Research Article

Ethical Collaboration and Artificial Intelligence Among Healthcare Professionals

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ARTICLE INFO	ABSTRACT
	Artificial intelligence is currently a diagnostic tool and this study investigated healthcare professionals' ethical collaboration along the line of AI expertise in the United States of America (USA). **Objectives:** This research objectives were divided into four parts to address healthcare professionals' discourse. For instance, the objectives investigated the engagement level and significant influence of healthcare professionals like, repost and comment factors on number of views as evident through X data analytics. **Methods:** This study adopted quantitative methodology consisting of data analytics gathered from X (formerly Twitter). Also, a total of five thousand and thirty-five (5035) data analytics on X were purposively gathered and analysed in this research to answer healthcare professionals' ethical collaboration and artificial intelligence related questions. A dataset of 5,035 analytics is sufficiently large to capture diverse themes, sentiment trends, and ethical concerns discussed among healthcare professionals. This research adopted both inferential and descriptive statistics with three (3) hypotheses tested for this study at $p < .05$ statistical level of significance. **Results:** This study result show that artificial intelligence (AI) use as a tool for healthcare professionals' ethical collaboration needs more perfection. Also, the results show that most factors involved in this enquiry had significant influence with reliable predictive power of 60%. **Conclusions:** This study concludes that there is a significant influence on most of the engagement factors introduced in this research, which shows the high level of interest channelled towards the healthcare professional's collaborative ethics and AI discourse in USA. **Keywords:** AI, Ethical, Collaboration, Healthcare, Professionals.

INTRODUCTION

Artificial intelligence (AI) is permeating across all facets of healthcare systems. Besides, the ethical collaboration considerations are informed consent matters for more cautious collaborative use of AI in healthcare systems. For instance, healthcare professionals are major actors adopting this AI technology for the benefit of mankind (Uzougbo, Ikegwu & Adewusi, 2024). It is faster with diagnoses and allows multiple treatment within a short time (Stasevych & Zvarych, 2023; Wang et al., 2023). The AI has made healthcare systems to be more efficient (Kaddoura & Al Husseiny, 2023). However, majority of the patient's data are exposed online when using AI applications (Dave, Athaluri & Singh, 2023). This calls for more scrutiny of the AI systems to observe more ethical practices in the light of the technology's proliferation (Chen, Liao & Yu, 2024).

Notwithstanding, this study is a continuum to fill the scarcity of literature on healthcare professionals' ethical collaboration matters and AI in the USA. For instance, previous enquiry addressed healthcare matters without considering healthcare professionals' collaboration along the line of AI expertise (Gazi, Hasan, Gurung & Mitra, 2024). The use of AI applications needs back up document on ethics to safeguard users from harm and promote trust in using the system (Alazwari et al, 2024).

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The ethical dilemma is being sort after in the face of AI growth in healthcare sector. For instance, the AI models produce output that presents ambiguity with interpretation for healthcare professionals (Lugo, 2023). This calls for redress through campaign for AI explainability so that more healthcare professionals benefit the dividend of this innovative application (Liebrenz, Schleifer, Buadze, Bhugra & Smith, 2023). The AI explainability enhances the ease of use of healthcare systems (Afzaal, Shanshan, Yan & Younas, 2024).

Artificial intelligence is being applied in a variety of ways in healthcare systems. For instance, medical imaging allows AI applications to capture clearer images of cancerous cells and conduct predictions of ailment before it happens (Bayley & Phipps, 2023). Likewise, wearables and health analytics are all forms of AI application within the healthcare sector, which allows the capturing of patient's healthcare performance using a wristwatch (Lugo, 2023). Hence, AI is a genome facing off old-fashioned approaches to healthcare practice in USA (Gao, Wang, Xie, Hu & Hu, 2023). Hence, this current AI era worths cross examining within the healthcare professionals' domain to ensure ethical standards are followed (Rahimi & Abadi, 2023). The ambience is ripe to investigate cautious use of AI with its increased deployment by healthcare professionals in USA (Ektefaie at al, 2024).

Nowadays, keeping up with the AI development through constant training and education is paramount to healthcare professionals. Likewise, with the robots, complex surgical operations that used to be a human and manual procedure has changed to automated processes (Ayo-Farai, Olaide, Maduka & Okongwu, 2023). Healthcare professionals are adopting AI for patients' records automation to reduce long waiting period during appointment (Morris, Song, Rajesh, Asaad & Phillips, 2023). Presently, drug prescriptions are AI led for quicker and more efficient healthcare services (Wu & Liu, 2023).

The following research questions were deduced:

1. What is the level of healthcare professionals' engagement on ethical collaboration and artificial intelligence?

2. Is there any significant influence between healthcare professionals' ethical collaboration and artificial intelligence related comments on the number of X views?

3. Is there any significant influence between healthcare professionals' ethical collaboration and artificial intelligence related repost on the number of X views?

4. Is there any significant influence between healthcare professionals' ethical collaboration and artificial intelligence related likes on the number of X views?

The following hypotheses were deduced from research questions two, three and four as follows:

HO1: There is no significant influence between healthcare professionals' ethical collaboration and artificial intelligence related comments on the number of X views.

HO2: There is no significant influence between healthcare professionals' ethical collaboration and artificial intelligence related repost on the number of X views.

HO3: There is no significant influence between healthcare professionals' ethical collaboration and artificial intelligence related likes on the number of X views.

LITERATURE REVIEW

Ethical issues are informed consent addressing healthcare professional practices in the light of increased artificial intelligence (AI) use. Likewise, ethical issues are guidelines for globally acceptable professional practices in healthcare systems (Kunze, Jang, Fullerton, Vigdorchik & Haddad, 2023). Also, ethical issues address data privacy in clear statement, which unequivocally informs AI users on how data is stored and safeguarded against cyberbreach (Zhang & Zhang, 2023). Patients must be informed on the ethical issues applicable to them when using AI applications within healthcare systems to increase trustworthiness on the system adoption (Masters, 2023). Ethical issues are related to data privacy (Kasula, 2024). Ethical issues must be read and agreed upon by patients prior to using AI applications (Jhurani, Reddy & Choudhuri, 2023). Ethical issues aim to address patients' safety in the light of AI proliferation in healthcare systems (Cacciamani, Chen, Gill & Hung, 2024). Ethical issues inform patients' right to withdraw from using AI applications if feelings of insecurity arise (Sai et al, 2024).

Ethical issues are paramount in this 21st century due to the large amount of data shared on the internet during authentication of patient's information entry. For example, some of the data contains private information such as patient passwords, home address, social security number and bank account number (Sun, Yin, Xu & Zhao, 2023). Hence, it is part of AI ethics to ensure patients private details are protected during log in authentication to promote quality in using the application (Iqbal, Qureshi, Khan, Aurangzeb & Akbar, 2024).

The ethical issues application by healthcare professionals is currently high in USA. However, ethical issues adoption is challenged presently due to inconsistencies in AI's output within the healthcare system (Dave, Athaluri & Singh, 2023). For instance, AI is the basis for granting access to health insurance benefits in the United States of America (USA) and some patients recently show discontentment with the allocation of insurance claims to beneficiaries (Slimi & Carballido, 2023). Besides, artificial intelligence (AI) intervention is blamed partly as responsible for this anomaly in healthcare insurance allocation due to biased algorithm (Askin, Burkhalter, Calado & El Dakrouni, 2023). The AI introduction to data processing is currently a very big issue to healthcare professionals as it predetermines many patients' operations (Chen, Jensen, Albert, Gupta & Lee, 2023). Hence, safeguarding patient's data calls for more serious ethical issues observation (Gupta & Srivastava, 2024).

Ethical concerns are pressing issues that must be addressed to protect healthcare professionals from losing relevance in this AI dominated era. Presently, there is rise in ethical issues observance among healthcare professionals so that humanly responsibilities take the forefront. Besides, there must be re-awakening of healthcare professionals through quality continuous professional development programmes (CPD) consisting of quality AI training to help take full control of the speedy growth of AI in healthcare system (Gupta, Kamboj & Bag, 2023). AI is quite expedient in taking over complex surgical procedures like eye cataract surgery, which used to be a time-consuming medical procedure (Kavian, Wilkey, Patel & Boyd, 2023).

The emergence of AI as a more efficient technology with potentials similar to healthcare professionals job presents ethical concerns to healthcare system. For instance, healthcare system well-being is paramount in the face of fast-growing artificial intelligence technology. However, human beings are taking up the challenges in the AI era by trying to dictate what AI does using programming techniques. Healthcare professionals must uphold ethical issues by prioritising their existential roles above AI. Healthcare professionals must be convinced on data safety in the light of AI so that patients are convinced of the reliability of the technology (Camilleri, 2024).

Ethical collaboration is the deliberate networking of skills. It is the process of ensuring direct linkage of ideas among individuals for more meaningful work processes. Likewise, ethical collaboration is either a dual or multiple activity among two or more people to enhance faster and more effective output within a system (Ferrara, 2023). Ethical collaboration is a direct or indirect relationship along the line of expertise in healthcare systems (Sarker, 2024).

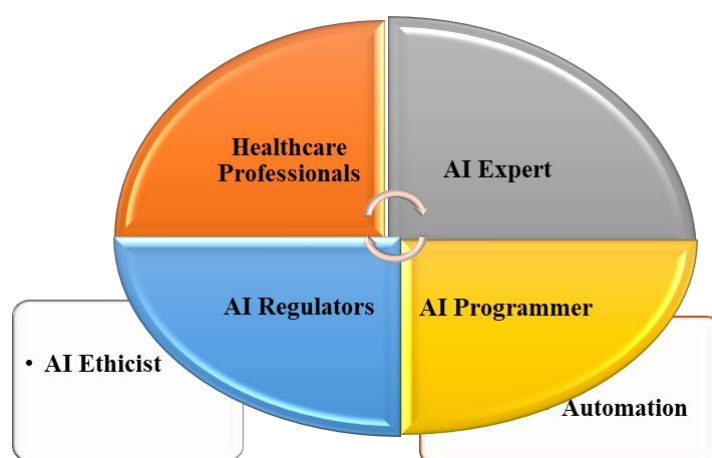This idea is conceptualised in figure 1 as follows.

Figure 1. Conceptual framework on ethical collaboration between healthcare professionals in the United States of America (USA). Adopted and adapted from Gaspar, Silva and Silva (2024).

Numerous factors were considered during the design of this research conceptual framework. The reason is that some healthcare professionals in USA have different areas of expertise based on individual differences (Al-Antari, 2023). For instance, education is conceptualised under healthcare system as the acquisition of health-related knowledge, which is evident in health and nursing education discipline where human physiology and anatomy are taught (Kumar, Dwivedi & Anand, 2023). The education expertise allows healthcare professionals to demonstrate their teaching abilities embedded in methodologies such as lecturing and discussion. Healthcare professionals with education expertise have additional qualifications related to education field such as bachelors in science education (B.SC. ED), Doctor of Education (Ed. D), postgraduate diploma (Pgde.) and certificate (PgCert. Ed) in education (Amjad, Kordel & Fernandes, 2023). Education experts in healthcare are skilled teachers with the ability to teach difficult healthcare concepts clearly using latest AI related educational technologies like ChatGPT (Aiosa, Palesi & Sapuppo, 2023).

Also, training expertise is one of the factors conceptualised in this research as skill and dimension under education. Hence, education subsumes training as it is like an umbrella that accommodates training issues (Galetsi, Katsaliaki & Kumar, 2023). Training goes along with education. Training is an entity that clings to the wings of education as a practical process among healthcare professionals in USA (Jeyaraman, Balaji, Jeyaraman & Yadav, 2023). Healthcare professionals with expert training are awarded with professional certificates such as Certified Critical Care Registered Nurse (CCRN), American Board of Internal Medicine (ABIM), Doctor of Audiology (AuD) and Doctor of Psychology (PsyD) (Terra, Baklola, Ali & El-Bastawisy, 2023). Healthcare professionals constantly train to ensure continuous professional development (Liu, 2024).

Healthcare professionals are major actors in healthcare systems. For instance, the healthcare professionals' factor in the figure 1 of this study's conceptual framework is central to this research. This factor encompasses all class of healthcare workers ranging from nurses, general practitioners, radiologists, science laboratory technologists and medical laboratory scientists (Ford, Milne & Curlewis, 2023). Healthcare professionals' practice is usually guided by ethics (Palkar, Dias, Chadaga & Sampathila, 2024).

Artificial intelligence expertise is an automated skill. For instance, the AI experts factor accommodates programming and automation, ethicist and regulatory functions (Husnain, Rasool, Saeed, Gill & Hussain, 2023). Besides, the AI experts are healthcare professionals with specialty in artificial intelligence related task (Adams, 2023). Also, it is critically evident in literature and data analytics that AI experts likewise perform the roles of AI ethicist, regulators, automation and programmer (Dahmen et al., 2023). Similarly, AI experts deal with ethics, regulators, automation and programming operations (Lund et al., 2023). This conception place AI ethicists, regulators and programmers under one umbrella (Dennehy et al., 2023). The AI expertise falls within the purview of regulation, ethics, automation and programming (Farah et al., 2023). For instance, an AI expert function as ethicist by dealing with ethical issues, which address patients right to data protection (Horváth & Vicsek, 2023). The AI expert function as programmer that basically pre-determines AI processes (Hockly, 2023). The automation factor is applicable to the utilisation of AI applications for automated healthcare procedures (Eswaran & Khang, 2024). Examples of these procedures entails the adoption of AI applications for cancer and X-ray medical procedures (Monteith et al., 2023). AI expert function as a regulator by monitoring ethical compliance levels in healthcare (Chow, Sanders & Li, 2023). AI experts are healthcare professionals with exceptional knowledge and training in ethics, automation, programming and regulation of artificial intelligence (Kim & Shim, 2022).

However, this research focused more on artificial intelligence (AI) expertise of healthcare professionals in USA. The artificial intelligence (AI) has proven to be an inevitable tool to healthcare systems for quicker patient consultations (Berquedich et al, 2020).

Artificial intelligence (AI) allows the application of programming techniques for automated output. Artificial intelligence also involves digital data collation from human beings' online activities to enhance user experiences (Tay, Ethan, Chow & Sim, 2023). Artificial intelligence is currently being applied in healthcare system for automated processing of patient's healthcare records (Zhang & Hou 2024).

Artificial intelligence has numerous merits. For instance, patients no longer have to wait on long queues for general medical professional's appointment due to AI introduction in healthcare systems (Mao & Shi-Kupfer, 2023). Likewise, AI has showcased its ability to enhance co-ordinated task in healthcare using robots for more precise surgery (Wu, Lu & Wang, 2023). Artificial intelligence (AI) affords more precise learning management system by

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keeping records of students' level of engagement through analytics (Uddin, Chowdhury & Kabir, 2024). Besides, AI has brought a new form of innovation to healthcare system as it affords voice activated monitoring systems for elderly healthcare (Adhikari, Naik, Hameed, Raghunath & Somani, 2024). Using wrist watches has taken a new turn with the AI enabled applications installed in watches to gather patients' heartbeat, blood pressure and exercise metrics from patients (Chiu et al, 2021).

However, artificial intelligence (AI) has demerits too. For instance, AI is sometimes perceived as increasing unemployment in healthcare system (Jamal, Solaiman, Alhasan, Temsah & Sayed, 2023). Similarly, artificial intelligence depends on internet and digital hardware like personal computers and iPads, which are costly to maintain for low-income earners (Cuthbert & Simpson, 2023). Also, some of the AI applications like ChatGPT offer paid subscription for full access (Ho, Le, Mantello, Ho & Ghotbi, 2023). Available literature shows that AI likewise presents privacy issues to patients when accessing healthcare benefits (Chenais, Lagarde & Gil-Jardiné, 2023). Besides, some AI models explainability remains difficult, which poses question to the ease of use of artificial in healthcare system (Pierrès, Christen, Schmitt-Koopmann & Darvishy, 2024).

Healthcare professionals promote healthcare system using AI. Some examples of these healthcare experts are general practitioners that diagnose diseases, and pharmacist that prescribe medications (Hayıroğlu & Altay, 2023). Other examples are evident in physiotherapy, laboratory technology, and public health (Lazarus, Truong, Douglas & Selwyn, 2024). Healthcare professionals are needed in hospitals, laboratories, universities and colleges (Rehan, 2023). Healthcare professionals are trained to be ethically respectful and treat patients with passion and confidence (Seth et al., 2023). Healthcare workers are also trained researchers to find latest technologies for the betterment of healthcare system (Hooshyar & Yang, 2024).

Ethical collaboration between healthcare workers has historically been a norm through anaesthesiologist and surgeons' collaborative patients' treatment. Likewise, public health expert collaborates with social worker and health nutritionist to fashion out plans for healthier environment. The goal of healthcare professionals is to ensure patients are healed (Allen, Naeem & Gill, 2024).

Healthcare professionals possess software skills and communication proficiency, which helps them navigate through patient's ailment. Hence, healthcare professionals are major players in healthcare system (Lu, Zheng, Gong & Xu, 2024).

Healthcare professionals work around the clock to safeguard patients live. Sometimes, healthcare professionals go out of boundaries risking their lives to treat patients (Shiwani et al., 2023). However, the introduction of artificial intelligence (AI) has relieved healthcare professionals stress through online diagnosis (Eltawil, Atalla, Boulos, Amirabadi & Tyrrell, 2023).

Healthcare professionals have serious impact in the society through vaccination duties, health education and humanitarian services. Healthcare professionals are trained to work in remote areas with limited resource support (Merhi, 2023). The emergence of AI has made healthcare delivery to remote areas easier through online consultations (Celik, 2023). Healthcare professionals are key players in global healthcare systems (Trocin, Mikalef, Papamitsiou & Conboy, 2023). The application of innovative technology like AI enhances more effective patients' treatment (Jing, Liu, Gong & Zhao, 2022).

Healthcare professionals are individuals saddled with the responsibilities of treating sick patients. Healthcare professionals help with patient records keeping (Suthar, Kounsal, Chhetri, Saini & Dua, 2023). Also, healthcare professionals help in monitoring of human physiological, psychological and anatomical performance (Kaushik, Khan, Kumari, Sharma & Dubey, 2024). The healthcare professionals treat human ailment (Ratwani, Bates & Classen, 2024). Besides, some of these human ailments are contained in the blood system (Zhang & Hou 2024).

There is a gap that exist in literature that necessitate this study as a continuum in understanding ethical collaboration issues, healthcare professionals and artificial intelligence discourse in USA healthcare system. For instance, there is a gap in studies that adequately showcase ethical collaboration between healthcare professionals in USA along the line of AI expertise (Kuznetsov, Sernani, Romeo, Frontoni & Mancini, 2024). This study fills a gap that suggest AI as not impeccable (Anshari, Hamdan, Ahmad, Ali & Haidi, 2023). This study findings fill a gap that position human

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intervention as critical to AI application in healthcare system (Sarella & Mangam, 2024). Hence, healthcare professionals need constant AI training for accurate result interpretation (Carlson, 2023).

This research adopted data analytics on X (formerly) Twitter, which fills a gap in methodological approach within healthcare related studies. In the light of literature scarcity this research creates more interest on ethical matters within the healthcare sector as healthcare professionals need to put patients as foremost priority when adopting AI (Fan, Yan & Wen, 2023).

Previous research treated ethical collaboration and artificial intelligence matters at the surface level and this study went further with a deeper scrutiny through data gathering for empirical validation of findings. Earlier research introduced limited data analytics, which informed this research to use higher number of analytics to enhance the validity and generalisation of this enquiry (Gaspar et al, 2024).

There is limited multiple skill framework with a rationale linking education, programming and healthcare professionals together as evident in this research. The multimodality approach permits a deconstruct with a rationale of narrowing down to healthcare professionals' (Gupta & Srivastava, 2024).

OBJECTIVES

1. To investigate the level of engagement of healthcare professionals on ethical collaboration and artificial intelligence.

2. To investigate the significant influence between healthcare professionals' ethical collaboration and artificial intelligence related comments on the number of X views.

3. To investigate the significant influence between healthcare professionals' ethical collaboration and artificial intelligence related repost on the number of X views.

4. To investigate the significant influence between healthcare professionals' ethical collaboration and artificial intelligence related likes on the number of X views.

METHODS

This study adopted quantitative methodology consisting of data analytics gathered from X (formerly Twitter).

This research introduced research instruments such as X (formerly Twitter) technology search engine, and screen recorder. The screen recorder helped with the data capturing as the researcher scrolls down the screen. Notwithstanding, a purposive sampling technique was adopted in selecting the data analytics for this study to capture highly relevant discourse.

The research instruments were validated at experts' level by consulting with AI experts and health professionals to establish face and content validity. The research instruments passed the face and content validity tests at experts' level to be worthy of use in this research. The face and content validity criteria were based on consistency of search results.

However, the research instrument reliability was established through different study using four thousand (4000) data analytics. The reliability was determined based on the consistency of search output over a given period of one (1) month. Hence, the search output was examined within the specified period of one (1) month and the reliability of the research instruments were confirmed as consistent and reliable for the main data gathering.

This study adopted a social media called X (formerly twitter) as an online application for data analytics gathering. These data analytics were freely available on the internet and contained no personal user information. Hence, no ethical committee approval was required in this research since personal information data were not introduced. Notwithstanding, this study observed anonymity and privacy protection of data through confidential handling of user identities. Social media users are aware that all activities on social media online applications are freely and publicly accessible to other users. Also, social media data are usable without consent and formal ethical committee approval as long as the user identities remain anonymous and confidential depth (Lithy, 2025).

This study sample involved healthcare professionals in the United States of America (USA). This study gathered a total of five thousand and thirty-five (5035) data analytics on X as related to healthcare professionals' ethical collaboration and artificial intelligence discourse in USA.

The target population for this study consists of healthcare professionals in the United States of America (USA), whose discussions and interactions on ethical issues and artificial intelligence (AI) in healthcare were examined using X based data analytics. This approach allows for the examination of trends and discourse patterns rather than relying solely on direct survey responses, enhancing the study's scope in understanding AI ethics in healthcare. By utilising 5,035 data points, this study captures a data-driven representation of the perspectives within the larger healthcare workforce, which, according to the U.S. Bureau of Labor Statistics (BLS), comprises approximately 14.7 million professionals (BLS, 2022).

The study utilises 5,035 data analytics to examine ethical issues and artificial intelligence (AI) discourse among healthcare professionals in the United States, where the total healthcare workforce is approximately 14.7 million (U.S. Bureau of Labor Statistics, 2023). Besides, its relevance and validity can be justified based on data-driven representativeness, thematic saturation, comparability with prior studies, and targeted analytical depth (Lithy, 2025).

For instance, data analytics captures naturally occurring discussions, behaviours, and interactions, offering a more organic and unbiased insight into healthcare professionals' perspectives on AI ethics. The large-scale and diverse nature of digital data sources enhance the generalisability of the findings. This study prioritises capturing highly relevant discussions among professionals actively engaging in AI-related ethical conversations on X (Somerville, Codd & Gowran, 2025).

Also, a dataset of 5,035 analytics is sufficiently large to capture diverse themes, sentiment trends, and ethical concerns discussed among healthcare professionals. Hence, the dataset ensures thematic saturation, which implies that the most relevant and recurring ethical issues surrounding AI in healthcare are adequately captured and analysed.

Prior research studies on AI ethics in healthcare rely on significantly smaller sample sizes, often in the range of a few hundred to a few thousand participants. The fact that this study surpasses such traditional research approaches in terms of volume makes it more robust in detecting discourse patterns and trends over time. It allows for deeper exploration of real-world discussions rather than relying solely on controlled surveys with limited participant pools (Abasilim et al., 2025). A comparison with prior studies by Győri, Perpék and Ádám (2025) and Whitley, Faydenko, Madigan and Finnell (2025) shows this dataset size is relatively large.

The study emphasises thematic depth over numerical representativeness, ensuring that the findings reflect substantive ethical concerns rather than a mere statistical proportion of the healthcare professionals. The credibility of the dataset is derived from the richness of extracted insights, making it a valuable and defensible sample for understanding the ethical discourse in AI and healthcare (Starke, Houkes, Sikora, Wegewitz & de Rijk, 2025).

The dataset of 5,035 analytics remains highly valid due to its ability to capture organic discussions, achieve thematic saturation, align with prior research standards, and focus on in-depth ethical analysis. This approach ensures that the study provides meaningful contributions to the discourse on AI and healthcare ethics (Lönnqvist, Sinervo, Kaihlanen & Elovainio, 2025).

This research procedures contain a measure of the healthcare professional's data analytics in-built in the likes, reposts, comments and views on X. Also, the inclusion and exclusion criteria were crucial towards the search terms for the analytics. For instance, the inclusion criteria involved search terms containing ethics, collaboration, AI, healthcare professionals and United States of America (USA). Likewise, the exclusion criteria involved search terms that were not related to inclusivity terms as contained in this research objectives.

The first month had 1500 data analytics. The second month had 2500 data analytics. The third month had 1035 data analytics. The addition of the data gathered for three months is as follows: 1500 +2500+1035= 5035 overall data analytics. The main data gathering took three (3) months for completion as shown in the figure 2 that follows.
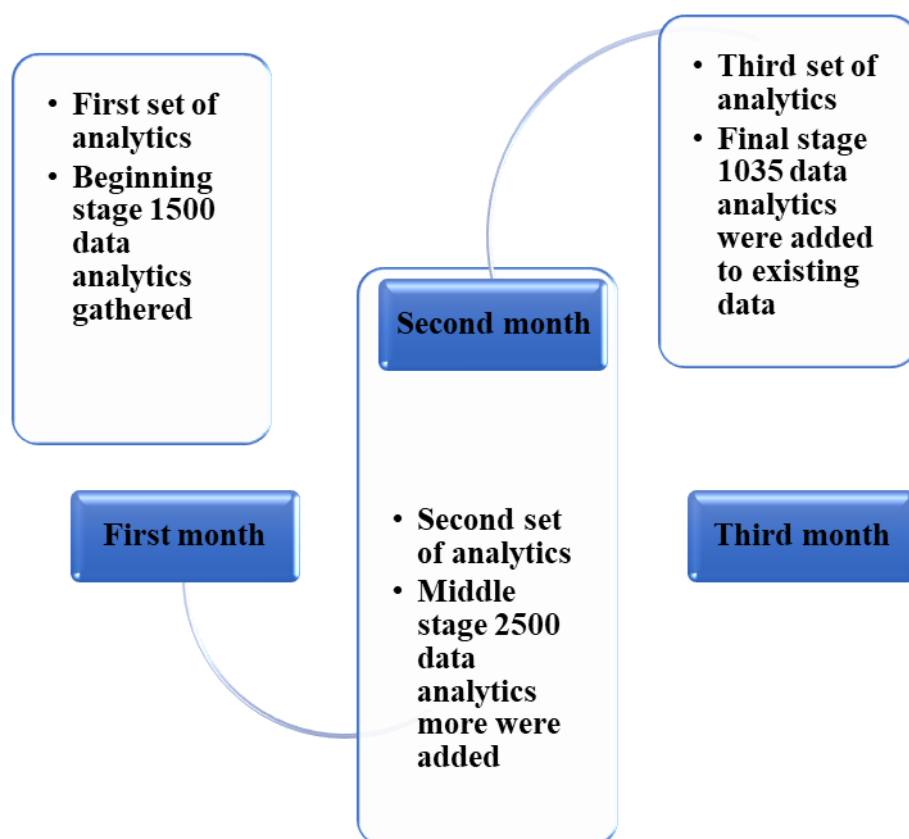
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Figure 2. Flow chart of data analytics gathering procedure.

This research adopted both inferential and descriptive statistics for data analyses. The inferential statistics involves the use of linear regression statistical model to test the significant relationship among factors investigated in this research. There were three (3) hypotheses tested for this study at $p < .05$ statistical level of significance.

However, the descriptive statistics involves percentage level of the healthcare professional's engagement for research question one.

This study adopted the statistical package for social sciences (SPSS) in analysing the data for this research.

This study adopted a social media called X (formerly twitter) as an online application for data analytics gathering. These data analytics were freely available on the internet and contained no personal user information. Hence, no ethical committee approval was required in this research since personal information data were not introduced. Notwithstanding, this study observed anonymity and privacy protection of data through confidential handling of user identities. Available literature shows that social media users are aware that all activities on social media online applications are freely and publicly accessible to other users. Also, additional literature evidence reveals that social media data are usable without consent and formal ethical committee approval as long as the user identities remain anonymous and confidential (Kennedy, Elgesem & Miguel, 2017).

RESULTS

Research question one:

Table 1: Level of engagement (comment) of healthcare professionals

	N	Overall Data	% Comments
Comments	3642	5035	72.3%

Research questions two, three and four were tested with hypotheses, one, two and three as follows:

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Hypothesis one:

Table 2: Significant influence between comments and views.

R	R²	Adjusted R²	R² Change	Sig.
.22	.05	.05	.05	.00

<div align="center">p< .05</div>

Hypothesis two:

Table 3: Significant influence between repost and views.

R	R²	Adjusted R²	R² Change	Sig.
.78	.61	.61	.61	.00

<div align="center">p<.05</div>

Hypothesis three:

Table 4: Significant influence between likes and views.

R	R²	Adjusted R²	R² Change	Sig.
.80	.60	.60	.60	.00

<div align="center">p<.05</div>

Interpretation of results:

The data analytics result show that 72.3% of USA health professionals were engaged in ethical collaboration and artificial intelligence discourse on X (see table 1). This measure falls within the third quarter (3/4) of the main data set (5035) on health professionals' engagement. This result likewise shows the high level of discourse on healthcare professionals' ethical collaboration and artificial intelligence in USA.

The hypothesis one result deduced from research question two show that there is a significant influence between healthcare professionals' ethical collaboration and artificial intelligence related comments and views (see table 2). Hence, hypothesis one (HO_1) was rejected.

The hypothesis two result deduced from research question three show that there is a significant influence of healthcare professionals' ethical collaboration and artificial intelligence related repost on views (see table 3). Hence, hypothesis two (HO_2) was rejected. There is strong relationship R=.78 between variables and the model's predictive power is strong at 61% based on the R^2= .61 value.

The hypothesis three results deduced from research question four show that there is a significant influence between healthcare professionals' ethical collaboration and artificial intelligence related likes on views (see table 4). Hence, hypothesis three (HO_3) was rejected. There is a strong relationship R=.8 between variables and the model's predictive power is strong at 60% based on R^2= .60 value.

DISCUSSION

There exist previous studies on healthcare professionals, artificial intelligence and ethical issues in USA with suggested limitations that calls for further studies. For instance, some of the limitations in previous studies show that areas related to healthcare professionals' ethical collaboration and artificial intelligence needs further research (Gunathilaka, Samaranayake & Weerasinghe, 2025).

Hence, this study fills a gap in healthcare professionals' ethical collaboration and AI use in USA. This study is consistent with previous research, which recommends for enquiry that address ethical collaboration between healthcare professionals to forestall failure in healthcare system (Bouderhem, 2024).

Besides, this research findings are consistent with previously existing knowledge on healthcare profession and artificial intelligence discourse. For instance, this research is consistent with Pustokhina et al, (2020) study related to healthcare professionals and artificial intelligence adoption. These researchers result was significant and shows the application of health analytics gathered from distant patients for quicker interventions (Kong & Yang, 2024).

Likewise, this research findings are consistent with previous study by Mridha, Uddin, Shin, Khadka and Mridha (2023). For instance, these researchers' findings were significant and promotes collaboration among healthcare workers to help in quicker disease diagnosis.

Collaboration between healthcare professionals' is for varieties of reasons. For instance, collaboration reduce the cost of hiring external experts. Collaboration based on healthcare expertise focus energy on similar minds for collective goal (Mittal, Sai & Chamola, 2024).

Hypotheses two and three (see tables 3 and 4) shows strong relationship between variables tested, which practically implies the high predictive power of these factors within the healthcare professional's circle. The AI application offer lots of opportunities for healthcare professionals' developmental goals (Yoon & Kim, 2015; Kaur et al, 2020).

This study findings theoretically implies the need for continuous healthcare professional development on AI and ethical collaboration practice. Besides, constant training on ethical issues and AI informs healthcare professionals on cautious use of artificial intelligence in the light of its proliferation (Yaseen et al, 2024).

This study findings theoretically implies that healthcare professional's interaction with AI still prioritise humanity as a determinant of the next line of action for artificially intelligent systems. Hence, healthcare professionals must serve as mediators during the use of AI for ethical reasons (Nedungadi, Surendran, Tang & Raman, 2024).

This research findings theoretically implies that attaining quality ethical collaboration is obscure without constant healthcare professionals' training and education. Likewise, the high conversational power of healthcare professionals as revealed in this study practically implies more hope for futuristic increase in ethical deployment of AI applications in USA healthcare system. Besides, it is believed that legislative concerns likewise dictate AI's utilisation by healthcare professionals (Wang, 2024). The AI presents serious challenges with regards to data safety and ethical collaboration between healthcare professionals (Fontes, De Almeida & Cunha, 2024).

This research practically implies that healthcare system automation has profound advantage in efficient workplace. However, this theoretically implies that AI is imperative tool for 21st century healthcare professionals. The futuristic treatment of patients is also more feasible with the introduction of AI (Jahan et al., 2023).

Notwithstanding, the high engagement results in this study and available literature show that some of the model outputs had low predictive power as evident in hypothesis one. Notwithstanding, the regression model outputs were significant despite their inability to predict all the deviation in the dependent variable as evident in hypothesis two and three testing of this research. Previous research has shown concerns on models' predictability for transparency and coherence (Turja, Kork, Ilomäki, Hellstrand & Koistinen, 2024).

This research introduced significant quantity of data with high predictability. However, it is recommended that further research introduces more cases of data analytics to boost the generalisation of findings. Also, this study predicted 60% of the relationship between factors involved in this research and it is recommended that subsequent research is needed in considering the remaining 40% factors that were not predicted in this research (Adams, 2023).

Also, this research recommends that future enquiry is required to adopt mixed methodology for data gathering processes as this study entails only quantitative data. Likewise, this research recommends that future study investigates a comparison of healthcare professionals' ethical collaboration and artificial intelligence discourse in other countries apart from USA (**Aiosa, Palesi & Sapuppo, 2023)**.

This research makes a practical recommendation that future study investigates the processes needed in designing and developing a more effective data management system with sufficient potential to constantly safeguard healthcare professionals' and patient's database when using AI (Al-Antari, 2023; Amjad, Kordel & Fernandes, 2023).

CONCLUSION

This study revealed significant influence on most of the engagement factors introduced in this research, which shows the high level of interest channelled towards the healthcare professional's collaborative ethics and AI discourse in USA. The results shows that the level of AI ethics still need more improvement for the betterment of patients' well-being. The artificial intelligence is a technology that currently affords faster patient treatment than it was in the past.

This research is relevant to existing knowledge in healthcare system as it contributes new findings to literature on healthcare professionals' ethical collaboration and artificial intelligence.

Conflict Of Interest

There is no conflict of interest in this research.

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