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Retraction

Retracted: Artificial Intelligence-based Blockchain Technology for Skin Cancer Investigation Complemented with Dietary Assessment and Recommendation using Correlation Analysis in Elder Individuals

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope

(2) Discrepancies in the description of the research reported

(3) Discrepancies between the availability of data and the research described

(4) Inappropriate citations

(5) Incoherent, meaningless and/or irrelevant content included in the article

(6) Manipulated or compromised peer review

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

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[1] S. Mann, A. Balyan, V. Rohilla, D. Gupta, Z. Gupta, and A. W. Rahmani, "Artificial Intelligence-based Blockchain Technology for Skin Cancer Investigation Complemented with Dietary Assessment and Recommendation using Correlation Analysis in Elder Individuals," *Journal of Food Quality*, vol. 2022, Article ID 3958596, 7 pages, 2022.

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Research Article

Artificial Intelligence-based Blockchain Technology for Skin Cancer Investigation Complemented with Dietary Assessment and Recommendation using Correlation Analysis in Elder Individuals

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In the modern world, due to the usage of high-power chemical-based cosmetics, climate change, and other major factors, skin cancer has been increasing among individuals. Skin cancer is considered as the most common malignant disorder, and there are more than a million cases being recorded with this disease every year. Extensive studies have already been performed to identify the risk factors and causative agents for skin cancer, including lifestyle changes and eatery patterns among individuals. The most common type of skin cancer is classified into basal cell carcinoma and squamous cell carcinoma. The researcher intends to conduct the research with the primary goal of determining the important factors in blockchain technology in the treatment of skin cancer in senior people. The application of new technologies such as blockchain has enabled offering better promises to health care professionals in addressing skin cancer in a more effective manner. These tools supported in evaluating the nature and severity of psoriasis has been regarded as much support for health care professionals in detecting skin cancer and offer better health care guidance for better living. The detection of melanomas supports the patient in enhancing the prognosis and support in discriminating between the melanomas and less impact lesions. The blockchain-based classification system offers more benefits and reduces the cost of detecting skin cancer in an effective manner. It also helps the medical professionals by assisting them in developing a custom diet plan for each patient on the basis of their health records and food intake. The researchers are focused on applying both the primary data sources and secondary data sources for performing the study. A detailed questionnaire is designed, and it is shared with the participants through university hospitals, support groups, etc. so as to gather the information. Nearly 156 respondents were chosen through nonprobability sampling, and the information was collected. The researcher performs critical descriptive analysis, and correlation analysis is performed to understand the overall association between the variables. The researchers intend to perform the study with the basic goal of understanding the critical factors in blockchain technology in skin cancer for elderly individuals. The major factors involved are enhanced data privacy, support in forecasting patterns, and enhanced medical services to patients complemented with personalized dietary assessment and recommendations. The result demonstrates that artificial intelligence-based blockchain technology allows for the efficient processing of huge amounts of data in order to complete the assigned task and correctly determine and predict the model.

1. Introduction

In the modern world, due to various factors such as high artificial cosmetics, climate changes, lifestyle, and dietary patterns, among other deficiencies have resulted in an increase in skin cancer among individuals. It has been regarded that nearly 1 million new cases of skin cancer are being reported every year around the globe. The most common nature of skin cancer is mainly stated as basal cell and squamous cell carcinomas [1]. Various novel technologies such as machine learning, robotics, automation, and blockchain are being implemented in the medical industry to provide better care and assistance to the patients [2].

A blockchain usually contains a set of different data blocks that contain information about various functions, such as a list of information, timestamps and the number of transactions, hash hashes, and other considerations. Therefore, the blockchain is essential to help patients protect their data, share critical information not only with targeted users, and modify the user database.

The application of algorithmic models supports processing a large volume of information to perform the required task and enable recognizing and forecasting the pattern in an effective manner. The application of blockchain technology supports protecting the data and enables the movement of information to the intended users with the utmost case. The radiologists use the technology to enhance the quality of image analysis, support detection and quantifying malignant tumours, and forecast the patterns effectively [3]. The success of implementing blockchain technology [4] mainly depends on the overall acceptance level of the radiologists, medical practitioners, and patients, which is mainly focused on the intended benefits which the blockchain technology and sensors offer to them [5, 6].

Basal cell carcinoma and squamous cell carcinoma, often known as nonmelanoma skin cancer, are the two most prevalent kinds of skin cancer [7]. Malignancies like these arise in the cells that line or lining the organ. Basal cell carcinoma is the most prominent kind of cancer in the USA, accounting for more than 90 percent of total of all skin malignancies. It is often a slow-growing malignancy that does not migrate to other sections of the body very often. Squamous cell carcinoma is less prevalent than basal cell carcinoma, yet it is more likely to occur than basal cell cancer. Because skin cancer can invade and kill adjacent tissues, early recognition and diagnosis are critical [8].

The application of block chain in the medical industry is mainly stated as the decentralized ledger which supports in recording the transactions in an effective manner [9]. When more blocks are being added to the chain, the ledger will transform as a complete book, before including any new transactions in the block, there will be a consensus mechanism which will be applied by the participant to validate the entries and the block which needs to be appended [10, 11]. The transactions are residing in the block for a given period until the overall consensus of the processes are done effectively, and the blocks of entries are then stored in the ledger, where the data cannot be altered or upended. When the hash category of the block is modified, the block will not be valid, which enables making adjustments in the other blocks to be invalid [12].

The needs and requirements in the health care industry [13] include sharing of a large volume of information related to patient health information across the intended participants, complying with regulatory reporting, enhancing data confidentiality and integrity, and enhancing service delivery [14]. Researchers have noted that the critical feasibility of applying blockchain technology in skin cancer is mainly focused on the capability of recording and collating the needed information, processing the information of the patient information, enhance privacy, and reduce the overall cost involved in storing and accessing database [15, 16]. Blockchain supports in customizing the private solutions to address the needs of health care information, the trade-off approach is mainly happening between the proof-related attempts to implement blockchain technology in the health care sector [17].

The research gap of the study is to explore the application blockchain technology for skin cancer investigation using correlation analysis in elder individuals. The researcher intends to use quantitative measurements for performing the study [18]. Therefore, the use of blockchain in the treatment of skin cancer is considered very beneficial as it enables the registration of information about the patient, the nature and prediction of the cancer, and effective analysis of treatment models by providing tailor-made food plans to aid treatment, and reduces the chances of developing skin cancer that are more vulnerable [19]. In addition, this technology supports data protection, which can effectively control the end users' total operating costs.

The researchers intend to perform the study with the basic goal of understanding the critical factors of blockchain technology in skin cancer for elderly individuals. The major factors involved are enhanced data privacy, support in forecasting patterns, and enhanced medical and providing customized dietary recommendation services to the patients [20].

The current paper has been dived into five sections: the introduction of artificial intelligence-based model has been discussed in Section 1. Section 2 illustrates the review of the literature. The methodology of the current paper has been described in Section 3. Section 4 puts light on statistical analysis, and finally, the conclusion has been mentioned in Section 5.

2. Review of Literature

The researcher has published a core set of clinical data agreed upon by various stakeholders [21] in cancer genomics repositories. The lack of a standard clinical data sharing platform can be attributed to a number of reasons, including incompatible data streams or formats, nonstandard data collection, conflicting business models, export processes and availability, and data protection issues [22]. A central and organized platform managed by a single institution is not ideal due to data ownership, cost, and distribution process problems. Trends in other areas shift from quarterly batch data analysis, whether from customer web clicks or ground-

based sensor architecture to real-time analysis. The learning cycles have decreased from months to hours. Finally, core data exchange efforts from top to bottom, although necessary for research and scientific understanding, have a consistent lifespan of group studies, support, or interest [23].

Patients and physicians will focus on the most accurate collection and analysis of local data, medical history, and radiological reports to provide appropriate medical treatment and recommendations to patients. In addition, data must be protected from cyberattacks and being shared without patients' consent. As a result, blockchain offers better privacy options and ensures that the general needs of stakeholders are effectively met to provide better healthcare.

Blockchain is a pioneering innovation that utilizes the capacity of health care information systems to improve patient care. However, this has significant regulatory, financial, and operational consequences. Licensed private blockchains are a viable option for the healthcare industry to process sensitive patient data. This type of blockchain development has a beneficial effect on the health of blockchains [24]. Uses suggested by blockchain researchers [25] in health care include patient-managed medical records, advanced insurance procedures, accelerated medical research using shared patient data, and advanced medical records. Drug supply chain and consent registration blockchain remain unchanged. Therefore, you cannot delete a block. Blockchain thus does not meet the GDPR requirement that registered persons have the right to request deletion of their data, including sensitive health data. The recommended solution is to store patient data outside the chain and store alias codes in the chain. However, this means that the alias code and all transaction records in the patient data in the chain are preserved even after the patient data outside the chain has been deleted [26].

The needs and requirements of the health care industry include the exchange of large amounts of patient health information between prospective participants, compliance with regulatory reporting, improved data confidentiality and integrity, and support for improved service delivery [27]. The researchers note that the critical feasibility of using blockchain technology to treat skin cancer primarily focuses on the ability to capture and collect basic information, process information from patient information, improve confidentiality, and reduce overall storage and access costs.

New medicines ought to be more efficacious, less expensive, and without jeopardising patient safety independent of disease [28]. To accomplish one or the other, an appropriate solution must be designed that considers good patient inter-operability, best treatment effectiveness, extremely low toxicity, and very high efficacy to reach a particular body position per unit weight of the drug [29]. Different types of foods and nutrients have been investigated to evaluate their significance in skin cancer prognosis and to distinguish between foods that are effective in decreasing skin cancer incidence rates and those that may enhance it [30]. Researchers have also improving the accuracy of dietary assessments by analyzing food items and notifying users regarding their nutritive value [31]. Nanotechnology-based formulations are also a cutting-edge treatment option for such illnesses. They could be more efficient as they can be adorned with target fragments (such as antibodies), and they can release the beneficial content in a regulated manner. They minimize toxicity since smaller amounts are required to get the same effect, and the toxicity is highly localised because the release is directed and regulated solely at the site of action. The latter is often linked to a high level of transportation efficiency [32].

Areas of application proposed by researchers in health care blockchain include patient-managed medical records, advanced insurance procedures, rapid medical research using shared patient data, and advanced medical records. Drug supply chains and consensus block chains remain unchanged. Therefore, you cannot delete a block. As a result, Block chain does not meet the GDPR requirement that registrants have the right to request deletion of their data, including sensitive health data [33]. The recommended solution is to store patient data outside the chain and store alias codes in the chain. However, this means that the alias and all transaction records of the patient data in the chain are preserved even after the patient data outside the chain has been deleted.

3. Methodology

The basic aim of the study is to understand the critical factor of using blockchain in performing better treatment modalities for patients with skin care, the researchers use quantitative research methodology to perform the study, the idea of using blockchain in health care is emerging as there is a growing need for data protection, information security, and in-depth measures based on available information. Therefore, researchers wanted to use primary and secondary sources to gather the information needed for the study, a detailed closed questionnaire was prepared for data collection. The researcher uses convenience sampling to select respondents. Approximately, 154 respondents were considered for the data collection study [34]. The researchers also used secondary data to understand the previous literature in the field of research and to understand the critical factors that led to the comprehensive analysis. The researchers also use quantitative methods which will provide more and critical understanding. The researcher intends to provide better and enhanced aspects to the readers and hence different analyses such as analysis of variance (ANOVA) and percentage analysis were performed.

3.1. Hypothesis

H1: There is no statistical difference between the enhanced data privacy and the application of blockchain technology in treating patients.

H2: There is no statistical difference among supports in forecasting patterns and application of blockchain technology in treating patients.

H3: There is no statistical difference between enhanced medical and custom-made diet plan services to the patients and the application of blockchain technology in treating patients

4. Statistical Analysis

This section states in detail the statistical analysis of the data which has been collated by the researcher. IBM SPSS data package is used to perform the critical analysis such as correlation analysis and analysis of variance model.

From the analysis in Table 1, it is identified that 45.5% of the respondents have stated strongly agreed with the statement that the application of blockchain is highly cost-effective for patients, and hence, they are widely applied in the health care industry. Furthermore, 28.6% of the respondents have agreed to the statement, whereas 13% have been neutral and the remaining are disagreeing to the statement. This is shown graphically in Figure 1.

The next computation is to understand if the application of blockchain enables secured data sharing among individuals.

From the analysis in Table 2, it is identified that 28.6% of the respondents have stated strongly agreed to the statement that the usage of blockchain is increasingly important in health care as it supports better and secured data sharing between individuals. Furthermore, 41.6% of the respondents have agreed to the statement, whereas 11.7% have been neutral and the remaining are disagreeing to the statement. This is shown graphically in Figure 2.

4.1. Correlation Analysis. The next step is to identify the nature of the association between the dependent variables and independent variables. The coefficient of correlation tends to be in the range between −1 and +1.

From the correlation analysis in Table 3, it is identified that the relationship between the independent variables such as enhanced data privacy, forecasting patterns, and enhanced medical services possess a strong positive correlation towards dependent variable blockchain technology in treating patients.

The coefficient of correlation between enhanced data privacy and blockchain technology in treating patients is stated to be +0.860, whereas for forecasting patterns and blockchain technology in treating patients is at the highest with +0.870, and the relation between enhanced medical services and blockchain technology in treating patients is in the range of +0.829. Hence, it can be concluded that there is a greater influence between the variables.

4.2. Analysis of Variance. This portion of the study is intended to test the hypothesis set by the researcher using the key statistical tool analysis of variance.

4.3. Hypothesis 1. H1: There is no statistical difference between the enhanced data privacy and application of blockchain technology in treating patients.

Based on Table 4, the p value is 0.001; hence, it can be concluded that there is a statistical difference between the enhanced data privacy and application of blockchain technology in treating patients.

Table 1: Cost effectiveness.

Cost effectiveness	Frequency	Percent
Strongly disagree	11	7.1
Disagree	9	5.8
Neutral	20	13
Agree	44	28.6
Strongly agree	70	45.5
Total	154	100

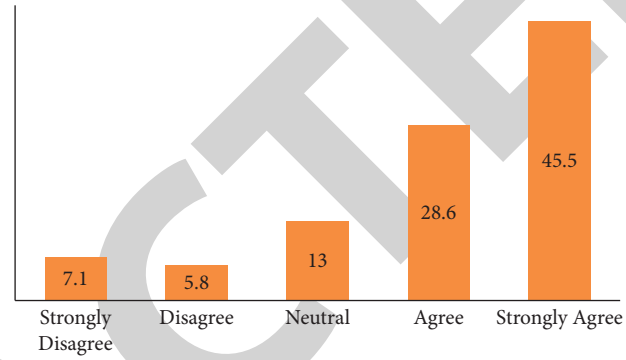

Figure 1: Cost effectiveness.

Table 2: Secured data sharing.

Secured data sharing	Frequency	Percent
Strongly disagree	11	7.1
Disagree	17	11
Neutral	18	11.7
Agree	64	41.6
Strongly agree	44	28.6
Total	154	100

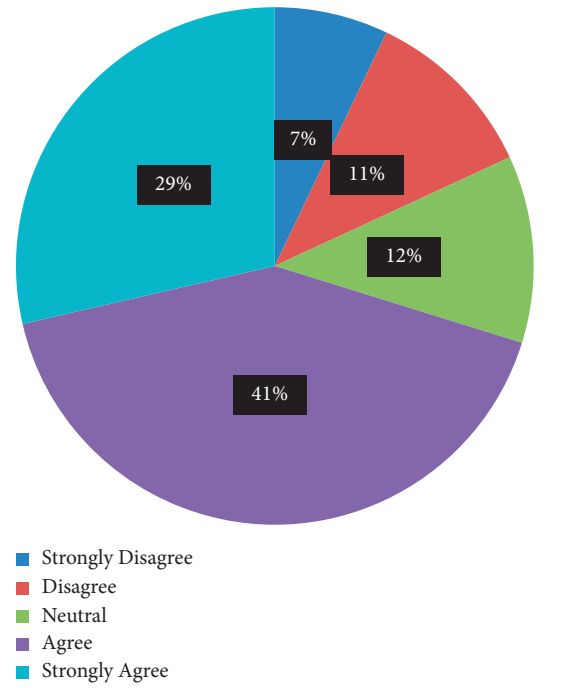

Figure 2: Secured data sharing.

Table 3: Correlation.

	Enhanced data privacy	Forecasting the patterns	Enhanced medical services	Blockchain technology in treating patients
Enhanced data privacy	1	0.886	0.813	0.86
Forecasting the patterns	0.886	1	0.861	0.87
Enhanced medical services	0.813	0.861	1	0.829
Blockchain technology in treating patients	0.86	0.87	0.829	1

Table 4: ANOVA test between enhanced data privacy and application of blockchain technology in treating patients.

ANOVA	SS	Dof	MS	*F* value
Between groups	168.58	4	42.145	250.877
Within groups	25.031	149	0.168	
Levene statistic	18.438			
p value	0.001			

Table 5: ANOVA test between support in forecasting patterns and application of blockchain technology in treating patients.

ANOVA	SS	Dof	MS	*F* value
Between groups	210.026	4	52.506	461.076
Within groups	16.968	149	0.114	
Levene statistic	7.836			
p value	0.001			

4.4. Hypothesis 2. H2: There is no statistical difference among supports in forecasting patterns and application of blockchain technology in treating patients.

Based on the above Table 5, the *p* value is 0.001; hence, it can be concluded that there is a statistical difference among supports in forecasting patterns and application of Blockchain technology in treating patients.

4.5. Hypothesis 3. H3: There is no statistical difference between enhanced medical and custom made diet plan services to the patients and the application of blockchain technology in treating patients.

Based on Table 6, the *p* value is 0.001; hence, it can be concluded that there is a statistical difference among enhanced medical and custom-made diet plan services to the patients and the application of Blockchain technology in treating patients.

Table 6: ANOVA test between enhanced medical services to the patients and the application of blockchain technology in treating patients.

ANOVA	SS	Dof	MS	*F* value
Between groups	163.226	4	40.806	138.918
Within groups	43.768	149	0.294	
Levene statistic	16.721			
p value	0.001			

In the modern world, due to the use of high-performance chemical-based cosmetics, climate change, lifestyle, eating patterns, and other important factors, the incidence of skin cancer has increased among individuals. Skin cancer is considered the most common neoplasm and more than one million cases of the disease have been reported over the years. The most common types of skin cancer are basal cell carcinoma and squamous cell carcinoma. The use of new technologies such as blockchain has helped provide better promises to health care professionals to fight skin cancer more effectively [28]. These tools, which help assess the nature and severity of psoriasis, help health care professionals detect skin cancer, and provide better health tips for a better life. Detection of melanoma helps the patient to improve the prognosis and distinguish melanoma from smaller lesions. A blockchain-based classification system offers several benefits and reduces the cost of effective skin cancer detection and treatment. The medical application of blockchain is mostly described as a decentralized universal that helps to efficiently record transactions. A blockchain usually contains a set of different data blocks that contain information about various functions such as information list, timestamps, number of transactions, scroll, hash, and other aspects. If multiple blocks are added to the chain, the general ledger is converted to a complete general ledger before any new transactions are added to the block, and the participant applies an authentication mechanism to validate the records and the block to be attached [29]. The researchers note that the critical feasibility of using blockchain technology to treat skin cancer primarily focuses on the ability to capture and collect basic information, process information from patient information, improve confidentiality, and reduce overall storage and access costs. Blockchain supports the adaptation of private solutions to meet the need for health care information with the compensation method, mainly in the data-driven effort to apply blockchain technology in health care.

5. Conclusion

It is estimated that around one million new skin cancers are reported worldwide each year. The most common types of skin cancer are basal cell carcinoma and squamous cell carcinoma. There are ways to prevent the risk of skin cancer, and one of those influencing factors being the changes in the diet these days. Therefore, various new technologies such as machine learning, robotics, automation, and blockchain are used in the medical industry for better patient care and support. The future scope of blockchain technology is mostly focused on cybersecurity. The data are protected and authenticated, even though the blockchain ledger is open and decentralized. The use of algorithmic models supports the processing of large amounts of information to perform the

necessary work and effectively identify and predict the model. Block chain technology supports data protection and allows information to flow to target users at best. Radiologists use the technology to improve image resolution, support the detection and quantification of malignancies, and predict patterns effectively. The findings show that the blockchain technology based on artificial intelligence enables for the efficient analysis of large volumes of data in order to finish the work at hand and properly identify and anticipate the model. The success of block chain technology is mainly due to the general acceptance of radiologists, doctors, and patients, which mainly focuses on the expected benefits of blockchain technology.

Data Availability

The data shall be made available on request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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