

A Study to Assess the Impact of Chatgpt on Student Learning Outcome in A Selected Nursing Colleges of Karnataka

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Abstract

Artificial intelligence has become an important part of modern education, and tools like ChatGPT are increasingly used by students across the world. ChatGPT provides quick explanations, . Therefore, the present study was conducted to assess the impact of ChatGPT on learning outcomes among nursing students, the objectives of the study were to assess the impact of ChatGPT use on nursing students, assess the effect of ChatGPT on the learning outcome, to determine the effectiveness of ChatGPT and to find out the association between the impact of ChatGPT with selected sociodemographic variables. The descriptive correlational research design was adopted for the study. 94 samples were selected by simple random sampling technique. **Result;** The overall result of the study showed that the mean percentage of ChatGPT is 45.70, and the Learning outcome is 45.20. The SD of ChatGPT is 10.86, and the learning outcome is 4.58. It revealed that there is a positive correlation between ChatGPT and Learning outcomes. **Conclusion;** The study explored the use of ChatGPT among nursing students and found a positive correlation between ChatGPT usage and learning outcomes

Keywords: ChatGPT, Learning outcome, Nursing students

1. Introduction

“Technology will never replace great teachers, but technology in the hands of great teachers can be transformational.”

— George Couros.

ChatGPT stands for Chat Generative Pre-Trained Transformer. It is an AI language model developed by OpenAI that generates human-like text in response to prompts. The "Generative" refer to its ability to create new content, "Pre-Trainer" refer to its training on a vast amount of data, and "Transformer" refers to the specific neural network architecture it uses.¹

ChatGPT is a generative artificial intelligence model developed by OpenAI. Since its launch at the end of 2022, it has rapidly become a prominent technological phenomenon, especially in education. Since been offered via web interface, mobile applications and API integrations.²

Learning outcomes are statements that describe what a learner is expected to know, understand, and/or be able to do after participating in a learning process. They focus on measurable knowledge, skills, attitudes or competences. In the context of student-nurse education, learning outcomes might include clinical reasoning ability, safe nursing practice, communication skills and professional behaviour.³

According to Sr. Nancy, nursing is defined as: “the art and science of caring for individuals, families, communities who are experiencing or are at risk of experiencing health problems, and assisting them to attain, maintain or recover optimal health and quality of life.” This definition situates nursing as both a caring and evidence-based profession, which helps frame the educational context for student nurses.⁴

Globally, according to the World Health Organisation (WHO), there are an estimated 29 million nurses and 2.2 million midwives worldwide.⁵

As per the Indian Nursing Council records, the total number of Registered Nurses and Registered midwives in India is 2,151,850. Additionally, there are 892,829 ANMs and 56,644 lady health visitors, The nurse-to-population ratio in India is currently about 1.7 nurses per 1000 population. In India, approximately 1,34,949 diploma, 1,07,814 bachelor’s, 25,485 post-graduate, and 13,971 master’s nursing students complete their courses annually.⁷

Karnataka alone has 668 nursing institutes with 32164 seats functioning as of (2025-2026), making it one of the top states for nursing education.⁶

Globally, over 700 million people use ChatGPT, with daily usage in India leading globally. The most common uses are for practical guidance (30percent), seeking information (25percent), and writing (25percent), including drafting and editing documents and emails. Approximately (73percent) of usage is non-work related, with work-related use more common among highly educated professionals.⁷

2. NEED FOR THE STUDY

ChatGPT is a generative artificial intelligence Chatbot developed by OpenAI and released on November 30, 2022. It is designed to generate human like text based on user prompts. It utilizes a large language model specifically the generative pre trained transformer to understand and respond to a wide range of inputs. ChatGPT breaks the information into shorter sentences.⁸

As of 2025, ChatGPT weekly active users have reached 800 million doubling from 400 million in February 2025. The users base double in just weeks, driven by new features and improved AI capabilities. Between December 2024 and February 2025 users grew by 33% from 300 million to 400 million.⁹

India’s 13.5 percent share of global users surpasses the US 8.9 percent and Indonesia 5.7 percent. The high usage rate reflects India’s growing embrace of AI technologies particularly in professional and educational settings. Statistically, ChatGPT gets 193.33 million visits per day, and has 800 million weekly active users as of 2025. over 2 billion daily queries are processed on ChatGPT, there are 64.27million ChatGPT app downloads so far and users send 2.5 billion prompts each day on ChatGPT.¹⁰

Nursing students can use the ChatGPT to access the information about patient illness and treatments and read articles, blogs to improve their knowledge like summarize illness and for understanding pathophysiology, to identify sign and symptoms as well as to learn about the Nurses responsibilities.¹¹

There is a need to investigate the long-term effects of ChatGPT on student learning behaviour and educational outcomes. Excessive reliance on ChatGPT for learning may lead to a dependency that hampers student’s ability to think critically and solve problems independently.¹²

3. REVIEW OF LITERATURE

A study was conducted to assess the effectiveness of ChatGPT on student learning outcome among nursing student at the university of Leon, Spain. The sampling size was 98 students. The data collected using three validated questionnaires that assessed sociodemographic characteristics, knowledge of artificial intelligence, and perception ff using ChatGPT as an educational tool. The data were analysed using IBM

SPSS statistics. The study shows that the student who used ChatGPT showed a significant improvement in their academic grades additionally 89.5 students reported significant improvement in their academic performance (p=0.003).¹³

A study was conducted to assess Nursing Students perception and use of generative artificial intelligence in nursing education in New York City. The study was conducted among 99 undergraduate nursing students. Data was collected through online self- report measures using semi structured, open ended questions. The data was analysed using content analysis.92 percent participants used generative AI tools to access accurate information, clarify nursing concepts, and support clinical tasks such as diagnoses and health assessment as well as for health promotion. The results Shows positive impact on nursing education and needed for critical evaluation.¹⁴

A study was conducted to assess the perspectives of Itali nursing students on the utilization of ChatGPT in their learning process. A qualitative descriptive design was conducted among 25 second year nursing students who were purposively selected. Data were collected through online and offline. the qualitative data were analysed using thematic analysis. Result shows that ChatGPT maybe helpful but not fully trusted, Nurses skill will never be replaced, it will be needed for evaluating and advancing curriculum. This study also shows emerging technologies into the nursing curriculum will improve Nurses unique abilities and the essence of caring in nursing field.¹⁵

4. LIST OF TABLES

TABLE NO.	TABLES
1	Frequency and percentage distribution of nursing students by age in years
2	Mean and standard deviation of the impact of ChatGPT among nursing student.
3	Correlation of ChatGPT and Learning outcome.
4	Association between impact of ChatGPT on learning outcome with socio demographic variables

5. RESULTS

FREQUENCY AND PERCENTAGE DISTRIBUTION OF DEMOGRAPHIC DATA AMONG NURSING STUDENTS

Table 1: Frequency and percentage distribution of nursing students by age in years n= 94

AGE	FREQUENCY	PERCENTAGE (%)
< 20 year	19	20.2
>20 year	75	79.8
TOTAL	94	100

TABLE 1: shows the distribution of students according to the age. Majority of the students are 75 (79.8 percent) were in the age group of >20 years, and 19 (20.2 percent) were in the age group of <20 years.

TABLE 2: Mean and standard deviation of the impact of ChatGPT among nursing student. n=94

Variables	Mean	SD	't' values
3 rd year BSc nursing	45.7	9.10	0.294
3 rd year GNM	45.2	7.6	0.945

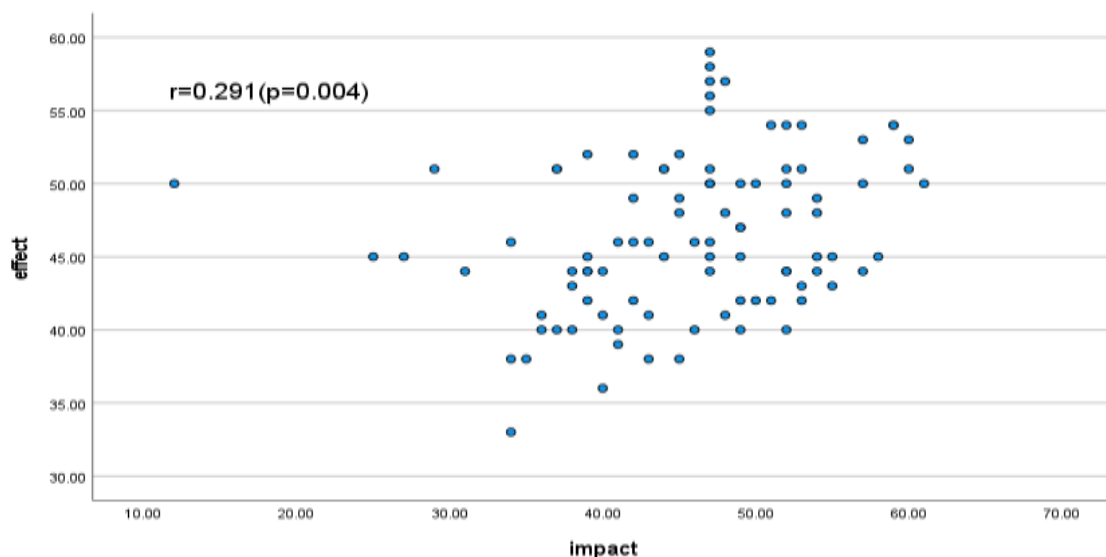
Table 7 shows the mean and standard deviation of ChatGPT in nursing student, where mean of 3rd year student is 45.7, SD is 9.10 and ‘t’ is 0.294 and 3rd year GNM mean value is 45.2, SD is 7.6 and ‘t’ value is 0.945

It is statistically significant. Hence H₁: there will be a significant association between chatgpt and learning outcome among nursing students hence research hypothesis accepted, null hypothesis rejected.

Table 3: Correlation of ChatGPT and Learning outcome n=94

Correlations

		total_impact	total_effect
total_impact	Pearson Correlation	1	.291**
	Sig. (2-tailed)		.004
	N	94	94



The graph gives the description of correlation between ChatGPT and learning outcome where ‘r’ is 0.291 and ‘p’ is 0.004.

It is statistically significant. Hence research hypothesis accepted and null hypothesis rejected.

TABLE 4: Mean and standard deviation of the impact of ChatGPT among nursing students. n=94

Variables	Mean	SD	‘t’ values
3 rd year BSc nursing	45.7	9.10	0.294
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Table 4 shows the mean and standard deviation of ChatGPT in nursing student, where mean of 3rd year student is 45.7, SD is 9.10 and ‘t’ is 0.294 and 3rd year GNM mean value is 45.2, SD is 7.6 and ‘t’ value is 0.945

6. RECOMMENDATIONS FOR FURTHER STUDY

Based on the findings of the study, the following recommendations are stated:

A similar study can be replicated on a large sample, through which findings can be generalised.

A similar study can be undertaken with a control group design.

A comparative study can be undertaken between medical and paramedical students.

An experimental study can be undertaken to validate and standardise the ChatGPT impact on learning outcomes.

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