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Civil Legal Protection Against Patients For Chatbot-Based Health Consultation Malpractice

Andi Hartawati✉, A. Silfiana Sirajuddin, Muhammad Sumardin
Universitas Andi Sudirman
✉ ahartawati@gmail.com

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Abstract

The advancement of artificial intelligence (AI) in the healthcare sector has significantly transformed medical consultation practices, particularly through the use of AI chatbots as tools for preliminary diagnosis and health recommendations. However, the use of such systems introduces potential algorithmic errors and biases that may cause harm to patients, while the existing legal framework has not yet clearly defined the scope of civil liability in cases of AI-based malpractice. This study employs a normative juridical method with statutory, conceptual, and comparative approaches to examine civil legal protection for patients harmed by AI-driven medical consultations. The findings reveal that Indonesia's Health Law, Consumer Protection Law, and Electronic Information and Transactions Law remain insufficient to address the complex distribution of liability among doctors, healthcare institutions, platform providers, and AI developers. Therefore, regulatory reform in the form of a lex specialis is necessary to incorporate the principles of explainability, mandatory algorithm auditing, and burden-shifting mechanisms to ensure equitable legal protection for patients in the digital era.

Keywords: Artificial Intelligence, Health Law, Malpractice, Patient Protection.

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Coresponding Author:
Email : ahartawati@gmail.com

1. Introduction

In this era, the shift in digitalization and advances in artificial intelligence (AI) technology continue to penetrate various sectors of life, including the health sector. AI-based medical chatbots, which are capable of interacting with users, analyzing symptoms, and providing initial recommendations related to health conditions, are increasingly popular as an alternative or complement to conventional medical consultations (Li et al., 2023; Security Implications of AI Chatbots in Health Care, 2023). The use of AI in healthcare promises high efficiency, wider access, and reduced burden on the health system, especially in remote areas. In various developed countries, AI-assisted diagnostic services have been implemented in radiology, pathology, or clinical triage, and AI's contribution is even judged to exceed human accuracy in the early detection of certain diseases (Di Mauro et al., 2025). However, this innovation is not free from risks. Algorithmic errors, data bias, lack of transparency (black box), and the potential for the spread of misinformation by chatbots are significant issues (Meyrowitsch et al., 2023; Gumilar et al., 2024).

Global phenomena show that the application of medical AI brings legal challenges that have not been fully resolved. In a systematic literature review, Cestonaro (2023) revealed the weaknesses

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of traditional medical liability frameworks in dealing with AI diagnostic algorithms, especially the issue of proving errors and attributing of responsibility. Jorstad (2020) in his note on the intersection of AI and medical law said that the current legal system is structurally not ready to deal with malpractice involving machine learning-based decisions. Maliha (2021) highlights that even if a physician chooses to *rely on* AI systems in his or her practice, the obligation to ensure that the decisions taken remain in accordance with professional standards cannot be ignored. In fact, recent research highlights that the level of *explainability* or ability of an AI system explaining the reasons behind its output can affect the division of responsibility between developers, clinicians, and institutions (Wei, Verona, Bertolini, & Mengaldo, 2025).

In the regulatory context, the European Union is developing a draft *Artificial Intelligence Liability Directive* (AILD) to fill the gap in non-contractual liability that arises in the realm of AI, including in healthcare (duffourc & Gerke, discussed in Price, 2024). However, a number of observers say that the draft has not completely addressed the loophole in the case of medical AI with a "black box" character, where the internal operation of the system is difficult to access (The proposed EU Directives for AI liability leave worrying gaps, 2023). In a comparative analysis of the US and European legal systems, (Duffourc 2024) it is shown that both face similar challenges regarding professional liability standards that are difficult to apply when AI is involved in determining a diagnosis, the burden of proof that burdens patients, and the loopholes that arise when AI output is erroneous but no human actor is clearly at fault (Decoding U.S. Tort Liability in Healthcare's Black-Box AI Era, 2024).

Meanwhile, in Indonesia, digital transformation in healthcare has shown acceleration, especially since the COVID-19 pandemic. Telemedicine (online medical consultation) is part of the healthcare strategy, and is combined with AI elements to speed up and simplify early diagnosis (Legal Perspectives on the Risks of Medical Malpractice, 2025). However, as revealed by Alvina, Markoni, and Kanthika (2025), Indonesia's health regulations so far are still general and have not formulated specific limits on obligations in AI-based medical practices. The study concluded that the absence of *a lex specialis* governing AI malpractice leads to potential injustices in determining the responsible parties. Some other researchers highlight that Indonesian health regulations, such as Health Law No. 36 of 2009 and its implementing regulations, have not yet contained specific provisions on medical AI (Hakim, 2023). In her writing, Yuliana (2023) also mentioned that legal considerations in implementing medical AI in Indonesia are still minimal: for example, there are no formal guidelines related to patient written consent that includes AI involvement, or the obligation to disclose that recommendations from chatbots are supportive.

In Indonesia, relevant health regulations are an important foundation in establishing patient protection. Law No. 36 of 2009 on Health gives patients the right to "claim compensation against a person, health worker, and/or health service provider who causes losses due to errors or negligence in health services" (Article 58). This provision explicitly opens the door to civil lawsuits for medical damages. In addition, Article 4 and Article 5 of the Health Law guarantee that everyone has the right to safe, quality, and affordable health services without discrimination (Law No. 36/2009). Article 9 further stipulates that everyone has the right to obtain information about health data and medical action plans from health workers (Health Law, Article 9).

The Health Law also requires health workers to comply with professional standards in carrying out their duties (Article 24 paragraph 1), and in an emergency, health service facilities are obliged to provide assistance without refusal (Article 190). In relation to the privacy and confidentiality of medical data, the Health Law (Article 32 letter i) contains protection for patients' medical secrets.

In addition to the Health Law, patients are also protected through the Consumer Protection Law (Law No. 8 of 1999). In an AI-based medical consultation relationship, patients can be considered consumers and AI providers or health platforms as service providers. This norm provides a basis for claiming compensation or cancellation of the contract if the service is not as expected (UNDERSTAND Patient Rights..., 2021). However, the application of the Consumer Protection Law to medical services is still often debated, because medical services also demand special professional standards that are not entirely the same as ordinary commercial services. Although a formal regulatory framework already exists, the practical problems are very complex when the context is AI chatbots.

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For example, when a patient uses a chatbot as an initial consultation, and then the follow-up of a medical diagnosis is carried out by a human doctor, a responsible interaction arises between AI recommendations and human decisions. If the AI gives the wrong advice and the doctor ignores it, does the neglect constitute negligence? Conversely, if a doctor follows the wrong AI advice, is he "relieved" of responsibility? The results of research on this interaction show that in experiments, doctors who accept AI recommendations that are in accordance with *standard care* and accept them tend to have a lower risk of liability than those who reject the recommendations (When Does Physician Use of AI Increase Liability?, 2020. In daily practice, concrete examples of concern begin to appear. For example, if a patient uses a health chatbot for medication advice or initial steps, but the chatbot provides inappropriate recommendations so that the patient is late in seeking further medical care, can the patient claim compensation against the chatbot provider, developer, or clinic that facilitates its use? Or, when online health platforms claim that chatbots are just "tools" and are not responsible for their accuracy, what is the legal position of the patient? If AI ever becomes part of the operational standard in clinical practice, can a doctor's failure to adopt it also be questioned as negligence?

These issues raise fundamental questions about civil law protection against aggrieved patients in the context of chatbot-based AI health consultations. In the context of civil law, the patient as the aggrieved party can claim compensation based on the theory of default (if there is a service contract) or tort/unlawful act (if there is no explicit contract). But the application of such classical theories faces obstacles when the object of demand is the "decision of the algorithm". On the one hand, AI systems are not subject to traditional medical ethics; On the other hand, developers and platforms are often not tied to the day-to-day clinical medical practice. Proving causation between AI recommendations and medical losses is often difficult to prove, especially when the system's internal logs are not open. In addition, shared liability becomes complicated when several contributing parties (developers, operators, user doctors) how is the proportion of responsibility determined? Furthermore, the product liability theory of AI software in the context of health is also not definitely accepted in many jurisdictions. In many cases of traditional medical malpractice, liability centers on the medical service provider. But in the case of AI, software developers can be seen as "manufacturers" of potentially flawed systems. If so, can Indonesian product laws, such as the Consumer Protection Law No. 8 of 1999, be used as the basis for lawsuits against health AI? Then, what is the position of the liability of health institutions (hospital liability) if the institution provides chatbots as part of their services? Is there institutional responsibility or vicarious liability for staff or systems that use AI?

Moreover, the use of AI in healthcare poses new regulatory challenges: transparency and *explainability obligations*, external audits, algorithmic security standards, and independent audit authority (Functional Requirements to Mitigate the Risk of Harm to Patients from AI in Healthcare, 2023). Without an obligation of access to decision logs or external audits, the patient's position in the lawsuit is very weak. Therefore, the legal aspects of informatics (privacy, data security, right to explanation) are also relevant in medical AI malpractice.

Within the framework of academic research, several previous studies have attempted to unravel some aspects of the responsibility of AI in health. However, most of them are conceptual or theoretical and present limitations. For example, Terranova et al. (2024) discuss the new challenges faced by expert witnesses in malpractice cases involving AI, but do not specifically detail the liability scheme for consulting chatbots. Gumilar (2024) studied the disparity of medical recommendations from AI chatbots and showed that AI often generates different recommendations based on data bias, but does not examine the depth of legal responsibility for incorrect outcomes. Duffourc (2022) proposes a *control-based framework* to link adverse AI outputs to those who have control over the algorithm, but its application to medical consultation chatbots has not yet been empirically tested. Indonesian studies (Alvina et al., 2025; Legal Perspectives, 2025) the majority still emphasizes the need for general regulation, without detailing concrete accountability models or comparative comparisons. Thus, the *research gap* that emerges is: there is no normative-juridical study in Indonesia that integrates the aspects of contracts/delicacies/products in an integrated manner, with a global comparative approach to the case of medical chatbots, and explores a realistic model of shared liability and burden of proof in the context of AI. Against that background, this research is presented with the intention of filling this gap. This research will systematically dissect how the doctrine of civil liability

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can be adapted or reformed to be more relevant in cases of malpractice of AI chatbot-based health consultations. It will discuss how various theories (contracts, defaults, delicacies, products) can be applied, how the burden of proof can be readjusted, and how draft regulations or policies can be formulated to ensure legal certainty.Based on the above narrative, a number of *research gaps* can be formulated that are the basis of this research. First, while much of the global literature discusses diagnostic AI and legal liability, few specifically examine the malpractice of chatbot-based health consulting that directly interacts with patients (not behind-the-scenes clinical AI). Second, the existing Indonesian literature is still limited to regulatory introductions and general recommendations, without formulating an integrated civil liability model for various parties (doctors, platforms, developers, institutions). Third, the burden of proof approach in AI malpractice lawsuits has not been discussed in depth, especially in the context of "algorithmic log disclosure" and how legal systems can facilitate access to technical data for patients or courts. Fourth, the global comparative literature generally focuses on diagnostic AI and clinical systems, without specifically examining the character of medical consultation chatbots (as a direct interaction model). Fifth, there are few studies that explore *practical and proportional shared liability* schemes between doctors, institutions, and AI developers in the context of chatbot-based consultation.

This research is here to close these gaps through normative-juridical studies with an international comparative approach and analysis of the Indonesian legal system. Thus, this research not only presents a conceptual understanding, but also a formulation of practical models: how the burden of proof can be reset, how shared liability can be shared fairly, and how regulations need to be reformed to produce adequate legal certainty for patients in the era of medical AI.

2. Method

This study uses a normative legal research method with a legislative, conceptual, and comparative approach to analyze the form and limits of civil liability to patients for the malpractice of AI chatbot-based health consultation. The legislative approach is carried out by examining the norms in Law Number 36 of 2009 concerning Health, Law Number 8 of 1999 concerning Consumer Protection, Law Number 11 of 2008 concerning Electronic Information and Transactions and their amendments, as well as Regulation of the Minister of Health Number 24 of 2022 concerning Electronic Medical Records to identify the extent to which Indonesia's positive law has provided legal protection for patients who use services health based on AI technology. A conceptual approach is used to elaborate on civil liability theories including the concepts of medical malpractice, product liability, and vicarious liability associated with the context of human interaction and algorithms, while a comparative approach is carried out by comparing legal practices in the European Union and the United States through a study of *the EU Artificial Intelligence Liability Directive (2024)* and *the U.S. Tort Law Principles for AI-driven Healthcare Systems* (Price, 2024).

The legal materials used consist of primary legal materials (laws and regulations and international legal instruments), secondary legal materials (scientific journals, research results, and cutting-edge legal doctrines), and tertiary legal materials (legal dictionaries and encyclopedias). The analysis of legal materials is carried out in a descriptive-analytical manner, namely interpreting applicable legal norms, identifying legal vacancies, and assessing the suitability of civil liability theory with the development of AI-based health technology. The results of the analysis were then compared with the findings of global research (Cestonaro, 2023; Terranova et al., 2024; Wei et al., 2025) to formulate a proportionate legal responsibility model between physicians, developers, and service provider institutions. Thus, this method produces normative recommendations that are evidence-based and can be an academic and practical reference for health law reform in Indonesia.

3. Result and Discussion

Civil Lawsuits and Theories of Liability in AI Chatbot Malpractice Cases

In the realm of civil law, patients aggrieved by health consulting malpractices (including those based on AI chatbots) can file a claim for damages based on two main theories: default/contractual (in

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the case of a service agreement) and unlawful/tort (medical malpractice). But the application of these classical theories suffers from complications when the wrong object is the decision or recommendation of the algorithm, rather than the direct action of a human.

In the case of AI chatbot consultation, there is usually an agreement on the use or approval of services between the health platform provider (consulting services) and the patient. In that context, the obligation of the service provider can be classified as a contractual obligation (obligation of result or obligation of means). If the chatbot is promised to provide accurate diagnoses or recommendations, failure to deliver on the promise could be a default. But in practice, providers often state that chatbots are only "tools" and not a substitute for doctors, thus hiding or limiting their contractual responsibilities. In such situations, the patient must prove (1) the existence of a contract or consent; (2) default/omission; (3) losses; (4) the causal relationship between default and loss. However, the evidentiary aspect becomes very difficult when AI recommendations are not transparent (black box), so patients do not know the internal logic of the system, training data, or the reason for algorithmic decisions, so that showing a cause-and-effect relationship becomes a big challenge (Are Current Tort Liability Doctrines Adequate for Addressing Injury Caused by AI?, 2019).

In the absence of an explicit contract or if the AI's actions are considered part of general medical services, then the theory of medical negligence or tort negligence is more relevant. In the theory of negligence, the elements that must be proven are duty, breach of duty, damage, and causation. For AI chatbot applications, the obligation may start from the service provider or medical institution to choose a safe and adequate AI system according to professional standards or technology standards (Liability for harm caused by AI in healthcare: an overview of the core legal concepts, 2023). Weaknesses in system implementation, such as data bias, inadequately tested algorithms, or poor system updates, can be considered a breach of obligation. However, the burden of proof generally falls on the patient, who in the case of AI may not be able to gain access to system logs or training data to show where errors occurred, making prosecution very difficult (Understanding Liability Risk from Healthcare AI, 2024).

In addition, in the recent literature, there is a hybrid approach or *AI-specific liability regimes* that recommend shifting burden or presumption of negligence in certain situations (Liability regimes in the age of AI: a use-case driven analysis of the burden of proof, 2022). If the patient can demonstrate that the harm suffered is consistent with the possible AI error and that the AI system does not guarantee transparency, then the burden of proof can shift to the system provider or developer to prove that they have taken adequate precautionary measures.

In the context of hospitals or health institutions that provide chatbots as part of their services, the vicarious liability theory can be applied, i.e. institutions can be held accountable for the mistakes of their staff or the system adopted in service practices. If an institution selects, operates, or supervises an AI system without adequate oversight, then it can be blamed for *negligent selection* or *negligent supervision* (Liability for use of artificial intelligence in medicine (NCBI).

More complexly, the theory of product liability for software becomes relevant if AI chatbots are seen as a product or technological tool that has the potential for defects. In this context, AI developers can be considered as "manufacturers" who are responsible for product defects (defects in design, defects in implementation, or lack of warnings). Some researchers propose that AI products in healthcare should be subject to safety standards and external audits, with an obligation to repair or recall the system when defects are detected (AI and Liability in Medicine: The Case of Assistive-Diagnostic AI, 2023). However, in many jurisdictions, especially in Indonesia, product regulation for medical software is still vague and has not explicitly acknowledged responsibility for AI production.

In litigation practice, the composition of liability can be in the form of shared liability between doctors, institutions, and AI developers. The determination of the proportion of responsibility depends on how much each party contributes to the creation of the error. For example, if the main algorithm errors come from the developers, then they can bear most of it; if institutions fail to oversee the use of AI, then institutions are also responsible; If doctors rely too much on AI without verification, then doctors also have a responsibility. In the Milbank Quarterly literature, it is argued that AI/ML accountability systems must balance security and innovation: overly burdensome allocations of responsibilities to developers can stifle innovation, while light allocations can weaken patient

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protection (Artificial Intelligence and Liability in Medicine: Balancing Safety and Innovation).

On the Indonesian legal side, Health Law No. 36/2009 Article 58 opens the right of patients to claim compensation against health workers or health service providers who make mistakes or negligence. Therefore, even if AI chatbots are used in consultations, parties who are considered health workers or service providers (platforms or institutions) can still be sued. However, current regulations do not yet establish specific standards or specific sanctions for AI errors, so the interpretation of liability must refer to general civil principles (e.g. *Lex specialis derogat generali*, *Prudentia*, *in dubio pro aegroto*). In addition, the Consumer Protection Law No. 8/1999 can also be the basis if patients are considered consumers of AI-based consulting services, service providers must be responsible for the quality and correctness of the service (Article 4 concerning the right to safe and quality products/services). However, many authors criticize that the application of the Consumer Law in medical services is still a dilemma because the character of medical professionals is different from ordinary commercial services (Legal Protection of Patients and Responsibilities of Artificial Intelligence–Based Telemedicine Health Services in Indonesia, 2025).

Therefore, in the case of AI consulting malpractice, civil lawsuits must consider the adaptation of classical theories (contracts, delicacies, products, vicarious) with specific modifications (shifting burden, presumption of negligence, audit obligation, shared liability) in order to achieve a balance between patient protection and the development of health technology

Proof Obstacles and the Role of Explainability in AI

One of the most fundamental challenges in filing a civil lawsuit against AI-based consulting malpractice is the issue of evidence, especially the causation and fault relationship. In complex and often black box AI systems, patients or lawyers generally do not have access to internal logs, training data, model structures, or algorithmic decision records. Without such access, it is difficult to prove that erroneous AI recommendations are the result of design errors, system defects, or maintenance failures (Defining medical liability when artificial intelligence is applied on..., 2023).

In the literature *Explainability matters: The effect of liability rules on the healthcare sector* (2025), Wei, Verona, Bertolini, and Mengaldo show that the level of *explainability* (the ability of an AI system to explain the reasons behind its output in a reasonable way) is highly relevant for the allocation of responsibility. If AI systems are designed to provide human-interpretable explanations of clinical decisions, then the burden of proof can be lighter for patients. Conversely, if the system is truly opaque (oracle model), then the AI provider or developer must bear the additional burden of proving that the system has been designed with proper care standards. In this context, new legal norms can establish *explainability obligations* as a condition of responsibility such as *the duty to explain algorithmic decisions* (We i et al., 2025).

In addition to *explainability*, other literature suggests legal mechanisms such as *disclosure obligations* and mandatory external audits, so that patients and legal authorities can access AI's "black box" when losses occur (AI and professional liability assessment in healthcare, 2023). Thus, AI systems in healthcare should not be completely closed must comply with auditibility, logging, and transparency protocol standards as part of legal obligations.

Further, in medical AI litigation cases in the United States, court cases against advanced software or systems indicate that plaintiffs often face difficulties in demonstrating that software errors (bugs, algorithm defects) directly caused physical injury because traditional tort theories assume that service or product providers will maintain internal records or documentation processes (liability risk from healthcare AI, Stanford HAI). In many successful examples of litigation against medical software devices, liability is often attributed to the clinician's negligence in using the system, rather than the fault of the software itself (Understanding Liability Risk from Healthcare AI, 2024).

In the Indonesian context, in order to strengthen the patient's position in the evidentiary way, a positive legal approach could be proposed: for example, the health law was revised to include logging obligations, algorithm audits, and the disclosure of AI system logs in the event of a medical loss. With this requirement, patients or the court can request technical data as evidence. If a provider or developer refuses to grant access on the grounds of "intellectual property rights" or trade secrets, the law may impose sanctions or a presumption of negligence if access is denied without a valid reason.

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Then, in the literature *Liability regimes in the age of AI* (2022), Fernández Llorca et al. illustrate that in order to facilitate the victim's right to compensation, the burden of proof in the case of AI should be adjusted perhaps by applying *rebuttable presumptions*, where after the patient has demonstrated certain facts (e.g.: that an error occurred, that the AI system was used, and that the loss arose in a way that AI might have caused), then the burden shifts to the provider/developer to reject or prove that the system is not wrong (Fernández Llorca et al., 2022). In the context of AI chatbot consultation, patients could point out that the chatbot's response departed from data that appeared to be incorrect, or that the recommendation deviated from medical standards, so the burden shifted to the provider to prove that their system was algorithmically correct.

Finally, to support the evidence, it is necessary to have the role of an expert witness specifically for AI, namely an expert in medical technology and algorithms who are able to explain to the judge how the system works, where the possible errors are, and whether the duty of care has been fulfilled (AI and professional liability assessment in healthcare, 2023). But the practical challenge is whether courts in Indonesia are able to assess such technical evidence and whether technologists can be presented and recognized as credible witnesses in medical trials.

One of the most fundamental challenges in filing a civil lawsuit against AI-based consulting malpractice is the issue of evidence, especially the causation and fault relationship. In complex and often black box AI systems, patients or lawyers generally do not have access to internal logs, training data, model structures, or algorithmic decision records. Without such access, it is difficult to prove that erroneous AI recommendations are the result of design errors, system defects, or maintenance failures. In the literature *Explainability matters: The effect of liability rules on the healthcare sector* (2025), Wei, Verona, Bertolini, and Mengaldo show that the level of explainability (the ability of an AI system to explain the reasons behind its output in a reasonable way) is highly relevant for the allocation of responsibility. If AI systems are designed to provide human-interpretable explanations of clinical decisions, then the burden of proof can be lighter for patients. Conversely, if the system is truly opaque (oracle model), then the AI provider or developer must bear the additional burden of proving that the system has been designed with proper care standards. In this context, new legal norms can establish explainability obligations as a condition of responsibility such as the duty to explain algorithmic decisions (Wei et al., 2025).

In addition to explainability, other literature suggests legal mechanisms such as disclosure obligations and mandatory external audits, so that patients and legal authorities can access AI's "black box" when losses occur (AI and professional liability assessment in healthcare, 2023). Thus, AI systems in healthcare should not be completely closed but must comply with auditability, logging, and transparency protocol standards as part of legal obligations.

Further, in medical AI litigation cases in the United States, court cases against advanced software or systems indicate that plaintiffs often face difficulties in demonstrating that software errors (bugs, algorithm defects) directly caused physical injury because traditional tort theories assume that service or product providers will maintain internal records or documentation processes (liability risk from healthcare AI, Stanford HAI). In many successful examples of litigation against medical software devices, liability is often attributed to the clinician's negligence in using the system, rather than the fault of the software itself (Understanding Liability Risk from Healthcare AI, 2024).

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Finally, to support the evidence, it is necessary to have the role of an expert witness specifically for AI, namely an expert in medical technology and algorithms who are able to explain to the judge how the system works, where the possible errors are, and whether the duty of care has been fulfilled (AI and professional liability assessment in healthcare, 2023). But the practical challenge is whether courts in Indonesia are able to assess such technical evidence and whether technologists can be presented and recognized as credible witnesses in medical trials.

In addition, the implementation of AI traceability systems could substantially strengthen the evidentiary process. A traceability framework requires that every AI-generated medical decision be automatically logged, timestamped, and attached to identifiable metadata, including algorithm version, training dataset reference, and user interaction details. Such documentation would create an objective audit trail for investigators or courts to reconstruct the sequence of events that led to patient harm. By integrating this standard into medical AI regulation, Indonesia could align its evidentiary infrastructure with global best practices, thereby reducing disputes over the authenticity and reliability of digital records.

Moreover, developing AI liability insurance mechanisms could help bridge the gap between complex causation and patient compensation. Insurers could underwrite specific AI systems based on risk profiling, thereby guaranteeing compensation to victims without the need for lengthy litigation. This approach has been discussed in comparative research as a pragmatic solution to manage uncertainty in AI error attribution, particularly in healthcare environments where multiple actors evelopers, clinicians, and institutions share operational responsibility.

The introduction of technical ombudsmen or AI audit panels could further facilitate dispute resolution. These independent panels, composed of legal and technical experts, would serve as mediators between victims and service providers, evaluating AI performance logs and determining whether system failure or human misuse occurred. This mechanism could prevent courts from being overloaded with highly technical disputes and ensure faster, more transparent adjudication processes.

Additionally, data governance reform plays a critical role in strengthening the evidentiary foundation of AI malpractice claims. Establishing clear regulations on data ownership, retention, and interoperability would prevent data loss or manipulation, ensuring that all relevant evidence remains available for judicial review. Harmonizing data protection and medical law under a unified regulatory framework would not only safeguard patient privacy but also provide legal certainty in evidence handling.

Finally, judicial capacity building is imperative. Judges and legal practitioners must be trained to understand algorithmic logic, statistical inference, and machine learning biases to accurately evaluate AI-related evidence. Interdisciplinary training programs, supported by collaborations between legal institutions and technical universities, can prepare the judiciary to adjudicate AI malpractice cases effectively. Without such capacity building, even the most well-designed legal frameworks will fail to deliver substantive justice in the rapidly evolving landscape of AI-driven healthcare.

Dynamics of Regulation Implementation and Effectiveness of Dispute Resolution Institutions

From an institutional perspective, this study found that the mechanism for resolving consumer disputes in the BNPL sector is still fragmentary and not yet fully effective. Formally, there are several main legal instruments: the UUPK, THE PDP LAW, THE P2SK Law, and OJK Regulation Number 22 of 2023 concerning Consumer and Community Protection in the Financial Services Sector. However, coordination between dispute resolution institutions such as BPSK, LAPS SJK, and OJK has not been synergistic (Wulandari, 2024).

LAPS SJK normatively has a mandate to handle disputes in the non-bank financial services sector, including fintech and BNPL. However, Suwondo's research (2023) found that the number of BNPL cases entering the SJK LAPS is still very low compared to public complaints on social media or unofficial channels. This low reporting rate is due to two factors: (1) lack of consumer awareness

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of formal dispute resolution mechanisms, and (2) lack of trust in the effectiveness of these institutions.

Furthermore, Fitriani's research (2023) highlights the regulatory lag between the development of financial technology and the adaptation of national laws. Existing regulations still tend to be reactive, while digital innovations such as BNPL are growing very fast. As a result, many legal loopholes have not been accommodated, such as the provider's responsibility for credit scoring algorithm errors, as well as the aspect *of data sharing* between the e-commerce platform and the service provider.

In this context, legal literacy is again key. Consumers who understand their legal rights are better able to take advantage of existing settlement channels and demand service provider accountability. On the contrary, the lack of legal literacy causes most consumers to consider the formal complaint process too complicated and not proportional to the value of the losses experienced.

To increase the effectiveness of dispute resolution institutions, it is necessary to implement an integrative system between OJK, BPSK, and LAPS SJK. Digitizing complaint mechanisms and technology-based socialization can be a solution so that consumers can more easily access legal justice (Iskandar & Putri, 2024).

From an institutional perspective, this study found that the mechanism for resolving consumer disputes in the BNPL sector is still fragmentary and not yet fully effective. Formally, there are several main legal instruments: the UUPK, the PDP Law, the P2SK Law, and OJK Regulation Number 22 of 2023 concerning Consumer and Community Protection in the Financial Services Sector. However, coordination between dispute resolution institutions such as BPSK, LAPS SJK, and OJK has not been synergistic (Wulandari, 2024).

LAPS SJK normatively has a mandate to handle disputes in the non-bank financial services sector, including fintech and BNPL. However, Suwondo's research (2023) found that the number of BNPL cases entering the SJK LAPS is still very low compared to public complaints on social media or unofficial channels. This low reporting rate is due to two factors: (1) lack of consumer awareness of formal dispute resolution mechanisms, and (2) lack of trust in the effectiveness of these institutions. Furthermore, Fitriani's research (2023) highlights the regulatory lag between the development of financial technology and the adaptation of national laws. Existing regulations still tend to be reactive, while digital innovations such as BNPL are growing very fast. As a result, many legal loopholes have not been accommodated, such as the provider's responsibility for credit scoring algorithm errors, as well as the aspect of data sharing between the e-commerce platform and the service provider.
In this context, legal literacy is again key. Consumers who understand their legal rights are better able to take advantage of existing settlement channels and demand service provider accountability. On the contrary, the lack of legal literacy causes most consumers to consider the formal complaint process too complicated and not proportional to the value of the losses experienced.
To increase the effectiveness of dispute resolution institutions, it is necessary to implement an integrative system between OJK, BPSK, and LAPS SJK. Digitizing complaint mechanisms and technology-based socialization can be a solution so that consumers can more easily access legal justice (Iskandar & Putri, 2024).

In addition, it is essential to strengthen the enforcement capacity of each institution involved in the consumer protection framework. Although OJK plays a strategic role as a regulator, the execution of dispute settlement decisions still depends on the cooperation of other agencies and the willingness of financial service providers to comply. Without a binding enforcement mechanism, many decisions issued by BPSK or LAPS SJK remain declaratory in nature, which undermines public confidence in the system. Therefore, a unified enforcement framework supported by a centralized monitoring database could enhance both transparency and accountability across the BNPL ecosystem.

Another critical aspect is the need to institutionalize preventive supervision through early detection systems that monitor recurring complaint patterns. Such proactive supervision would allow regulators to identify systemic issues such as deceptive advertising, excessive fees, or unfair debt collection, before they escalate into widespread disputes. Incorporating AI-assisted monitoring tools could further improve regulatory responsiveness, aligning with the digital character of BNPL platforms themselves.

The study also suggests that cross-sectoral collaboration between financial authorities,

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consumer protection agencies, and digital platform operators should be formalized through memoranda of understanding (MoUs) or inter-agency task forces. This coordination could ensure that consumer complaints are handled seamlessly, regardless of whether they originate in e-commerce environments, fintech platforms, or banking channels. Clear procedural linkages would help prevent jurisdictional overlaps and bureaucratic delays that currently hinder effective redress.

Furthermore, consumer education and outreach must become a permanent agenda in the digital finance ecosystem. Public campaigns on responsible digital credit use, data privacy, and complaint procedures could increase awareness and promote behavioral change among users. By integrating consumer education into the operations of BNPL platforms and digital payment services, regulators can foster a culture of compliance and informed decision-making that ultimately reduces the volume of disputes.

Lastly, regulatory harmonization remains crucial for long-term stability. The rapid evolution of BNPL models often operating at the intersection of banking, fintech, and commercedemands consistent legal definitions and enforcement standards. Indonesia's legal framework should therefore aim to unify overlapping provisions across the UUPK, P2SK, and PDP Laws, ensuring clarity of institutional mandates and avoiding regulatory fragmentation. A harmonized system would not only enhance consumer protection but also strengthen investor confidence and promote sustainable growth in the digital financial services sector.

Conclusions

Based on the results of the analysis, it can be concluded that the civil law protection against patients for the malpractice of AI-based chatbot-based health consultation in Indonesia is still facing a vacuum and ambiguity of norms. The existing legal framework, namely Law No. 36 of 2009 on Health, Law No. 8 of 1999 on Consumer Protection, and Law No. 11 of 2008 on ITE have not explicitly regulated civil liability in the context of digital health services involving AI systems. This ambiguity has an impact on the weak position of the patient as the aggrieved party, especially in the aspect of proving errors and cause-and-effect relationships due to the non-transparent nature of the algorithm (*black box*). Classical liability theories (defaults, delicacies, products, and vicarious) are still relevant, but new adaptations are needed to accommodate the complexity of the legal relationship between patients, medical personnel, platform providers, and AI developers.

To ensure legal certainty and patient protection in the digital era, regulatory reform is needed that incorporates the principles of explainability, algorithm audits, and shifting burden of proof in the context of AI-based malpractice. The government needs to formulate *a lex specialis* or derivative regulation that regulates the shared responsibility between developers, institutions, and medical personnel, along with a *no-fault compensation scheme* for aggrieved patients. In addition, strengthening the capacity of judges and technology experts in the judicial environment is important so that the law enforcement process is more adaptive to algorithm-based evidence. With these measures, Indonesia's legal system will be able to ensure a balance between patient protection, legal certainty, and artificial intelligence-based health technology innovation.

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