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Research Paper

The Use of Information Technology System for Risk Control at a Sharia Cooperative

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ABSTRACT

The use of technology plays an unnegotiable role in the risk control of sharia cooperatives. Because almost all sharia cooperatives lack proper information technology systems, many cooperatives are unable to recognize the risks, particularly due to a lack of liquidity as well as a lack of managerial supervision and control over operational transactions carried out by officers. An improvement in the current information technology systems can replace these roles. This study analyzes the use of information technology systems in the financing, liquidity, and sharia compliance risk control in the BMT UGT Nusantara Cooperative, located in Pasuruan East Java. This descriptive qualitative involves informants of administrators, supervisors, managers, branch heads, and IT providers. With automatic notification system, applicant screening, application adjusting policies and regulation, this study indicates that upgrading information technology systems are critical to minimizing risks and lowering the ratio of non-performing financing. It also eases the applicants as well as the institution in the process of application and screening as well as an installment payment.

Introduction

The advancement of information technology systems has reached a very astonishing epoch. The major influence of information technology systems in the business world, in

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particular, is the growing number of public internet and mobile network usage for financial transactions, online shopping, and billing and payments. Its power can alter human lifestyle patterns, including communication, interaction, business, learning, and working styles. Information technology systems also transform work from static to more adaptable and efficient digital, mobile, and virtual. The information technology system is a must for today's business. Referring to LawInsider.com, information technology systems mean all communications systems and computer systems used by a Group Company including all hardware, software, and websites but excluding networks generally available to the public. It has a significant impact on improving work processes, which are critical in many modern human activities, such as financial business institutions such as banking and Savings and Loans Cooperatives, as well as non-financial services such as travel services, ticketing, market places, transportation, and others (Budiman, 2018).

On August 4, 2020, Indonesian President, Joko Widodo, states that this current Covid-19 pandemic should be used as an opportunity to accelerate digital transformation. The statement was welcomed by the Minister of Cooperatives and SMEs of the Republic of Indonesia by collaborating with the Indonesian Consortium for Cooperatives Innovation (ICCI). Since 2020, the ministry has launched a collaborative digital transformation program supported by technology providers. The Minister of Cooperatives and SMEs has planned for this program activity to take place each year to boost cooperative digitalization. Cooperative digital technology transformation is required for cooperatives to adapt in this digital economy era. The bigger the challenges, the greater the demand for speed, agility, and convenience for cooperative members and administrators. This pandemic has provided a very valuable lesson for all of us, where we are massively forced to adapt to new habits. The advantages of upgrading the Cooperative's information technology to Go Digital will make it easier for members to transact 24 hours a day, and administrators will be able to easily find out the number of transactions, fund needs, fund management, system security, all with a single device, smartphone.

Compare to conventional cooperatives, sharia cooperative suffers more risk than the conventional one. The conventional cooperative is different from the conventional cooperative. The main characteristic of a Sharia cooperative is the existence of a Sharia Supervisory Board, which supervises and is responsible for ensuring compliance with Islamic principles in line with DSN MUI fatwas (Ubaidi et al., 2020). The implications of these distinctions may be observed in the types of risks that may be experienced. If conventional financial institutions have just eight kinds of risks, Sharia Cooperatives have ten kinds of risks (Hidayat, 2019). Hence, risk control is unarguable for sharia cooperative. Risk control, as a part of risk management, is an institution's effort to mitigate risk by using an operational process (Reciprocity, 2020). Risk control is critical for avoiding financial problems, particularly, avoiding defaults made by the debtor. Hence, the lack of information technology systems should be upgraded as an effort to mitigate risk at the sharia cooperative.

In addition to insufficient information technology systems, sharia cooperatives (KSPPS/BMT) are now dealing with several difficulties that are slowing their growth. It may be one of the reasons why businesses are at risk of going out of business if immediate upgrades and innovations, particularly in the information technology system are not implemented. These challenges appear to be a common concern in any sharia cooperative, notably less creative products, inadequate human resources, and poor managerial skills in

terms of financing risk, liquidity risk, and sharia compliance risk (Zulkifli et al., 2016). In contrast to conventional cooperatives, the operations of sharia must comply with Islamic rules.

Many Sharia cooperatives are exposed to these three risks, most of which are due to insufficient information technology systems. The consequences of these three risks are a high non-performing financing ratio and fraud or criminal acts of misappropriating funds by management, managers, or employees. Furthermore, there is a low cash reserve ratio or liquidity, to guarantee that the cooperative's obligations to its members and outsiders are met. This creates a lack of trust from members and partners. This situation is exacerbated by the risk of non-compliance with sharia principles, such as the improper implementation of *muamalah* contracts due to a lack of contract fulfillment, making contract agreements that violate sharia principles in the form of interest, or distribution of financing to industrial sectors prohibited by sharia. As a result, many sharia cooperative actors are concerned about these three risks. If there is a breach of sharia principles, potential members or members may abandon sharia cooperatives, which will also have a negative impact on the image of sharia cooperatives (Bonita & Anwar, 2018).

Previous research has examined risk control in several contexts. Noncompliance with compliance risk on *mudharabah* deposit has no significant impact, but it can threaten financial losses, particularly since liquidity will be disturbed, and it will influence legal risk and reputation risk, such as declining bank reputation due to customer default (Umami, 2019). supervision and control of liquidity risk as well as regular meetings with all staff assisted by information technology system can reach all branches optimally and efficiently (Susilo & Septiarini, 2015). The board of directors and the supervisory board are passive in monitoring and reviewing by holding routine meetings twice a month with the top managers at the center (Anwar & Susilo, 2015). The 5C principles, namely character, condition of the economy, capacity, capital, and collateral are used for financing risk management can maintain the liquidity and solvency of BMT (Permana, 2018). Banking technology and customer satisfaction have a linear relationship, and banking technology has a significant positive effect on customer satisfaction (Layaman & Andriyani, 2017).

The existence of greater risk creates more opportunities for profit and reward. Although risk control is vital, it is also maintained that risk should not be completely avoided by passing it to other contracting parties because this leads to injustice and unfairness (Agha & Sabirzyanov, 2015). Since risk control is a systematic method for identifying and evaluating an organization's or individual's pure loss risk, as well as selecting and implementing the most appropriate ways to address such exposure (Agha & Sabirzyanov, 2015), it is inevitable for sharia institutions to consider.

As a result, the importance of information and communication technology in cooperatives cannot be overstated. In addition to having control and security functions that seek to lower the risk of non-performing financing ratios, it may also reduce the efficiency of operational expenses, as well as the risk of fraud and criminal actions committed by transaction players owing to human error. The function of technology can also minimize errors on contracts and transactions. Hence, this study seeks to explore a mobile application named Si BMT which is used in KSPPS BMT UGT Nusantara to control the financing, liquidity, and sharia compliance risk control. This study shed light on risk

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control in the context of cooperative sharia, which has been underrepresented in previous articles on the subject.

Method

Research Design

This study determines the role of the information technology systems in controlling financing risk, liquidity risk, and sharia compliance risk in the BMT UGT Nusantara Cooperative in Pasuruan East Java Indonesia. Therefore, it is critical to investigate the three risks in detail and depth, as well as the impact of the information technology system utilized by KSPPS BMT UGT Nusantara in controlling and mitigating these risks. Descriptive qualitative analysis was employed to get a picture of the problems and find solutions.

Sample Selection and Data Sources

In qualitative research, data collection is carried out in natural settings. Participatory observation, in-depth interviews, and documentation are used as primary data sources and data collection methods. The interview involved informants consisting of administrators, supervisors, managers, branch heads, and IT providers. Observations were made during the study by coming directly to the site and using the Si BMT. Documentation was made to record data in the form of documents related to the sharia cooperative as well as the application used for financing.

Instrument and Data Analysis

Qualitative data is the source of a rich description and well-grounded explanation of processes occurring in the identifiable local context (Miles & Huberman, 1992). Data analysis of this study includes data reduction, data presentation, and conclusion drawing. Triangulation was employed to ensure the validity of the data analysis. In triangulation, the dataset findings are analyzed independently, but they must also be compared to one another in some way (Miles & Huberman, 1992). There are several types of triangulations namely methods triangulation, source triangulation, investigator/analyst triangulation, and theory/perspective triangulation (Denzin, 1978). In this study, methodological triangulation was used by employing observation, in-depth interviews, and documentation.

Findings

The Use of Information Technology Systems in Financing Risk Control

The importance of the information technology systems in a savings and loan institution or a sharia savings and financing institution cannot be overstated. If sharia cooperatives are not well managed, there will be many undesirable risks, but effective management without the support of a qualified IT system will be breached. The role of information technology systems in management policies might compel employees to follow the regulations. Many aspects, including financing risk, may be mitigated with the proper and optimal use of IT. According to the interview results, there are at least three strategies to use IT MT UGT Nusantara cooperative to control financial risk.

The first is the use an automatic notification system service whenever there is an outgoing or incoming transaction (see Figure 1). Notifications are also sent automatically to members who are debtors, reminding them that their installment obligations are coming due shortly and that they should pay them immediately. This reminder notification provides information about the installment due date, installment amount, and remaining debit balance, which debtor members can get by SMS or inbox on Mobile UGT.

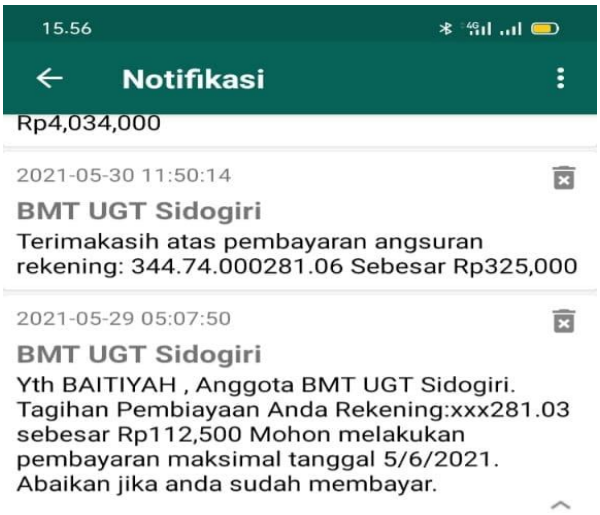

Figure 1. The Automatic Notification in Si BMT

Second, utilizing applicant information screening services with Debtor Information System in Si BMT's internal data like the BI Checking or the Financial Information Service System (SLIK) services in banking. This service makes it easy for BMT managers to obtain complete information about members through their residency registration number, date of birth, or the name of their biological mother to track record of installment payments. So that it may be identified whether members have previously done financing and whether they have had issues with their payments before. This helps the manager determine whether the applicants will be accepted. If a member has overdue installment payments that have not been paid for, the Si BMT system will automatically lock. As depicted in Figure 2, an applicant was blacklisted due to the history of her installment payment before.

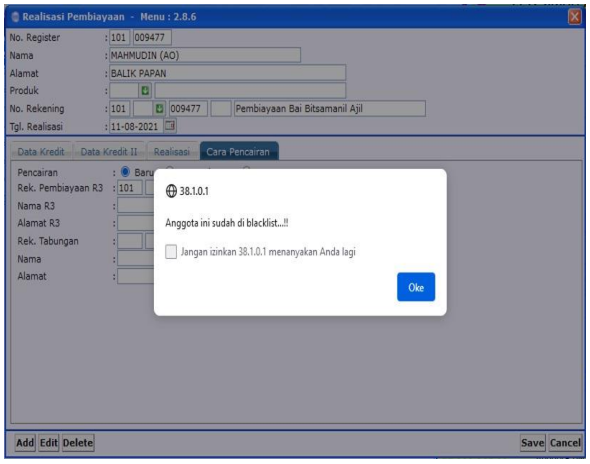

Figure 2. The Screening of Applicant in Si BMT

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Third, utilizing the information technology systems or Si BMT to support policies on financing management, either in the form of regulations or SOPs. The existing Si BMT has been adjusted to the applicable SOPs and regulations to control employee compliance with regulations, SOPs, and financing guidelines. For example, policies concerning the installment system, period, margin, and the amount of the financing ceiling are developed with the aid of the IT system, and all of these policies are executed in line with the relevant SOP.

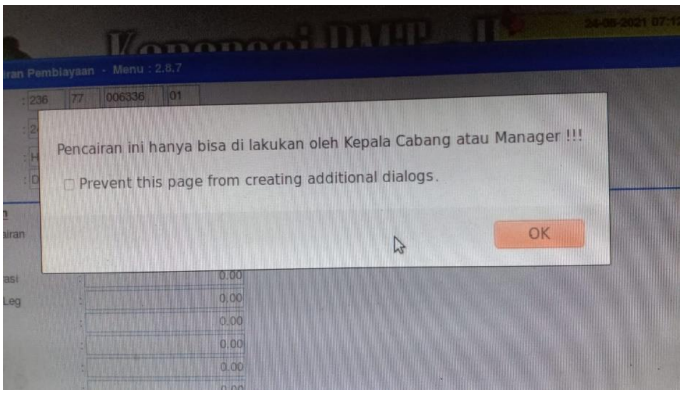

Figure 3. The System is Developed Supporting the SOPs in Si BMT

The interviews reveal some ideas for future development and improvement in the use of information technology systems at KSPPS BMT UGT Nusantara to reduce the financing risk. First, upgrading the information technology system following the development of the 5.0 industry era for more precise, accurate, and objective financial analyses, for example, by using the artificial intelligence-based application to process the data into a mature and comprehensive financial analysis information to accept or reject applicants and determine the ceiling number for debtors for installment payment. Second, improving Mobile application services by adding a financing application to propose data themselves. Then the system determines whether the application is approved, considered, or rejected for certain reasons, such as insufficient income and so on. Third, debtor profiling by utilizing external data, such as social media data to combine with previous financing history for scoring financing feasibility.

The use of social media information is now extremely relevant, since, in this global day, individuals are readily sociable, allowing BMT managers to easily obtain extra information on the identity of the prospective debtor. Fourth, connect the application to WhatsApp or Telegram. Many institutions use these applications, as well as social media apps like Instagram and Messenger, have been linked to IT Core Banking, which can broadcast all information from the system, such as cooperative developments, member obligations, installment billing, financial transactions, such as balances check, transfers, buy credit or electricity tokens, and pay the water bill. Fifth, making a collaboration with data services from the Civil Register Office regarding the validity of the identity of the debtor to avoid identity fraud. Sixth, Improve the core technology of the Si BMT program that is connected to service providers with OJK SLIK or PEFINDO, similar to BI Checking/SLIK services at banking institutions for a wider screening of prospective debtors. Seventh, improving the tracking system on Si BMT or Mobile UGT to monitor the transaction to payments made by the prospective debtor, in a *murabahah* financing contract. One of the causes of a financing problem is side streaming, particularly in

the *murabahah bil wakalah* contracts. If the system has a tracking service that can monitor from liquidation to the purchase of goods, and payments, it will prevent the bad loan.

Discussion

Risk Control in the Quran

The risk control and investment have been done by Prophet Yusuf when Egypt was hit by a food crisis for seven years. In the Qur'an, the story of Prophet Yusuf is known as the best story (*Ahsanul Qashas*). He was given the ability by Allah the Exalted and Glorified to translate dreams. At that time the Pharaoh dreamed that he saw fat cows and then came other skinny cows, also full grain and empty wheat. This story is enshrined in the word of Allah, Surah Yusuf verses 46-47:

يُوسُفُ أَيُّهَا الصِّدِّيقُ أَفْتِنَا فِي سَبْعِ بَقَرَاتٍ سِمَانٍ يَأْكُلُهُنَّ سَبْعٌ عِجَافٌ وَسَبْعِ سُنْبُلَاتٍ خُضْرٍ وَأُخَرَ يَابِسَاتٍ لَعَلِّي أَرْجِعُ إِلَى النَّاسِ لَعَلَّهُمْ يَعْلَمُونَ ، قَالَ تَزْرَعُونَ سَبْعَ سِنِينَ دَأَبًا فَمَا حَصَدْتُمْ فَذَرُوهُ فِي سُنْبُلِهِ إِلَّا قَلِيلًا مِمَّا تَأْكُلُونَ.

He said,˹ "Joseph, O man of truth! Interpret for us ˹the dream of˺ seven fat cows eaten up by seven skinny ones; and seven green ears of grain and ˹seven˺ others dry, so that I may return to the people and let them know." Joseph replied, "You will plant ˹grain˺ for seven consecutive years, leaving in the ear whatever you will harvest, except for the little you will eat." (Surah Yusuf: 46-47)

Prophet Yusuf interprets the dream as a warning that Egypt will experience a period of glory, fertility, prosperity, and prosperity, followed by a period of drought, famine, and food shortages. It is known as the Business Cycle in the realm of economics. Amazingly, Prophet Yusuf was not only able to translate dreams, but he also offered solutions and controlled the risks that would develop.

The next verse (48) reads:
ثُمَّ يَأْتِي مِنْ بَعْدِ ذَٰلِكَ سَبْعٌ شِدَادٌ يَأْكُلْنَ مَا قَدَّمْتُمْ لَهُنَّ إِلَّا قَلِيلًا مِمَّا تُحْصِنُونَ

Then after that will come seven years of great hardship which will consume whatever you have saved, except the little you will store ˹for seed˺.

From these verses, Prophet Yusuf explained three important economic cycles, which are planting and harvesting (investment), preservation of crops (protection in the future), and savings by consuming the crops little by little (minimize consumption).

According to modern economic theory, harvest time is the productive age for working. Meanwhile, famine is translated into retirement. A person should conserve his current harvest (money) to face the famine later. The Prophet Yusuf's next notable comment is about preserving seven years of the crop to prepare for a seven-year famine. According to mathematical reasoning, it should be half saved and half consumed. However, the preceding verse instructs people to consume only a little, or less than half. This is because the wheat will not decrease if it is stored. However, Egypt's population would increase over the past seven years. Thus, larger quantities of wheat are needed to feed the people in the future. The more the population, the more demand for wheat. When the amount of demand increases, the price of wheat will increase. In the context of macroeconomics, this is called inflation. The amount of money saved may remain or increase, but the prices grow more expensive. As a result, the strategy that might be

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emulated is to minimize consumption while increasing investment. The suggestion of the Prophet Yusuf became an extraordinary basis for lifecycle investing. Mathematically, the strategy is described as follows:

$$\Sigma\text{Consumer Goods}7T1 = \Sigma\text{Consumption}7T1 + \Sigma\text{saving}7T1 \quad (1)$$
(Consumer Goods for Sever Year I)

$$\Sigma\text{Consumer Goods}7T2 = \Sigma\text{Consumption}7T2 + \Sigma\text{saving}7T2 \quad (2)$$
(Consumer Goods for Sever Year II)

Thus, what happened at that time was:

a. The first seven years => X1 = 0.5Xk1 + 0.5Xs1
b. The second seven years => X2 = 0, So ΣConsumption7T2 = 0.5Xk2 = 0.5Xs1

In other words, the drop in harvest in the second seven years is balanced by savings from harvests in the first seven years, resulting in the same level of consumption in the first and second seven years. In total, the fourteen years are worth 1, with each being divided into half for the first period and a half for the second period. As a result, a straight line is established on the level of consumption of the population.

Hence, risk control in the form of investment has been exemplified in the Quran. There are several arguments and evidence in Islamic tradition that demonstrate the significance and necessity of risk control in a financial transaction (Agha & Sabirzyanov, 2015). It is the proof that economy can run smoothly without interest. After all, interest creates inflation. Asgharpur, Kohnehshahri, and Karami (2007) found a unidirectional causality from interest rate to the inflation rate in 40 Islamic countries and suggest that banks must reduce the interest rate to decrease the inflation. Thus, the sharia cooperative is one of the solutions for better growth for the country's financial conduction, particularly in the recovery after the pandemic hit Indonesia.

Risk Control in Sharia Cooperative

A financial institution, both bank, and non-bank, such as cooperatives, serves primarily as a mediator, linking those who have excess funds with others who lack funds (Lisa & Hermanto, 2018). Cooperatives have an important role in Indonesia's economic progress (Isa & Hartawan, 2017). Credit distribution, in particular, plays an essential role in the overall movement of the economy and facilitates economic growth. Banks are a tool for defining monetary policy at the macroeconomic level; they are the primary source of funding for enterprises and people at the microeconomic level (Bakhri & Alwi, 2021). Financial institutions, both banks and non-banks or conventional and sharia, operate in the same sector, namely financial institutions. Sharia cooperatives have very different principles than conventional cooperative financial institutions, particularly when it comes to applying sharia principles. Risk control is essential to avoid the problem in financing. Problem financing is financing that is directed to consumers but the customers are unable to make payments or installments in line with contractual agreements; in other words, the customer has defaulted (Lisa & Hermanto, 2018). In this study, KSPPS BMT UGT Nusantara has provided attempts to ensure a better financing process.

An automatic notification system was adopted to provide information about the installment due date, installment amount, and remaining debt balance. An

automatic notification system allows information on financing bills through the UGT, WhatsApp, and Telegram. Soraya et al. (2015) argue that employees do transaction processing manually, which increases the possibility of calculation errors, thus, a transaction-management is required. She developed a notification system to find out the status of credit applications and notification services repayment or the due date of loan payments to the status of expansion. This ease debtor in accessing information as well as memorizing their obligation anywhere and anytime.

Information screening is crucial prior to the decision-making when applicants apply for financing. By utilizing debtor information screening services with Debtor Information System in Si BMT's internal data like the BI Checking or the Financial Information Service System (SLIK) services in banking, the information of the debtor can be tracked. Their ability to pay for such financing can also be considered. This feature also allows KSPPS BMT UGT Nusantara to determine the amount of financing which is feasible to be reimbursed. This confirms a previous study conducted by Busthomi and Hendratmi (2017) that risk mitigation is accomplished by loss avoidance, loss prevention, and loss reduction. This is accomplished by enhancing the coordinator function, tightening the financing application procedure, and improving the risk identification and evaluation process following the risks experienced. Financing feasibility analysis is crucial before the fund disbursement (Lisa & Hermanto, 2018).

The use of the application should be customized to the SOPs of KSPPS BMT UGT Nusantara. Si BMT supports policies on financing management, either in the form of regulations or SOPs. The previous study also agrees that the development of applications should suit the need of the institution. Soraya et al. (2015) developed an application to manage data financing applications, member data, financing, installments, and reports. The application can be customized with the SOPs of the institutions. The use of information technology systems also help data saving. With the use of application, it is envisaged that by implementing information technology systems, data that has previously been saved and administered manually will be digitized and increasing the efficacy of cooperative performance (Karyadiputra, 2016).

Risk is inevitable in a financial institution, especially in sharia cooperatives. There is always the risk of disagreements regarding mutually agreed-upon terms in financial concerns and commercial interactions in transactions involving money, land, rights, ownership, and property demanding documentation in the form of a contract and signed by both parties in the presence of witnesses to avoid default and guaranteesthat all parties' rights are protected (Agha & Sabirzyanov, 2015). By appropriately and optimally utilizing IT, the financing will be better regulated to avoid Non-Performing Financing (NPF). This is because all concerns linked to the risk of non-performing financing have been minimized making it less probable that financing that has gone through the screening process such as the steps above would become stuck, except for natural disasters (force majeure).

Conclusion

The use of information technology systems at KSPPS BMT UGT Nusantara can control financing risk, liquidity risk, and sharia compliance risk in several ways. First, the use automatic notification system eases financing bills through the UGT, WhatsApp, and Telegram. Second, applicant screening using Debtor Information System in Si BMT's

internal data like the BI Checking or the Financial Information Service System (SLIK) services in banking ensures that the applicants are eligible for the fund reimbursed. Third, Si BMT supports policies on financing management, either in the form of regulations or SOPs making the application follow the SOP of KSPPS BMT UGT Nusantara to ease users understand the regulation. This study is anticipated to broaden academic research studies on the use of information technology systems to manage financing, liquidity, and sharia compliance risks. It offers adequate input to all relevant parties, particularly KSPPS BMT UGT Nusantara and, more broadly, sharia cooperatives. It is hoped that in the future, similar, more detailed research will be conducted using quantitative approaches such as Multiple Linear Regression, Vector Auto Regression - Vector Error Correction Model (VAR-VECM), Structural Equation Modeling (SEM), or Data Envelopment Analysis (DEA), or qualitative methods such as the Analytic Network Process (ANP).

Authors' Declaration

The authors made substantial contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation, and discussion of results. The authors read and approved the final manuscript.

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