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CHATGPT ADOPTION IN UNIVERSITY EDUCATION 2023

**CHATGPT ADOPTION IN UNIVERSITY
EDUCATION: A DUAL PERSPECTIVE OF
HEALTHCARE EDUCATORS AND
STUDENTS**

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AND STUDENTS**

By
ELYSHA SII

A Research project submitted to the Department of Physiotherapy,
M. Kandiah Faculty of Medicine and Health Sciences,
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CHATGPT ADOPTION IN UNIVERSITY EDUCATION: A DUAL PERSPECTIVE OF HEALTHCARE EDUCATORS AND STUDENTS

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ABSTRACT

Background: ChatGPT is an emerging transformative technology that carries significant societal implications. In order to gauge the level of understanding and preparedness of UTAR educators and students for this innovative tool, it is essential to assess their awareness of ChatGPT. By examining the understanding, perceptions, and attitudes of both educators and students towards such technologies, valuable insights can be gained, especially considering ChatGPT's potential to play a crucial role in education. This study aims to explore and compare the awareness, perceptions, and opinions of educators and students concerning ChatGPT. Understanding the difference between these two groups can provide understanding into how technology is seen in the educational setting and how it might be successfully incorporated into the university learning environments at UTAR.

Objectives: The purpose of this study is to determine and compare the awareness, perceptions, and opinions towards ChatGPT among UTAR students.

Methods: This cross-sectional questionnaire study investigates the awareness, perceptions, and opinions of UTAR Sungai Long Campus MK FMHS educators and students regarding ChatGPT. Sample size calculations resulted in 84 educators and 249 students, selected through convenience sampling. The reliable and validated questionnaire, adapted from Syed and Basil A. Al-Rawi (2023), assesses demographics, awareness, perceptions, and opinions. The study aims to provide information regarding the integration of ChatGPT in healthcare education at UTAR Sungai Long Campus MK FMHS. Microsoft

Excel and SPSS software was used to analyse the data gathered and to generate the findings from the research. Descriptive statistics was used to analyse all the data, which will be presented as frequency.

Results: The total 280 responses collected, there were 5 participants who were found to be ineligible. These data were removed from the data analysis process and hence there were only 275 responses were processed in the final stage of the study. There are 74 educators and 201 students participated in this study. Occasional ChatGPT usage is prevalent (35.2% educators, 34.8% students), with positive experiences reported by 52.7% of educators and 67.2% of students. In clinical settings, 87.8% of educators and 50.7% of students abstain. Educators (62.2%) reject ChatGPT replacing their profession, while students see it positively, viewing it as helpful (71.1%) and improving their field (58.2%). Both lack formal education on ChatGPT (66.2% educators, 69.7% students). Educators hold mixed views on devaluation, error reduction, and access facilitation, while students strongly disagree on devaluation (59.2%) but support its role in reducing errors (60.7%) and facilitating access (63.7%). Students strongly support including ChatGPT in academic curriculum (70.6% for knowledge and skills, 60.7% for applications), emphasizing diverse perspectives in integration.

Conclusion: This study shows that there is a gap between the views of educators and students. Educators appear to have more negative opinions towards ChatGPT and how it can affect the healthcare industry. Opposingly, students seem to be more positive overall and see ChatGPT as a technology that can improve several healthcare delivery features.

Keywords: ChatGPT, Artificial Intelligence, Awareness, Perceptions, Opinions, Medical, Health Sciences, Academic

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APPROVAL SHEET

This Research project entitled “**CHATGPT ADOPTION IN UNIVERSITY EDUCATION: A DUAL PERSPECTIVE OF HEALTHCARE EDUCATORS AND STUDENTS**” was prepared by ELYSHA SII and submitted as partial fulfilment of the requirements for the degree of Bachelor of Physiotherapy (Honours) at Universiti Tunku Abdul Rahman.

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PERMISSION SHEET

It is hereby certified that **ELYSHA SII** (ID No: **21UMB029779**) has completed this Research project entitled “CHATGPT ADOPTION IN UNIVERSITY EDUCATION: A DUAL PERSPECTIVE OF HEALTHCARE EDUCATORS AND STUDENTS” under the supervision of MS PREMALA KIRSHNAN (Supervisor) from the Department of Physiotherapy, Faculty of Medicine and Health sciences.

Yours truly,



(ELYSHA)

DECLARATION

I hereby declare that the Research project is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UTAR or other institutions.

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Date: 23/01/2024

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LIST OF ABBREVIATIONS

AGI	Artificial general intelligence
AI	Artificial Intelligence
GPT	Generative Pre-training Transformer
LLM	Large language models
MBBS	Bachelor of Medicine and Bachelor of Surgery
MK FMHS	M. Kandiah Faculty of Medicine and Health Sciences
NLP	Natural language processing
NS	Bachelor of Nursing
PS	Bachelor of Physiotherapy
TCM	Bachelor of Chinese Medicine
UTAR	Universiti Tunku Abdul Rahman

CHAPTER 1

BACKGROUND

1.1 Chapter Overview

This chapter will provide an overview of the study's history, problem statement, and research question. Following that, the research's goals and aims will be covered. Following the operational definition used in the research study, the purpose and scope of the study will also be addressed.

1.2 Background of study

1.2.1 Historical Context and Evolution of AI (1950s-2010s)

In the middle of the 20th century, John McCarthy and Alan Turing, two pioneers in the field, laid the groundwork for artificial intelligence (AI) research and development. In the 1950s and 1960s, AI research was primarily concerned with creating computer programmes that could carry out activities that were previously only performed by humans, such as playing chess or solving mathematical equations. Research in AI slowed down in the 1970s and 1980s, creating a period known as the "AI winter." Due to unmet expectations and few real-world applications, funding and interest in AI have declined. Improvements in machine learning and neural networks in the 1990s and early 2000s rekindled interest in AI. These techniques enabled computers to derive predictions or

choices from data without explicit programming. (Rasetti, 2020; Bottazzi & Bartlett, 2019)

1.2.2 Rise of AI and Integration into Daily Life (2010s-2020s)

Deep learning advancements were made possible by the development of big data and the accessibility of powerful computer resources in the 2010s. Huge volumes of data could be processed and analysed by computers thanks to deep learning algorithms, which were inspired by the structure of the human brain. This led to substantial improvements in fields like picture identification and natural language processing. AI is now incorporated into many facets of our life, including voice assistants like Siri and Alexa, recommendation engines, self-driving cars, and healthcare software. With continuous study in topics like ethical issues, explainable AI, and reinforcement learning, AI is still evolving quickly (Rasetti, 2020; Bottazzi & Bartlett, 2019). According to Matthew Woodward (2022), there will be around 4.2 billion devices with AI assistants by 2021. This number is anticipated to double by 2024 to 8.4+ billion devices with AI assistants. An interesting finding was that almost 40% of smartphone users claimed they use voice search on their phones with AI-powered assistants at least once a day. Furthermore, according to Costello (2019), The number of companies utilising AI services increased by 270% between 2015 and 2019. Only 10% of organisations in 2015 had already employed AI or had plans to do so soon. This proportion had risen to 37% by 2019.

1.2.3 Introduction to ChatGPT and its Rapid Adoption

One of the most outstanding advanced AI technologies is ChatGPT. On November 30, 2022, ChatGPT made its first appearance in the public domain as a powerful language processing tool and within a week had more than a million subscribers (OpenAI, 2019). The globe was taken aback by the advanced ability of the generative AI tool ChatGPT to do impressively complicated jobs. This AI chatbot employs a neural network machine learning model and generative pre-trained transformer (GTP) to draw from a large amount of data to create conversation-style responses in various written content, for a variety of domains, from history to philosophy, science to technology, banking, marketing, and entertainment, in the form of articles, social media posts, essays, computer programming codes, and emails (Adamopoulou & Moussiades, 2020). Based on data from SimilarWeb (2023) as of June 2023, Over the past 30 days, ChatGPT has had almost 1.6 billion visits. That is a 160% increase from the 1 billion in February 2023. And around 7 times greater than the 266 million visitors in December 2022. The bounce rate for ChatGPT is 38.67%. An average of 4.26 pages are seen by each ChatGPT user every visit. Additionally, each person stays on the page for an average of 7 minutes and 27 seconds.

1.2.4 ChatGPT in Academic and Medical Education

ChatGPT is a modern AI system that can produce human-like writing in response to user input, it has established itself in the academic field, notably in

the field of medical education. According to Gilson et al. (2023), ChatGPT has attained the level required to pass a test for third-year medical students. Educators have mixed thoughts about ChatGPT's exceptional capacities to carry out complicated tasks in the realm of education because this development in AI appears to revolutionize current educational praxis (Baidoo-Anu & Owusu Ansah, 2023). Concerns regarding what and how to educate the future generation have been raised as a result of the major changes AI is making to the labour market, which is one of education's main functions. These issues underline the need of educating future individuals to provide them with the necessary abilities and skills to survive in the fast-changing world (Zhai, 2022).

1.2.5 Student Perspectives and Educational Challenges

A major educational concern emerges with the appearance of massive language models: Will these models present an opportunity or a challenge to the current teaching and learning frameworks? Students are core players in this situation. Understanding their perspectives is critical for answering this question. According to a study done by Abdulhadi Shoufan (2023), high levels of curiosity, appreciation, and motivation were shown by the students for ChatGPT. Since it improves students' self-regulation, teamwork, problem-solving, and joy of learning, interest is very relevant to learning. These views may have been influenced by a variety of elements, including clear explanations, simplicity of use, conversational tone, and educational value. By assessing information on prior accomplishments and learning preferences, ChatGPT may help students

prepare for exams more effectively. ChatGPT may be used to provide virtual tutoring services by assessing data on a person's educational needs and offering tailored suggestions for private courses (Gill & Kaur, 2023).

ChatGPT used in education, however, have a number of drawbacks and difficulties. These include issues with coping with misspellings, comprehending colloquial language, processing student inputs, and replicating natural conversation flow, leading to experiences devoid of human feeling (Abdulhadi Shoufan, 2023). Additionally, it has been trained on a significant quantity of data, but as the model is only trained on data up to 2021, it could not be aware of events that occur beyond that year (OpenAI, 2022).

1.2.6 Potential and Limitations in Clinical Settings

Virtual health assistants like ChatGPT provide exciting possibilities for clinical settings. By improving the understanding of medical information and resolving coordination and equipment issues, these assistants enhance patient communication. By providing remote health monitoring, filling up the gaps in mental health assistance, and helping primary care doctors manage chronic conditions, these assistants reinvent remote patient care (Medina-García et al., 2022; Giroux et al., 2022). Benoit (2023) determined that ChatGPT has outstanding diagnostic capability, with a final diagnosis accuracy of 76.9% and a cross-sectional accuracy of 71.7% for 36 clinical situations. Additionally, the study shows that ChatGPT can create, alter, and assess clinical vignettes with a decent level of accuracy. However, it is important to understand that while it

benefits clinical and diagnostic decisions, it should never be used in place of qualified healthcare professionals.

1.2.7 Concluding Remarks

In short, ChatGPT is a viable source for an interactive tool in medical education to enhance learning but it, however, is still in its initial stages of development and, as such, exhibits some limitations and drawbacks (Temsah et al., 2023). Exploring and comparing the difference between the awareness, perceptions, and opinions towards ChatGPT among UTAR MK FMHS faculty educators and students has the potential to illuminate the educational community on the effectiveness and acceptance of AI-powered learning aids. By performing a thorough investigation, we may acquire important information about how ready educators and students are to accept ChatGPT as a teaching and learning tool and spot any obstacles or worries that would prevent its effective integration. This study tries to condense and integrate the existing understanding of ChatGPT in healthcare and medical education among UTAR MK FMHS faculty educators and students.

1.3 Problem Statement

There are currently few studies that clearly compare and analyse educators' and students' understanding of, perceptions of, and views towards ChatGPT in the educational setting. Although research on AI in education have been conducted, relatively few have particularly examined ChatGPT's

integration and effects on both educators and students. (Abdulhadi Shoufan, 2023; Syed & Basil A. Al-Rawi, 2023) Examining the particular effects of ChatGPT in educational contexts is essential because the majority of current research in this field focuses on more general AI applications or other AI-powered technologies. By examining educators' and students' perceptions of ChatGPT and illuminating their attitudes, worries, and expectations, this study seeks to close this gap. The results of this study can give educational institutions and policymakers useful information about how to use ChatGPT to improve teaching and learning experiences. A seamless and responsible integration of ChatGPT into the educational environment may also be ensured by comprehending the various points of view and developing suitable training programmes and support systems. The outcomes can also give lecturers and students information on the possible advantages and drawbacks of utilizing ChatGPT, empowering them to decide whether to include it as part of their academic efforts.

1.4 Research Problem

1. What is the level of awareness towards ChatGPT among MK FMHS faculty educators and students at UTAR Sungai Long Campus?
2. How do MK FMHS faculty educators and students at UTAR Sungai Long Campus perceive ChatGPT in terms of its capabilities and potential uses?
3. What are the opinions of MK FMHS faculty educators and students at UTAR Sungai Long Campus towards ChatGPT?

4. What are the differences between UTAR MK FMHS educators' and students' awareness, perceptions, and opinions towards ChatGPT?

1.5 Aim

The primary aim of this research is to thoroughly evaluate and compare the awareness, perceptions, and opinions of two crucial university education stakeholders—educators and students—regarding the implementation of ChatGPT as a teaching or learning tool.

1.6 Objectives

1. To assess the level of awareness towards ChatGPT among MK FMHS faculty educators and students at UTAR Sungai Long Campus.
2. To explore the perceptions of MK FMHS faculty educators and students at UTAR Sungai Long Campus towards ChatGPT in terms of its capabilities and potential uses.
3. To examine the opinions of MK FMHS faculty educators and students at UTAR Sungai Long Campus towards ChatGPT.
4. To compare the differences between UTAR MK FMHS educators' and students' awareness, perceptions, and opinions towards ChatGPT.

1.7 Operational Definition

1.7.1 ChatGPT

ChatGPT is a sophisticated language processing tool designed by OpenAI and released on November 30, 2022, to be a model that can produce, categorise, and summarise text with high levels of coherence and accuracy. (OpenAI, 2019)

1.7.2 Dual Perspective

A way to provide opposing or complementary viewpoints on a crucial problem (Picciotto & Esch, 2016). For this study, the awareness, perceptions, and opinions of both university educators and students regarding ChatGPT will be assessed and compared.

1.7.3 Adoption

The level to which educators and students use ChatGPT technology in a variety of teaching and learning activities, as well as in assessments and communication.

1.7.4 University Education

As known as tertiary education; refers to the advanced level of learning offered by universities and higher education institutions.

1.7.5 UTAR Sungai Long Campus

The campus of Universiti Tunku Abdul Rahman (UTAR) at Bandar Sungai Long, Kajang, Selangor, Malaysia.

1.7.6 MK FMHS

The M. Kandiah Faculty of Medicine and Health Sciences (MK FMHS) was founded on November 16, 2009, at Universiti Tunku Abdul Rahman. It is a centre of instruction and research for medical and health sciences. (Faculty of Medicine and Health Sciences, n.d.) The faculty will consist of 3 departments: Bachelor of Medicine and Bachelor of Surgery (MBBS), Department of Traditional Chinese Medicine (TCM), Department of Physiotherapy (PS), and Department of Nursing (NS).

1.7.7 Healthcare

The system or business to provide medical services to a community or individuals (Cambridge Dictionary, 2019a).

1.7.8 Educators

Active academic staff in UTAR MK FMHS faculty.

1.7.9 Students

Active undergraduate students in UTAR MK FMHS faculty.

1.7.10 Awareness

Knowing something existing or having current knowledge of a situation or topic based on information or experience (Cambridge Dictionary, 2019). For this study, participants are asked to assess their awareness of ChatGPT, including its possible influence on their career, its widespread use in Malaysia, and their formal AI education as part of this study.

1.7.11 Perceptions

An idea or viewpoint that is frequently shared by many individuals and based on how things appear (Cambridge Dictionary, 2020). This research will assess participants' perceptions of how ChatGPT has affected their profession in various ways, including how it has affected the devaluation of their profession, the reduction of errors, the clients' access to services and information, the accuracy of their decisions, the clients' confidence, the clients' education, the professional-client relationship, the client's control over services, the confidentiality of the information, and the client's access to services.

1.7.12 Opinions

A notion or conviction towards something or someone (Cambridge Dictionary, 2023). This study aims to gather opinions on whether specific statements related to ChatGPT should be included in the academic curriculum. The statements cover ChatGPT knowledge and skills, its use in reducing career mistakes,

training on ChatGPT ethical issues, a condensed lecture on ChatGPT, applications that give customers more control over services, ChatGPT in scientific research, and ChatGPT-assisted emergency responses. Participants are asked to answer whether they agree, disagree, or don't know about each statement.

1.8 Rationale of Study

While several studies have examined through the general uses of AI in educational settings, there has not been much in-depth research on assessing or comparing the educators' and students' awareness, perceptions, and opinions towards ChatGPT (Lo, 2023; Tlili et al., 2023). The knowledge about how educators and students perceive and use this advanced AI technology is restricted by this gap. By filling up this gap, the study aims to give significant information on the adoption and implications of ChatGPT in educational settings, providing a basis for wise judgements, successful integration methods, and the improvement of teaching and learning experiences. By doing so, this study aims to assess and compare both UTAR MK FMHS faculty educators' and students' awareness, perceptions and opinions towards ChatGPT. Understanding how ChatGPT is seen by the younger generation, who are anticipated to be early adopters and heavy users of such technology, may be gained by analysing the awareness, attitudes, and views of UTAR Sungai Long Campus students.

With the findings of this study, educators may obtain important information on how both themselves and their students perceive and comprehend ChatGPT. Educators can improve student engagement and learning results by catering to the preferences and requirements of their pupils. The study can help educators by increasing their knowledge of AI technology, allowing them to modify their teaching strategies, and boosting their professional development.

This study may benefit students by enhancing their educational experience and allowing better ChatGPT usage. Students can use ChatGPT to help their learning journey more effectively by being aware of the tool's possible advantages and drawbacks.

The research findings can help healthcare faculty with ChatGPT integration into medical education. Faculty may create a medical education that efficiently uses AI technology by recognising the possible applications of ChatGPT.

The findings may be used to the university's advantage by thoughtfully integrating ChatGPT and other AI tools into its instructional programmes. Utilising the gained knowledge, the university may offer modern and appropriate education, establishing a reputation as a forward-thinking organisation that provides students with advanced abilities.

The research findings can be used by policymakers to influence decisions on adopting AI technology into healthcare and education systems. Policymakers may create regulations that support the ethical and successful integration of AI by taking into consideration the views and opinions of educators and students.

1.9 Scope of Study

This research aims to explore and compare the awareness, perceptions, and opinions regarding ChatGPT among MK FMHS educators and students at UTAR's Sungai Long Campus. By investigating the level of familiarity, attitudes, and views towards ChatGPT in this academic community, valuable insights can be gained to enhance its integration and potential applications in the educational context.

CHAPTER 2

LITERATURE REVIEW

2.1 Chapter Overview

This chapter provides the context for the research paper by discussing several topics from previous journals and literature that have connections to the current investigation.

2.2 What is ChatGPT? An Overview of ChatGPT

2.2.1 What is Artificial Intelligence (AI)?

Artificial intelligence (AI) is an area of computer science that attempts to develop intelligent robots that can mimic human thought and behaviour. These AI systems have the capacity to learn from their surroundings and create wise judgments depending on the data presented. They have proven they are capable of resolving complicated issues in a variety of fields, including natural language processing, autonomous driving, and medical diagnosis (Deng & Lin, 2023). Natural language processing (NLP), machine learning, and deep learning are a few of the several types of AI. While deep learning, a subset of machine learning, uses neural networks to analyse data, machine learning includes utilising algorithms to learn from data and create predictions. NLP specialises in using algorithms to understand and produce human-like communications (Deng et al., 2019).

A specialised type of machine learning known as neural networks functions similarly to the human brain. Data travels across the input, hidden, and output layers, which are layers made up of linked nodes. The strengths of connections between nodes are controlled by weights, and the output is filtered and transformed by an activation function (Deng & Lin, 2023). Neural networks have become a potent tool in NLP, providing accurate and context-sensitive language processing. Tasks like text categorization, machine translation, speech recognition, named entity recognition, and text production depend on them. These developments have improved the capabilities of AI systems, which has accelerated the use of AI technology across a range of spheres in our everyday lives.

2.2.2 Introduction to ChatGPT and How It Work

Among advanced natural language processing (NLP) systems, ChatGPT is one example. ChatGPT, a chatbot, uses the GPT-3 language model to generate responses in response to user input. Generative The large-scale language model known as Pre-trained Transformer 3, or GPT-3, was developed by OpenAI and is capable of producing text with 175 billion parameters. It was trained using a substantial amount of data. Chat GPT uses the capabilities of GPT-3 to respond to user input conversationally and naturally (OpenAI, 2019).

ChatGPT integrates a number of technologies, including deep learning, independent learning, instruction fine-tuning, concurrent learning, in-context

learning, and reinforcement learning, to provide its many impressive capabilities (Wu et al., 2023).

The selection of ChatGPT as a significant component of this study is supported by its advanced natural language processing abilities, user-friendly interface, potential for customised medical orientation, flexibility across healthcare situations, and its significant status among AI systems. ChatGPT will be used to assess and compare awareness, perceptions, and opinions among clinical healthcare educators and students. Unlike other AI systems, ChatGPT excels in producing highly related and contextually appropriate replies, promoting successful communication in clinical engagements. In comparison to more complicated AI systems, its user-friendly design assures accessibility for people with various technical backgrounds. Additionally, ChatGPT stands out from less adaptable AI competitors due to its ability to provide personalised counsel, which is in line with the patient-focused approach that modern healthcare aims for (Mogavi, Reza Hadi et al., 2023). ChatGPT is a front-runner in the quickly developing field of AI in healthcare, making it a prime choice for researching its potential influence on healthcare practice and education from the different perspectives of educators and students (Sallam, 2023).

2.2.3 Applications and Features of ChatGPT

One of ChatGPT's key features is its ability to comprehend natural language input and reply accordingly. ChatGPT uses natural language

processing (NLP) to analyse user input and generate suitable responses. Because of this, users may interact with ChatGPT in a way that seems natural, just as they would with a real person (FIRAT, 2023).

The capabilities of ChatGPT are the result of intensive training on enormous volumes of text data. The model can understand the fine distinction and patterns of human language usage according to this huge collection that includes various language data, which enhances its capacity to produce coherent and contextually appropriate replies. (Wu et al., 2023) The use of in-context learning by ChatGPT is a key feature that distinguishes it from other platforms. ChatGPT considers the full conversation context as opposed to conventional language models, which treat each input independently. The model can better grasp the dialogue by considering earlier sections of the exchange. As a result, it can respond in a way that fits the conversation's flow and maintains its relevance to the topic at hand. (Dwivedi et al., 2023; Wu et al., 2023)

Concisely, ChatGPT's success as a language model is a result of its massive text data training, in-context learning strategy, and ongoing reinforcement through human input. By utilising these techniques and going through a number of technological processes, ChatGPT has become a potent tool with the ability to comprehend and provide human-like answers, enhancing interactions and discussions across a wide variety of applications (Ray, 2023).

2.2.4 Summary

AI has reshaped a number of industries by simulating human reasoning and behaviour to address challenging issues. ChatGPT stands out among revolutionary AI systems. Unlike conventional models, ChatGPT excels at comprehending context, parsing spoken language, and producing human-like replies. Deep learning, autonomous learning, and reinforcement learning techniques form the foundation of its extraordinary skills. For evaluating the viewpoints of clinical educators and students, ChatGPT was chosen due to its advanced language processing, user-friendly design, personalised medical counselling, flexibility in healthcare, and notable AI status. ChatGPT is a strong choice for research into its effects on healthcare education since, in contrast to other systems, it excels at generating appropriate replies, accessibility, and patient-oriented assistance.

2.3 Using ChatGPT for Enhancing Teaching and Learning

2.3.1 ChatGPT Integration in Educational Settings

The integration of ChatGPT into educational environments has the potential to improve learning outcomes. Educators may give students immediate access to precise information on theory-based topics by utilizing this innovative language model, especially in communication, business writing, and composition classes. The precise and brief responses produced by ChatGPT can function as a dependable source for prompt clarifications and answers, saving time and enhancing learning effectiveness. (Halaweh, 2023)

Since ChatGPT is still a recent technology, many academic staff members and students might not be familiar with it or may just have heard of it without really using or investigating it. Training should be offered to teach them about the tool's operations, how to assess accuracy and information, and how to track inquiries as described in the article in order to make sure they can use it effectively (Halaweh, 2023).

2.3.2 AI Chatbots for Educators: Providing Support

By identifying both the strengths and weaknesses within a given task in a wide range of assignments, including research articles, academic essays, and other types of written coursework, ChatGPT has the potential to automatize and improve the grading system. ChatGPT has also been suggested as a tool that could be used to semi-automate the grading process for students' work. In this situation, educators might modify the reports produced by such a model to give students useful feedback in situations involving formative evaluation. Additionally, ChatGPT may be used to provide a more accurate assessment of a student's learning problems and progress. This can help educators identify the areas in which students struggle, enabling them to focus on treatments more successfully (Kasneci et al., 2023).

ChatGPT can follow the progress of students' assignments, tests, and quizzes using machine learning techniques, and they can alert the students in a nice and motivational manner if they are falling behind so they may take the necessary action. They can also let the professors know how a pupil is doing

(Pereira and Juanan, 2016). There is mounting evidence that using chatbots/bots encourages pupils to study and keeps them interested in the subject matter (Diwanji et al., 2018).

2.3.3 Student Interaction and Engagement

Recent studies have shown that chatbots, like ChatGPT, may significantly improve learning experiences by enhancing learning performance, raising engagement, and giving students feedback and encouragement for extracurricular activities (YILDIZ DURAK & ONAN, 2023). According to research done by Pinto dos Santos et al. (2018), the majority (85.2%) of medical students had heard of AI, and half of them (52.5%) were even aware that it has recently been addressed in the medical field, even if most of them (30.8%) did not necessarily comprehend the fundamental technical principles behind AI.

According to Syed and Basil A. Al-Rawi (2023), pharmacy students at a Saudi university in Riyadh appeared to have favourable attitudes, awareness of, and positive opinions towards AI and its use in the healthcare context. The study found that 73.9% of the students were familiar with AI. Furthermore, 69.4% of the students believed that AI is a technology that is helpful to healthcare professionals. More than half of the students (57.3%) believed that the widespread application of AI will help healthcare practitioners enhance. Additionally, 75.1% of the students agree that AI is able to reduce medical practice mistakes. The findings indicated that students need to be aware of emerging medical technologies, such as AI, as well as their development and

effect. Consideration should be given to educational programmes regarding the treatment, with an emphasis on how well-liked this new therapeutic approach is. To guarantee that face-to-face courses are afterwards offered in an appropriate online format with applicable evaluations and activities without overburdening, more efforts might be required (Syed & Basil A. Al-Rawi, 2023). Regrettably, there are several limitations to this study. The study was mostly done among pharmacy students and only addressed the field of AI. However, this study tries to widen its reach to include a more varied range of target people in a concentrated effort to solve these constraints. With this objective in mind, the research design has been modified to include an evaluation of ChatGPT awareness, attitudes, and views among students studying the health sciences. As is clear, there is a considerable vacuum in the literature that directly contrasts educators' and students' viewpoints on ChatGPT or AI in order to identify any potential differences between the two groups. As a result, this study also examines the perspectives of educators. The information gathered will make it possible to distinguish between educators and students with transparency.

2.3.4 Summary

By automating grading tasks and assisting educators in delivering feedback, ChatGPT integration in education provides students with rapid and accurate information. These AI chatbots can improve student engagement and educational experiences by providing individualised encouragement and help. Syed and Basil A. Al-Rawi (2023) have done a study among pharmacy students to investigate their awareness, perceptions and opinions. However, the previous

study's scope was restricted by its main focus on pharmacy students and AI. The research attempts to modify to account for a wider range of ChatGPT awareness, attitudes, and views among health science students in order to address this limitation. By contrasting educators' and students' opinions on ChatGPT and AI, the study also intends to fill the gap in the literature by offering a thorough knowledge of any differences between the two groups.

2.4 Evaluating Effects of ChatGPT on Academic Integrity

2.4.1 Potential Effects on Academic Integrity

Concerns have been raised about the development of ChatGPT and its potential impact on academic integrity. The rise of AI has put the conventional methods of clinical practice and learning to the test. A study investigated the capacity of ChatGPT to generate writing that is indistinguishable from human-written text, execute high-order thinking tasks, and be used as a tool for academic dishonesty in online exams. (Susnjak, 2022)

The result from the study done by Mijwil et al. (2023), has shown that ChatGPT excels in giving quick and accurate information with extraordinary language that is devoid of grammatical mistakes, even if it cannot generate academic writing that fulfils the requirements necessary for publishing in academic publications. In reality, they wrote their essay using ChatGPT as a writing tool, which they then revised and edited to meet academic requirements. It is important to remember that AI-based technologies like ChatGPT assist rather than replace human work. While they can help with finishing jobs and

writing quality improvement, they cannot fully replace human writing and critical thinking skills. Therefore, it's essential to understand AI's limits and to employ it in addition to rather than as a substitute for human work.

2.4.2 Cheating detection and prevention using ChatGPT

It is significant to mention that the integrity of academic submissions may be at risk due to the recent development of AI models like ChatGPT (Cotton et al., 2023; Susnjak, 2022). By changing their evaluation methods, institutions should take action to stop and catch cheating that leverages AI models like ChatGPT. Students must also be informed of their schools' regulations on academic integrity and the repercussions of cheating. Results produced by ChatGPT should not be included in any student submissions. Additionally, because ChatGPT is not a person and is not responsible for any created work, researchers do not advocate adding ChatGPT as an author (Lund & Wang, 2023; Thorp, 2023).

The solution could be found in competing technologies or AI systems. Adopting technology to identify ChatGPT-generated results is one of the greatest strategies to stop students from using ChatGPT. There are several methods to utilize ChatGPT to prevent cheating in academic settings. By comparing submitted work to a database of published content, it may be used to spot plagiarism, for example. In the event that the AI model notices similarities between the two, it may notify the professor or educator, who can subsequently take the appropriate action to guarantee academic integrity. The resources and

database may be expanded by plagiarism tools, and this includes the created material of AI applications like ChatGPT. The institution is able to avoid plagiarism and preserve academic integrity in this way. (Ventayen, 2023)

2.4.3 Summary

The emergence of AI-powered chatbots like ChatGPT raises concerns about their possible application for producing material in educational environments, which might compromise academic integrity (Susnjak, 2022). While ChatGPT is effective at supplying accurate information, it is clear that it has limits when it comes to creating academic writing (Mijwil et al., 2023). The report highlights the necessity for a balanced approach, acknowledging AI's assistance while highlighting the indispensable nature of human critical thinking abilities in academics. The paper also examines methods for detecting and preventing cheating using AI-based solutions, emphasising the value of upholding academic integrity, and investigating efficient ways to use technology (Cotton et al., 2023; Lund & Wang, 2023; Thorp, 2023).

2.5 Opportunities and Limitations of ChatGPT as a Teaching and Learning Tool

2.5.1 Understanding the Opportunities of ChatGPT

ChatGPT gives educators and learners the chance to obtain precise responses to theory-based queries, especially in communication, business writing, and composition classes. Unlike search engines, which might not be accurate and relevant, ChatGPT's replies are succinct and effective. It is useful

in providing practical solutions for case studies, business letters, and essays, giving students beneficial information and suggestions for their projects. From the standpoint of the educator, implementing ChatGPT in the classroom makes it easier to show pupils how to write. The replies produced by ChatGPT may be debated, assessed, and used as examples, which promotes practical learning. Creating genuine workshop materials takes less time because of its quick response creation (AlAfnan et al., 2023).

2.5.2 Recognising the Limits of ChatGPT

For both students and educators, ChatGPT's potential also brings some major challenges. In order to prevent academic dishonesty, educators should oppose using it while writing evaluations or formal submissions, even though they may advocate its usage for concept descriptions and insights, mentioned AlAfnan et al. (2023) in their study. Due to ChatGPT's capacity to bypass plagiarism checks, students may be tempted to utilize it for last-minute submissions, which might have an adverse effect on their learning and long-term development. Students may grow dependent on AI, which might result in a lack of inventiveness and critical thinking.

For educators, measuring learning outcomes and maintaining fairness in the assessment is difficult when grading AI-generated replies. It can be challenging to distinguish between student work and AI-generated content when using ChatGPT's human-like answers, which may earn variable marks. As ChatGPT can skilfully paraphrase and bypass similarity tests, plagiarism

detection software becomes less accurate. To sustain academic integrity and the calibre of teaching and learning, the usage of ChatGPT necessitates careful thought and ethical application. (AlAfnan et al., 2023; Dwivedi et al., 2023)

2.5.3 Summary

ChatGPT offers a variety of opportunities for educators and students alike, providing exact answers to theoretical questions and assisting with practical work. The potential it holds also presents difficulties, as educators must manage its usage to prevent academic dishonesty and students may struggle with an excessive dependence on AI and the pressure to bypass conventional education. (AlAfnan et al., 2023; Dwivedi et al., 2023) The complicated interaction between technology and education is highlighted by the delicate balance between increased learning and retaining academic integrity.

2.6 ChatGPT in Healthcare

2.6.1 Application of ChatGPT in Healthcare Setting

Though using such technologies is not without challenges, the use of AI-driven language models, such as ChatGPT, has the potential to benefit medical field by reforming documentation procedures, improving workflows, and eventually result in more effective and patient-centred care (Nguyen & Pepping, 2023).

Evidence reveals that the length of healthcare case documentation has been rising over time, and clinical staff in the healthcare industry spend 35% of

their time documenting patient data (Rule et al., 2021). ChatGPT has the potential to speed up processes like creating healthcare progress notes by allowing users to create logical, correct language in a matter of seconds, which might also improve uniformity and quality.

Nguyen & Pepping (2023) evaluated ChatGPT's capacity to use quick programming to produce progress reports for chronic pain evaluation. ChatGPT created clear and accurate progress reports in a matter of seconds by modifying the prompts to incorporate note goals, patient information, and structure. The research group believed that ChatGPT may be applicable in conjunction with thoughtful instructions to create useful health progress reports, particularly in psychiatric settings.

2.6.2 Will Healthcare Professionals Be Replaced by ChatGPT?

Large language models (LLMs), such as ChatGPT and GPT-4, have gained popularity due to their remarkable performance, particularly in medical examinations, while having certain drawbacks in more specialised assessments. While claims that LLMs have attained artificial general intelligence (AGI) are exaggerated, they have demonstrated potential in jobs like language correction and administrative responsibilities. These models, like GPT-4, are trained on enormous datasets and optimised for responsiveness, but because to their lack of actual comprehension and reliance on the training data that is currently available, they still display errors. Discussions concerning AI development have been sparked by worries about safety, ethics, and replacement; nevertheless,

because LLMs rely on human-generated data and don't integrate with practical factors, incorporating them into complicated activities like healthcare remains difficult. (Brown et al., 2020; Bubeck et al., 2023; Ouyang et al., 2022)

Future models may show to be better decision-makers than experienced physicians, however this would eventually need to be demonstrated in big clinical trials comparing clinician judgements with AI conclusions. Clinicians won't be replaced, even if adequate technology is created and contentious clinical efficacy trials can be undertaken. Patients prefer human therapists who consider their unique circumstances and values because they fear autonomous AI (Esmailzadeh et al., 2021; Epstein & Street, 2011). Medical practitioners are thus not anticipated to be significantly affected by changes brought about by the growth of LLM apps since clinical practise necessitates more than just precisely answering questions or even improving the biological process of diagnosis and care (Eloundou et al., 2023). Assistance tools like ChatGPT may be very useful in medical setting, but AI is not yet ready to take our position as medical professionals (Arun James Thirunavukarasu, 2023).

2.6.3 Perceptions and Expectations of Healthcare Professionals

Mohamad-Hani Temsah et al. (2023) done a study recently in Saudi Arabia to investigate the perceptions and expectations of healthcare professionals towards ChatGPT. 18.4% of the participants said they have used ChatGPT for medical needs, while 84.1% of non-users said they would be

interested in using AI chatbots in the future. The majority of participants (75.1%) felt confident implementing ChatGPT in their healthcare setting. Healthcare workers (HCW) declared the chatbot was helpful for a variety of healthcare tasks, including medical decision-making (39.5%), patient and family support (44.7%), evaluating medical literature (48.5%), and assisting with medical research (65.9%). The majority (76.7%) said ChatGPT might improve healthcare systems in the future. But the biggest obstacles were found to be doubts regarding the veracity and the source of the data offered by AI Chatbots (46.9%).

However, this study is subject to limitations such as bias. The sampling method used is the researchers distributed a survey link via online platform including WhatsApp, Twitter, email invitations and more. Since participants may not accurately represent the entire population of healthcare workers, the sampling technique applied could create selection bias. Response bias may also be the result of individuals giving socially acceptable responses or misunderstanding questions (Mohamad-Hani Temsah et al., 2023). In order to overcome the limitations of their study, a structured questionnaire will be distributed to the participants physically. Additionally, participants are informed that if they have any queries about the study or questionnaire, they can ask immediately. By asking participants direct, straightforward questions, this strategy aims to reduce the impacts of response bias, increasing the chances of getting precise responses.

2.6.4 Summary

AI-driven language models like ChatGPT have the potential to improve healthcare documentation, workflows, and patient-centred care. However, concerns about safety, ethics, and replacement remain. A study was conducted in Saudi Arabia by Mohamad-Hani Tamsah et al. (2023) to examine how healthcare practitioners perceive and anticipate ChatGPT. Although this study has some limitations, such as selection and response bias due to survey distribution online, these problems are expected to be addressed by this study through using a physical structured questionnaire and encouraging immediate participant clarification to improve the accuracy of the response obtained.

2.7 Application of ChatGPT in Clinical Settings

2.7.1 Enhancing Patient Communication

Clinical care is heavily dependent on effective communication, but medical literature is frequently challenging for patients to read and understand. Issues include a lack of standardisation, antiquated equipment, poor coordination between health employees, and inadequate numbers of healthcare workers can lead to miscommunication, delays, and errors in patient treatment. Clinical settings may enhance patient care and results, as well as potentially save costs, through increasing communication. ChatGPT is one possible technique for enhancing communication in healthcare environments (Santandreu-Calonge et al., 2023).

In the healthcare industry, ChatGPT has the potential to be highly helpful, especially in crowded emergency rooms, where high patient numbers can result in overload, longer wait times, and perhaps compromised patient care. Healthcare professionals may improve patient priority, resource allocation, communication, and patient education in the emergency room context by utilising ChatGPT's features. Though ChatGPT and other artificial intelligence-generated content technologies for natural language processing offer great potential, they ought not to be utilised as a replacement for humans but should be used as assisting tools with caution instead. (Jacob et al., 2023; Santandreu-Calonge et al., 2023)

2.7.2 Virtual Health Assistants

By addressing a variety of healthcare issues, virtual health assistants like ChatGPT are redefining remote patient care. They make it possible for devices to remotely monitor lifestyles and health measurements, assisting healthcare professionals in keeping track of patient wellbeing (Medina-García et al., 2022). The potential for virtual care to offer mental health assistance to people with chronic conditions in disadvantaged locations is demonstrated by platforms like REACHOUT (Tang et al., 2022). While virtual healthcare cuts down on expenses, delays, and travel time, it may also draw attention to gaps caused by insufficient facilities and low knowledge about technology in rural areas (Giroux et al., 2022).

Due to factors including their knowledge and views, primary care physicians play a significant role in carrying out remote patient monitoring programmes for conditions like hypertension (Liyanage-Don et al., 2022). In distant Australian health systems, virtual clinical pharmacy services have shown the potential to enhance drug safety (Chambers et al., 2022). By collecting real-time patient data, the Internet of Things (IoT) assists in health monitoring and is beneficial to both medical professionals and caregivers. Virtual health assistants have the ability to improve healthcare quality and accessibility despite obstacles. As technology develops, their position will likely grow, which might have a big influence on distant patient care (Nagaraj et al., 2021).

2.7.3 Supporting Diagnostic Process

In medicine and medical microbiology, particularly in the clinical diagnosis process, ChatGPT, an AI chatbot with a wide language model that can reproduce and analyse spoken and written human communication, may be employed (Egli, 2023). Through testing ChatGPT on standardised clinical scenarios, Rao et al. (2023) assessed ChatGPT's capability for ongoing clinical decision assistance. With the highest performance in making a final diagnosis, ChatGPT had an accuracy of 76.9%, achieving a total accuracy of 71.7% across all 36 clinical scenarios. Another research examined ChatGPT's potential for creating, revising, and assessing collections of clinical vignettes. With reasonable accuracy, ChatGPT could create fresh sets of vignettes and rewrite preexisting ones (Benoit, 2023). Despite the fact that ChatGPT has shown

potential in assisting clinical decision-making, it is crucial to remain aware that it cannot take the place of a qualified medical professional.

2.7.4 Summary

In clinical settings, virtual health assistants like ChatGPT provide new opportunities. By assisting with medical information understanding and resolving issues with coordination and equipment, they improve patient communication. By enabling remote health monitoring, filling up the gaps in mental health assistance, and helping medical professionals keep track of chronic diseases, these assistants redefine remote patient care. Additionally, ChatGPT shows potential in assisting clinical decision-making, generating clinical vignettes, and supporting diagnostic procedures, but it's important to keep in mind that these capabilities should be used to supplement, not replace, qualified medical professionals.

CHAPTER 3

METHODOLOGY

3.1 Study Design

Cross-sectional Questionnaire Study.

3.2 Study Setting

Universtiti Tunku Abdul Rahman (UTAR) Sungai Long Campus.

3.3 Study Population

UTAR Sungai Long Campus M. Kandiah Faculty of Medicine and Health Sciences (MK FMHS) Educators and Students.

3.4 Sample Size

According to Krejcie and Morgan (1970) sampling method, a number calculated by the sample size formula can be used to determine the sample size.

UTAR Sungai Long Campus MK FMHS Educators:

$$\begin{aligned} s &= \frac{X^2NP(1-P)}{[d^2(N-1) + X^2P(1-P)]} \\ &= \frac{(3.831*107*0.5*0.5)}{[(0.05*0.05*106) + (3.831*0.5*0.5)]} \\ &= 84 \end{aligned}$$

UTAR Sungai Long Campus MK FMHS Students:

$$\begin{aligned}s &= \frac{X^2NP(1-P)}{[d^2(N-1) + X^2P(1-P)]} \\&= \frac{(3.831*700*0.5*0.5)}{[(0.05*0.05*699) + (3.831*0.5*0.5)]} \\&= \mathbf{249}\end{aligned}$$

s = required sample size

X² = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.831)

N = the population size

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size)

d = the degree of accuracy expressed as a proportion (0.05)

(Krejcie & Morgan, 1970)

333, the total sample size is calculated by using the formula above. UTAR has 107 educators currently involving in clinical settings and 700 students in the Sungai Long Campus MK FMHS faculty. Thus, according to the table, 84 educators and 249 students will make up the projected sample size.

However, the ideal final sample size for our study will be 366 individuals, with 10% of the initial sample size being used to accommodate any dropouts. This strategy guarantees a solid and trustworthy dataset, allowing us to derive valuable findings from the study.

3.5 Sampling Method

Convenience sampling method.

3.6 Inclusion Criteria

Participants will be included if they meet the following criteria:

1. Active UTAR educators and students in Sungai Long Campus MK FMHS faculty.
2. Both genders.

By limiting the study's population to a specific faculty (UTAR MK FMHS), it is ensured that the participants have similar backgrounds and contexts in healthcare education. This specialization aids in gaining focused and relevant insights into ChatGPT only from healthcare professionals and students.

Having both genders covered in the sample helps prevent prejudices that may result from a biased sample. It encourages variety and shows a commitment to comprehending the perspectives of people with different experiences in the context of healthcare education.

3.7 Exclusion Criteria

Participants will be excluded if they have the following conditions:

1. Pre-clinical educators.
2. Admin staff.

3. Part-time educators and students.
4. Year 1 students.
5. Postgraduate students.

Pre-clinical educators are excluded to ensure that the study targets only at those who are employed in clinical settings. This focus enables a deeper investigation of the awareness, perceptions, and opinions regarding ChatGPT within the context of practical healthcare education.

Administrative staff may not directly engage in the educational aspects of healthcare training. Excluding admin staff helps maintain a clear focus on individuals directly involved in clinical practice in healthcare settings. By doing this, the results of the research are certain to have a greater immediate impact on healthcare education.

Part-time educators and students may have different levels of commitment and engagement compared to their full-time counterparts. Excluding part-time individuals helps ensure a more consistent level of involvement and commitment among participants, which makes the context for analysing awareness and opinions more evenly distributed.

Students in their first year of study might not have had as much exposure to the clinical settings and medical training tools. Excluding them allows the study to focus on individuals with more substantial experience in the faculty, providing insights from participants who have progressed further in their education and training.

Compared to undergraduate students, postgraduate students could have different educational demands, experiences, and viewpoints. Excluding postgraduate students helps to maintain a more specific participant group, allowing for a more targeted investigation into the perspectives of individuals at a similar educational level.

3.8 Instrumentation

A reliable questionnaire (refer to Appendix IV) which was adapted from previous research done by Syed and Basil A. Al-Rawi (2023), was used to determine the awareness, perceptions, and opinions among participants. The survey comprised six sections. The informed consent section (refer to Appendix II) was the first part, in which participants are given a brief description of the research's goals, methods, potential risks and benefits, confidentiality protection, and the researcher's contact information.

In the second part of the research, participants were given a detailed personal data protection notice emphasizing the significance of privacy and confidentiality (refer to Appendix III). After thoroughly understanding the consequences and receiving guarantees about data protection, participants were kindly asked to give their agreement, stating their willingness to engage in the research.

In the third part of the study, participants were asked to provide vital demographic information. This information contained vital details like their age, gender, nationality, the current academic programmes they are enrolled in, and

the number of years they have been either enrolled in studies at the institution or teaching at UTAR. In addition, to aiding in the categorization and comprehension of the varied sample, the collection of this demographic information enabled meaningful studies of the potential relationships between participant characteristics and their viewpoints on ChatGPT.

The assessment of participants' knowledge and familiarity with ChatGPT was a focus of the fourth part of the questionnaire. Three questions made up this component, which were used to determine how well-versed and knowledgeable they are about this advanced technology.

In the fifth part, participants' perceptions of ChatGPT were evaluated through eleven questions presented in a Likert scale format with five response options: "strongly agree," "agree," "neutral," "disagree," and "strongly disagree". This part aimed to assess participants' perceptions of ChatGPT, covering topics such as its definition, applications, features in the medical and health sciences field, and its role in various domains.

Part six comprised seven questions. The purpose of this part was to evaluate the participants' attitudes towards ChatGPT. The questions in this part explored their perspectives on ChatGPT's role as a learning aid, and its inclusion in the curriculum, and gather opinions on the participants' overall views towards ChatGPT.

All sections 3, 4, and 5 were adapted from a study done by Syed and Basil A. Al-Rawi (2023) titled "Assessment of Awareness, Perceptions, and Opinions towards Artificial Intelligence among Healthcare Students in Riyadh

Saudi Arabia”. Due to its compatibility with the PICO structure of the current research's content, the study carried out by Syed and Basil A. Al-Rawi (2023) has been chosen. Furthermore, the limitations found in their research are expected to be addressed and overcome by the current study. In this regard, the current study attempted to broaden the target group's focus by switching from a pre-clinical (pharmacy students) to a clinical population (healthcare students). Apart from that, this study also intended to add educators as populations to compare the difference between both groups of populations.

3.8.1 Reliability

Syed and Basil A. Al-Rawi (2023) calculated the Cronbach's Alpha coefficient using the responses from only 30 randomly chosen undergraduate pharmacy students, the questionnaire reliability test found an acceptable level of internal consistency (12 questions that assess the perceptions of AI; Cronbach's Alpha = 0.82) and 17 questions that assess the opinions of an AI; Cronbach's Alpha = 0.78).

3.8.2 Validity

With the assistance of a senior professor and a researcher who were specialists in creating and validating cross-sectional studies, the questionnaire designed by Syed and Basil A. Al-Rawi (2023) underwent validation to establish the appropriateness, flow, and amount of time required to complete the questionnaire.

3.9 Procedure

Due to the cross-sectional methodology used in this study, 356 participants were required. At the faculty MK FMHS in Universiti Tunku Abdul Rahman (UTAR) Sungai Long Campus, recruitment was concentrated on people who correspond to the inclusion requirements. Convenience sampling was conducted to target the participants.

Participants were given a brief summary of the study's goals and methods at the UTAR KA block, where the research was performed in part. Participants in part got an actual copy of the questionnaire.

The questionnaire, which divided into two parts, was cover every important component of the investigation. The participants' demographic information, including their gender, age, country, and department of study or teaching, among other pertinent information, were covered in Section A. The assessment component took centre stage in Section B with the goal of determining participants' knowledge, perceptions, and views on ChatGPT. This section had a total of 30 written questions that provided a thorough assessment of both educators' and students' viewpoints on ChatGPT.

Participants were kindly asked to complete a consent form before beginning the questionnaire in order to assure the ethical conduct of the research. On this form, they needed to produce a signature confirming their informed consent to participate in the study. While answering all of the questions is required, participants were also invited to express any queries they may have concerned about the study.

The information went through careful review when the data-gathering procedure was over. A thorough analysis of the dataset produced helpful findings on the current beliefs, viewpoints, and levels of knowledge held by educators and students towards the use of ChatGPT.

3.10 Statistical Analysis

Microsoft Excel and IBM's Statistical Package for Social Science (SPSS) version 26.0 software was used to analyse the data gathered and to generate the findings from the research. Descriptive statistics was used to analyse all the data, which will be presented as frequency.

5.11 Ethical Approval

The Scientific and Ethical Review Committee (SERC) of Universiti Tunku Abdul Rahman (UTAR) reviewed and approved the study's ethical standards. Before starting the questionnaire, the subjects' informed permission was obtained. The specifics of the research were also disclosed to the participants. By protecting the participants' personal information, data confidentiality was preserved. The collected data was kept safe and only used for research purposes. It was only accessible to supervisors and course coordinators.

5.12 Gantt Chart

	JUL 2023	AUG 2023	SEPT 2023	OCT 2023	NOV 2023	DEC 2023
Research Proposal Preparation						
Research Proposal Presentation						
Ethical Approval from SERC UTAR						
Review and Amendment						
Data Collection						
Data Analysis						
Report Writing						
Submission of Thesis						
Presentation of Thesis						

CHAPTER 4

RESULTS

4.1 Chapter Overview

This chapter focuses on the results and findings of the study project's data gathering procedure. The data will be analysed using descriptive statistics and shown as frequency. A summary is given after the findings are presented in appropriate graphs, such as a pie chart or bar chart, along with the data tabulated.

Five participants were found to be ineligible, and their responses, out of a total of 280, were eliminated from the data. Only 275 responses were evaluated in this study as a result of these data being eliminated from the data analysis procedure.

4.2 Demographic Data of Population

The demographic information of the participants, including gender, age, country, year of teaching or study, department of teaching or study, and others, is the primary focus of this paragraph. A table summarising the whole subsection is included last.

4.2.1 Educators

Figure 4.2.1.1

Gender of Educators

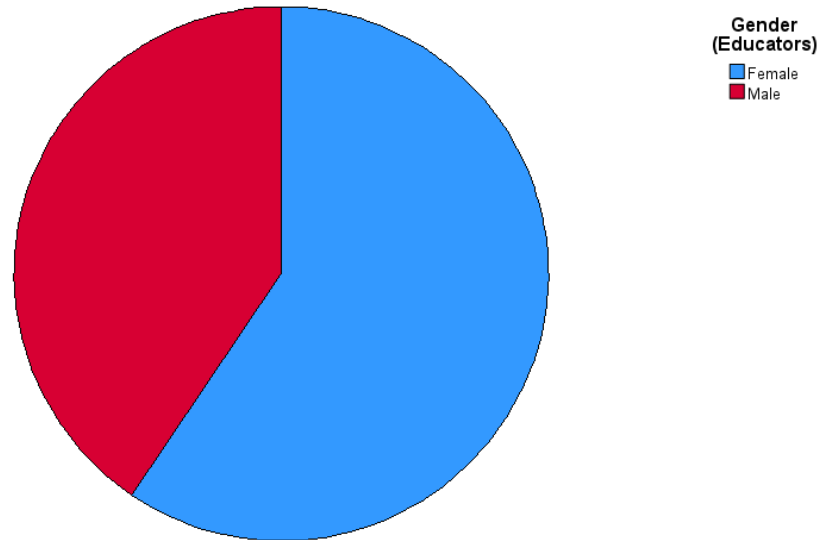


Figure 4.2.1.1 shows the gender of educators who participated in the study. In this study, 44 female educators were recruited, accounting for 59.5% (Table 4.1.1) of the total participants, while 30 male educators, or 40.5% (Table 4.1.1) of the total, were included.

Figure 4.2.1.2

Age of Educators

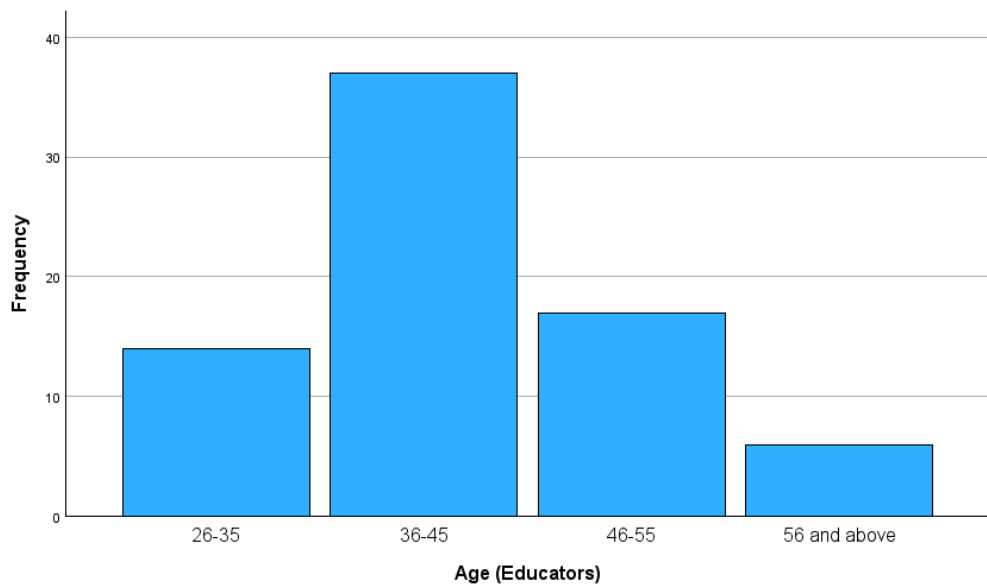


Figure 4.2.1.2 shows the age of educators who participated in the study. 14 out of 74 educators, or 33.7% (Table 4.1.1), are between the ages of 26 and 35, while the majority of educators—37 out of 74, or 50% (Table 4.1.1)—are between the ages of 36 and 45. Among the educators, 17 of them, or 23.0% (Table 4.1.1), are between the ages of 46 and 55. Last but not least, 6 individuals, or 8.1% (Table 4.1.1) of the total participants, are age of 56 and above.

Figure 4.2.1.3

Nationality of Educators

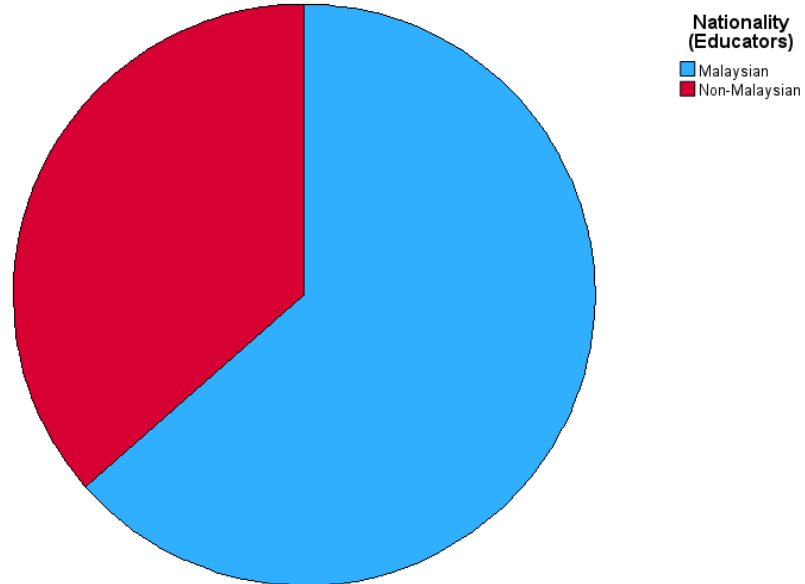
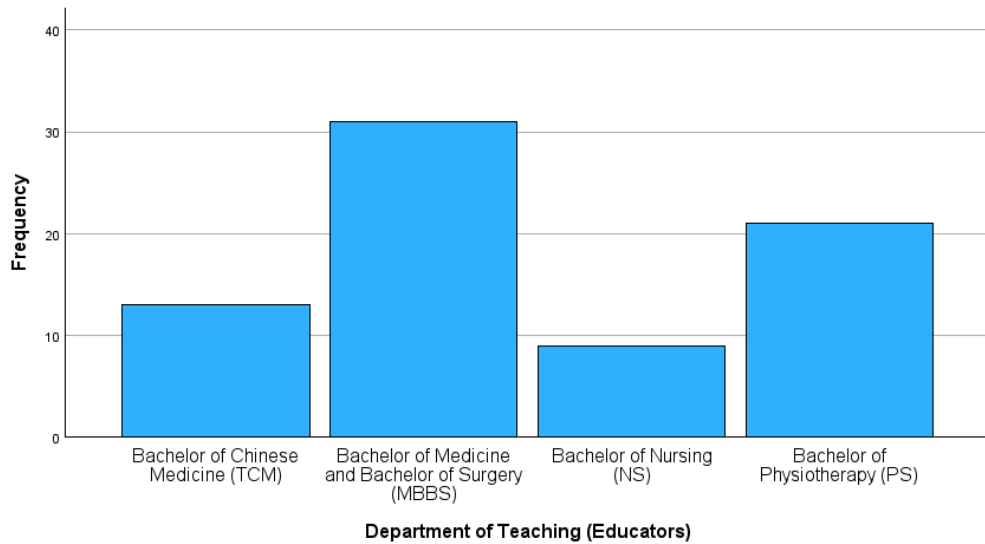


Figure 4.2.1.3 shows the nationality of educators who participated in the study. 47 Malaysian, or 63.5% of the total participants, were recruited for this study (Table 4.1.1), whereas 27, or 36.5% of the participants, were non-Malaysian.

Figure 4.2.1.4

Department of Educators Teaching



The number of educators in each department in the research is shown in Figure 4.2.1.4. Among all participants, educators who teach in Bachelor of Medicine and Bachelor of Surgery (MBBS) made up the largest group with 31 individuals, or 41.9%; educators in Bachelor of Nursing department made up the smallest group with just 9 individuals, or 12.2%. 13 educators in Bachelor of Chinese Medicine (TCM) department participated in the study, accounting for 17.6% of the total participants. 21, or 28.4%, of the remaining participants are educators in Bachelor of Physiotherapy (PS) department. (Table 4.1.1)

Figure 4.2.1.5

Year of Educators Teaching

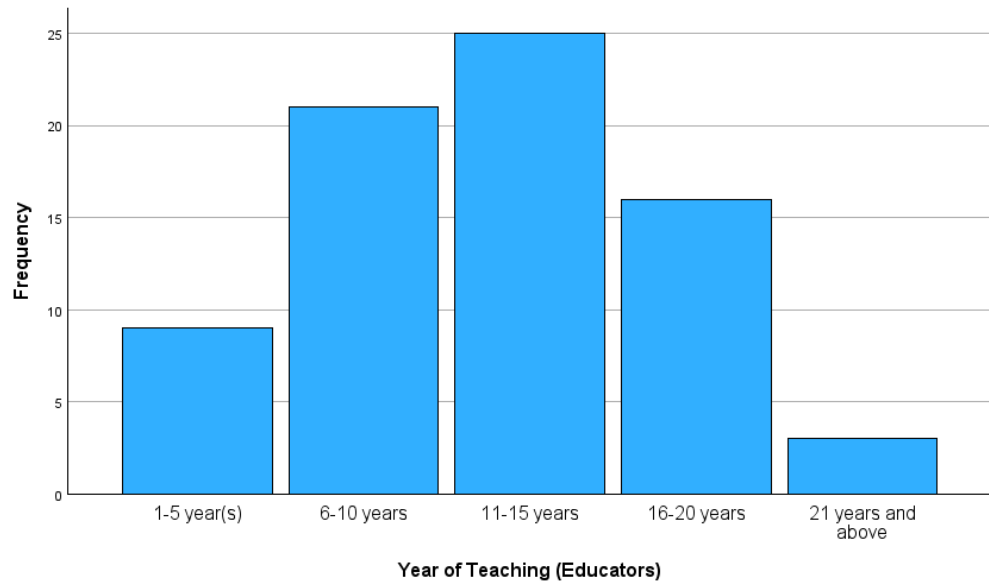
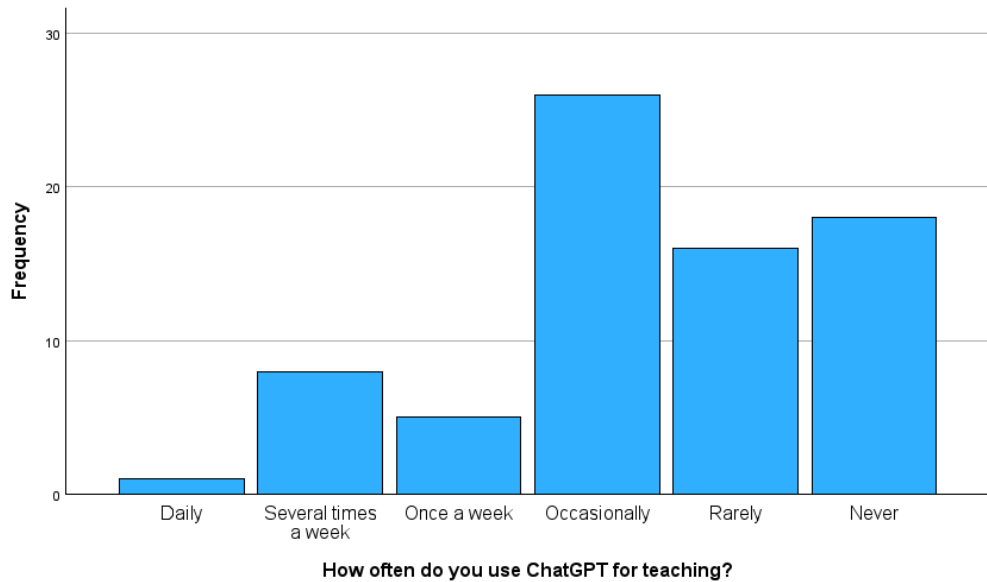


Figure 4.2.1.5 shows the distribution of year of educators teaching in the study. 9 educators, or 12.2% of the participants, had one to five years of experience in education. There are 21 educators, or 28.4% and 25 educators, or 33.8% with 6–10 years and 11–15 years of teaching experience, respectively. According to Table 4.1.1, the proportion of educators with 16-20 years of experience is 21.6%, which is 16 of them among 74 participants. Educators with over 20 years of experience are the least represented, numbering just 3 or 4.1% (Table 4.1.1).

Figure 4.2.1.6

Frequency of Educators' ChatGPT Utilization



The frequency with which individuals used ChatGPT is shown in the research. Only one of the participants reported using ChatGPT every day, made up to 1.4%, while the other 8 educators reported using it several times a week, made up to 10.8%. Furthermore, 5 participants, or 6.8% mentioned using ChatGPT once a week, while 26 among 74 educators, or 35.2% use it occasionally. 16 of the participants, or 21.6% reported using ChatGPT rarely, and 18 of them, or 24.3% mentioned they had never used ChatGPT in their life. (Table 4.1.1)

Figure 4.2.1.7

Educators' User Experience

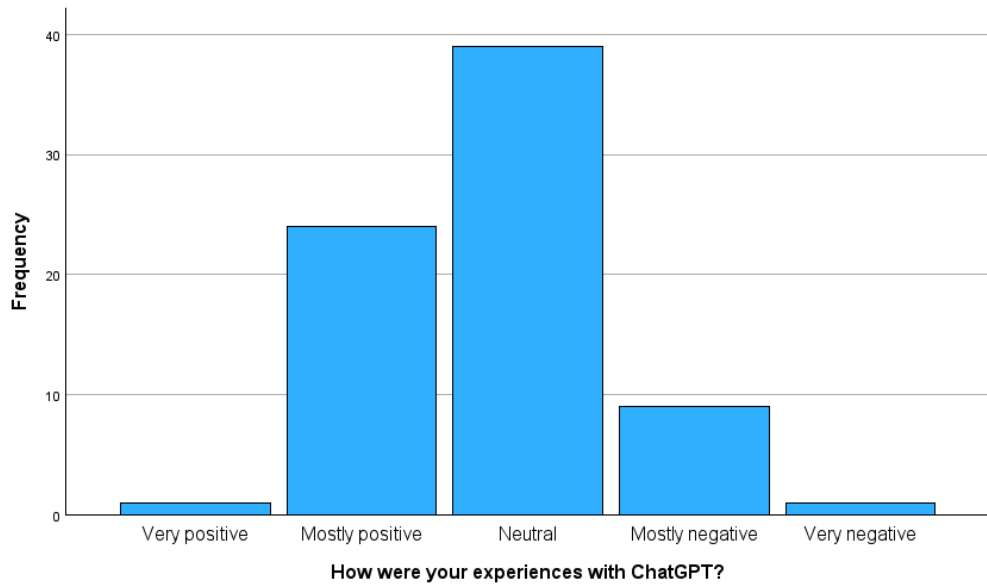


Figure 4.2.1.7 shows the feedback of user experience from educators. 1.4% of the educators, which is 1 out of 74 of them stated that they had very positive experiences while using ChatGPT, while 24 of them, or 32.4% expressed mostly positive experiences. A significant position of educators, which is 39, or 52.7% maintained a neutral stance. Meanwhile, 9 of the educators reported mostly negative experiences, which made up to 12.2% and only 1 of them, or 1.4 % stated that they had very negative experiences while using ChatGPT. (Table 4.1.1)

Figure 4.2.1.8

Educators' Usage in Clinical Settings

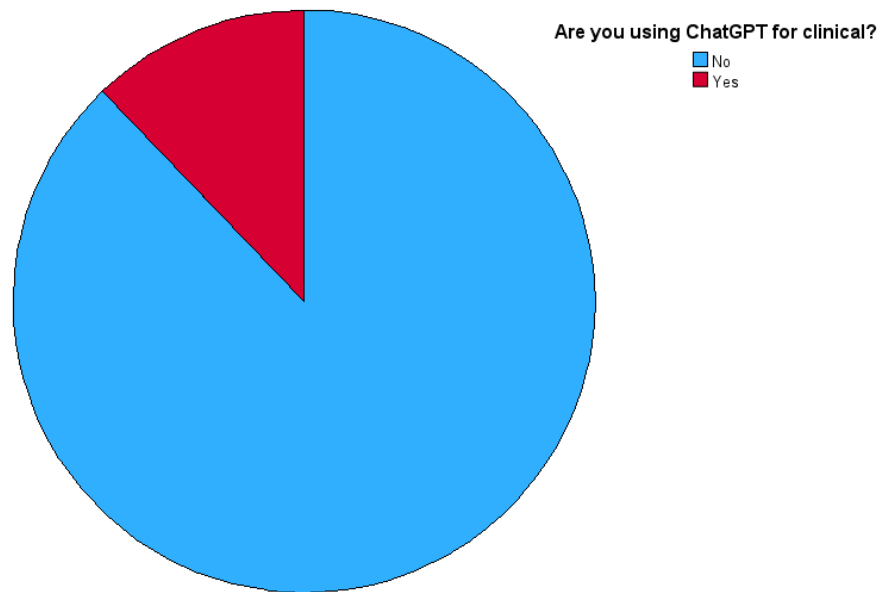
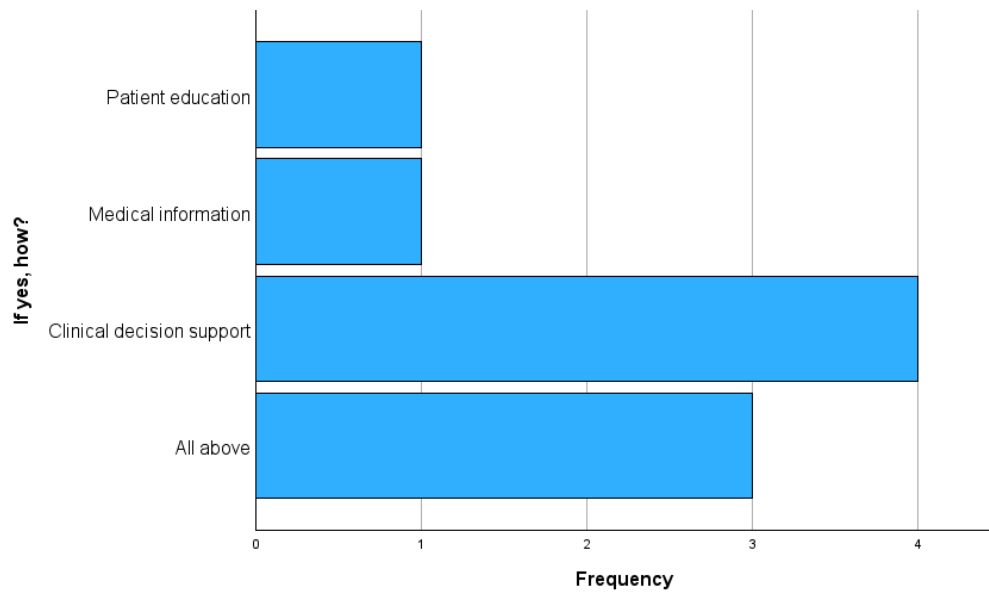


Figure 4.2.1.8 shows majority of the educators, which is 65 of them, or 87.8% are not using ChatGPT in clinical settings. Meanwhile, 9 educators, or 12.2 % mentioned they are using ChatGPT for clinicals. (Table 4.1.1)

Figure 4.2.1.9

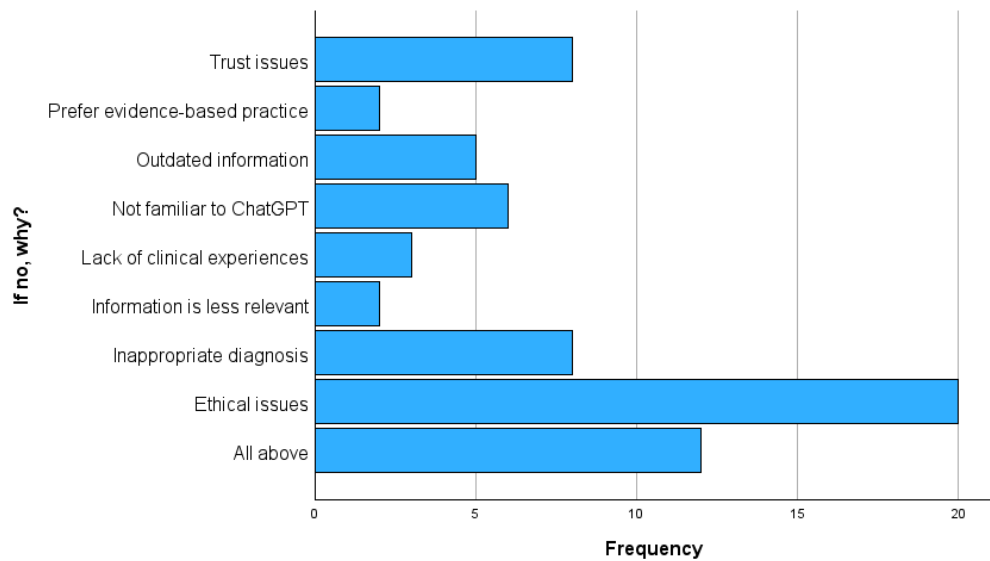
Reasons of ChatGPT Utilized in Clinicals



For educators who chose ‘yes’ for the previous question, they are asked for the reasons why they chose to use ChatGPT in clinicals. The reasons are stated in Figure 4.2.1.9. Among 9 of them, 4 educators or 44.5% used ChatGPT for clinical decision support in clinical settings, while 1 educator or 11.1% used for patient education. Another 1 educator, or 11.1% used ChatGPT for medical information in clinical settings, lastly, 3 of them, or 33.3% mentioned they used it for all reasons above. (Table 4.1.1)

Figure 4.2.1.10

Reasons of ChatGPT Not Utilized in Clinicals



For educators who chose ‘no’ for the previous question, they are asked for the reasons why they chose not to use ChatGPT in clinicals. The reasons are stated in Figure 4.2.1.10. Among all the reasons, the majority of the educators— 20 out of 65, or 30.8%—mentioned they chose not to use ChatGPT in clinical settings due to ethical issues. Meanwhile, 8 out of 65, or 12.3% reported the reason of inappropriate diagnosis; and 2 educators, or 3.1 % reported that they chose not to use it because the information is less relevant. 3 of them, or 4.6 % had a lack of clinical experience, and 6 educators, or 9.2% were not familiar to ChatGPT. 5 educators, which made up 7.7% chose not to use ChatGPT in clinical settings due to outdated information; besides that, 2 educators, or 3.1 % prefer evidence-based practice. Trust issues is one of the reasons, as 8 educators (12.3%) mentioned that as the reason why they chose not to use ChatGPT. Lastly, 11 educators (16.9%) reported that they chose not to use it for all the reasons above. (Table 4.1.1)

Table 4.1.1*Demographic Data of Educators*

Demographic data	Frequency (%)
Gender	
Male	30 (40.5)
Female	44 (59.5)
Age	
26-35	14 (18.9)
36-45	37 (50.0)
46-55	17 (23.0)
56 and above	6 (8.1)
Nationality	
Malaysian	47 (63.5)
Non-Malaysian	27 (36.5)
Department of Teaching	
Bachelor of Chinese Medicine (TCM)	13 (17.6)
Bachelor of Medicine and Bachelor of Surgery (MBBS)	31 (41.9)
Bachelor of Nursing	9 (12.2)
Bachelor of Physiotherapy	21 (28.4)

Year of Teaching	
1-5 year(s)	9 (12.2)
6-10 years	21 (28.4)
11-15 years	25 (33.8)
16-20 years	16 (21.6)
21 years and above	3 (4.1)
How often do you use ChatGPT for teaching?	
Daily	1 (1.14)
Several times a week	8 (10.8)
Once a week	5 (6.8)
Occasionally	26 (35.1)
Rarely	16 (21.6)
Never	18 (24.3)
How were your experiences with ChatGPT?	
Very positive	1 (1.4)
Mostly positive	24 (32.4)
Neutral	39 (52.7)
Mostly negative	9 (12.2)
Very negative	1 (1.4)
Are you using ChatGPT for clinical?	
Yes	9 (12.2)
If yes, how?	
Clinical decision support	4 (44.5)
Medical information	1 (11.1)

Patient education	1 (11.1)
All above	3 (33.3)
No	65 (87.8)
If no, why?	
Ethical issues	20 (30.8)
Inappropriate diagnosis	8 (12.3)
Information is less relevant	2 (3.1)
Lack of clinical experiences	3 (4.6)
Not familiar to ChatGPT	6 (9.2)
Outdated information	5 (7.7)
Prefer evidence-based practice	2 (3.1)
Trust issues	8 (12.3)
All above	11 (16.9)

4.2.2 Students

Figure 4.2.2.1

Gender of Students

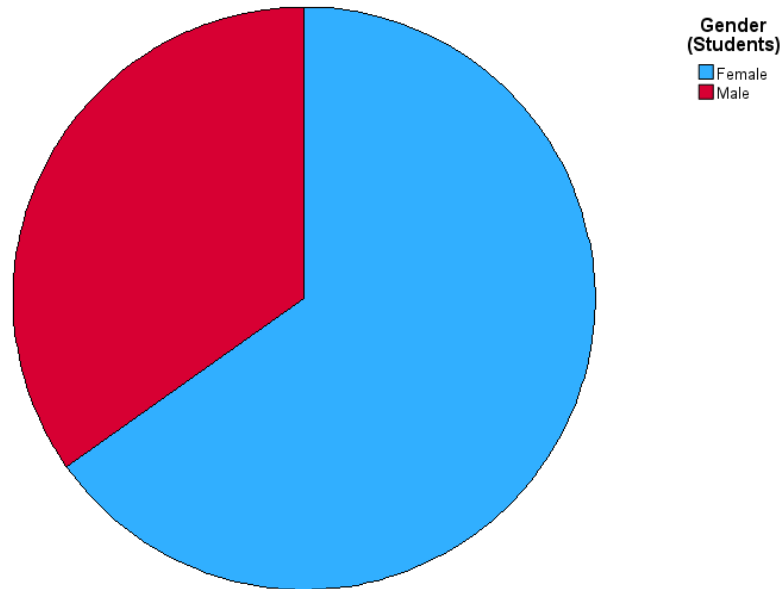


Figure 4.2.2.1 shows the gender of students who participated in the study. In this study, 131 female students were recruited, accounting for 65.2% (Table 4.1.2) of the total participants, while 70 male students, or 34.8% (Table 4.1.2) of the total, were included.

Figure 4.2.2.2

Age of Students

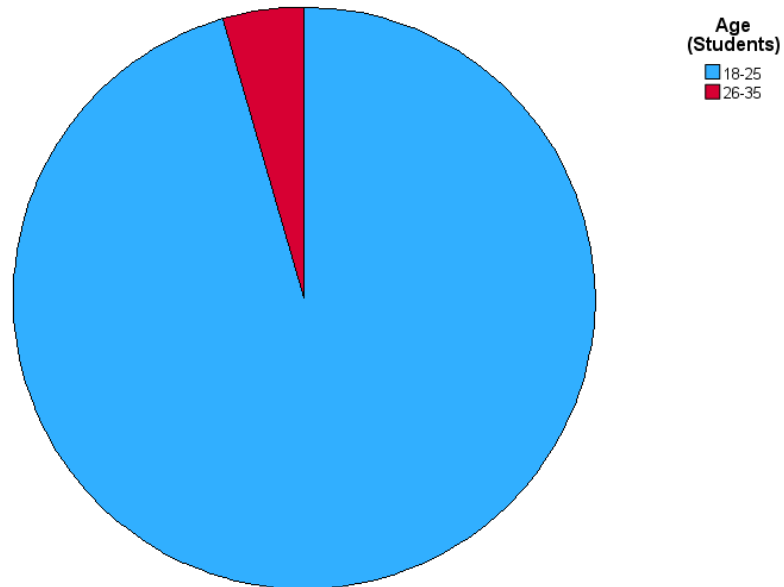


Figure 4.2.1.2 shows the age of students who participated in the study. Majority of the students, 192 out of 201, or 95.5% (Table 4.1.2), are between the ages of 18 and 25, while 9 students, or 4.5% (Table 4.1.2) are between the ages of 26 and 35.

Figure 4.2.2.3

Nationality of Students

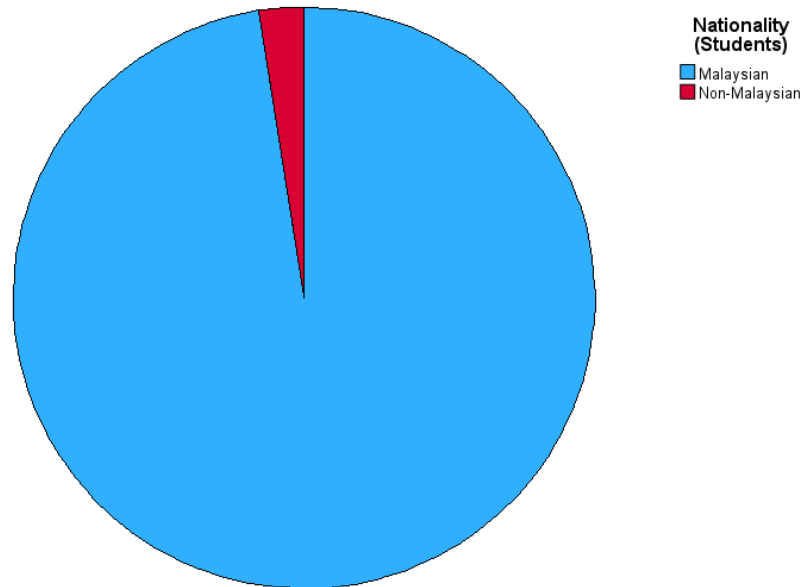
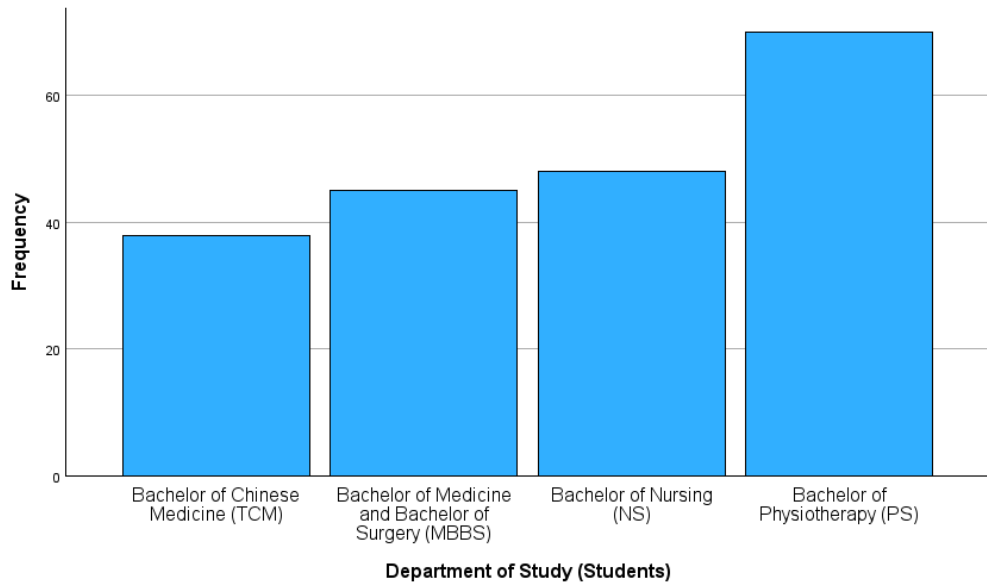


Figure 4.2.1.3 shows the nationality of students who participated in the study. 47 Malaysian, or 63.5% of the total participants, were recruited for this study (Table 4.1.2), whereas 27, or 36.5% of the participants, were non-Malaysian.

Figure 4.2.2.4

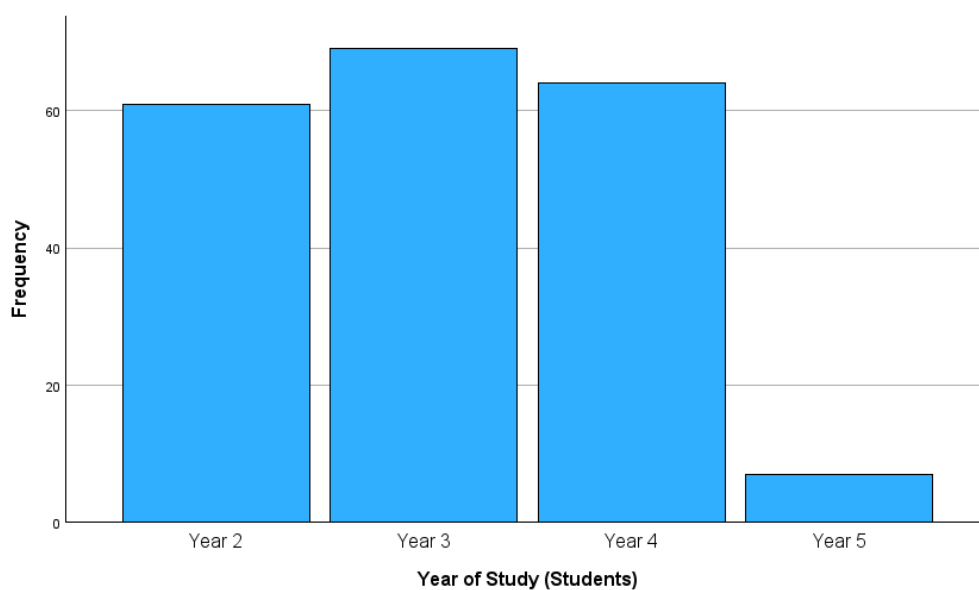
Department of Students' Study



The number of students in different courses is shown in Figure 4.2.2.4. Out of all the participants, students pursuing a Bachelor of Physiotherapy degree made up the largest group with 70 individuals, or 34.8% (Table 4.1.2). Conversely, students pursuing a Bachelor of Chinese Medicine (TCM) degree made up the smallest group with just 38 individuals, or 18.9% (Table 4.1.2). 48 Bachelor of Nursing students, or 23.9% of the students, are involved in this study (Table 4.1.2). 45 students, or 22.4 %, of the remaining participants are Bachelor of Medicine and Bachelor of Surgery (MBBS) students (Table 4.1.2).

Figure 4.2.2.5

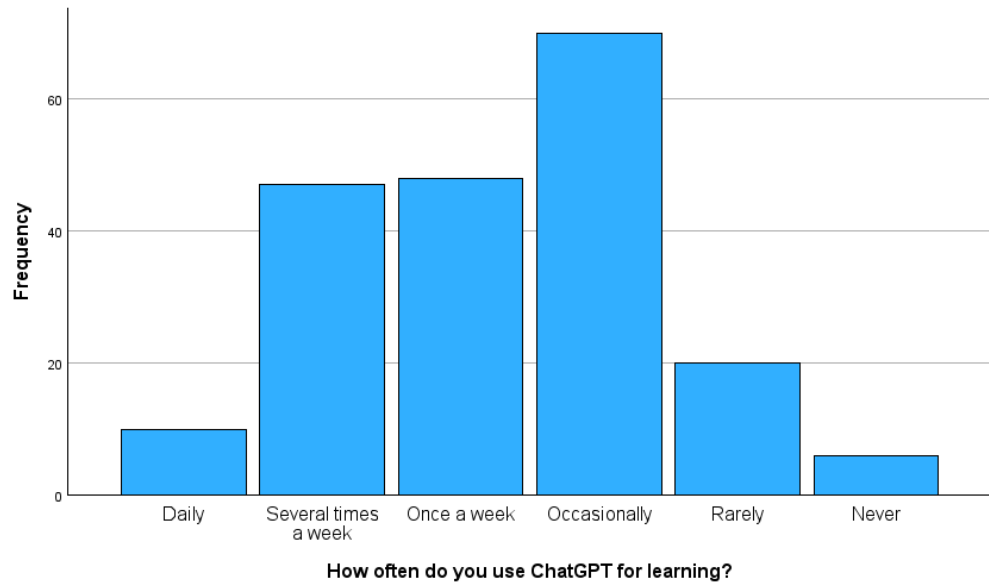
Year of Students' Study



The distribution of study participants' years of study is presented in Figure 4.2.2.5. 30.3% of the students, or 61 students, are enrolled in their second year of study (Table 4.1.2). There are 69 and 64 pupils in years three and four, respectively, which according to Table 4.1.2, the proportion of students in years two and three will be 34.3% and 31.8%, respectively. 7 students who participated in the study are from their fifth year of study, or 3.5% of the total.

Figure 4.2.2.6

Frequency of Students' ChatGPT Utilization



The frequency with which students used ChatGPT is shown in the research. 10 of the students reported using ChatGPT every day, made up to 5.0%, while the other 47 students reported using it several times a week, made up to 23.4%. Furthermore, 48 participants, or 23.9% mentioned using ChatGPT once a week, while 70 among 201 students, or 34.8% use it occasionally. 20 of the participants, or 23.4% reported using ChatGPT rarely, and 6 of them, or 3.0% mentioned they had never used ChatGPT in their life. (Table 4.1.2)

Figure 4.2.2.7

Students' User Experience

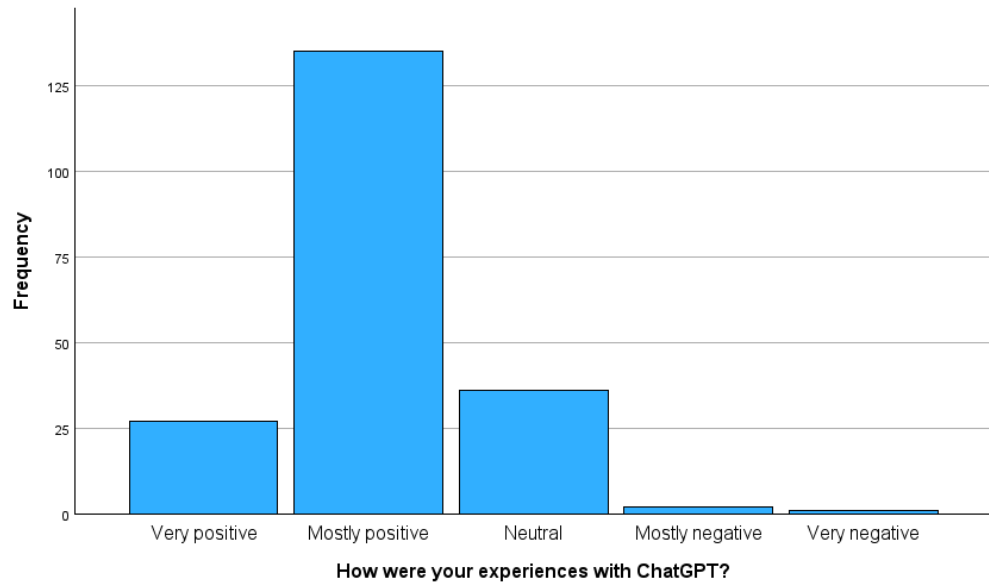


Figure 4.2.1.7 shows the feedback of user experience from students. 13.4% of the students, which is 27 out of 201 of them stated that they had very positive experiences while using ChatGPT, while 135 of them, or 67.2% expressed mostly positive experiences. 36 students, or 17.9% maintained a neutral stance. Meanwhile, 2 of the students reported mostly negative experiences, which made up to 1.0% and only 1 of them, or 0.5% stated that they had very negative experiences while using ChatGPT. (Table 4.1.2)

Figure 4.2.2.8

Students' Usage in Clinical Settings

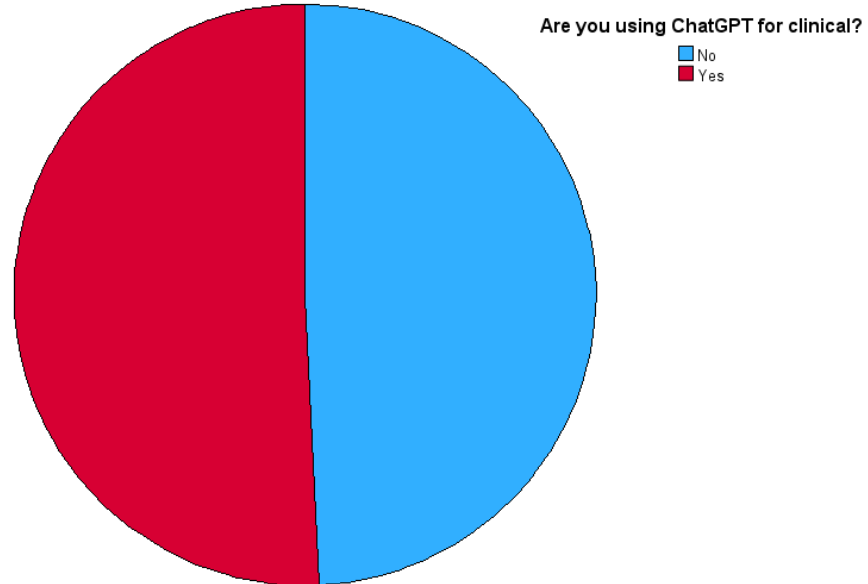
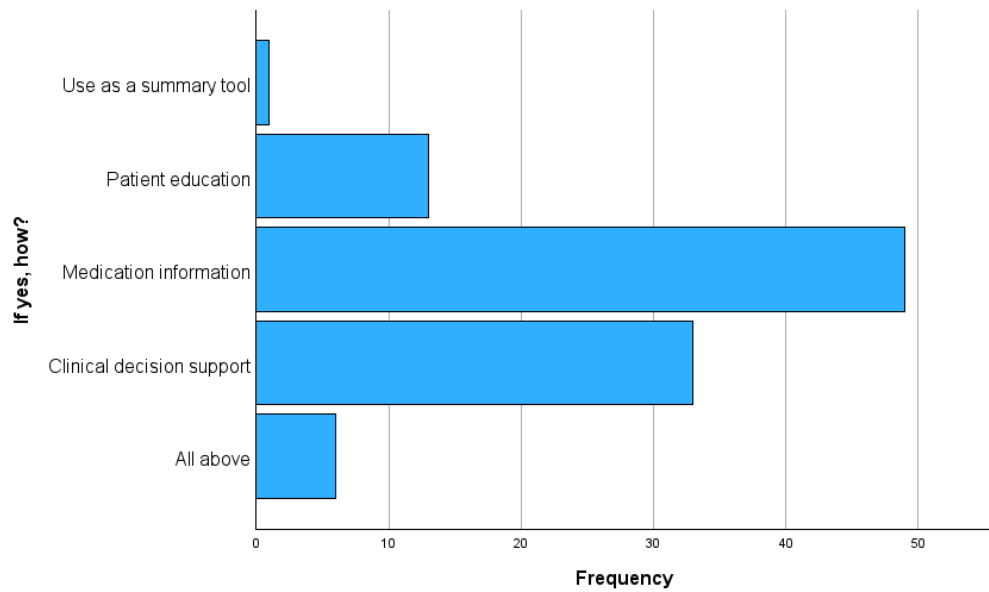


Figure 4.2.2.8 shows 102 out of 201 students, or 50.7% are using ChatGPT in clinical settings. Meanwhile, 99 students, or 49.3 % mentioned they are not using ChatGPT for clinicals. (Table 4.1.2)

Figure 4.2.2.9

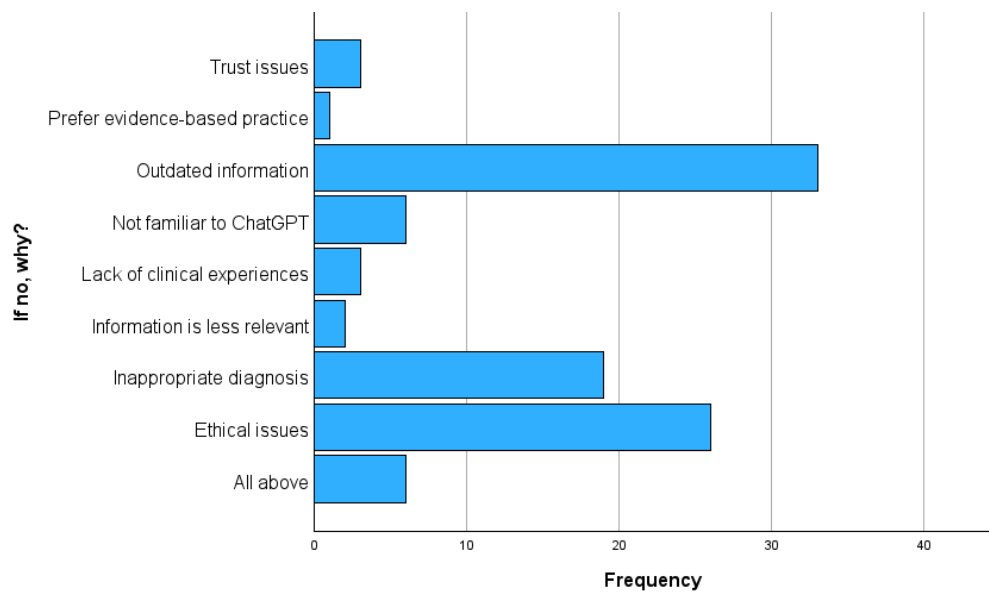
Reasons of ChatGPT Utilized in Clinicals



For students who chose ‘yes’ for the previous question, they are asked for the reasons why they chose to use ChatGPT in clinicals. The reasons are stated in Figure 4.2.1.9. Among 102 of them, 33 students or 32.4% used ChatGPT for clinical decision support in clinical settings, while 13 students or 12.7% used for patient education. Another 49 students, or 48.0% used ChatGPT for medical information in clinical settings, and 1 student (1.0%) mentioned that ChatGPT is used as a summary tool. Lastly, 6 of them, or 5.9% mentioned they used it for all reasons above. (Table 4.1.2)

Figure 4.2.2.10

Reasons of ChatGPT Not Utilized in Clinicals



For students who chose ‘no’ for the previous question, they are asked for the reasons why they chose not to use ChatGPT in clinicals. The reasons are stated in Figure 4.2.1.10. Among all the reasons, the majority of the students— 33 out of 99, or 33.3%—mentioned they chose not to use ChatGPT in clinical settings due to outdated information. Meanwhile, 19 out of 99, or 19.3% reported the reason of inappropriate diagnosis; and 2 students, or 3.0% reported that they chose not to use it because the information is less relevant. 3 of them, or 3.0% had a lack of clinical experience, and 6 students, or 6.1% were not familiar to ChatGPT. 26 students, which made up 26.3% chose not to use ChatGPT in clinical settings due to ethical issues; besides that, 1 student, or 1.0 % prefers evidence-based practice. Trust issues is one of the reasons, as 3 students (3.0%) mentioned that as the reason why they chose not to use ChatGPT. Lastly, 6 students (6.1%) reported that they chose not to use it for all the reasons above. (Table 4.1.1)

Table 4.1.2*Demographic Data of Students*

Demographic data	Frequency (%)
Gender	
Male	70 (34.8)
Female	131 (65.2)
Age	
18-25	192 (95.5)
26-35	9 (4.5)
Nationality	
Malaysian	196 (97.5)
Non-Malaysian	5 (2.5)
Department of Study	
Bachelor of Chinese Medicine (TCM)	38 (18.9)
Bachelor of Medicine and Bachelor of Surgery (MBBS)	45 (22.4)
Bachelor of Nursing	48 (23.9)
Bachelor of Physiotherapy	70 (34.8)
Year of Study	
Year 2	61 (30.3)
Year 3	69 (34.3)
Year 4	64 (31.8)

Year 5	7 (3.5)
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How often do you use ChatGPT for teaching?

Daily	10 (5.0)
Several times a week	47 (23.4)
Once a week	48 (23.9)
Occasionally	70 (34.8)
Rarely	20 (23.4)
Never	6 (3.0)

How were your experiences with ChatGPT?

Very positive	27 (13.4)
Mostly positive	135 (67.2)
Neutral	36 (17.9)
Mostly negative	2 (1.0)
Very negative	1 (0.5)

Are you using ChatGPT for clinical?

Yes	102 (50.7)
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If yes, how?

Clinical decision support	33 (32.4)
Medical information	49 (48.0)
Patient education	13 (12.7)
Use as a summary tool	1 (1.0)
All above	6 (5.9)

No	99 (49.3)
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If no, why?

Ethical issues	26 (26.3)
Inappropriate diagnosis	19 (19.2)
Information is less relevant	2 (2.0)
Lack of clinical experiences	3 (3.0)
Not familiar to ChatGPT	6 (6.1)
Outdated information	33 (33.3)
Prefer evidence-based practice	1 (1.0)
Trust issues	3 (3.0)
All above	6 (6.1)

4.3 Awareness towards ChatGPT

Figure 4.3.1.1

Educators' Awareness of The Role of ChatGPT in Their Field

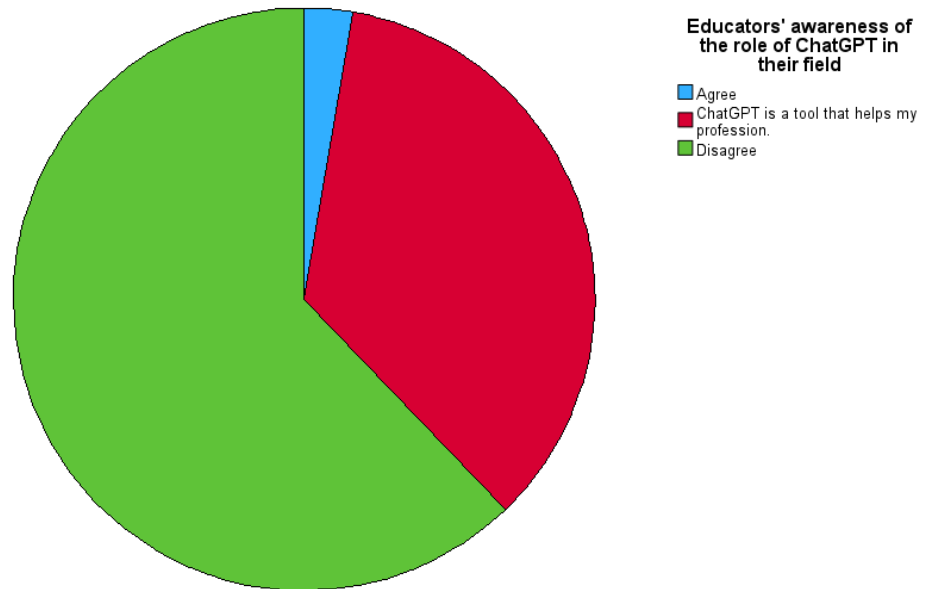


Figure 4.3.1.1 shows the awareness of educators of the ChatGPT's role in their field. Majority of the educators—46 out of 74, or 62.2%—disagreed that ChatGPT will replace their profession, while 2.7% of them, or 2 educators agreed that ChatGPT will replace their profession in the future. 26 educators, or 5.1% think that ChatGPT is a tool to help their profession. (Table 4.2.1)

Figure 4.3.1.2

Educators' Awareness of The Potential Influence of ChatGPT on Their Profession

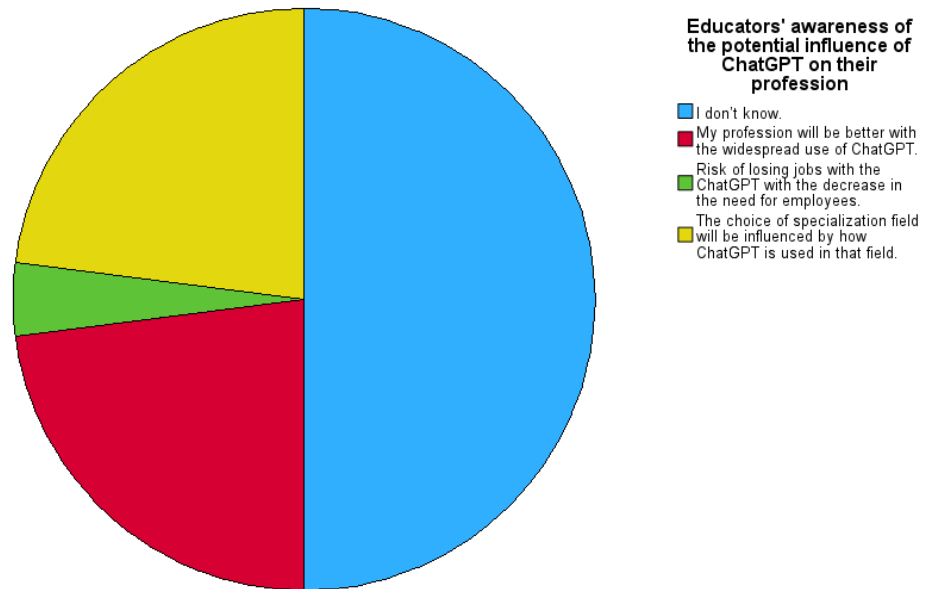
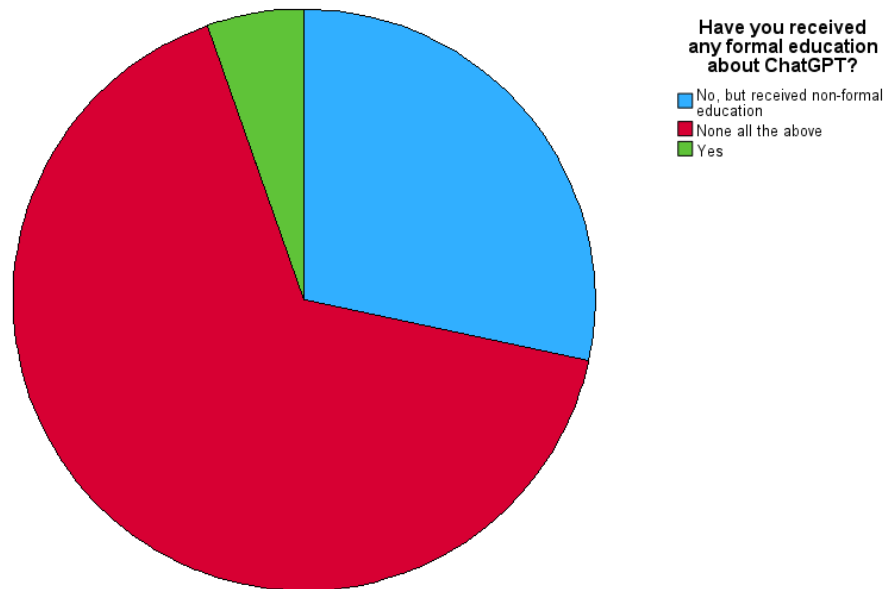


Figure 4.3.1.2 shows the educators' awareness of the potential impact of ChatGPT on their profession. 37 educators, or 50.0% were uncertain about the influence of ChatGPT, while 3 out of 74, or 4.1% were aware of the risk of losing jobs with ChatGPT with the decrease in the need for employees. 17 educators, which made up to 23.0%, think that their profession will be better with the widespread use of ChatGPT and another 17 of the educators, or 23.0% think that the choice of specialization field will be influenced by how ChatGPT is used in that field. (Table 4.2.1)

Figure 4.3.1.3

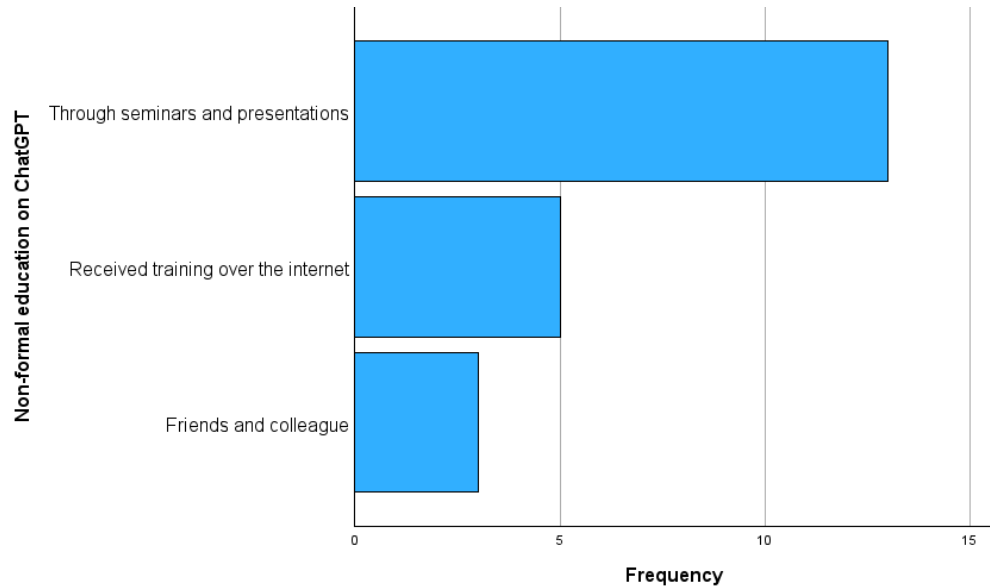
Educators' Education on ChatGPT



Educators' education on ChatGPT is shown in Figure 4.3.1.3. 4 out of 74, or 5.4% had received formal education on ChatGPT, while 49 of them, or 66.2% had never received any education on ChatGPT. Apart from that, 21 educators, which made up to 28.4%, did received non-formal education on ChatGPT. (Table 4.2.1)

Figure 4.3.1.4

Educators' Non-Formal Education on ChatGPT



Among 21 educators who had received non-formal education on ChatGPT, 5 of them, or 23.8% received training over the internet, such as YouTube. 13 educators, which made up to 61.9%, received education through seminars and presentations, while 3 out of 21, or 14.3% had discussions among their friends and colleague. (Table 4.2.1)

Table 4.2.1*Awareness of Educators Towards ChatGPT*

Statements	Frequency (%)
Do you think that ChatGPT will replace your profession in the future?	
Agree	2 (2.7)
Disagree	46 (62.2)
ChatGPT is a tool that helps my profession	26 (35.1)
What is your opinion, if ChatGPT is widespread in Malaysia?	
Risk of losing jobs with the ChatGPT with the decrease in the need for employees	3 (4.1)
My profession will be better with the widespread use of ChatGPT.	17 (23.0)
The choice of specialization field will be influenced by how ChatGPT is used in that field	17 (23.0)
I don't know	37 (50.0)
Have you received any formal education about ChatGPT?	
Yes	4 (5.4)
No, but non-formal education	21 (28.4)
Receives training over the internet	5 (23.8)

Through seminars and presentations	13 (61.9)
Discussions among friends and colleague	3 (14.3)
None all the above	49 (66.2)

4.3.2 Students

Figure 4.3.2.1

Students' Awareness of The Role of ChatGPT in Their Field

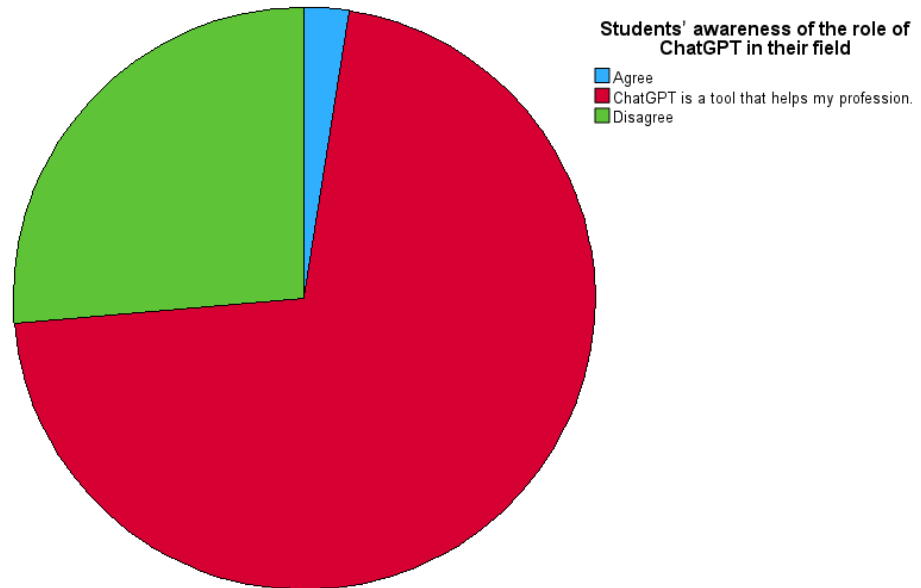


Figure 4.3.2.1 shows the awareness of students of the ChatGPT's role in their field. Majority of the students—143 out of 201, or 71.1%—thought that ChatGPT is a tool that can help their profession, while 2.5% of them, or 5 students agreed that ChatGPT will replace their profession in the future. 53 students, or 26.4% didn't think that ChatGPT will replace their profession. (Table 4.2.2)

Figure 4.3.2.2

Students' Awareness of The Potential Influence of ChatGPT on Their Profession

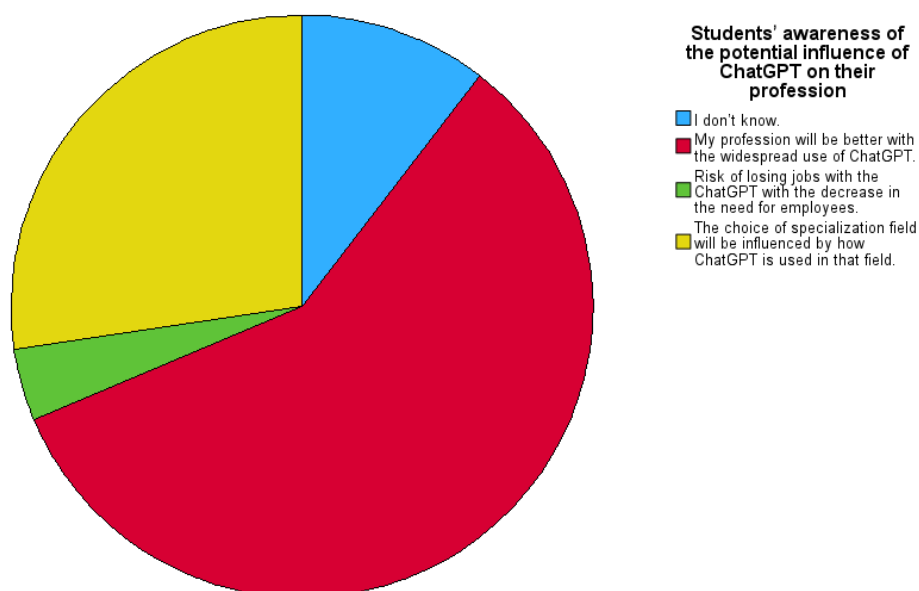
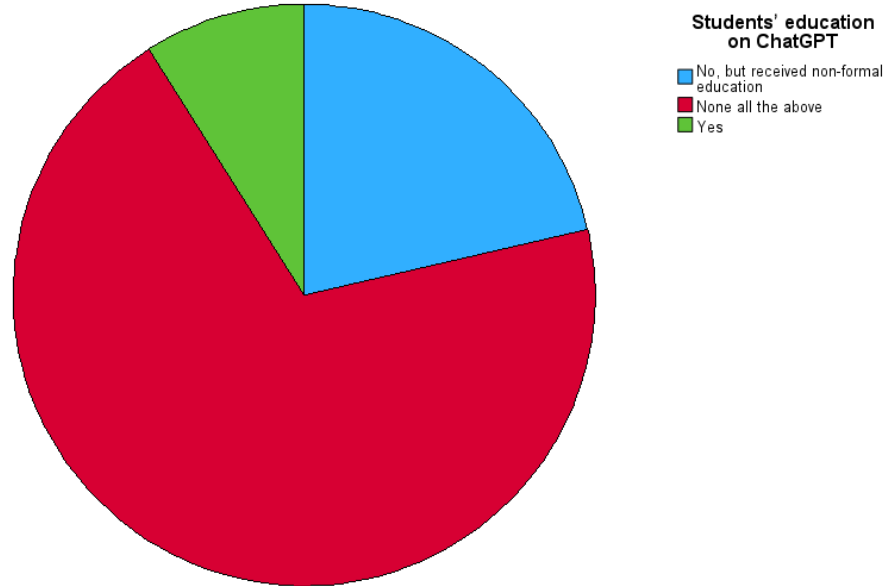


Figure 4.3.2.2 shows the students' awareness of the potential impact of ChatGPT on their profession. 21 students, or 10.4% were uncertain about the influence of ChatGPT, while 8 out of 201, or 4.0% were aware of the risk of losing jobs with ChatGPT with the decrease in the need for employees. 117 students, which made up to 58.2%, think that their profession will be better with the widespread use of ChatGPT and another 55 of the students, or 27.4% think that the choice of specialization field will be influenced by how ChatGPT is used in that field. (Table 4.2.2)

Figure 4.3.2.3

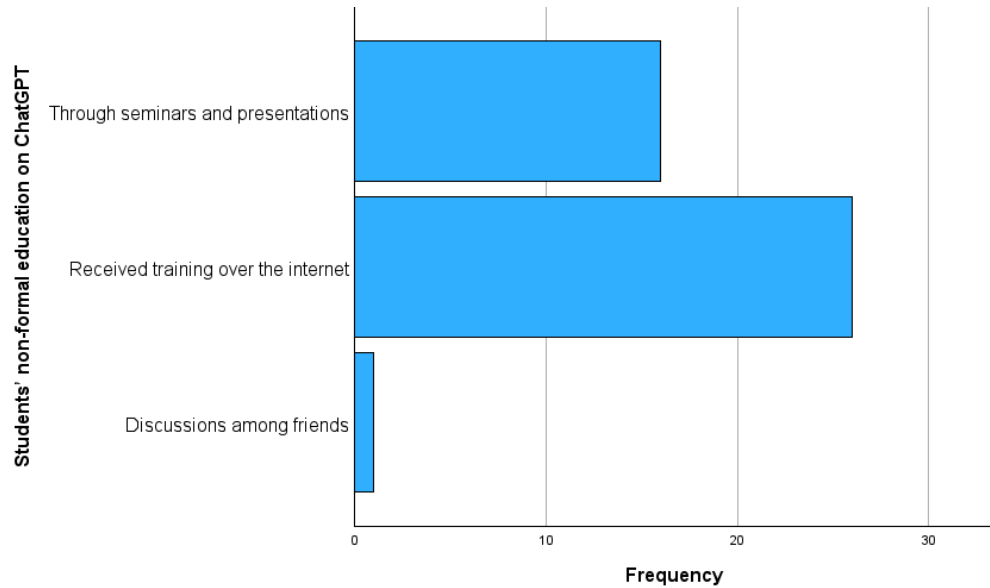
Students' Education on ChatGPT



Students' education on ChatGPT is shown in Figure 4.3.2.3. 18 out of 201, or 9.0% had received formal education on ChatGPT, while 140 of them, or 69.7% had never received any education on ChatGPT. Apart from that, 43 students, which made up to 21.4%, did received non-formal education on ChatGPT. (Table 4.2.2)

Figure 4.3.2.4

Students' Non-Formal Education on ChatGPT



Among 43 students who had received non-formal education on ChatGPT, 26 of them, or 60.5% received training over the internet, such as YouTube and blogs. 16 students, which made up to 37.2%, received education through seminars and presentations, while 1 out of 43, or 2.3% had discussions among their friends. (Table 4.2.2)

Table 4.3.1*Awareness of Students Towards ChatGPT*

Statements	Frequency (%)
Do you think that ChatGPT will replace your profession in the future?	
Agree	5 (2.5)
Disagree	53 (26.4)
ChatGPT is a tool that helps my profession	143 (71.1)
What is your opinion, if ChatGPT is widespread in Malaysia?	
Risk of losing jobs with the ChatGPT with the decrease in the need for employees	8 (4.0)
My profession will be better with the widespread use of ChatGPT.	117 (58.2)
The choice of specialization field will be influenced by how ChatGPT is used in that field	55 (27.4)
I don't know	21 (10.4)
Have you received any formal education about ChatGPT?	
Yes	18 (9.0)
No, but non-formal education	43 (21.4)

Receives training over the internet	26 (60.5)
Through seminars and presentations	16 (37.2)
Discussions among friends	1 (2.3)
None all the above	140 (69.7)

4.4 Perceptions towards ChatGPT

4.4.1 Educators

Figure 4.4.1.1

Educators' Perception of The Possibility of ChatGPT Devaluing Their Profession

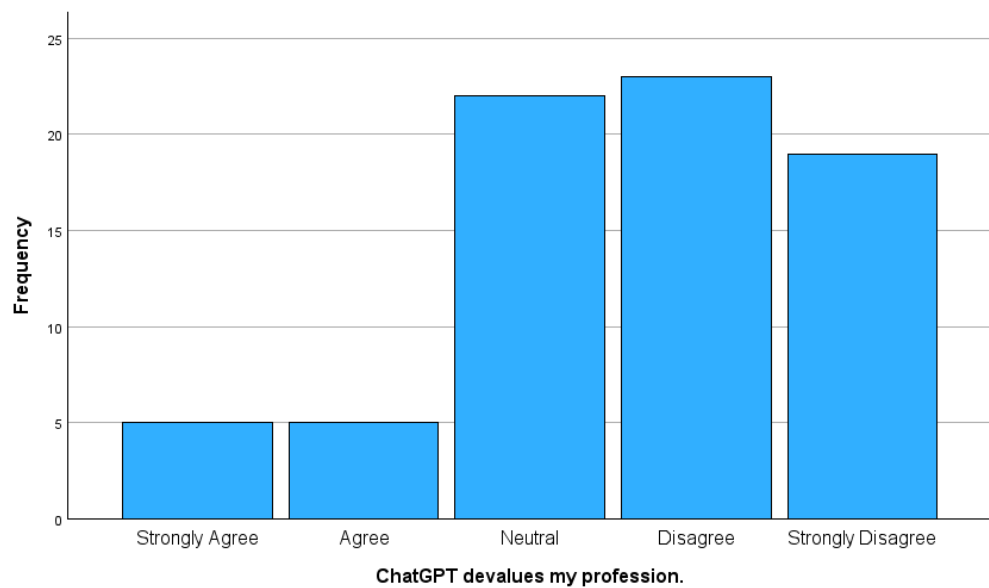


Figure 4.4.1.1 shows educators' perception of the possibility of ChatGPT devaluing their profession. 5 or 6.8% of educators strongly agreed while another 5 or 6.8% of educators agreed on the statement. 22 or 29.7% of educators were neutral on the statement. However, there are 23 or 31.1% of educators disagreed and 19 or 25.7% educators strongly disagreed that ChatGPT devalues their healthcare profession. (Table 4.3.1)

Figure 4.4.1.2

Educators' Perception of The Possibility of ChatGPT Reducing Errors in Their Career Practice

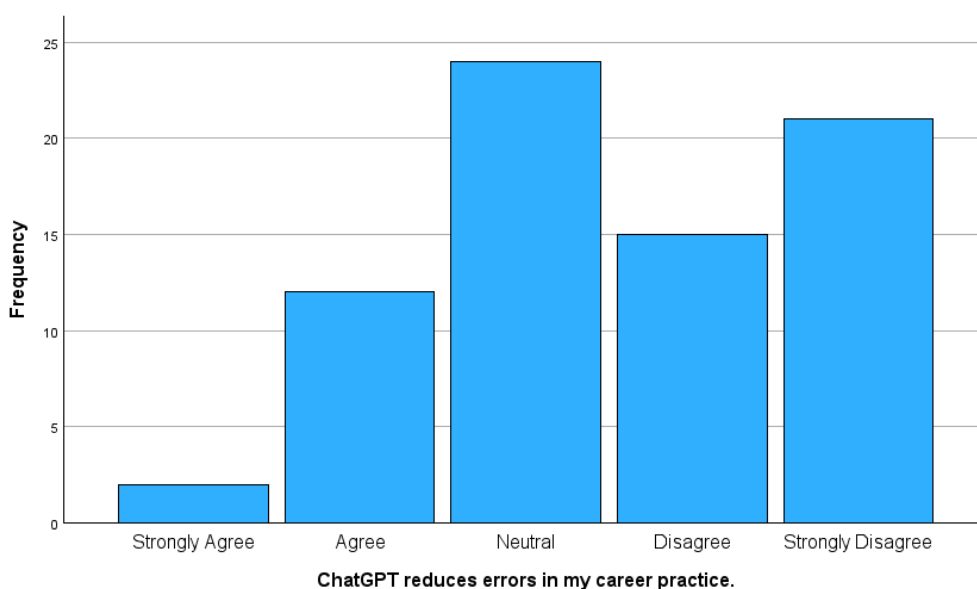


Figure 4.4.1.2 shows the perception of educators of the possibility of ChatGPT reducing errors in their career practice. 2 or 2.7% of the educators strongly agreed while 16.2% of educators—12 out of 74—agreed on the statement. 24 or 32.4 % of the educators stayed neutral to the statement. The rest of the educators disagreed and strongly disagreed that ChatGPT is able to reduce errors in their career performance, which account for 20.3% and 28.4% respectively. (Table 4.3.1)

Figure 4.4.1.3

Educators' Perception of The Possibility of ChatGPT Facilitating Clients' Access to The Service

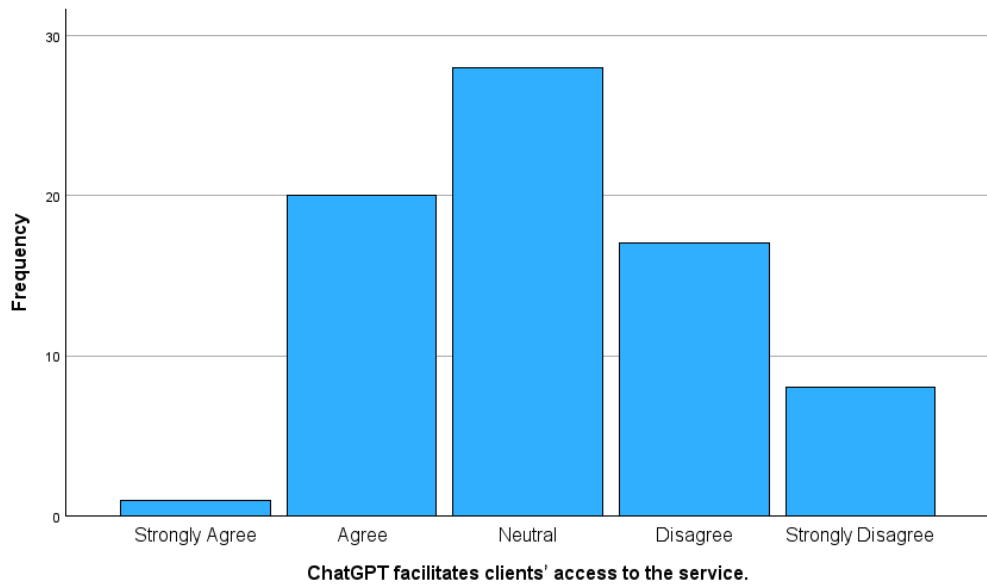


Figure 4.4.1.3 shows educators' perception of the possibility of ChatGPT facilitating clients' access to healthcare services. 1 or 1.4% of the educators strongly agreed and 20 or 27.0% of the educators agreed that statement. 28 or 37.8% of educators remained neutral on that. Meanwhile, 17 or 23.0% of educators disagreed and 8 or 10.8% of educators strongly disagreed that ChatGPT can facilitate clients' access to their healthcare services. (Table 4.3.1)

Figure 4.4.1.4

Educators' Perception of The Possibility of ChatGPT Facilitating Professionals' Access to Information

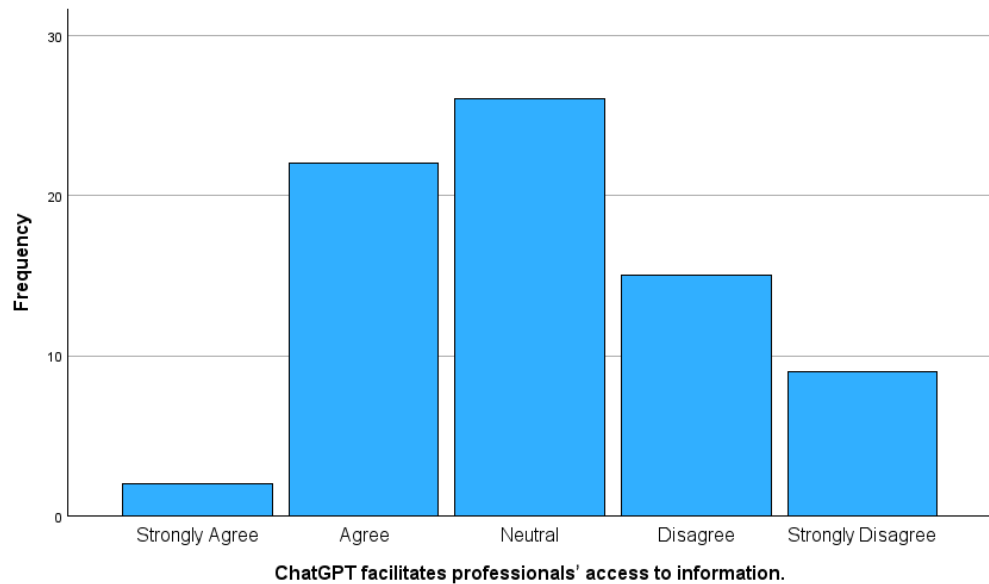


Figure 4.4.1.4 shows the perception of educators of the possibility of ChatGPT facilitating healthcare workers' access to information related to healthcare. 2 or 2.7% of the educators strongly agreed and 22 or 29.7% of the educators agreed on the statement. Meantime, 26 educators, which made up 35.1%, remained neutral on the statement. However, 15 educators (20.3%) disagreed, and 9 educators (12.2%) strongly disagreed with the statement, as they didn't think that ChatGPT can facilitate professionals' access to healthcare information. (Table 4.3.1)

Figure 4.4.1.5

Educators' Perception of The Possibility of ChatGPT Enabling Professionals to Make More Accurate Decisions

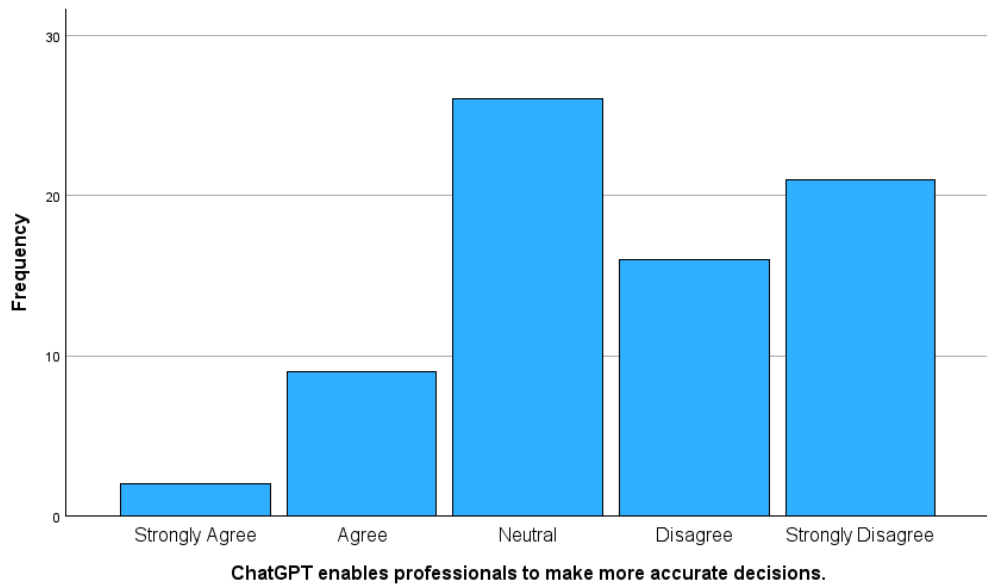


Figure 4.4.1.5 demonstrates the perception of educators of the possibility of ChatGPT enabling healthcare professionals to make more accurate decisions. 2 or 2.7% of educators strongly agreed while 9 or 12.2% of them agreed on that statement. 26 or 35.1% of educators stayed neutral on the statement. Nevertheless, 16 or 21.6% of educators disagreed and 21 or 28.4% of the educators disagreed that ChatGPT has the ability to assist healthcare professionals to make more accurate decisions. (Table 4.3.1)

Figure 4.4.1.6

Educators' Perception of The Possibility of ChatGPT Increasing Clients' Confidence in Service

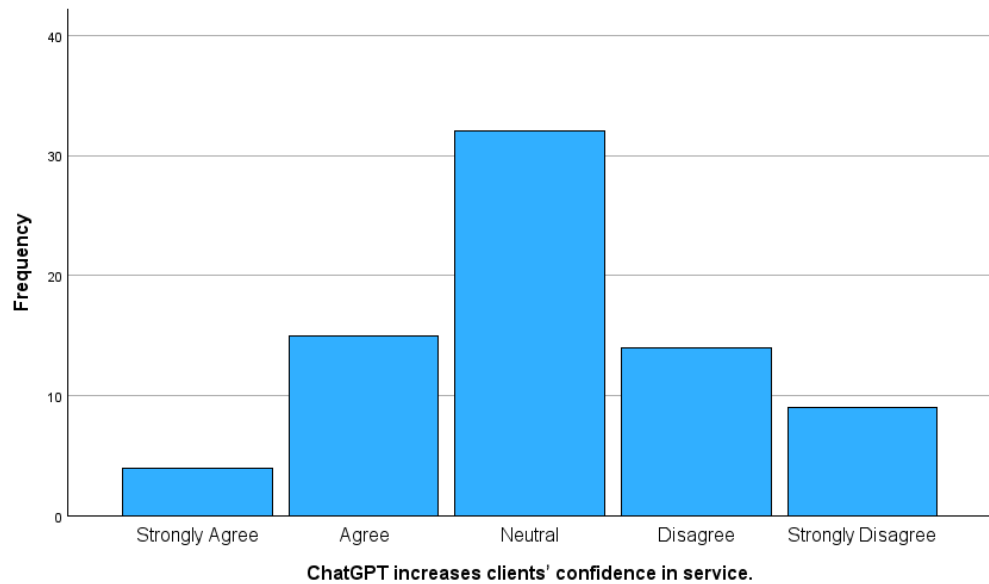


Figure 4.4.1.6 reveals the educators' perceptions of the possibility of ChatGPT increasing clients' confidence in healthcare services. 4 or 5.4% of the educators strongly agreed and 15 or 20.3% of the educators agreed to the statement given. 32 or 43.2 % of the educators maintained neutral to the statement. Yet, 14 or 18.9% of educators disagreed and 9 more educators, or 12.2%, strongly disagreed with the statement, as they believed that ChatGPT cannot increase clients' confidence in healthcare services. (Table 4.3.1)

Figure 4.4.1.7

Educators' Perception of The Possibility of ChatGPT Facilitating Client Education

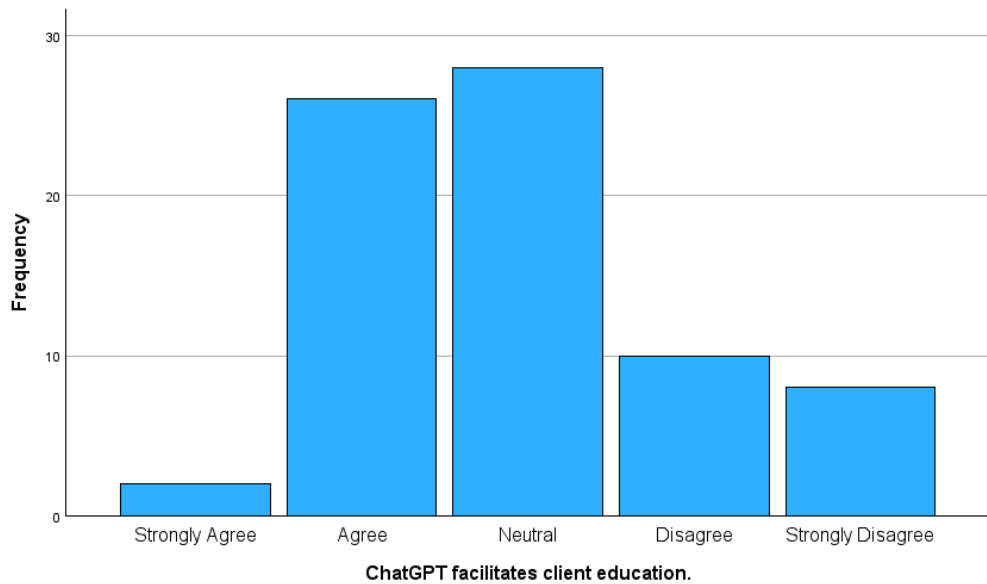


Figure 4.4.1.7 displays the educators' perception of the possibility of ChatGPT assisting clients' education. 2 or 2.7% of the educators strongly agreed and 26 or 35.1% of the educators agreed that ChatGPT has the ability to facilitate client education. 28 or 37.8% of them remained neutral on the statement. 10 or 13.5% of educators disagreed and the remaining 8 educators (10.8%) strongly disagreed with the statement given. (Table 4.3.1)

Figure 4.4.1.8

Educators' Perception of The Possibility of ChatGPT Negatively Affecting the Relationship Between Healthcare Professionals and Clients

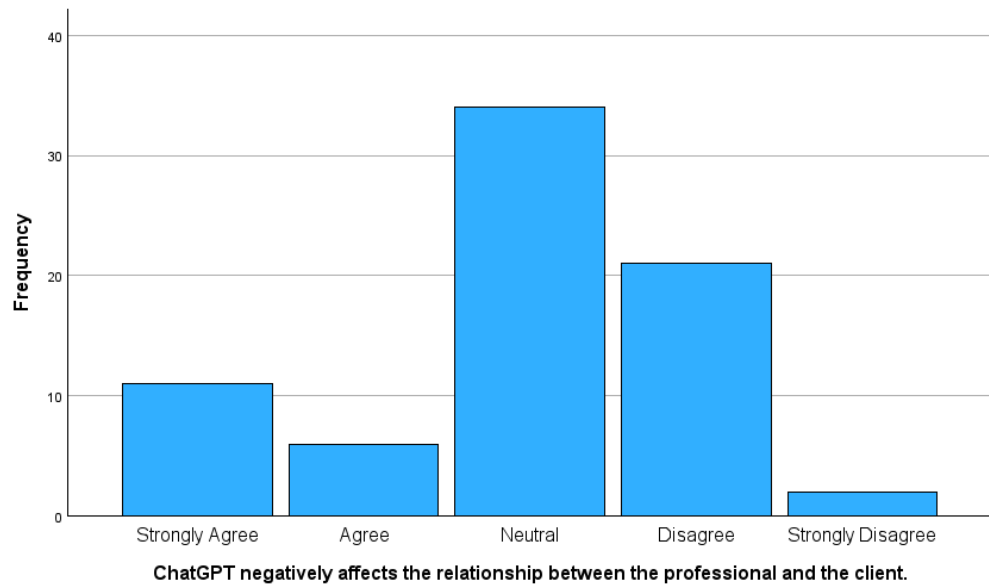


Figure 4.4.1.8 reveals the educators' perception of the possibility of ChatGPT negatively affecting the relationship between healthcare professionals and clients. 11 or 14.9% of educators strongly agreed and 6 or 8.1 % of educators agreed on the statement given. Meantime, 34 or 45.9% of educators remained neutral. Nevertheless, 21 or 28.4% of educators disagreed and 2 or 2.7% of educators strongly disagreed with ChatGPT can negatively impact the relationship between healthcare professionals and their clients. (Table 4.3.1)

Figure 4.4.1.9

Educators' Perception of The Possibility of ChatGPT Reducing the Humanistic Aspect of The Profession

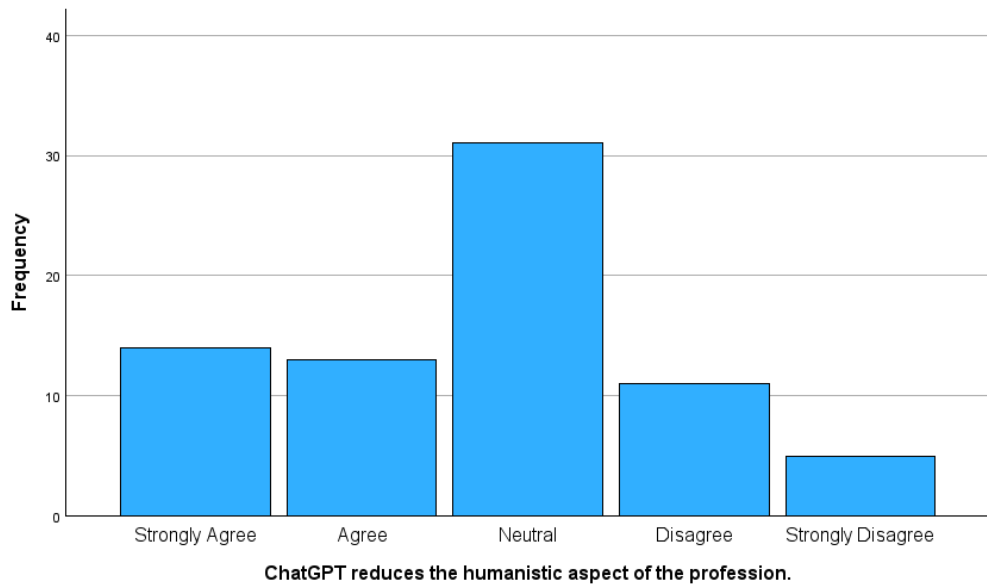
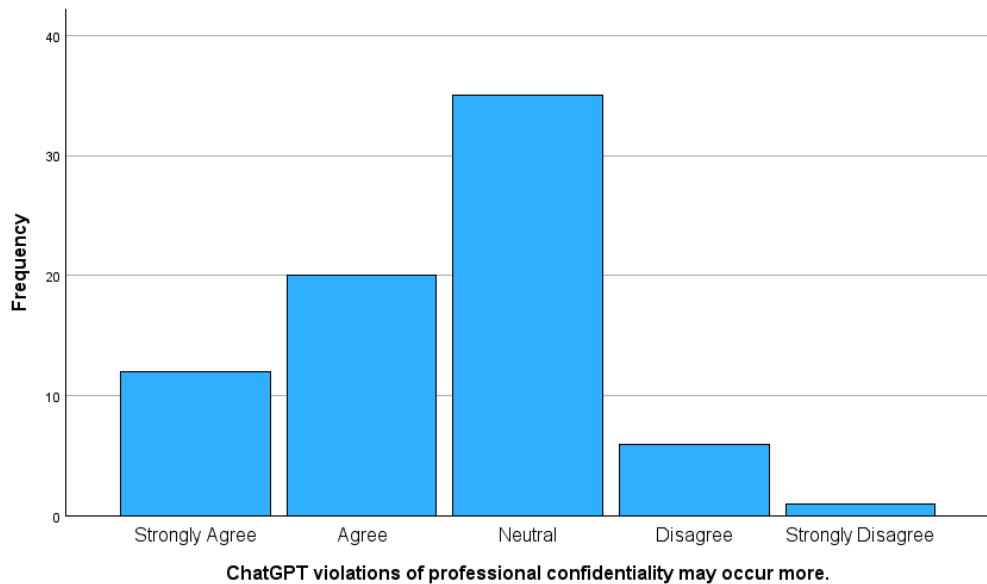


Figure 4.4.1.9 demonstrates educators' perception of the possibility of ChatGPT reducing the humanistic aspect of the profession. According to the figure, 14 or 18.9% of educators strongly agreed and 13 or 17.6% of educators agreed to the statement given, while 31 or 41.9% of educators stayed neutral on the statement. However, 11 educators (14.9%) disagreed with the statement and 5 out of 74 educators, which made up 6.8%, strongly disagreed that ChatGPT reduces the humanistic aspect of the profession. (Table 4.3.1)

Figure 4.4.1.10

Educators' Perception of The Possibility of More Occurring of ChatGPT Violations of Professional Confidentiality



Educators' perception of the possibility of more occurring of ChatGPT violations of professional confidentiality is revealed in Figure 4.4.1.10. According to the figure, 12 out of 74 educators (16.2%) strongly agreed and another 20 of them, which made up 27.0% agreed to the statement given. Apart from that, 35 or 47.3% of educators remained neutral to the statement. However, 6 or 8.1% of educators disagreed and the remaining one educator, or 1.4%, was strongly agree with the statement given. (Table 4.3.1)

Figure 4.4.1.11

Educators' Perception of The Possibility of ChatGPT Allowing the Clients to Increase Their Control Over the Service Received

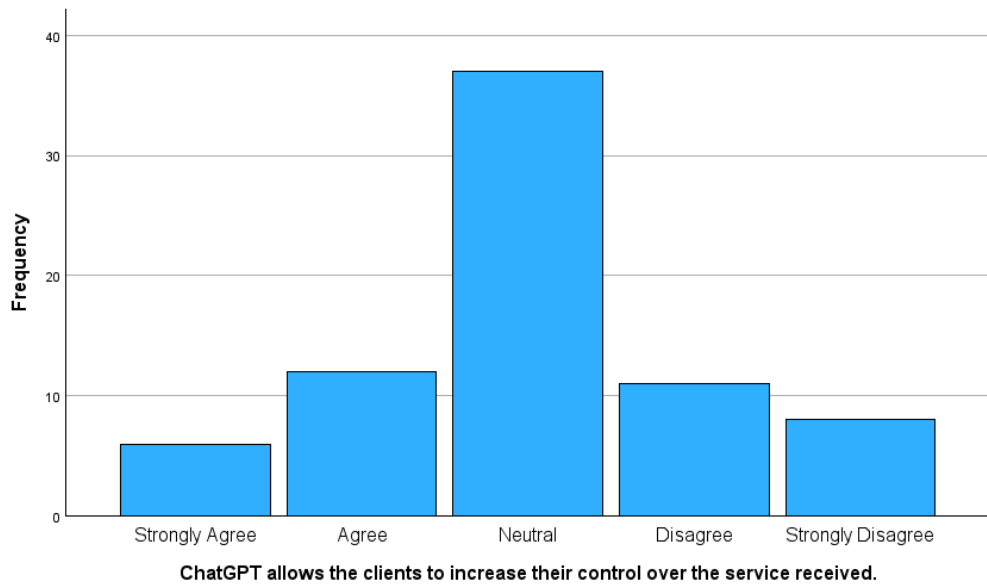


Figure 4.4.1.11 reveals the educators' perception of the possibility of ChatGPT allowing the clients to increase their control over the service received. 6 out of 74 educators, which made up 8.1%, strongly agreed and 12 or 16.2% of educators agreed that ChatGPT allows the clients to increase their control over their healthcare service received. Meanwhile, 37 of them, which made up 50.0%, maintained neutral on the statement. 16.2% of the educators, which is 11 of them disagreed and the remaining 8 individuals (10.8%) strongly disagreed to the statement given. (Table 4.3.1)

Table 4.3.1*Perceptions of Educators Towards ChatGPT*

Variables					
	Strongly	Agree	Neutral	Disagree	Strongly
	Agree <i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	Disagree <i>n</i> (%)
<hr/>					
ChatGPT					
devalues my profession.	5 (6.8)	5 (6.8)	22 (29.7)	23 (31.1)	19 (25.7)
<hr/>					
ChatGPT					
reduces errors in my career practice.	2 (2.7)	12 (16.2)	24 (32.4)	15 (20.3)	21 (28.4)
<hr/>					
ChatGPT					
facilitates clients' access to the service.	1 (1.4)	20 (27.0)	28 (37.8)	17 (23.0)	8 (10.8)
<hr/>					
ChatGPT					
facilitates professionals' access to information.	2 (2.7)	22 (29.7)	26 (35.1)	15 (20.3)	9 (12.2)

ChatGPT

enables

professionals

2 (2.7) 9 (12.2) 26 (35.1) 16 (21.6) 21 (28.4)

to make more

accurate

decisions.

ChatGPT

increases

clients'

4 (5.4) 15 (20.3) 32 (43.2) 14 (18.9) 9 (12.2)

confidence in

service.

ChatGPT

facilitates

2 (2.7) 26 (35.1) 28 (37.8) 10 (13.5) 8 (10.8)

client

education.

ChatGPT

negatively

affects the

relationship

11 (4.9) 6 (8.1) 34 (45.9) 21 (28.4) 2 (2.7)

between the

professional

and the client.

ChatGPT

reduces the

humanistic 14 (18.9) 13 (17.6) 31 (41.9) 11 (14.9) 5 (6.8)

aspect of the

profession.

ChatGPT

violations of

professional

confidentiality 12 (16.2) 20 (27.0) 35 (47.3) 6 (8.1) 1 (1.4)

may occur

more.

ChatGPT

allows the

clients to

increase their 6 (8.1) 12 (16.2) 37 (50.0) 11 (14.9) 8 (10.8)

control over

the service

received.

4.4.2 Students

Figure 4.4.2.1

Students' Perception of The Possibility of ChatGPT Devaluing Their Profession

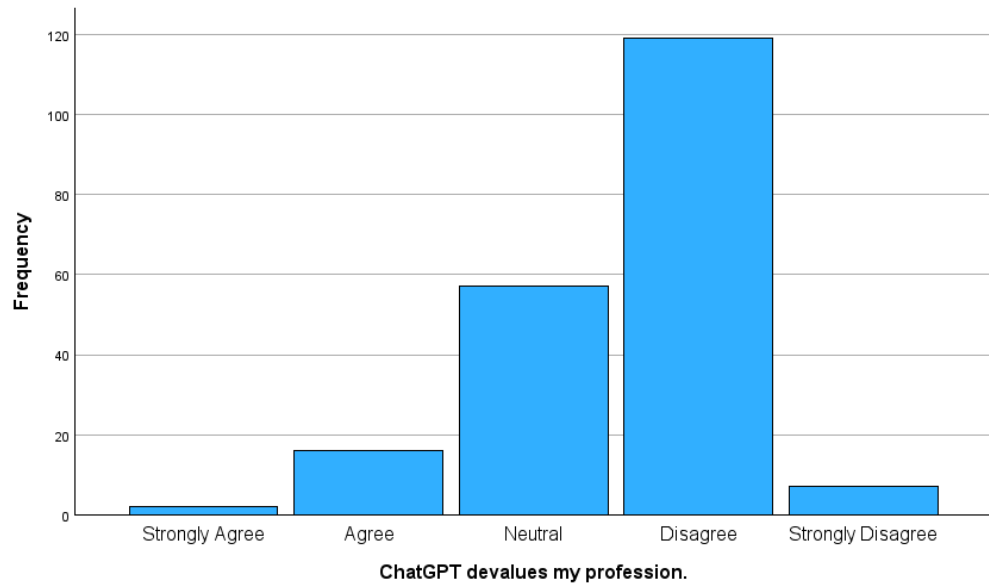


Figure 4.4.2.1 shows students' perception of the possibility of ChatGPT devaluing their profession. 2 or 1.0% of students strongly agreed while 16 or 8.0% of students agreed on the statement. 57 or 28.4% of students were neutral on the statement. However, there are 119 or 59.2% of students, which is more than half of the students disagreed and 7 or 3.5% students strongly disagreed that ChatGPT devalues their healthcare profession. (Table 4.3.2)

Figure 4.4.2.2

Students' Perception of The Possibility of ChatGPT Reducing Errors in Their Career Practice

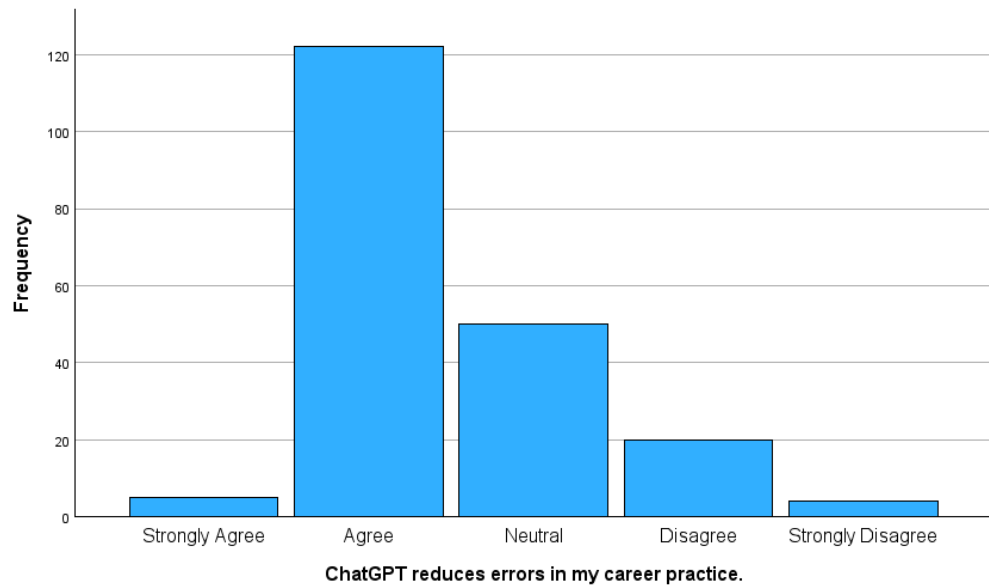


Figure 4.4.2.2 shows the perception of students of the possibility of ChatGPT reducing errors in their career practice. 5 or 2.5% of the students strongly agreed while most of the students—122 out of 201 (60.7%)—agreed on the statement. 50 or 24.9% of the students stayed neutral to the statement. The rest of the students disagreed and strongly disagreed that ChatGPT is able to reduce errors in their career performance, which account for 10.0% and 2.0% respectively. (Table 4.3.2)

Figure 4.4.2.3

Students' Perception of The Possibility of ChatGPT Facilitating Clients' Access to The Service

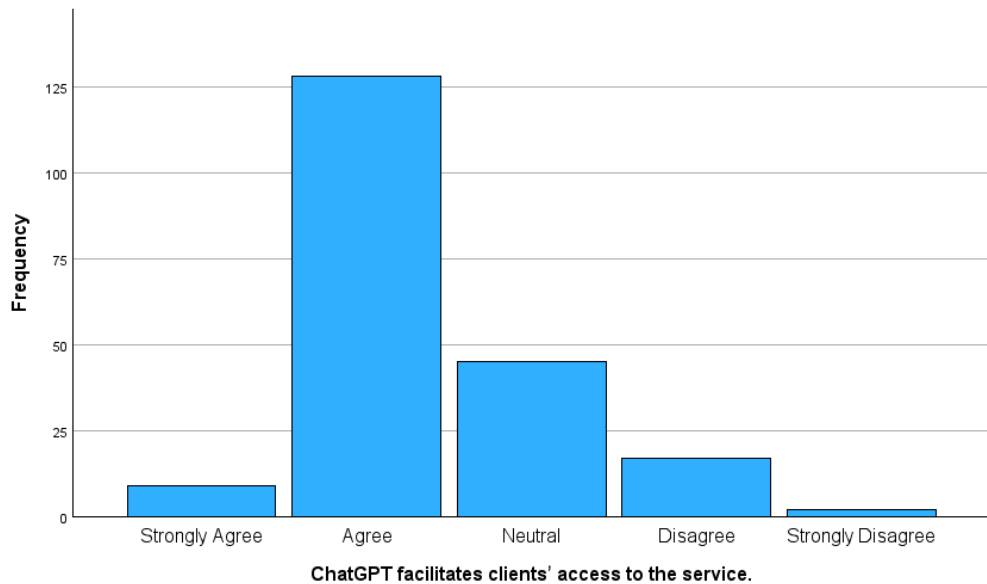


Figure 4.4.2.3 shows students' perception of the possibility of ChatGPT facilitating clients' access to healthcare services. 9 or 4.5% of the students strongly agreed and 128 or 63.7% of the students agreed that statement. 45 or 22.4% of students remained neutral on that. Meanwhile, 17 or 8.5% of students disagreed and 2 or 1.0% of students strongly disagreed that ChatGPT can facilitate clients' access to their healthcare services. (Table 4.3.2)

Figure 4.4.2.4

Students' Perception of The Possibility of ChatGPT Facilitating Professionals' Access to Information

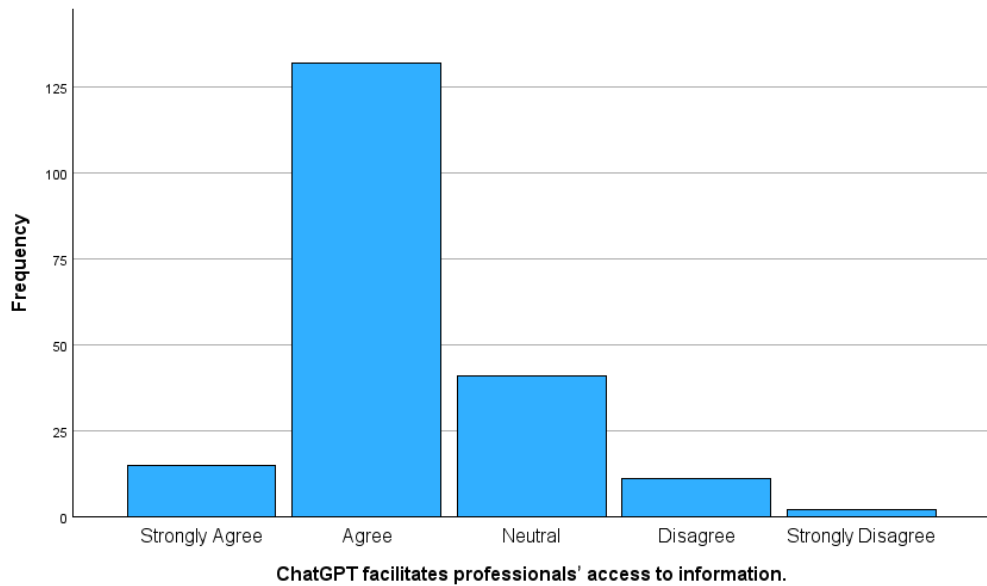


Figure 4.4.2.4 shows the perception of students of the possibility of ChatGPT facilitating healthcare workers' access to information related to healthcare. 15 or 7.5% of the students strongly agreed and 132 or 65.7% of the students agreed on the statement. Meantime, 41 students, which made up 20.4%, remained neutral on the statement. However, 11 students (5.5%) disagreed, and 2 students (1.0%) strongly disagreed with the statement, as they didn't think that ChatGPT can facilitate professionals' access to healthcare information. (Table 4.3.2)

Figure 4.4.2.5

Students' Perception of The Possibility of ChatGPT Enabling Professionals to Make More Accurate Decisions

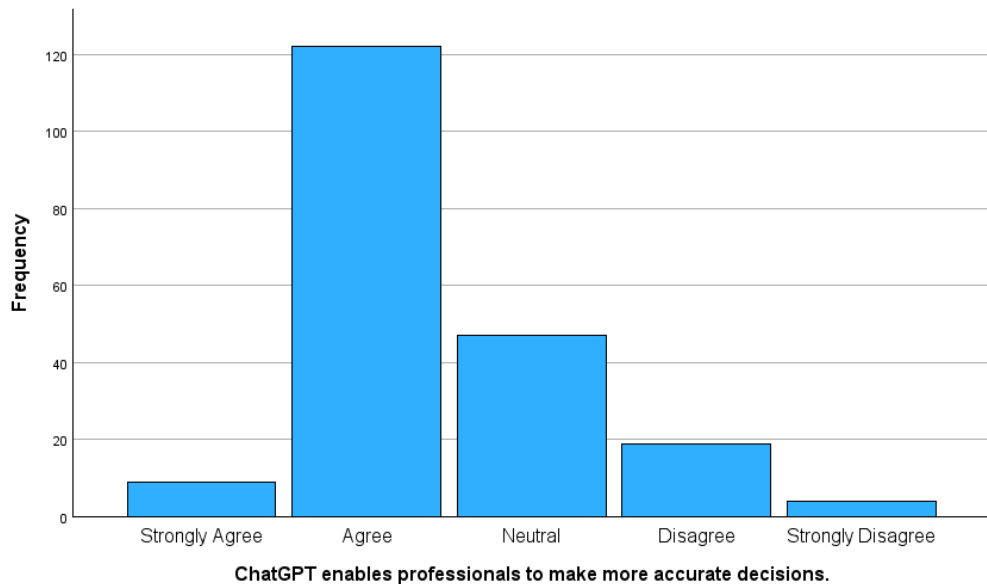


Figure 4.4.2.5 demonstrates the perception of students of the possibility of ChatGPT enabling healthcare professionals to make more accurate decisions. 9 or 4.5% of students strongly agreed while 122 or 60.7% of them agreed on that statement. 47 or 23.4% of students stayed neutral on the statement. Nevertheless, 19 or 9.5% of students disagreed and 4 or 2.0% of the students disagreed that ChatGPT has the ability to assist healthcare professionals to make more accurate decisions. (Table 4.3.2)

Figure 4.4.2.6

Students' Perception of The Possibility of ChatGPT Increasing Clients' Confidence in Service

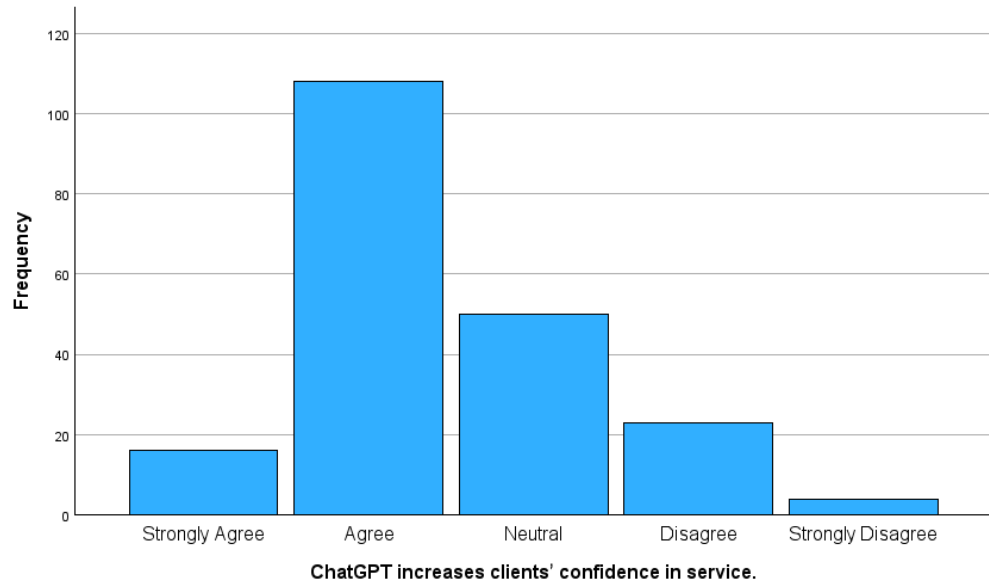


Figure 4.4.2.6 reveals the students' perceptions of the possibility of ChatGPT increasing clients' confidence in healthcare services. 16 or 8.0% of the students strongly agreed and 108 or 53.7% of the students agreed to the statement given. 50 or 24.9% of the students maintained neutral to the statement. Yet, 23 or 11.4% of students disagreed and 4 more students, or 2.0%, strongly disagreed with the statement, as they believed that ChatGPT cannot increase clients' confidence in healthcare services. (Table 4.3.2)

Figure 4.4.2.7

Students' Perception of The Possibility of ChatGPT Facilitating Client Education

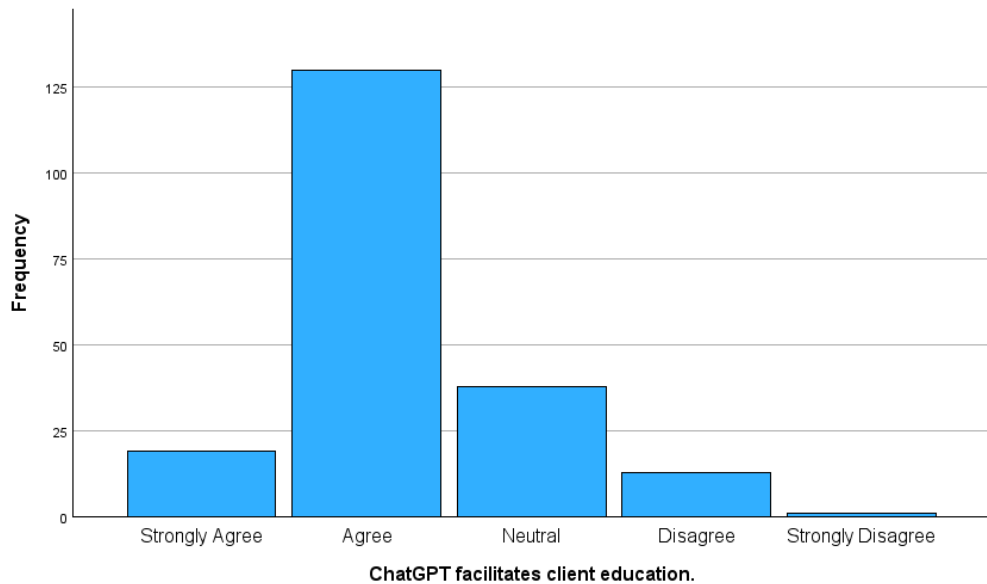


Figure 4.4.2.7 displays the students' perception of the possibility of ChatGPT assisting clients' education. 19 or 9.5% of the students strongly agreed and 130 or 64.7% of the students agreed that ChatGPT has the ability to facilitate client education. 38 or 18.9% of them remained neutral on the statement. 13 or 6.5% of students disagreed and the remaining one student strongly disagreed with the statement given. (Table 4.3.2)

Figure 4.4.2.8

Students' Perception of The Possibility of ChatGPT Negatively Affecting the Relationship Between Healthcare Professionals and Clients

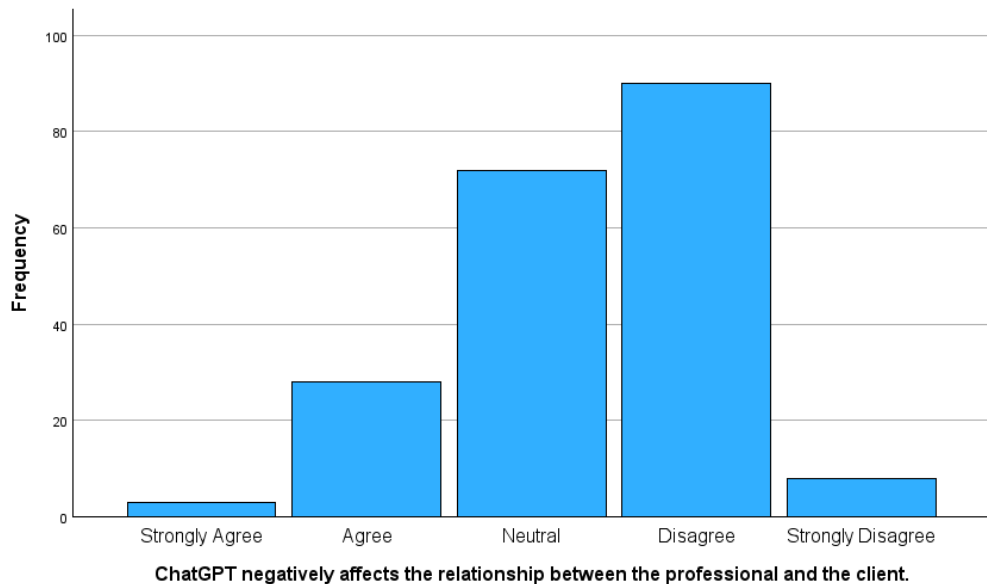


Figure 4.4.2.8 reveals the students' perception of the possibility of ChatGPT negatively affecting the relationship between healthcare professionals and clients. 3 or 1.5% of students strongly agreed and 28 or 13.9% of students agreed on the statement given. Meantime, 72 or 35.8% of students remained neutral. Nevertheless, 90 or 44.8% of students disagreed and 8 or 4.0% of students strongly disagreed with ChatGPT can negatively impact the relationship between healthcare professionals and their clients. (Table 4.3.2)

Figure 4.4.2.9

Students' Perception of The Possibility of ChatGPT Reducing the Humanistic Aspect of The Profession

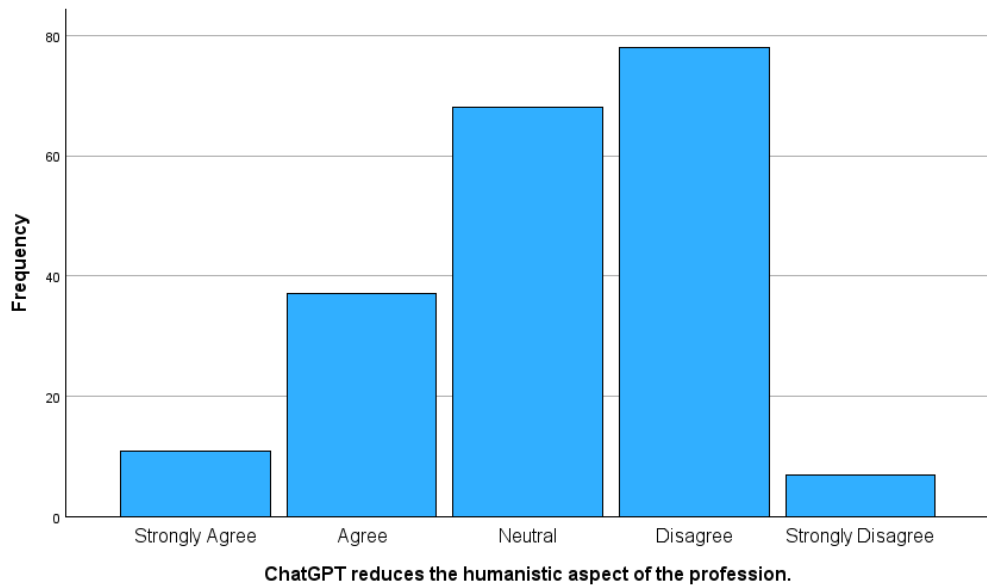
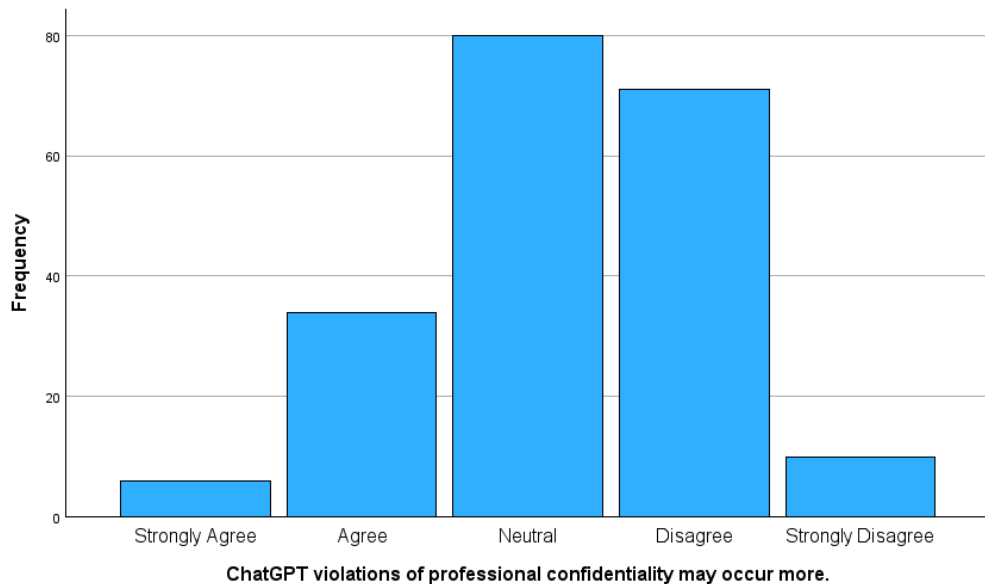


Figure 4.4.2.9 demonstrates students' perception of the possibility of ChatGPT reducing the humanistic aspect of the profession. According to the figure, 11 or 5.5% of students strongly agreed and 37 or 18.4% of students agreed to the statement given, while 68 or 33.8% of students stayed neutral on the statement. However, 78 students (38.8%) disagreed with the statement and 7 out of 201 students, which made up 3.5%, strongly disagreed that ChatGPT reduces the humanistic aspect of the profession. (Table 4.3.2)

Figure 4.4.2.10

Students' Perception of The Possibility of More Occurring of ChatGPT Violations of Professional Confidentiality



Students' perception of the possibility of more occurring of ChatGPT violations of professional confidentiality is revealed in Figure 4.4.2.10. According to the figure, 6 out of 201 students (3.0%) strongly agreed and another 34 of them, which made up 16.9% agreed to the statement given. Apart from that, 80 or 39.8% of students remained neutral to the statement. However, 71 or 35.3% of students disagreed and the remaining 10 students, or 5.0%, was strongly agree with the statement given. (Table 4.3.2)

Figure 4.4.2.11

Students' Perception of The Possibility of ChatGPT Allowing the Clients to Increase Their Control Over the Service Received

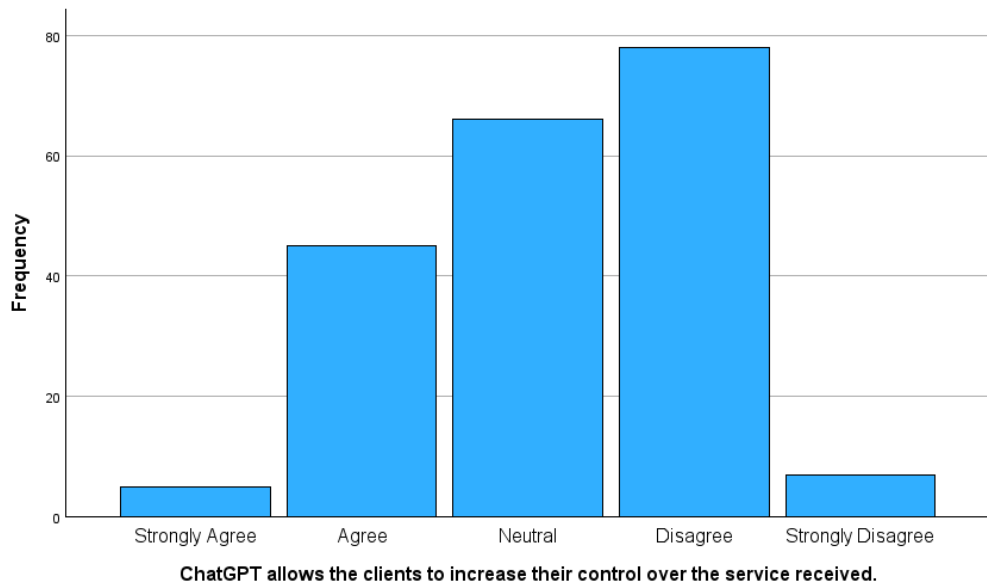


Figure 4.4.2.11 reveals the students' perception of the possibility of ChatGPT allowing the clients to increase their control over the service received. 5 out of 201 students, which made up 2.5%, strongly agreed and 45 or 22.4% of students agreed that ChatGPT allows the clients to increase their control over their healthcare service received. Meanwhile, 66 of them, which made up 32.8%, maintained neutral on the statement. 38.8% of the students, which is 78 of them disagreed and the remaining 7 individuals (3.5%) strongly disagreed to the statement given. (Table 4.3.2)

Table 4.3.2*Perceptions of Students Towards ChatGPT*

Variables		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
		<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
ChatGPT						
devalues my profession.		2 (1.0)	16 (8.0)	57 (28.4)	119 (59.2)	7 (3.54)
ChatGPT						
reduces errors in my career practice.		5 (2.5)	122 (60.7)	50 (24.9)	20 (10.0)	4 (2.0)
ChatGPT						
facilitates clients' access to the service.		9 (4.5)	128 (63.7)	45 (22.4)	17 (8.5)	2 (1.0)
ChatGPT						
facilitates professionals' access to information.		15 (7.5)	132 (65.7)	41 (20.4)	11 (5.5)	2 (1.0)

ChatGPT

enables

professionals

9 (4.5) 122 (60.7) 47 (23.4) 19 (9.5) 4 (2.0)

to make more

accurate

decisions.

ChatGPT

increases

clients'

16 (8.0) 108 (53.7) 50 (24.9) 23 (11.4) 4 (2.0)

confidence in

service.

ChatGPT

facilitates

19 (9.5) 130 (64.7) 38 (18.9) 13 (6.5) 1 (0.5)

client

education.

ChatGPT

negatively

affects the

relationship

3 (1.5) 28 (13.9) 72 (35.8) 90 (44.8) 8 (4.0)

between the

professional

and the client.

ChatGPT

reduces the

humanistic 11 (5.5) 37 (18.4) 68 (33.8) 78 (38.8) 7 (3.5)

aspect of the

profession.

ChatGPT

violations of

professional

confidentiality

6 (3.0) 34 (16.9) 80 (39.8) 71 (35.3) 10 (5.0)

may occur

more.

ChatGPT

allows the

clients to

increase their 5 (2.5) 45 (22.4) 66 (32.8) 78 (38.8) 7 (3.5)

control over

the service

received.

4.5 Opinions towards ChatGPT

4.5.1 Educators

Figure 4.5.1.1

Educators' Opinions on The Inclusion of Knowledge and Skills Related to ChatGPT in The Academic Curriculum

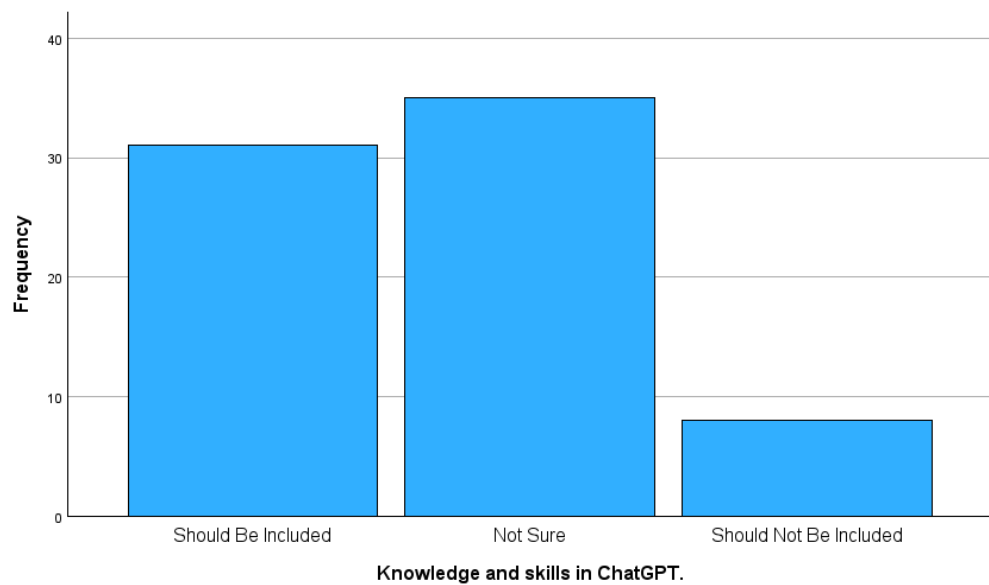
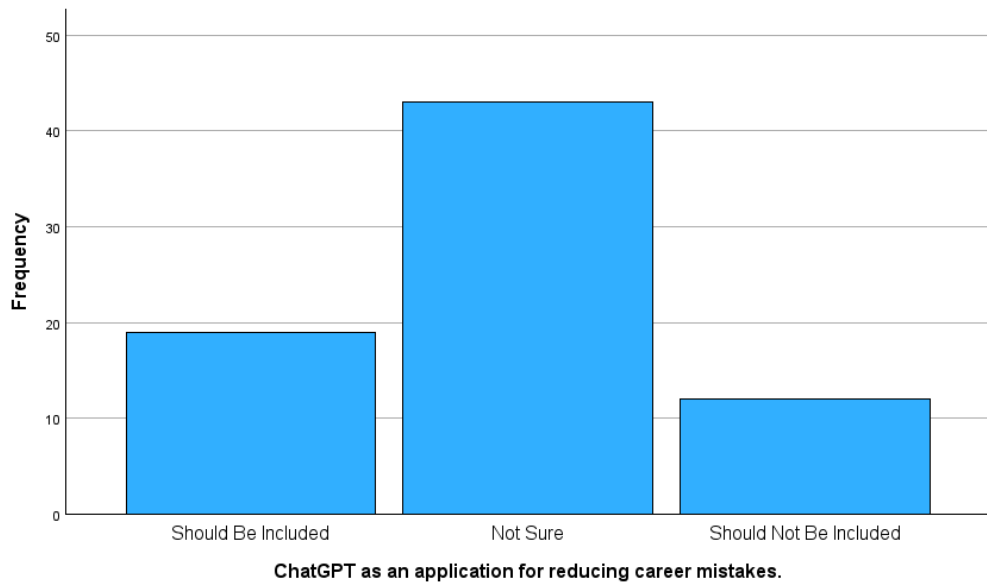


Figure 4.5.1.1 reveals educators' opinions on the inclusion of knowledge and skills related to ChatGPT in the academic curriculum. 31 out of 74 (41.9%) educators thought that knowledge and skills in ChatGPT should be included in the academic curriculum. Meanwhile, 35 or 47.3% of the educators were not confident in endorsing the statement. The remaining 8 educators, which made up 10.8%, they were of the opinion that knowledge and skills related to ChatGPT should not be included in academic curriculum. (Table 4.4.1)

Figure 4.5.1.2

Educators' Opinions on The Inclusion of ChatGPT as An Application for Reducing Career Mistakes in The Academic Curriculum



Educators' opinions on the inclusion of ChatGPT as an application for reducing career mistakes in the academic curriculum is shown in Figure 4.5.1.2. Based on the figure, 19 educators, which made up 25.7%, had the opinion that ChatGPT as an application should be included in academic curriculum for reducing career mistakes. 43 educators (58.1%) reported that they were not sure about the statement given. In the remaining 12 educators' opinions, ChatGPT as an application for reducing healthcare career mistakes should not be included in academic curriculum. (Table 4.4.1)

Figure 4.5.1.3

Educators' Opinions on The Inclusion of Training to Prevent and Solve Ethical Problems That May Arise with ChatGPT Applications in The Academic Curriculum

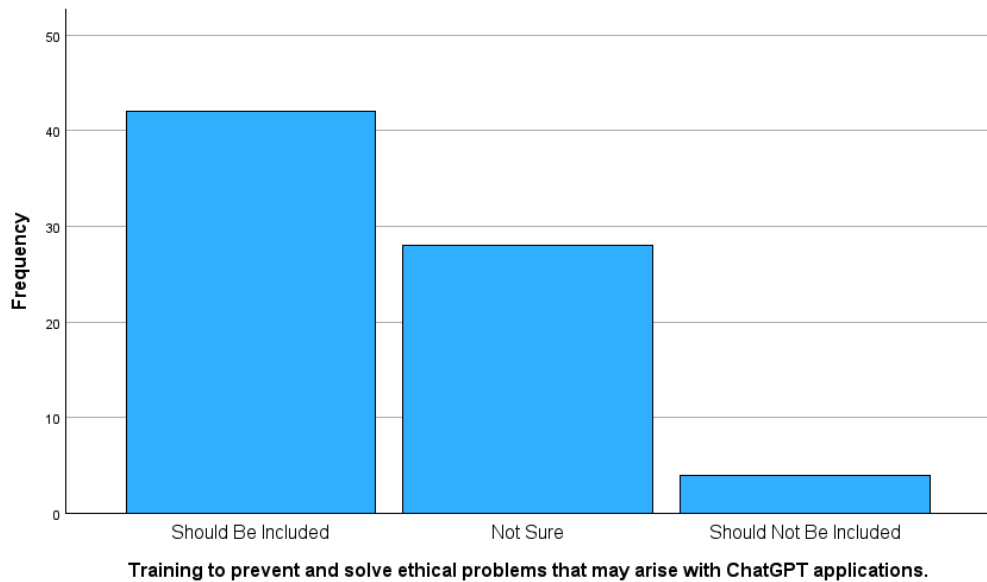


Figure 4.5.1.3 shows the educators' opinions on the inclusion of training to prevent and solve ethical problems that may arise with ChatGPT applications in the academic curriculum. 42 of them, or 56.8%, felt that the training mentioned should be included in academic curriculum, while 28 educators, or 37.8%, were not sure about that. 4 or 5.4% of the educators believed that the training would bring negative impacts, thus it should not be included in academic curriculum. (Table 4.4.1)

Figure 4.5.1.4

Educators' Opinions on The Inclusion of a Simplified Lecture on ChatGPT in The Academic Curriculum

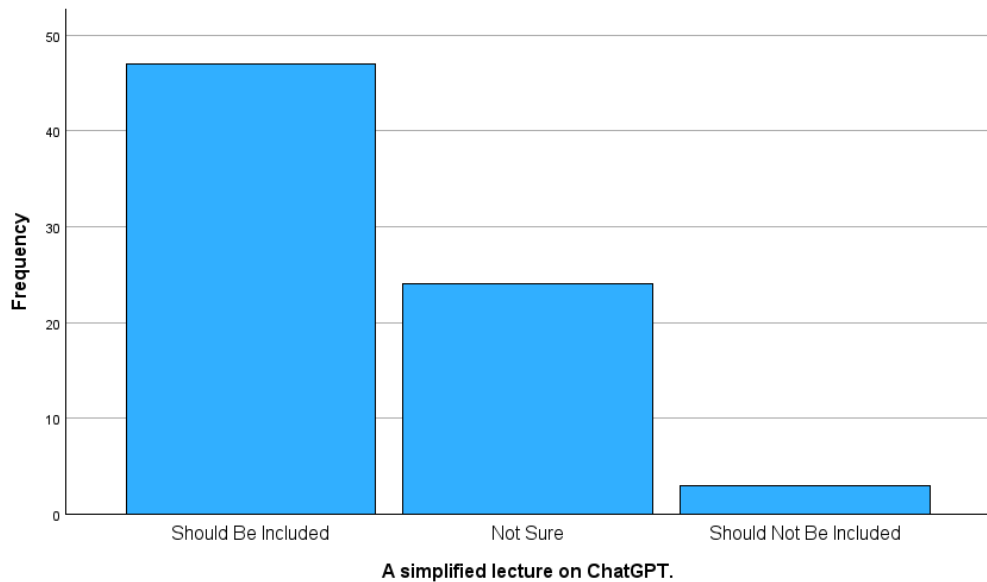


Figure 4.5.1.4 demonstrates the educators' opinions on the inclusion of a simplified lecture related to ChatGPT in the academic curriculum. 47 out of 74, which made up 63.5% of all educators participated in the study, had the opinion that a simplified lecture about ChatGPT should be included in their academic curriculum. 24 or 32.4% of educators indicated uncertainty regarding the given statement. The remaining 3 educators (4.1%) thought that the simplified lecture should not be included in the academic curriculum. (Table 4.4.1)

Figure 4.5.1.5

Educators' Opinions on The Inclusion of ChatGPT Applications That Will Increase Clients' Control Over the Service Received in The Academic Curriculum

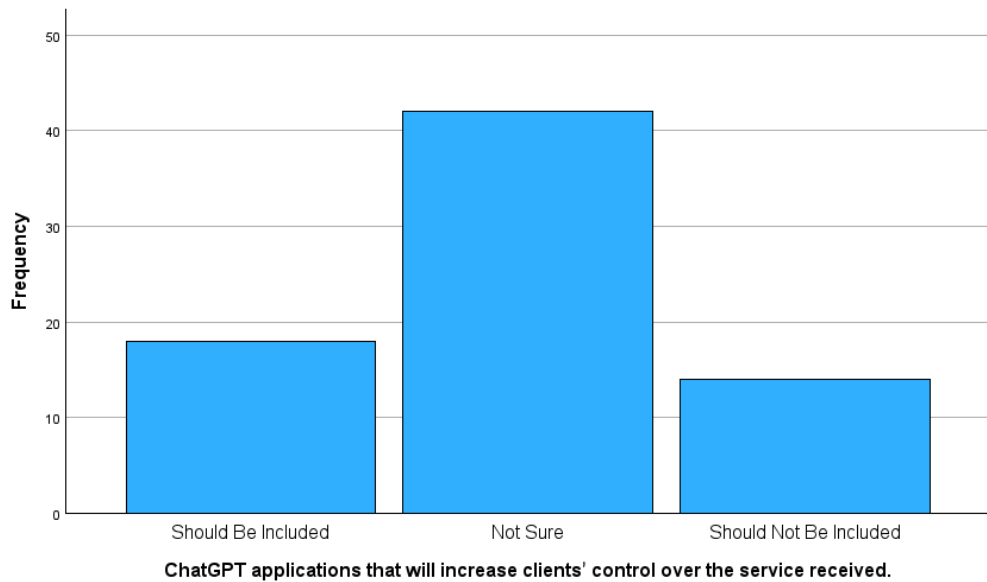
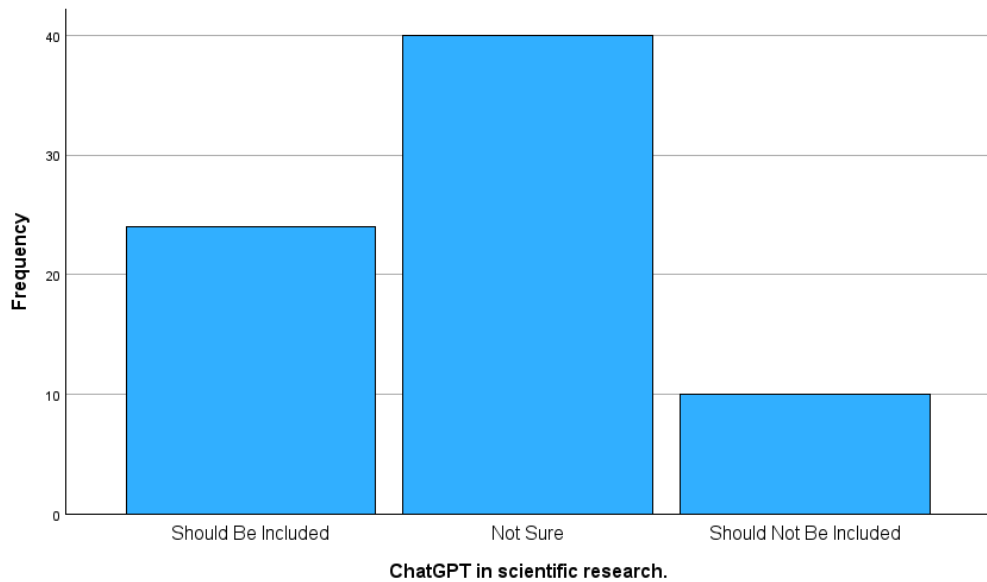


Figure 4.5.1.5 reveals the educators' opinions on the inclusion of ChatGPT applications that will increase clients' control over the healthcare service received in the academic curriculum. 18 educators, or 24.3%, believed that the statement mentioned should be included in their academic curriculum. 42 or 56.8% of the educators conveyed a lack of certainty regarding the given statement. 14 educators, which made up 18.9%, had the opinion that the ChatGPT applications mentioned should not be included in their academic curriculum. (Table 4.4.1)

Figure 4.5.1.6

Educators' Opinions on The Inclusion of ChatGPT in Scientific Research in The Academic Curriculum



Educators' opinions on the inclusion of ChatGPT in scientific research in the academic curriculum is revealed in Figure 4.5.1.6. 24 educators (32.4%) believed that incorporating ChatGPT in scientific research into the academic curriculum is essential. More than half of the educators (54.1%) of educators, which is 40 of them, were not sure about the statement mentioned above. 10 or 13.5% of educators had the opinion that ChatGPT in scientific research should not be included in the academic curriculum. (Table 4.4.1)

Figure 4.5.1.7

Educators' Opinions on The Inclusion of ChatGPT Assisted Emergency Responses in The Academic Curriculum

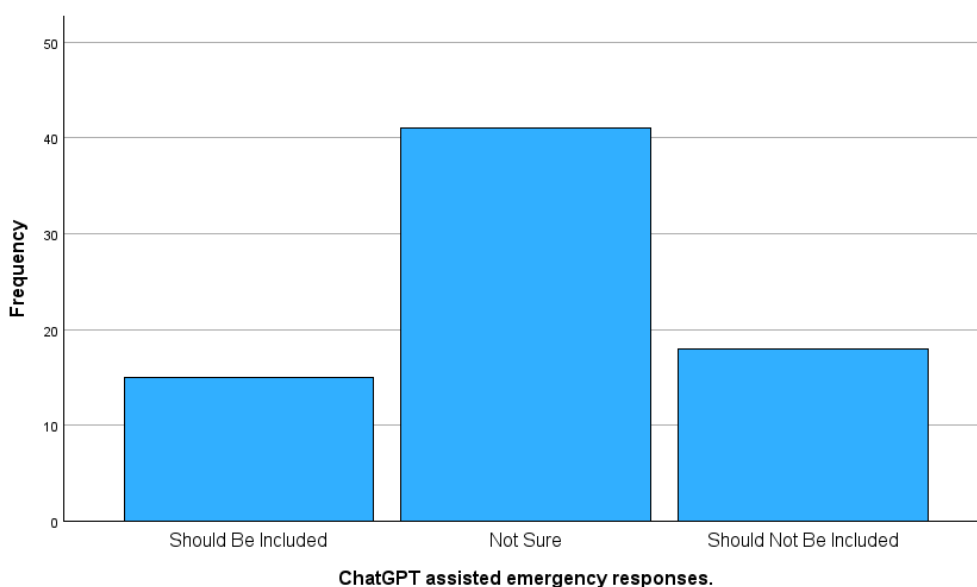


Figure 4.5.1.7 shows the educators' opinions on the inclusion of ChatGPT assisted emergency responses in the academic curriculum. 15 of them, or 20.3%, felt that the statement mentioned should be included in academic curriculum, while 41 educators, or 55.4%, were not sure about that. 18 or 24.3% of the educators believed that the given statement would bring negative impacts, thus it should not be included in academic curriculum. (Table 4.4.1)

Table 4.4.1*Opinions of Educators Towards ChatGPT*

Variables	Should Be Included <i>n</i> (%)	Not Sure <i>n</i> (%)	Should Not Be Included <i>n</i> (%)
Knowledge and skills in ChatGPT.	31 (41.9)	35 (47.3)	8 (10.8)
ChatGPT as an application for reducing career mistakes.	19 (25.7)	43 (58.1)	12 (16.2)
Training to prevent and solve ethical problems that may arise with ChatGPT applications.	42 (56.8)	28 (37.8)	4 (5.4)
A simplified lecture on ChatGPT.	47 (63.5)	24 (32.4)	3 (4.1)
ChatGPT applications that will increase	18 (24.3)	42 (56.8)	14 (18.9)

clients' control over their service received.			
ChatGPT in scientific research.	24 (32.4)	40 (54.1)	10 (13.5)
ChatGPT assisted emergency responses.	15 (20.3)	41 (55.4)	18 (24.3)

4.5.2 Students

Figure 4.5.2.1

Students' Opinions on The Inclusion of Knowledge and Skills Related to ChatGPT in The Academic Curriculum

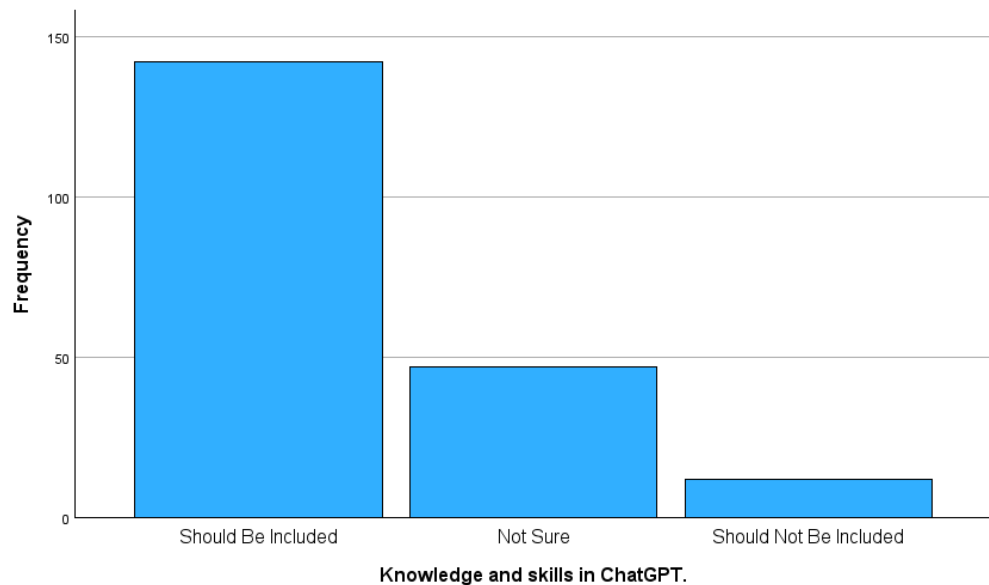
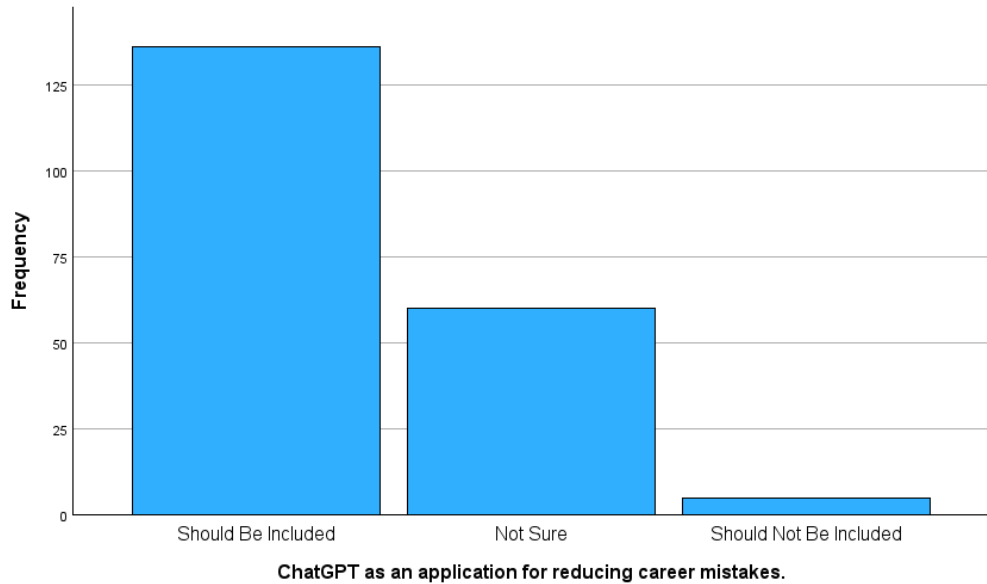


Figure 4.5.2.1 reveals students' opinions on the inclusion of knowledge and skills related to ChatGPT in the academic curriculum. Majority of the students—142 out of 201 (70.6%)—thought that knowledge and skills in ChatGPT should be included in the academic curriculum. Meanwhile, 47 or 23.4% of the students were not confident in endorsing the statement. The remaining 12 students, which made up 6.0%, they were of the opinion that knowledge and skills related to ChatGPT should not be included in academic curriculum. (Table 4.4.2)

Figure 4.5.2.2

Students' Opinions on The Inclusion of ChatGPT as An Application for Reducing Career Mistakes in The Academic Curriculum



Students' opinions on the inclusion of ChatGPT as an application for reducing career mistakes in the academic curriculum is shown in Figure 4.5.2.2. Based on the figure, more than half of the students, which is 136 of them, had the opinion that ChatGPT as an application should be included in academic curriculum for reducing career mistakes. Another 69 students reported that they were not sure about the statement given. In the remaining 5 students' opinions, ChatGPT as an application for reducing healthcare career mistakes should not be included in academic curriculum. (Table 4.4.2)

Figure 4.5.2.3

Students' Opinions on The Inclusion of Training to Prevent and Solve Ethical Problems That May Arise with ChatGPT Applications in The Academic Curriculum

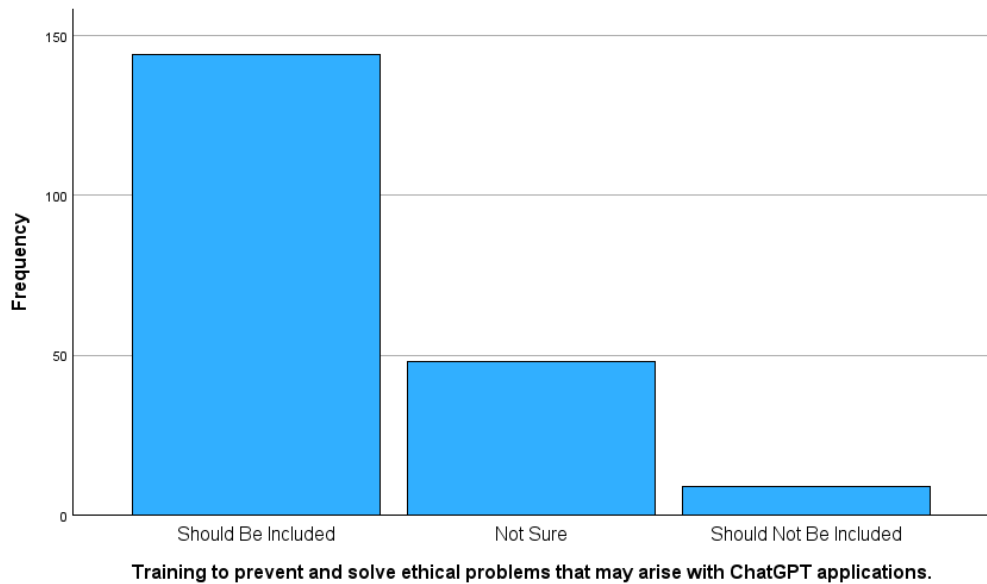


Figure 4.5.2.3 shows the students' opinions on the inclusion of training to prevent and solve ethical problems that may arise with ChatGPT applications in the academic curriculum. 144 of them, or 71.6%, felt that the training mentioned should be included in academic curriculum, while 48 students, or 23.9%, were not sure about that. 9 or 4.5% of the students believed that the training would bring negative impacts, thus it should not be included in academic curriculum. (Table 4.4.2)

Figure 4.5.2.4

Students' Opinions on The Inclusion of a Simplified Lecture on ChatGPT in The Academic Curriculum

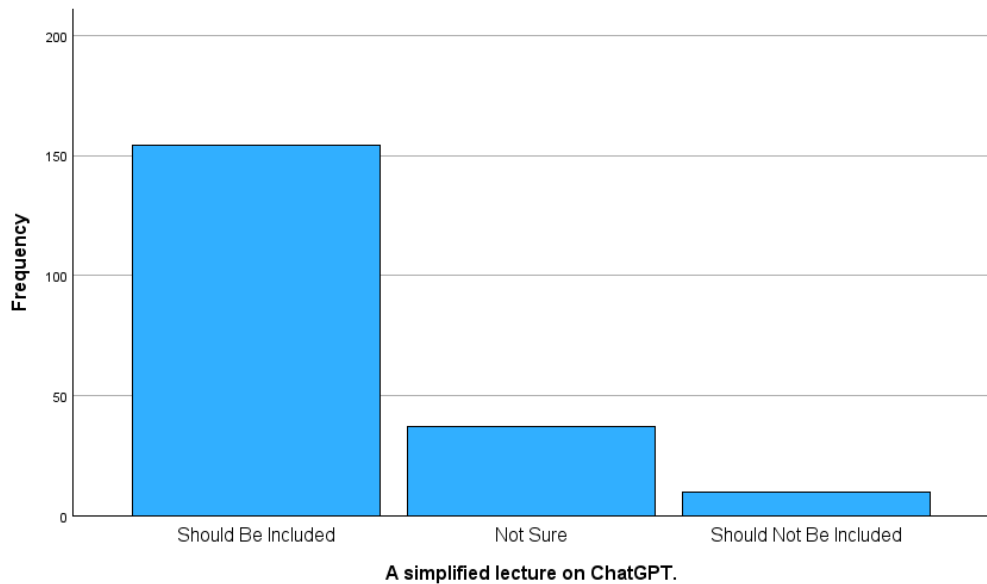


Figure 4.5.2.4 demonstrates the students' opinions on the inclusion of a simplified lecture related to ChatGPT in the academic curriculum. 154 out of 201, which made up 76.6% of all students participated in the study, had the opinion that a simplified lecture about ChatGPT should be included in their academic curriculum. 37 or 18.4% of students indicated uncertainty regarding the given statement. The remaining 10 students thought that the simplified lecture should not be included in the academic curriculum. (Table 4.4.2)

Figure 4.5.2.5

Students' Opinions on The Inclusion of ChatGPT Applications That Will Increase Clients' Control Over the Service Received in The Academic Curriculum

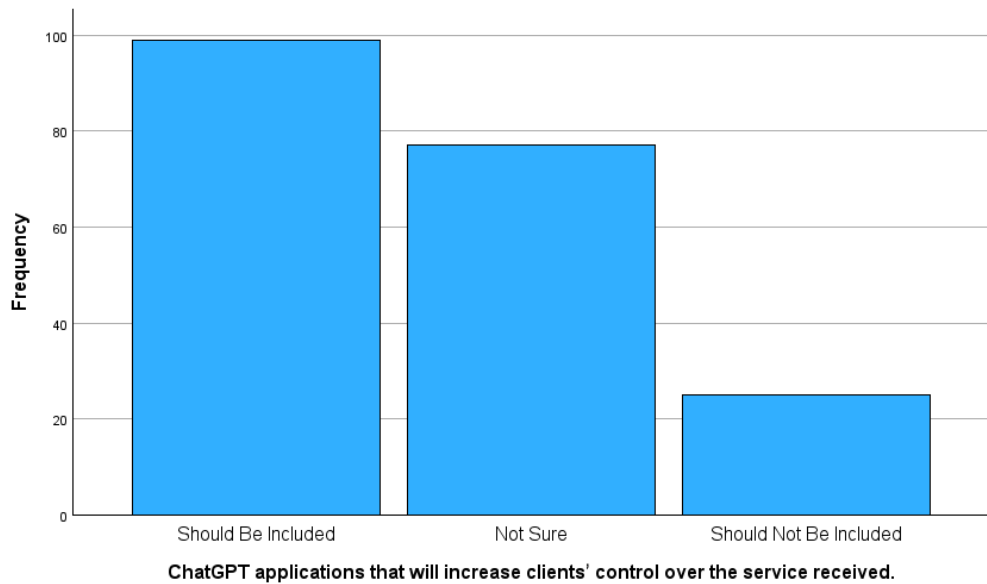
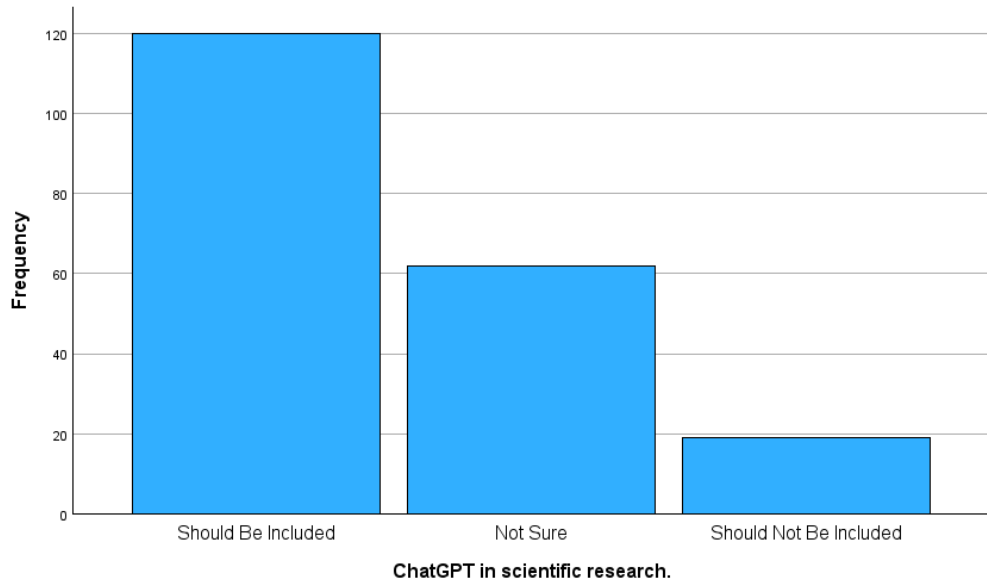


Figure 4.5.2.5 reveals the students' opinions on the inclusion of ChatGPT applications that will increase clients' control over the healthcare service received in the academic curriculum. Almost half of the students, which is 99 of them, or 49.3%, believed that the statement mentioned should be included in their academic curriculum. 77 or 38.3% of the students conveyed a lack of certainty regarding the given statement. 25 students, which made up 12.4%, had the opinion that the ChatGPT applications mentioned should not be included in their academic curriculum. (Table 4.4.2)

Figure 4.5.2.6

Students' Opinions on The Inclusion of ChatGPT in Scientific Research in The Academic Curriculum



Students' opinions on the inclusion of ChatGPT in scientific research in the academic curriculum is revealed in Figure 4.5.2.6. More than half of the students (59.7%) believed that incorporating ChatGPT in scientific research into the academic curriculum is essential. 30.8% of students, which is 62 of them, were not sure about the statement mentioned above. 19 or 9.5% of students had the opinion that ChatGPT in scientific research should not be included in the academic curriculum. (Table 4.4.2)

Figure 4.5.2.7

Students' Opinions on The Inclusion of ChatGPT Assisted Emergency Responses in The Academic Curriculum

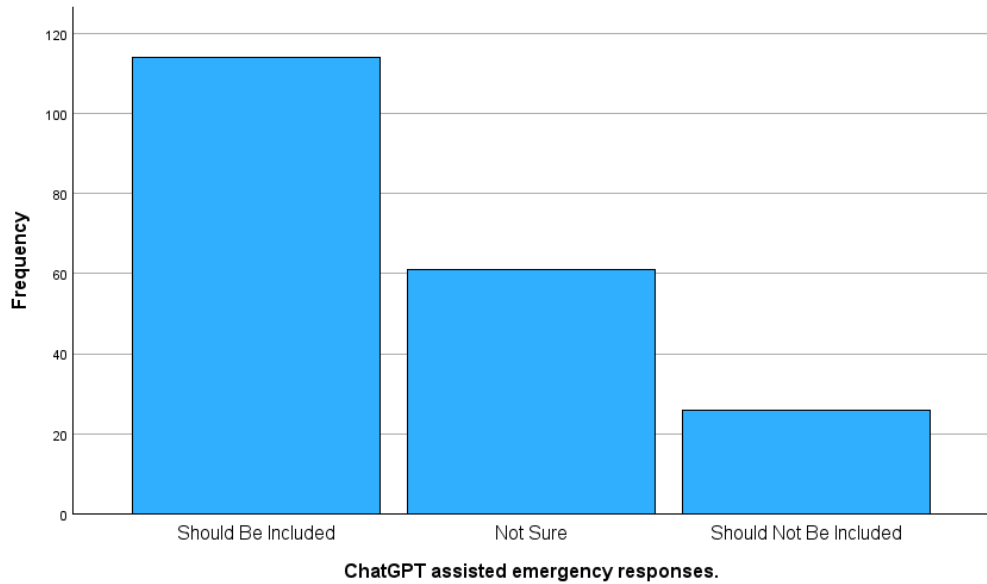


Figure 4.5.2.7 shows the students' opinions on the inclusion of ChatGPT assisted emergency responses in the academic curriculum. 114 of them, or 56.7%, felt that the statement mentioned should be included in academic curriculum, while 61 students, or 30.0%, were not sure about that. 26 or 12.9% of the students believed that the given statement would bring negative impacts, thus it should not be included in academic curriculum. (Table 4.4.2)

Table 4.4.2*Opinions of Students Towards ChatGPT*

Variables	Should Be		Should Not Be Included
	Included	Not Sure	
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>
Knowledge and skills in ChatGPT.	142 (70.6)	47 (23.4)	12 (6.0)
ChatGPT as an application for reducing career mistakes.	136 (67.7)	60 (29.9)	5 (2.5)
Training to prevent and solve ethical problems that may arise with ChatGPT applications.	144 (71.6)	48 (23.9)	9 (4.5)
A simplified lecture on ChatGPT.	154 (76.6)	27 (18.4)	10 (5.0)
ChatGPT applications that will increase	99 (49.3)	77 (38.3)	25 (12.4)

clients' control over their service received.			
ChatGPT in scientific research.	120 (59.7)	62 (30.8)	19 (9.5)
ChatGPT assisted emergency responses.	114 (56.7)	61 (30.3)	26 (12.9)

CHAPTER 5

DISCUSSION

5.1 Chapter Overview

This chapter will outline the analysis of significant findings from the results sections that are compatible with the research objectives. A discussion of the study's drawbacks, recommendations for further investigation, and the project's conclusion will be covered.

5.2 Discussion

The objectives of this study are achieved by collecting and comparing the awareness, perceptions, and opinions from UTAR MK FMHS educators and students with questionnaire distributed. The findings will be covered in the discussion below.

However, to the best of our knowledge, there is a severe lack of research done to determine and understand the voice of educators and students regarding the views towards ChatGPT, especially educators. Thus, this study would fill the gap, significantly raise the awareness of healthcare professionals, and provide advanced healthcare services to patients, communities, and clinical settings. It would also serve as a reference for future studies.

5.2.1 Comparison between educators and students

5.2.1.1 Comparison between awareness of educators and students towards ChatGPT

According to the result, there are noticeable characteristics that show the level of educators' and students' awareness towards ChatGPT's role in their fields. Educators were generally doubtful that ChatGPT would replace their work; 62.2% of them disagreed with this concept. In contrast, a significant percentage of students (71.1%) thought that ChatGPT was a useful tool for their area of work, which is a similar result compared to the result from Syed and Basil A. Al-Rawi (2023), as the pharmacy students in Saudi Arabia generally have a positive perception of AI, with 69.4% believing that AI is a tool that helps healthcare professionals (HCPs) rather than replaces them. The gap between the educators and students from UTAR MK FMHS in awareness could be due to educators emphasize more about the human components in healthcare and education settings that AI cannot fully mimic since educators have a stronger foundation in their profession. Similar to the educators in Pakistan, especially those with more experience, expressed generally negative perceptions, with hesitation to use ChatGPT in the classroom, expressing worries about cheating, plagiarism, and disruption. (Iqbal et al., 2022). Students, on the other hand, may give priority to new advanced tools that have the ability to improve their learning experience and future careers.

Furthermore, in regard to possible impact, educators were more uncertain (50.0%) than students (10.4%). Conversely, students expressed more confidence regarding ChatGPT's beneficial effects on their future careers—58.2%

said that its widespread usage would be better. The students' positive outlook is aligned with attitude of pharmacy students in Saudi Arabia who believe that AI will make the healthcare profession better, with 57.3% expressing this view (Syed & Basil A. Al-Rawi, 2023). Experienced educators, having witnessed the evolution of technology in their profession field, may be more careful about adopting a new tool in healthcare or education settings, more aware of challenges and limitations it may bring. Comparable research done by Iqbal et al. (2022), Pakistan university educators expressed concerns about potential risks, including cheating and disruption, however educators from Pakistan also acknowledged potential benefits such as improved lesson planning and timely feedback. In contrast, as students, growing up with technology and more oriented and adapted to AI integration, are more positive view of ChatGPT's impact on future healthcare professions.

The need for further education and training on ChatGPT in educational settings is emphasised by a lack of formal education of ChatGPT received among educators (5.4%) and students (9.0%). The result is similar to the previous research, Iqbal et al. (2022) found that educators are not yet ready to accept ChatGPT in their classrooms, and strategies are needed to mitigate potential risks.

5.2.1.2 Comparison between perceptions of educators and students towards ChatGPT

The findings presented in Figures 4.4.1.1 to 4.4.2.11 offer an extensive review of the way healthcare educators and students perceive ChatGPT, covering a variety of aspects of their professional practice. The results are analysed and compared among educators and students to facilitate a comprehensive discussion.

The ways that educators and students view ChatGPT vary greatly in several different ways. Though students (59.2%) view AI as an additional aid rather than a danger, educators (25.7%) are concerned about the value of the healthcare profession and emphasise the importance of the human element in education (Figure 4.4.1.1 and Figure 4.4.2.1). Similar to the views of students from UTAR, a significant portion of pharmacy students in Saudi Arabia, specifically 46.5%, do not believe that artificial intelligence (AI) would devalue their profession. This insight indicates a certain level of optimism or confidence among these pharmacy students regarding the impact of AI on their field (Syed & Basil A. Al-Rawi, 2023). An opposing result is provided by Qurashi et al. (2021), as in response to the issue of whether AI will replace participants' occupations, over half of the students felt that this application could endanger their careers.

Regarding ChatGPT's contribution to a decrease in errors in medical profession, opinions are different. While students (60.7%) consider AI favourably and anticipate improved accuracy and efficiency in their future careers, educators (18.9%) express doubt, believing that ChatGPT cannot assist

in reducing healthcare career errors (Figure 4.4.1.2 and Figure 4.4.2.2). Pharmacy students in Saudi Arabia seem to have an optimistic perspective on AI's role in reducing errors (75%), aligning with the current study where students generally anticipate improved accuracy and efficiency in their future careers (Syed & Basil A. Al-Rawi, 2023).

There seems to be disagreement among educators and students on ChatGPT's potential to make healthcare services more accessible. Educators seem to have mixed feelings regarding the potential of ChatGPT to improve accessibility, while students, who agree with this statement at 63.7%, seem to have greater enthusiasm (Figure 4.4.1.3 and Figure 4.4.2.3). The gap indicates various views on how useful and effective AI is in solving societal problems.

The viewpoints of educators and students about ChatGPT's capacity to make information more accessible to medical professionals to obtain are shown in Figures 4.4.1.4 and 4.4.2.4. With a greater proportion of students (73.2%) agreeing or strongly agreeing than educators (32.4%), both groups showed a positive attitude. This implies that students are more positive about ChatGPT's ability to improve healthcare professionals' access to information and might consider it an important tool for knowledge access. According to the study done by Syed and Basil A. Al-Rawi (2023), a significant majority of students, specifically 77.7%, believe that Artificial Intelligence (AI) has the capability to facilitate healthcare professionals' access to information. This coincides with the perceptions of students in the current study.

The opinions of educators and students about ChatGPT's capacity to help medical professionals make more precise decisions are distributed similarly (Figure 4.4.1.5 and Figure 4.4.2.5). There is a significant percentage of neutral responses in both groups, indicating a common lack of confidence regarding ChatGPT's effect on decision-making precision. According to Qurashi et al. (2021), 75.1% of students believe that AI will be useful in improving diagnosis and saving time, which the results show similar perceptions of both Saudi Arabia radiology students and UTAR healthcare students.

Students and educators have different views about whether ChatGPT can boost patients' confidence in medical services, as shown in Figures 4.4.1.6 and 4.4.2.6. Educators tend to be more doubtful than students—only 13.4% are in disagreement or strong disagreement—while 31.1% of educators indicate disagreement or strong disagreement.

Educators and students have various thoughts about ChatGPT's role in supporting client education. Though the majority of students—74.2%—agree that ChatGPT may improve client education, educators take a more mixed perspective. 37.8% of educators express uncertainty, whereas 37.8% see the possible advantages. Nonetheless, 24.3% voice doubts or disbelief (Figure 4.4.1.7 and Figure 4.4.2.7) The difference demonstrates a perceived gap between educators and students, with the educators group expressing worries about upholding the standard of client education in a medical setting while students are enthusiastic about the educational possibilities of AI.

Educators and students address how they perceive ChatGPT could negatively impact the interaction between patients and healthcare providers in Figures 4.4.1.8 and 4.4.2.8. Educators appear to have more different thoughts on this subject than students, who, at 35.8%, have a neutral stand. For educators, 43.5% are neutral. Nonetheless, a significant portion of educators (31.0%) disagree or strongly disagree, this could indicate a certain level of confidence in the quality and stability of the relationship between the professional and the client. It indicates that these educators think the human elements of healthcare—empathy, communication, and trust—are strong enough to withstand the introduction of AI technology like ChatGPT without suffering from major drawbacks. Conversely, students display a more evenly distributed range of viewpoints.

Both educators and students in Figures 4.4.1.9 and 4.4.2.9 essentially express a neutral view on the probability of ChatGPT decreasing the humanistic aspect of the profession. However, compared to students (33.8%), a slightly bigger percentage of educators (41.9%) remain neutral. In contrast, pharmacy students in Saudi Arabia seemed more optimistic, with a majority believing that AI would not reduce the humanistic aspect of the medical profession (Syed & Basil A. Al-Rawi, 2023). This could be a reflection of educators' worries about the possible loss of human interaction in medical procedures.

Concerns regarding the potential theft of professional confidentiality via ChatGPT are voiced by educators as well as students (Figures 4.4.1.10 and 4.4.2.10). Educators, on the other hand, seem more negative thoughts on this topic than students, as 33.2% of the educators agree or strongly agree that

ChatGPT violations of professional confidentiality may occur more. For students, 40.3% disagree or strongly disagree.

Among educators (Figure 4.4.1.11), 10.8% express agreement, 50.0% remain neutral, and 32.8% indicate disagreement. Conversely, students (Figure 4.4.2.11) exhibit a higher level of agreement, with 25.3%, yet a considerable 32.8% also remain neutral, and 38.8% express disagreement. This comparison indicates that students are comparatively more positive, demonstrating a larger tendency towards the belief that AI could benefit clients, even though both groups have doubts regarding ChatGPT's influence on client control. Educators, on the other hand, seem more vigilant, revealing a more varied opinion on ChatGPT's capacity to alter patient interactions in healthcare settings.

In summary, due to their deep experience in the field, educators appear to be cautious of ChatGPT and raise concerns about how it can affect the healthcare industry. Conversely, students seem to be more positive overall and see ChatGPT as a technology that can improve several healthcare delivery features. Differences in experience, exposure, and comprehension of the variations involved in healthcare practice may be the cause of this inequality in viewpoints. The study emphasises how crucial it is to have discussions regarding the application of AI technology in healthcare with educators and students to reduce fears and optimise advantages for all parties involved.

5.2.1.3 Comparison between opinions of educators and students towards ChatGPT

The views towards ChatGPT of educators are mixed; 41.9% of them support adding ChatGPT-related skills and knowledge, while 47.3% oppose it. On the other hand, a significant proportion of students (70.6%) support incorporating it. Pharmacy students in Saudi Arabia express support for including AI-related knowledge and skills in their curriculum, with 56.7% agreeing. This is comparable to the current study, where students generally favoured the inclusion of AI in educational settings, emphasizing its importance for their professional development (Syed & Basil A. Al-Rawi, 2023). The difference opinions between UTAR MK FMHS educators and students indicates a possible generational split apart, as students perceive ChatGPT as more essential to their education than certain educators do.

Although only 25.7% of educators prefer integrating ChatGPT to help students avoid professional mistakes, students are more excited about the concept—67.7% of them support its inclusion. This demonstrates how confident students are in ChatGPT's beneficial effects on their professional development.

A majority of educators (56.8%) support training on ethical problems associated with ChatGPT, compared with students, of whom 71.6% support such training. This indicates that educators are possibly more cautious or unsure about ChatGPT's consequences for ethics than the students. Compared to the research done by Syed and Basil A. Al-Rawi (2023), a majority of pharmacy students have similar opinions as UTAR MK FMHS students, supporting

training on ethical problems associated with AI, and suggesting a recognition of the importance of ethical considerations in AI integration.

Educators (63.5%) tend to agree with students (76.6%) when it comes to using ChatGPT for a simplified class. This agreement could result from the widespread opinion that a simplified lecture provides an initial foundation for encouraging more research into ChatGPT. It might be beneficial for both educators and students to begin with an understandable overview before moving on to more complicated concepts.

Educators (24.3%) are hesitant to use ChatGPT programmes to give clients greater control, whereas students (49.3%) have a more positive opinion. Compared to pharmacy students in Saudi Arabia, 66.2% of them also believe that including AI applications that can increase patients' control over their health might have a positive effect (Syed & Basil A. Al-Rawi, 2023). The difference might be the result of educators' concerns about how it would affect their traditional roles and responsibilities.

A third of educators (32.4%) are supportive of including ChatGPT in scientific research in the classroom. However, a higher percentage of students (59.7%) support its inclusion, indicating a possible difference in opinions regarding ChatGPT's contribution to research advancements. The students' opinions are aligned with the views of students from Saudi Arabia, as 59.9% of them are supportive of the inclusion of ChatGPT in scientific research in the academic curriculum (Syed & Basil A. Al-Rawi, 2023).

While students (56.7%) are more inclined to include ChatGPT-assisted emergency responses in the academic curriculum, educators (20.3%) are cautious about doing so. This conflict can be an indication of differing degrees of trust in AI systems in emergencies.

In conclusion, there is an obvious distinction in the views of educators and students on the inclusion of training related to ChatGPT in educational settings. Students tend to be more in support of its inclusion, seeing it as necessary for their professional development, education, and even ethical training. The educators, on the other hand, seem to be more hesitant, holding differing opinions about how it can affect their professional responsibilities, ethical issues, and instructional strategies. The opposing perspectives indicate a possible generational gap as well as different degrees of confidence in AI systems in educational settings. As based on Iqbal et al. (2022)'s study, a possible generational split is also shown, with students perceiving ChatGPT as more essential to their education than some educators do. Maintaining a balance between these viewpoints is essential to integrating ChatGPT in a trend that takes into account the concerns expressed by students and educators as well as any possible advantages.

5.3 Limitation of study

There were a few limitations in this study. First and foremost, self-report bias can cause certain behaviours or views to be overestimated or underestimated in sections where participants share their impressions and opinions. The reliability and validity of the data gathered may be impacted by this bias, especially in the areas where participants are questioned about their views regarding ChatGPT. Participants could, for example, give answers they believe to be more socially acceptable, which prevents them from truly understanding their thoughts. Another limitation of this study is that a cross-sectional design is used to conduct current research. Cross-sectional studies do not involve follow-up measurements, making it difficult to assess changes in participants' experiences, attitudes, or knowledge over time. In the dynamic field of technology and AI, perceptions and awareness of ChatGPT may develop as individuals gain more exposure or as the technology itself advances. A cross-sectional design, which simply offers an overview of the current situation, might fail to notice these changes and trends. Last but not least, this study may be limited due to insufficient responses. A low response rate in the ChatGPT study may result in selection bias, which would compromise the reliability and relevance of the results. This bias might result in an unrepresentative sample because those who participate systematically may differ from those who do not. This makes it difficult for the study to draw valid conclusions about how the general public feels about ChatGPT, highlighting the necessity of strong recruiting and open reporting to improve accuracy.

5.4 Recommendation for future research

Expanding research to multiple healthcare education institutions offers a valuable opportunity to understand difference perspectives towards ChatGPT. A comparative study across universities allows for a detailed examination of awareness and perceptions influenced by institutional contexts, policies, teaching methods, and regional variations. Including institutions with varied characteristics enhances the study's external validity, revealing trends and best practices applicable to a range of healthcare education settings.

Combining qualitative methods, like interviews and focus groups, with quantitative data will enhance the understanding of educators' and students' attitudes towards ChatGPT. While surveys provide deeper intentions, qualitative research uncovers the underlying motivations, concerns, and detailed perspectives. This approach captures emotional, ethical, and practical considerations, improving our interpretation of findings and guiding the development of targeted interventions and educational strategies.

5.5 Conclusion

In conclusion, this research addresses a notable void in the literature by examining the perspectives of UTAR MK FMHS educators and students regarding ChatGPT. The findings reveal a noteworthy disparity between educators and students concerning ChatGPT's impact on healthcare and education. Educators express reservations and highlight concerns, underscoring the irreplaceable role of the human factor in these domains. Conversely, students demonstrate a more optimistic view, acknowledging the potential advantages of AI in shaping their future professional paths. This study hints at a potential generational divergence in perceptions, underscoring the necessity for open dialogues and a judicious incorporation of ChatGPT in healthcare education. Subsequent research endeavours should extend to diverse institutions and incorporate qualitative methodologies to achieve a more thorough comprehension of these dynamics.

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SECTION 8: REFERENCES

APPENDIX-I

Ethical Approval Letter



UNIVERSITI TUNKU ABDUL RAHMAN

Wholly Owned by UTAR Education Foundation (Company No. 578227-M)

Re: U/SERC/248/2023

26 September 2023

Mr Muhammad Noh Zulfikri bin Mohd Jamali
Head, Department of Physiotherapy
M. Kandiah Faculty of Medicine and Health Sciences
Universiti Tunku Abdul Rahman
Jalan Sungai Long
Bandar Sungai Long
43000 Kajang, Selangor

Dear Mr Muhammad Noh,

Ethical Approval For Research Project/Protocol

We refer to your application for ethical approval for your students' research project from Bachelor of Physiotherapy (Hons) programme enrolled in course UMF3026. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

42.	A Comparison Between the Effect of Additional Kinesio Tape with Therapeutic Exercise Versus Therapeutic Exercise Alone on Forward Head Posture	Yuen Kuen Thong	Pn Nurul Husna Hmt Khairuddin
43.	ChatGPT Adoption in University Education: A Dual Perspective of Healthcare Educators and Students	Elysha Siti	Ms Premala a/p Krishnan
44.	Effects on Functional Electrical Stimulation and Balance Exercise on Fall Risk Management Among Geriatrics	Chok Kenneth	
45.	Relationship Between Hand-Eye Coordination and Reaction Time Amongst Boxing Practitioners in Petaling Jaya	Clariss Lu Jia Xin	Mr Sathish Kumar Sadagobane
46.	Association of Ankle Injuries with Foot Posture Index, Eccentric Control of Dorsiflexors and Muscle Endurance of Plantar Flexors Among Female Amateur Ballet Dancers in Klang Valley: An Observational, Cross-Sectional Study	Jowie Chong Yu Rou	
47.	Prevalence Of Flatfoot and Hallux Valgus in Female Recreational Basketball Players Among Undergraduate University Students with Gastrocnemius Tightness: An Observational Cross-Sectional Study	Khoo Wan Zhen	

The conduct of this research is subject to the following:

- (1) The participants' informed consent be obtained prior to the commencement of the research;
- (2) Confidentiality of participants' personal data must be maintained; and
- (3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.
- (4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,

Professor Ts Dr Faiz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

c.c Dean, M. Kandiah Faculty of Medicine and Health Sciences
Director, Institute of Postgraduate Studies and Research

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 Fax: (605) 466 1313
Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 Fax: (603) 9019 8868
Website: www.utar.edu.my



APPENDIX-II

Research Participant Information Sheet

Universiti Tunku Abdul Rahman
Faculty of Medicine and Health Sciences
Department of Physiotherapy
Bachelor of Physiotherapy (Honours)

Information Sheet to Participate in the Study

< CHATGPT ADOPTION IN UNIVERSITY EDUCATION: A DUAL PERSPECTIVE OF EDUCATORS AND STUDENTS >

Student Investigator: Elysha Sii
Department: Department of Physiotherapy
Course Name and Course Code: UMGD3026 RESEARCH PROJECT
Year and Semester: Year 3 Semester 2
Supervisor: Ms Premala Krishnan

You are being asked to volunteer for this research study that is being conducted as part of the requirement to complete the above-mentioned Course.

Please read this information sheet and contact me to ask any questions that you may have before agreeing to take part in this study.

Purpose of the Research Study

The purpose of this study is to assess and compare the awareness, perceptions, and opinions of educators and students towards ChatGPT adoption in the university classroom. By exploring these perspectives, we aim to gain valuable insights into the impact and implications of this AI technology on higher education.

Procedures

You are sincerely invited to share your valuable insights by answering this thorough questionnaire that is created to gather a range of viewpoints and provide us with your insightful comments. In exchange for just 5 to 10 minutes of your time, you can provide us significant information that will help us better grasp the topic at hand.

Length of Participation

One-time participation only.

Risks and Benefits**Risks**

No risk will be involved throughout the current study

Benefit

By participating in this study, participants will have the chance to reflect on their knowledge, views, and attitudes on ChatGPT, fostering self-awareness and critical thought about the use of technology in the classroom. Participants will also be given insights into the study's general conclusions, giving them the chance to learn more about ChatGPT's effects on academic settings.

Confidentiality

No information that will make it possible to identify you, will be included in any reports to the University or in any publications.

Research records will be stored securely, and only approved researchers will have access to the records.

Voluntary Nature of the Study

Participation in this study is voluntary. If you withdraw or decline participation, you will not be penalized or lose benefits or services unrelated to the study. If you decide to participate, you may decline to answer any question and may choose to withdraw at any time.

Contacts and Questions

If you have any questions, clarifications, concerns or complaints, about the research, the researcher conducting this study can be contacted at premala@utar.edu.my

The Course Coordinator can be contacted at Ms Premala Krishnan, premala@utar.edu.my if there are any inquiries, concerns or complaints about the research and there is a wish to talk to someone other than individuals on the research team.

Please keep this information sheet for your records.

Research Participant Consent Form

Universiti Tunku Abdul Rahman
Faculty of Medicine and Health Sciences
Department of Physiotherapy
Bachelor of Physiotherapy (Honours)

Consent Form to Participate in the Study

**< CHATGPT ADOPTION IN UNIVERSITY EDUCATION: A DUAL
PERSPECTIVE OF EDUCATORS AND STUDENTS >**

Student Investigator: Elysha Sii
Department: Department of Physiotherapy
Course Name and Course Code: UMFD3026 RESEARCH PROJECT
Year and Semester: Year 3 Semester 2
Supervisor: Ms Premala Krishnan

I have read the provided information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have, have been answered to my satisfaction. I understand that I will be given a copy of this form, and the researcher will keep another copy on file. I consent voluntarily to be a participant in this study.

☐ I have been notified by the researcher and that I hereby understand, consent and agreed to participate in this study

☐ I disagree to participate in this study

Date: _____

APPENDIX-III

Personal Data Protection Notice

Please be informed that in accordance with Personal Data Protection Act 2010 (“PDPA”) which came into force on 15 November 2013, Universiti Tunku Abdul Rahman (“UTAR”) is hereby bound to make notice and require consent in relation to collection, recording, storage, usage, and retention of personal information.

1. Personal data refers to any information which may directly or indirectly identify a person which could include sensitive personal data and expression of opinion. Among others it includes:

- a) Name
- b) Identity Card
- c) Place of Birth
- d) Address
- e) Education History
- f) Employment History
- g) Medical History
- h) Blood Type
- i) Race
- j) Religion
- k) Photo
- l) Personal Information and Associated Research Data

2. The purposes for which your personal data may be used are inclusive but not limited to:

- a) For assessment of any application to UTAR
- b) For processing any benefits and services
- c) For communication purposes
- d) For advertorial and news
- e) For general administration and record purposes
- f) For enhancing the value of education
- g) For educational and related purposes consequential to UTAR
- h) For replying any responds to complaints and enquiries
- i) For the purpose of our corporate governance
- j) For the purposes of conducting research/collaboration

3. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining, and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

4. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

5. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

6. By submitting or providing your personal data to UTAR, you had consented and agreed for your personal data to be used in accordance to the terms and conditions in the Notice and our relevant policy.

7. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

8. You may access and update your personal data by writing to us at elyshasii@lutar.my

☐ I have been notified and that I hereby understood, consented, and agreed per UTAR above notice.

☐ I disagree, my personal data will not be processed.

Signature:_____

APPENDIX-IV

Questionnaire

Section A: DEMOGRAPHIC DATA

1. Gender

☐ Male ☐ Female

2. Age

☐ 18-25
☐ 26-35
☐ 36-45
☐ 46-55
☐ 56 and above

3. Nationality

☐ Malaysian ☐ non-Malaysian

4. Department of Study/Teaching

☐ Bachelor of Medicine and Bachelor of Surgery (MBBS)
☐ Bachelor of Chinese Medicine (TCM)
☐ Bachelor of Physiotherapy (PS)
☐ Bachelor of Nursing (NS)

5. Year of Teaching (For educators only)

☐ 1-5 year(s)
☐ 6-10 years
☐ 11-15 years
☐ 16-20 years
☐ 21 years and above

6. Year of Study (For students only)

☐ Year 2 ☐ Year 3 ☐ Year 4 ☐ Year 5

7. How often do you use ChatGPT for teaching/learning?

☐ Daily
☐ Several times a week
☐ Once a week

- ☐ Occasionally
- ☐ Rarely
- ☐ Never

8. Are you using ChatGPT for clinical?

- ☐ Yes ☐ No

a. If yes, how?

- ☐ Patient education
- ☐ Medication information
- ☐ Clinical decision support
- ☐ Others: _____

b. If no, why?

- ☐ Inappropriate diagnosis
- ☐ Outdated information
- ☐ Ethical issues
- ☐ Others: _____

9. How were your experiences with ChatGPT?

- ☐ Very positive
- ☐ Mostly positive
- ☐ Neutral
- ☐ Mostly negative
- ☐ Very negative

Section B:

Part 1: Awareness of Educators and Students about ChatGPT

1. Do you think that ChatGPT will replace your profession in the future?

- ☐ Agree
- ☐ Disagree
- ☐ ChatGPT is a tool that helps my profession

2. What is your opinion, if ChatGPT is widespread in Malaysia?

- ☐ Risk of losing jobs with the ChatGPT with the decrease in the need for employees
- ☐ My profession will be better with the widespread use of ChatGPT.
- ☐ The choice of specialization field will be influenced by how ChatGPT is used in that field
- ☐ I don't know

3. Have you received any formal education about ChatGPT?

☐ Yes

☐ No

If no,

☐ Received training over the internet

☐ Through seminars and presentations

☐ Others: _____

☐ None all the above

Part 2: Perceptions of Educators and Students about ChatGPT

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. ChatGPT devalues my profession.					
2. ChatGPT reduces errors in my career practice.					
3. ChatGPT facilitates clients' access to the service.					
4. ChatGPT facilitates professionals' access to information.					
5. ChatGPT enables professionals to make more accurate decisions.					
6. ChatGPT increases clients' confidence in service.					
7. ChatGPT facilitates client education.					
8. ChatGPT negatively affects the relationship between the professional and the client.					
9. ChatGPT reduces the humanistic aspect of the profession.					
10. ChatGPT violations of professional confidentiality may occur more.					
11. ChatGPT allows the clients to increase their control over the service received.					

Part 3: Opinions of Educators and Students about ChatGPT

Do you think the statements listed below should be included in the academic curriculum?

Statements	Should Be Included	Not Sure	Should Not Be Included
1. Knowledge and skills in ChatGPT.			
2. ChatGPT as an application for reducing career mistakes.			
3. Training to prevent and solve ethical problems that may arise with ChatGPT applications.			
4. A simplified lecture on ChatGPT.			
5. ChatGPT applications that will increase clients' control over their service received.			
6. ChatGPT in scientific research.			
7. ChatGPT assisted emergency responses.			

Thank you for your valuable participation in this research study!

Your willingness to express your ideas is truly appreciated and will surely have a significant influence on how education will develop in the future.

If you have any additional comments or would like to learn about the study's findings, please feel free to contact us at [elyshasii@lutar.my]. Once again, thank you for being an essential part of this study!

Best regards,

Elysha Sii

APPENDIX-V

Turnitin Report

CHATGPT ADOPTION IN
UNIVERSITY EDUCATION A
DUAL PERSPECTIVE OF
HEALTHCARE EDUCATORS AND
STUDENTS

by Elysha Sii

Submission date: 24-Dec-2023 07:27PM (UTC+0800)

Submission ID: 2264546646

File name: RSPECTIVE_OF_HEALTHCARE_EDUCATORS_AND_STUDENTS_-_Elysha_Sii.docx (1.1M)

Word count: 18980

Character count: 106664

CHATGPT ADOPTION IN UNIVERSITY EDUCATION A DUAL PERSPECTIVE OF HEALTHCARE EDUCATORS AND STUDENTS

ORIGINALITY REPORT

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