

Electronic Banks and Electronic Payment Systems: An Economic and Jurisprudential Analytical Study of Concepts, Controls, Risks, and Protection Mechanisms

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Abstract

This study examines electronic banks and electronic payment systems from economic and Islamic jurisprudential perspectives, with emphasis on concepts, risks, and protection mechanisms. It shows that these systems enhance the efficiency of banking operations and promote financial inclusion, while also facing challenges related to security and electronic fraud. From a jurisprudential perspective, these services are deemed permissible under Islamic law when they comply with Sharia controls, particularly the prohibition of *riba*, the avoidance of *gharar*, and the assurance of transparency and mutual consent. The study therefore stresses the need to strike a balance between economic efficiency and Sharia compliance in order to ensure the sustainability of digital financial transactions.

Keywords: electronic banks, electronic payment, electronic banking, electronic wallet

Introduction

During recent decades, the world has witnessed fundamental transformations in the structure of financial and banking systems as a result of the rapid development of information and communication technologies. These developments have led to the emergence of modern forms of financial services, foremost among them electronic banks and electronic payment systems. Such transformations have reshaped the relationship between financial institutions and customers by shifting banking activity from its traditional form, based on physical presence, to a digital environment grounded in speed, efficiency, and lower operating costs.

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In this context, electronic banks have become one of the most important manifestations of financial innovation. They enable customers to manage their accounts, conduct transfers, and settle payments through various digital channels. Electronic payment systems, in turn, constitute the basic infrastructure that ensures the flow of funds and the completion of transactions instantly and securely. This development has strengthened financial inclusion and expanded the base of beneficiaries of banking services, particularly in light of the widespread use of smartphones and modern financial applications.

From a jurisprudential standpoint, this topic is of particular importance because electronic banks and electronic payment systems represent a contemporary extension of traditional financial transactions. This requires examining the jurisprudential characterization of these operations and determining the extent to which they conform to the rulings of Islamic Sharia. Islamic jurisprudence plays a central role in providing flexible frameworks capable of accommodating new developments through the application of its general legal maxims and higher objectives, especially those related to the realization of justice, the prohibition of *riba*, the avoidance of *gharar*, and the protection of wealth.

Accordingly, the study raises the following central problem: To what extent are electronic banks and electronic payment systems compatible with economic and jurisprudential controls, and how can the risks associated with them be evaluated and effective protection mechanisms developed?

Several subsidiary questions emerge from this problem, most notably:

- What is meant by electronic banks and electronic payment systems, and what is the nature of their operating mechanisms?
- How can these transactions be characterized jurisprudentially in light of recognized Sharia contracts?
- What are the most prominent economic and jurisprudential risks associated with them?
- What are the most important protection mechanisms capable of ensuring the security and integrity of transactions?

This study aims to provide an integrated analysis that combines economic and jurisprudential dimensions by clarifying the basic concepts, studying operational mechanisms, analyzing risks, and reviewing Sharia controls and protection mechanisms. It also seeks to highlight the role of Islamic jurisprudence in keeping pace with modern financial developments and offering solutions that achieve economic efficiency while remaining committed to Sharia rulings.

Section One: The Nature of Electronic Banks

Subsection One: The Concept of Electronic Banking and Electronic Banks

First: Electronic Banking

Electronic banking refers to the conduct of banking operations through electronic means; that is, through the use of new information and communication technologies (Qandouz & Nourine, n.d., p. 3).

Second: Electronic Banks

Electronic banks emerged at the beginning of the 1990s under several designations, including remote financial services, remote electronic banks, home banking, online banking, and self-service financial services (Khababab, 2008, p. 91).

An electronic bank is a bank that exists on the Internet and whose website contains the software necessary to perform banking operations. The term therefore refers to the provision of products and services through electronic channels (Lousif, 2009, p. 83).

Electronic banks are also defined as banks or financial institutions that operate on electronic foundations and employ all modern developments in information and communication technology in order to provide banking services with a high degree of security (Abdullah, 2009, p. 129).

Third: Characteristics of Electronic Banks

- The ability to deliver certain products electronically, such as digital products including account statements, balances, and similar documents.
- Working hours: electronic banks provide their services to customers at all times without being restricted by specific business hours.
- They enable small banks to expand their activities globally through the Internet without the need for external physical expansion, while also increasing investment and human resources (Abdullah, 2009, p. 129).

Subsection Two: Advantages and Risks of Electronic Banks

First: Advantages of Electronic Banks

Electronic banks provide several advantages, including the following (Lousif, 2009, p. 86):

- Organization of payments: agreement on the timing of deductions and the settlement of financial transfers organizes payment operations and removes uncertainty about the possibility of payment on the agreed date.
- Facilitation of work: automated clearing reduces the customer's need to visit the bank to deposit transfer amounts, thereby simplifying work and increasing efficiency.
- Reduction of paperwork: reliance on paper forms, traditional cheques, and other paper-based transactions is reduced.
- Increased customer satisfaction: the speed and lower cost of electronic transfers enhance customer satisfaction.
- Safety and security: advanced systems are designed to reduce fraud, while banks provide customers with assurances regarding the safety of transactions through their websites.
- Provision of complete and new banking services: some new banking operations cannot be performed by traditional banks for their customers. Electronic banks can distinguish themselves in this regard because of the specific nature of operations that require speed and lower cost.

Second: Risks of Electronic Banks

1. Operational risks. This type of risk arises from the following:

- Insufficient system security: this risk relates to the possibility of unauthorized intrusion into the bank's account systems in order to access and exploit customer information or steal credit-card numbers, whether the intrusion is carried out from outside the bank or by its employees.
- Misuse by customers: this risk arises when customers are not fully aware of preventive security procedures, allow criminal actors to access the accounts of other customers, or carry out laundering operations using their personal information because they fail to follow the required security procedures.

- Data integrity: data integrity is one of the most important components of system security. Bank managements must improve the ability of systems to operate and connect with other systems inside the organization itself and with other institutions. Because banking services are available around the clock, competitive pressures to satisfy customers increase and customers' tolerance for errors decreases (Abdullah, 2009, p. 132).
2. Reputational risks. These risks arise from negative public opinion toward a bank, particularly where an electronic bank lacks adequate software systems to protect customer data. This may lead to lower profits, a decline in the number of customers, and, consequently, a reduction in market share. For this reason, a communication strategy is required to protect the bank's reputation.
3. Legal risks. These risks occur when laws and established regulations are violated, especially those relating to anti-money-laundering measures (Abdullah, 2009, pp. 133-134).

Subsection Three: Objectives and Forms of Electronic Banks

Electronic banks have objectives that facilitate their work. Their activities differ according to their form and according to the media used by banks to facilitate the management of their services.

First: Objectives of Electronic Banks

- Determining the method of providing services to all customers.
- Identifying standard services and demand-based services for each segment of clients.
- Determining communication channels for each service.
- Determining how to promote new banking services through an online catalogue (Rubaei, 2005, p. 52).

Second: Forms of Electronic Banks

The informational website is the basic level of electronic banking. Through it, the bank provides information about its programs, products, and banking services.

The interactive or communicative website allows a form of communicative exchange between the bank and its customers, such as e-mail, completing applications or forms online, or modifying registration and account information.

The transactional website enables customers to access and manage their accounts, make cash payments, settle bills, obtain inquiry services, and make transfers between their accounts within the bank or with external parties (Khababah, 2008, p. 95).

Subsection Four: Electronic Banks from a Jurisprudential Sharia Perspective

First: The Concept of Electronic Banks and Their Jurisprudential Characterization

Financial transactions have developed considerably with the emergence of electronic banks, which provide their services through digital media without the need for physical presence. From the perspective of Islamic jurisprudence, these banks are not treated as an independent system; rather, they are considered a modern means of executing traditional financial transactions that remain subject to general Sharia rulings (Wahiba, n.d., p. 311).

Contemporary jurists characterize electronic banks within the framework of known contracts in Islamic jurisprudence. The operations conducted through them are electronic applications of contracts such as hawala, wakala, and wadia. For example, an electronic transfer is viewed as a Sharia-compliant hawala, whereas bank cards are considered composite contracts combining elements of qard, wakala, and kafala (Al-Qaradaghi, 2010, p. 85).

Second: Sharia Controls for Dealing with Electronic Banks

Dealings with electronic banks are subject to a set of Sharia controls, the most important of which are the following:

Prohibition of riba. Riba is among the most serious Sharia prohibitions in banking transactions, as Islam forbids any stipulated increase on loans. Accordingly, any electronic banking service that includes usurious interest is not permissible under Sharia (Ibn Qudamah, 1997, p. 50).

Prevention of gharar and uncertainty. Islamic jurisprudence requires transactions to be clear and free from ambiguity. This obliges electronic banks to provide accurate information about fees and terms of use (Wahiba, n.d., p. 320).

Realization of mutual consent. Mutual consent is an essential pillar of contracts. Jurists have considered electronic acceptance, such as clicking an approval button, to be a valid expression of will (Al-Qaradaghi, 2010, p. 82).

Legality of the contract subject matter. Financial transactions must be connected to lawful activities. Electronic systems may not be used to finance prohibited activities.

Third: Jurisprudential Issues Associated with Electronic Banks

Bank interest. Interest is one of the most important issues raised, especially in connection with credit cards and interest-bearing accounts. The majority of contemporary scholars consider stipulated interest to constitute prohibited riba (International Islamic Fiqh Academy, 2000, p. 132).

Fees and commissions. Fees may be imposed when they correspond to actual services, but they may not be used as a device to circumvent the prohibition of riba (Al-Qaradaghi, 2010, p. 90).

Electronic signature. Contemporary jurists have permitted electronic signatures because they fulfill the purpose of contracting by expressing and documenting will (Wahiba, n.d., p. 315).

Digital currencies. These are among the emerging issues. Juristic views differ between conditional permissibility and prohibition because of gharar and high risks (Al-Raysuni, 2019, p. 210).

Fourth: Protection Mechanisms in Electronic Banks from a Sharia Perspective

Protection in the electronic banking system is linked to the objectives of Sharia, particularly the preservation of wealth. The most prominent mechanisms include:

- Encryption and data protection to ensure transaction confidentiality and prevent intrusions.
- Sharia supervision through Sharia boards that monitor banks' compliance with Islamic rulings.
- Electronic documentation to safeguard rights and reduce disputes.
- Financial awareness to protect users from fraud.

Fifth: The General Sharia Ruling on Electronic Banks

The original ruling in Islamic financial transactions is permissibility unless the transaction includes a Sharia prohibition. Accordingly, electronic banks are permissible under Sharia when they comply with the required controls. Prohibition is therefore attached to practices such as riba and gharar, not to the technology itself (International Islamic Fiqh Academy, 2000, p. 140).

On this basis, electronic banks represent a natural development in financial means, and Islamic jurisprudence has dealt with them flexibly by characterizing them within known Sharia contracts. Nevertheless, ensuring their legitimacy requires strict adherence to Sharia controls, particularly the

prohibition of *riba*, the prevention of *gharar*, and the promotion of transparency, together with the development of protection mechanisms that realize the Sharia objective of preserving wealth.

Section Two: The Nature of Electronic Payment

Electronic payment is money or currency exchanged electronically. It includes various transfers of electronic funds and direct payment and is also referred to as electronic money.

Subsection One: The Concept of Electronic Payment

First: Definition of Electronic Payment

Electronic payment is defined as a process of transferring funds, essentially as the price of a good or service, through digital means; that is, by using computers and sending data through a telephone line, a network, or any other method for transmitting data (Lousif, 2009, p. 29).

Second: Characteristics of Electronic Payment

- Electronic payment is international in nature: it is a means accepted by all countries and is used to settle accounts in transactions carried out through electronic space among users around the world.
- Payment is made through the use of electronic money, which is a monetary value stored on a card with digital memory or in the main memory of the institution that manages the exchange process.
- This method is used to settle remote electronic transactions, with payment taking place through the Internet (Lousif, 2009, p. 31).

Subsection Two: Parties to and Procedures of Electronic Payment

First: Parties to Electronic Payment

Regardless of the electronic payment method used, five parties must participate for the process to be completed (Al-Titi, 2008, p. 134):

- The buyer: the party that makes the electronic payment as the price of a good or service purchased through the Internet or wireless networks.
- The merchant or seller: the party that receives the electronic payment as the price of a good or service provided to the buyer.
- The issuer: the financial institution or bank that issued the electronic payment instrument used in the electronic payment process.
- The regulator: usually governmental institutions that regulate and control electronic payment operations through the law.
- The automated clearing institution or clearing house: an electronic network that transfers funds between the bank accounts of the buyer and the seller.

Second: Electronic Payment Procedures

Electronic payment operations involve the implementation of electronic procedures in the following areas:

- Transferring funds between banks and customers.
- Paying for online purchases in exchange for goods or services.
- Settling amounts owed by citizens to the state, such as fines and similar obligations.
- Paying bills for basic services such as water, electricity, telephone, and related services (Al-Sairafi, 2008, p. 216).

Subsection Three: Electronic Cash

Electronic money is the means that makes it possible to settle transactions electronically. It has several advantages, but it is not without limitations.

First: Concept of Electronic Cash

Electronic money is defined as a set of protocols and digital signatures that allow an electronic message to function as an actual substitute for the exchange of traditional currencies. In other words, it is the electronic equivalent of traditional money (Bekhti, 2005, p. 72).

The significance of electronic money lies in its suitability as a means of payment for technological and scientific development. It enables transactions to be completed quickly, allowing users to save time compared with physically moving to a seller's location to offer traditional money (Saadawi & Saadawi, n.d., p. 2).

Second: Characteristics of Electronic Cash

- Electronic money is monetary value stored electronically.
- It consists of encrypted data placed on electronic messages in the form of plastic cards.
- It is two-dimensional in the sense that it can be transferred from the buyer to the seller without the need for a third party between them.
- It is easy to use because of its small size and light weight.
- The use of electronic money accelerates payment settlement, reduces the need to hold liquid cash, and expands commercial exchange (Al-Zalmi, 2010, p. 548).

Third: Advantages of Electronic Cash

- Low circulation cost: transferring electronic money through the Internet or other networks is much cheaper than using traditional banking systems.
- Absence of borders: electronic money can be transferred from anywhere to anywhere else in the world at any time because it relies on the Internet or on networks that do not recognize geographical boundaries.
- Simplicity and ease of use: electronic money greatly facilitates banking transactions by eliminating the need to complete forms and conduct banking inquiries by telephone (Bekhti, 2005, p. 75).
- It encourages secure payment operations.
- Divisibility: this characteristic distinguishes electronic cash from real currency (Al-Janbihi & Al-Janbihi, 2006, p. 55).

Fourth: Disadvantages of Electronic Cash

- Privacy and security are among the most important problems that must be addressed in the future.
- The problem of double spending.
- Electronic cash requires a specific type of software or precise technical expertise.
- Money laundering can occur easily through the purchase of goods and services with electronic cash (Al-Najjar, 2002, p. 131).

Subsection Three: Forms of Electronic Payment Systems and the Electronic Wallet

Electronic payment systems take many forms that differ according to their structure. Each form has distinctive advantages. The most widely used forms are the following:

First: Payment Cards

Payment cards are cards issued by banks or international financing companies on the basis of actual customer balances in current accounts corresponding to expected withdrawals. They include the following:

Credit card. A credit card is a magnetic card that the holder can use to purchase most needs or to obtain a service (Al-Tai, 2010, p. 186).

Credit cards are also issued by banks within specified limits and used as a guarantee instrument. They save customers time and effort and increase the issuing bank's revenues (Al-Awadi, 2010, p. 168).

Smart card. This card emerged in line with technological developments. It is a plastic card containing an electronic chip on which all data relating to the holder are stored, such as name, address, issuing bank, method of withdrawal, amount withdrawn and its date, and the customer's banking history (Al-Tai, 2010, p. 186).

This new type of card enables the customer to choose the method of dealing, whether by credit or immediate payment. This makes it a global card used widely in most European and American countries. Examples include the Mondex Card, which was introduced to bank customers (Hammad, 2003, p. 124).

Second: The Electronic Wallet

The electronic wallet saves time and effort by storing information related to a specific credit card. It can store information for several credit cards, shipping operations, invoices, and related items (Al-Titi, 2008, p. 138).

The electronic wallet makes the market more efficient and gives consumers the advantage of entering their information only once rather than entering it on every website with which they wish to transact (Schneider, 2008, p. 612).

The functions of the electronic wallet include the following:

- Proving the identity of its owner through the use of digital certificates.
- Providing a place to store cash and exchange monetary value.
- Managing secure payment operations from the buyer's account to the seller's account (Al-Abdan, n.d., p. 5).

Third: The Electronic Cheque

Electronic cheques are a new form of electronic payment. They constitute the electronic equivalent of traditional paper cheques, but they are authenticated and secured electronic messages (Raafat, 1999, p. 56).

Advantages of the electronic cheque include the following:

- Payments through electronic cheques are settled within only 48 hours compared with ordinary cheques.
- Dealing with electronic cheques eliminates some of the problems associated with ordinary cheques, such as loss (Ben Azza & Zouhri, n.d., p. 4).
- Electronic cheques are used to pay for electronic transactions of all kinds, whether administrative or commercial, securely by e-mail.
- Electronic cheques are subject to the same legal framework established for paper cheques (Barham, 2004, p. 124).

Subsection Four: Risks of Electronic Payment Systems and Electronic Crimes

Despite the many advantages of these modern means, they are not free from shortcomings. They also involve risks and electronic crimes, as follows:

First: Risks

1. Security risks. Security is one of the most important issues of concern to those working in the sector and to users of these means. These risks do not relate only to the consumer; they also extend to the merchant and the card issuer. A consumer's or merchant's electronic card may be stolen, and it may be forged by modifying the data stored on electronic cards, software, or hard disks. A security breach may also occur as the result of an unintentional act, such as deleting or damaging an Internet site because of electronic piracy. All such actions and threats may have serious legal, security, and financial consequences.

2. Legal risks. Electronic money has several legal risks, including the following (Al-Najjar, 2002, p. 46):

- Violation of laws and regulations, such as money laundering.
- Disclosure of customer secrets and violation of confidentiality.

3. Financial risks.

- A decline in the money supply of the central bank.
- A reduction in the role of the central bank as manager of monetary policy.
- A limitation on the central bank's ability to conduct open-market operations.

Second: Electronic Crimes

Data piracy. A person's data may be obtained unlawfully and without their knowledge in order to use it to obtain bank cards online, especially if organizations do not adopt sufficient security measures to confront this type of risk (Qassab & Bouderbala, n.d., p. 6).

1. Money laundering using cards. Money laundering is the process of transforming funds derived from an unlawful source, such as drugs, into funds that appear to have a legitimate source, such as trade in cars.

Electronic coercive theft. In this case, computers are used to manipulate information by entering false data on the part of the fraudster through the penetration of creditors, such as wages that must be paid or invoices that must be settled (Wahiba, n.d., pp. 8-9).

Subsection Five: Electronic Payment from a Jurisprudential Sharia Perspective

First: The Concept of Electronic Payment and Its Jurisprudential Characterization

Electronic payment is one of the most prominent manifestations of development in contemporary financial transactions. It enables the transfer of funds and the settlement of payments through digital media such as payment cards, electronic wallets, and Internet transfers. From the perspective of Islamic jurisprudence, electronic payment is not treated as an independent contract; rather, it is a modern means of executing traditional financial contracts, such as sale, hawala, and wakala. It is therefore subject to the general Sharia rulings governing transactions (Al-Zuhayli, 2000, p. 311).

Electronic payment is characterized jurisprudentially according to its nature. Payment through bank transfer is considered a Sharia hawala, electronic wallets may be considered a form of deposit or loan depending on the relationship between the user and the service provider, and payment cards are composite contracts containing several elements (Al-Qaradaghi, 2010, p. 82).

Second: Sharia Controls for Electronic Payment

Islamic jurisprudence stipulates several controls for the permissibility of electronic payment, the most important of which are the following:

Freedom from *riba*. Electronic payment operations must not include usurious interest, whether in credit cards or in cases of delayed settlement (Ibn Qudamah, 1997, p. 50).

Realization of Sharia-compliant possession. In certain transactions, such as currency exchange, immediate possession is required. Contemporary jurists have considered immediate electronic bank entry to constitute constructive possession when it occurs immediately (International Islamic Fiqh Academy, 2000, p. 128).

Clarity and prevention of *gharar*. All payment conditions must be clear, including fees and commissions, in order to avoid uncertainty and dispute (Al-Zuhayli, 2000, p. 320).

1. Realization of mutual consent. Electronic acceptance, such as clicking the payment button, is a valid expression of contractual will (Al-Qaradaghi, 2010, p. 90).

2. Legality of the subject matter. The goods and services being paid for must be lawful under Sharia.

Third: Forms of Electronic Payment and Their Sharia Rulings

1. Debit and credit cards.

- Debit cards are permissible because they rely on an actual balance.
- Credit cards are permissible if they are free from interest.
- Credit cards are prohibited if they include late-payment interest, which is *riba* (International Islamic Fiqh Academy, 2000, p. 128).

2. Electronic wallets.

- They are permissible if they do not include unlawful interest or fees.
- They are characterized as a deposit or a loan according to the method of use (Al-Qaradaghi, 2010, p. 90).

3. Electronic transfers.

- They are permissible under Sharia and are considered a form of *hawala*.
- They require security, speed, and freedom from manipulation.

4. Payment by mobile phone. This is permissible if it satisfies the relevant Sharia conditions, as it is an extension of traditional electronic payment.

Fourth: Jurisprudential Issues in Electronic Payment

1. The suspicion of *riba*. This appears in credit cards when interest is imposed for delay, which constitutes prohibited *riba* by scholarly agreement (Ibn Qudamah, 1997, p. 56).

2. The issue of possession in immediate transactions. Electronic payment raises questions concerning the realization of possession. The International Islamic Fiqh Academy has affirmed that immediate bank entry constitutes valid possession under Sharia (International Islamic Fiqh Academy, 2000, p. 132).

3. *Gharar* and uncertainty. These may arise because fees or terms of use are unclear, which makes transparency necessary.

4. Security and fraud. Electronic intrusion and digital theft constitute challenges that require technical and Sharia-compliant solutions.

Fifth: The General Sharia Ruling on Electronic Payment

The original ruling in transactions is permissibility. Accordingly, electronic payment is permissible under Sharia when it complies with the required controls, and it becomes prohibited when it includes forbidden elements such as *riba*, *gharar*, or the financing of unlawful activities (International Islamic Fiqh Academy, 2000, p. 140).

Conclusion

In light of the discussion and analysis presented in this study on electronic banks and electronic payment systems from economic and jurisprudential perspectives, it is clear that digital transformation in the banking sector is no longer merely a technical option. Rather, it has become an unavoidable necessity imposed by contemporary requirements and the development of the global economy. These systems have contributed to improving banking performance, accelerating financial transactions, reducing costs, and enhancing financial inclusion, thereby making them a central pillar in the construction of a modern digital economy.

From the jurisprudential standpoint, the study has shown that Islamic Sharia possesses significant flexibility in accommodating financial developments. Electronic banks and electronic payment systems can be characterized within recognized Sharia contracts, such as *hawala*, *wakala*, and *qard*. At the same time, the Sharia ruling does not attach to the technical means in itself, but rather to the nature and substance of the transaction. Consequently, the legitimacy of these systems remains conditional upon compliance with Sharia controls, foremost among which are the prohibition of *riba*, the prevention of *gharar*, the realization of transparency, and the assurance of mutual consent among the parties.

The study has also shown that achieving a balance between economic efficiency and Sharia compliance requires integration between technical and jurisprudential dimensions. This can be achieved through effective Sharia supervision within financial institutions, the development of electronic banking products compatible with Sharia rulings, and the strengthening of users' awareness of the risks of electronic transactions and the means of preventing them.

Based on the findings reached, the following recommendations may be proposed:

- The need to develop legal and regulatory frameworks in a manner consistent with the nature of electronic transactions.
- Strengthening cybersecurity systems to protect data and financial transactions.
- Supporting innovation in digital Islamic banking in order to provide effective Sharia-compliant alternatives.
- Activating the role of Sharia supervisory boards in monitoring electronic products and services.
- Spreading financial culture and digital awareness among individuals in order to reduce fraud risks.

In conclusion, electronic banks and electronic payment systems represent a real opportunity to achieve a qualitative transformation in banking work, provided that they are employed within a framework that combines economic efficiency with Sharia discipline. Such a framework realizes the objectives of Islamic Sharia in preserving wealth and strengthening justice and financial stability. This field remains open to further future studies addressing emerging issues, especially in light of the continuous development of modern financial technologies.

Declarations

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Ethical Approval: The study was conducted in accordance with applicable ethical principles.

Informed Consent: Informed consent was obtained from all participants.

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