tool of health worker performance in neonatal resuscitation at a district hospital in Pemba, Tanzania: A feasibility study. *BMJ Open*; 12. 2022.
- Dewar A, Lowe D, Mcphail D, Clegg G. The use of body-worn cameras in pre-hospital resuscitation. *Br Paramed J* 2019; 4: 4.
- Wong JZW, Park PSW, Frost T, Stephens K, Newk-Fon Hey Tow FK, Garcia PG, Senanayake C, et al. Using body cameras to quantify the duration of a Code Stroke and identify workflow issues: A continuous observation workflow time study. *BMJ Open*; 13. 2023.
- Appenzeller YE, Appelbaum PS, Trachsel M. Ethical and practical issues in video surveillance of psychiatric units. *Psychiatr Serv* 2020; 71: 480–486.
- Vicente V, Johansson A, Selling M, Johansson J, Möller S, Todorova L. Experience of using video support by prehospital emergency care physician in ambulance care - an interview study with prehospital emergency nurses in Sweden. *BMC Emerg Med* 2021; 21: 1–9.
- Ho JD, Dawes DM, McKay EM, Taliencio JJ, White SD, Woodbury BJ, et al. Effect of an EMS body-worn camera. *BMJ Open* 2019; 9: A3.1-A3.
- Ho JD, Dawes DM, McKay EM, Taliencio JJ, White SD, Woodbury BJ, et al. Effect of Body-Worn Cameras on EMS Documentation Accuracy: A Pilot Study. *Prehospital Emerg Care* 2017; 21: 263–71.
- Denecke, K., Meier, L., Bauer, J. G., Bender, M., & Lueg, C. Information Capturing in Pre-Hospital Emergency Medical Settings (EMS). *Stud Health Technol Inform* 2020; 270: 613–617.
- Iserson KV, Allan NG, Geiderman JM, Goett RR. Audiovisual recording in the emergency department: Ethical and legal issues. *Am J Emerg Med* 2019; 37: 2248–52.
- Shah NA, Jue J, MacKey TK. Surgical Data Recording Technology: A Solution to Address Medical Errors? *Ann Surg* 2020; 271: 431–3.
- Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021; 372:n71.
- Berridge C, Halpern J, Levy K. Cameras on beds: The ethics of surveillance in nursing home rooms. *AJOB Empir Bioeth* 2019; 10: 55–62.
- Foye U, Regan C, Wilson K, Ali R, Chadwick M, Thomas E, et al. Implementation of Body Worn Camera: Practical and Ethical Considerations. *Issues Ment Health Nurs* 2024; 1–12.
- Wilson K, Foye U, Thomas E, Chadwick M, Dodhia S, Allen-Lynn J, et al. Exploring the use of body-worn cameras in acute mental health wards: A qualitative interview study with mental health patients and staff. *Int J Nurs Stud* 2023; 140: 104456.
- Dumestre DO, Fraulin F. Avoiding breach of patient confidentiality: trial of a smartphone application that enables secure clinical photography and communication. *Plast Surg* 2020; 28: 12–8.
- Erba G, Giussani G, Juersivich A, Magaouda A, Chiesa V, Laganà A, et al. The semiology of psychogenic nonepileptic seizures revisited: Can video alone predict the diagnosis? Preliminary data from a prospective feasibility study. *Epilepsia* 2016; 57: 777–85.
- Krecichwost M, Sage A, Miodonska Z, Badura P. 4D Multimodal Speaker Model for Remote Speech Diagnosis. *IEEE Access* 2022; 4: 1–17.
- Szabó CÁ, Morgan LC, Karkar KM, Leary LD, Lie OV, Girouard M, et al. Electromyography-based seizure detector: Preliminary results comparing a generalized tonic-clonic seizure detection algorithm to video-EEG recordings. *Epilepsia* 2015; 56: 1432–1437.
- Wiegandt FC, Biegger D, Fast JF, Matusiak G, Mazela J, Ortmaier T, et al. Detection of breathing movements of preterm neonates by recording their abdominal movements with a time-of-flight camera. *Pharmaceutics* 2021; 13(5):721
- Allé MC, Manning L, Potheegadoo J, Coutelle R, Danion JM, Berna F. Wearable Cameras Are Useful Tools to Investigate and Remediate Autobiographical Memory Impairment: A Systematic PRISMA Review. *Neuropsychol Rev* 2017; 27: 81–99.
- Quach WT, Vittetoe KL, Langerman A. Ethical and Legal Considerations for Recording in the Operating Room: A Systematic Review. *J Surg Res* 2023; 288: 118–33.
- Gabrielli M, Valera L, Barrientos M. Audio and panoramic video recording in the operating room: Legal and ethical perspectives. *J Med Ethics* 2021; 47: 798–802.
- Turnbull AMJ, Emsley ES. Video recording of ophthalmic surgery-ethical and legal considerations. *Surv Ophthalmol* 2014; 59: 553–8.
- Thia BC, Wong NJ, Sheth SJ. Video recording in ophthalmic surgery. *Surv Ophthalmol* 2019; 64: 570–8.

30. van Dalen AS, Legemaate J, Schlack WS, Legemate DA, Schijven MP. Legal Perspectives on black box recording devices in the operating environment. *J Br Surg* 2019; 106: 1433–41.
31. Cumpanas A, Ferician OC, Latcu SC, Pricop C, Bardan RT. Ethical, legal and clinical aspects of live surgery in urology - Contemporary issues and a glimpse of the future. *Videosurgery Miniiv* 2017; 12 (1): 1–6.
32. Rajwani K. The “Third” Eye: Ethics of Video Recording in the Context of Psychedelic-Assisted Therapy. *Can J Bioeth* 2023; 6: 8–15.
33. Simma B, den Boer M, Nakstad B, Küster H, Herrick HM, Rüdiger M, et al. Video recording in the delivery room: current status, implications and implementation. *Pediatr Res.*2024; 96(3): 610–5.
34. Douglas SL, McRae A, Calder L, de Wit M, Sivilotti ML, Howes D, et al. Ethical, legal and administrative implications of the use of video and audio recording in an emergency department in Ontario, Canada. *BMJ Innov* 2021; 7: 224–30.
35. Lloyd A, Dewar A, Edgar S, Caesar D, Gowens P, Clegg G. How to implement live video recording in the clinical environment: A practical guide for clinical services. *Int J Clin Pract* 2017; 71: e12951.
36. Funkenstein AB, Kessler KA, Schen CR. Learning through the lens: Ethical considerations in videotaping psychotherapy. *Harv Rev Psychiatry* 2014; 22: 316–22.
37. Tamune H, Tsukioka Y, Sakuma S, Taira D, Takaoka Y, Tamura N, et al. EEG and video documentation of benzodiazepine challenge in catatonic stupor: A case report. *Neuropsychopharmacol Reports* 2024; 44: 468–73.
38. Malaysian Medical Council. Audio and Visual Recordings Guideline of the Malaysian Medical Council 003/2023.[cited Dec 2023]. Available from: [https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://mmc.gov.my/wp-content/uploads/2024/01/Audio-and-Visual-Recordings.pdf&ved=2ahUKEwiQ1P_drcGIAxW1RmwGHXM5O6wQFnoECBIQAQ&usq=AOvVaw2BCe-6C\]mYbwZCKLjTrn61](https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://mmc.gov.my/wp-content/uploads/2024/01/Audio-and-Visual-Recordings.pdf&ved=2ahUKEwiQ1P_drcGIAxW1RmwGHXM5O6wQFnoECBIQAQ&usq=AOvVaw2BCe-6C]mYbwZCKLjTrn61)
39. General Medical Council, United Kingdom. Making and using visual and audio recordings of patients. [cited Jan 2024] Available from: www.gmc-uk.org/ethical-guidance/ethical-guidance-for-doctors/making-and-using-visual-and-audio-recordings-of-patients.