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Knowledge and Attitude Regarding Artificial Intelligence in Healthcare among Nursing Students Selected College, Namakkal

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INTRODUCTION:

According to recent studies, Al adoption is growing rapidly worldwide, with a large proportion of users belonging to the adolescent and young adult age group. In the Indian context, digital health initiatives such as electronic health records and telemedicine are expanding rapidly. However, research on the application of AI in nursing practice and research is still in its early stages.

In recent years, scholars have emphasized the need for awareness, regulation, and ethical frameworks to guide the development and application of artificial intelligence. Educators, healthcare professionals, policymakers, and parents play a crucial role in promoting responsible Al usage and educating individuals about its benefits and risks.

The growth of artificial intelligence (AI) worldwide has accelerated rapidly over the past few decades due to advancements in computing power, data availability, and algorithm development. Countries across the globe are investing heavily in Al research and innovation to improve productivity, economic growth, and technological leadership. In healthcare, Al supports clinicians through enhanced diagnostic accuracy, early disease detection, patient monitoring, and optimized treatment planning, thereby contributing to Improved health care outcomes while maintaining human oversight.

NEED FOR STUDY:

The global demand for digital health competencies has increased significantly after the COVID-19 pandemic, which accelerated the adoption of AI tools such as telemedicine, predictive analytics, and automated triage systems.

Surveys conducted among healthcare students between 2021 and 2024 revealed that more than 70% of students were aware of AI applications in healthcare, yet only about 40–60% felt confident in using these technologies in clinical practice. The important concern highlighted in global literature is the ethical, legal, and professional implications of AI in healthcare. Nursing students must understand issues such as data privacy, patient confidentiality, algorithmic bias, and accountability in AI-assisted decision-making.

Around 54–60% of students have only basic knowledge, and nearly 59% have not received any formal training in AI applications. Despite these disparities, studies consistently report a high positive attitude toward AI, with approximately 85–90% of students expressing willingness to learn and adopt AI in their future practice.

Statement of problem:

A study assess the Knowledge and Attitude regarding Artificial Intelligence in Health care among the Nursing students at selected college, Namakkal.

Objectives:

1. To assess the level of knowledge regarding artificial intelligence in health care

2. To assess the level of attitude regarding artificial intelligence in health care

3. To find out the association between Level of knowledge regarding artificial intelligence in health care among nursing students with their selected demographic variables

4. To find out the association between Level of attitude regarding artificial intelligence in health care among nursing students with their selected demographic variables.

REVIEW OF LITERATURE:

The review of obtainable literature was organized below the subsequent headings.

1. Knowledge regarding Artificial intelligence in health care
2. Attitude regarding artificial intelligence in health care

RESEARCH METHODOLOGY:

Research design and approach: In this study, A analytical research design with quantitative approach was adopted.

Study Area: The Research was conducted in paavai college of nursing and research, Namakkal.

Population: The Target population of the study comprised of B.Sc.Nursing students studying in Nursing College, Namakkal.

Sampling

Sample: The study population were the college students who meet the inclusion criteria in Paavai college of nursing and research, Namakkal.

Sample size: The sample size was 60 college students who were selected at Paavai college of nursing and research Namakkal.

Sampling technique: sampling technique adopted for the study was systematic random sampling technique.

Criteria for sample selection

Inclusion criteria

In the study those students were included are,

a) Both gender

b) Available at time of data collection

c) Willing to participate in the study

Exclusion criteria

In the study those students were excluded,

a) Who is absence on the day of data collection

b) Who are not willing to participate in the study

c) Who are already participated in any other AI related survey

Method of data collection

Description of thr tool/data collection instruments

The tool used for this study consists of three parts.

Part 1: The structured self administered questionnaires consisted of demographic data such as age, gender, year if study, place of Residence, source of information about AI, assecibility to digital devices, types of AI application used and education background.

Part 2: It consists of questionnaires related to knowledge regarding Artificial intelligence in health care.

Knowledge section consists of 12 items. Each item consists of 4 options with one correct option. Each correct option contents “one score” and wrong option “zero score”. The level of knowledge was categorized Based on the actual scores to be obtained.

- Inadequate knowledge = below 50%
- Moderate and Adequate knowledge =50-74%

- Adequate knowledge =75% and above

Part 3: It consists of questionnaires related to attitude regarding artificial intelligence in health care

The Attitude section consists of 15 items;

- Unfavorable attitude = below 50%
- Moderately favorable attitude = 50-75%
- Favorable attitude =75% and above

Validity

Validity of tool was established thoroughly viewing of the literature, consulting with guide and subject experts from different fields and Biostatics. The tool was made in English for it appropriateness.

Ethical consideration

Prior to the data collection written permission was obtained from the nursing college Principal from selected college. The written and oral consent was obtained from the subjects before conducting the study.

Data collection procedure

Administrative approval was obtained from Principal, Paavai college of Nursing and research, Namakkal. Informed consent was obtained from all subjects to ensure their rights. Data was collected by using Structured self- administered questionnaires and standard tool within two weeks of period.

• Purpose and objectives were clearly explained to the respondents and written consent was obtained.

• Good interpersonal relationship was established with the sample.

• The collected data was checked daily before leaving to ensure the completeness of information.

• The form was numbered serially after completion from the respondents.

• The collected data was serially compiled in the file to prevent loss and damage.

• Confidentiality of records was strictly maintained throughout the study.

RESULT

Section - I : Description of demographic variables of college students

• Highest percentage (65.0%) were in the age group of 17-19years

• Highest percentage (96.67%) of them were Female

• Highest percentage (35.0%) of them were I st year B.Sc.Nursing students

• Highest percentage (26.67%) of them were living I urban areas

• Highest percentage (46.67%) of them had previous knowledge about AI

• Highest percentage (63.33%) of them had Internet/Online courses as their source of information about AI.

• Highest percentage (55.0%) of them had training/ workshop on AI

• Highest percentage (76.67%)of students have assess to laptop only

• Highest percentage (61.67%) of them had used AI based application

• Highest percentage (61.67%) of them have clinical decisions support systems

•Highest percentage (53.33%) of students have Biology group as their educational background.

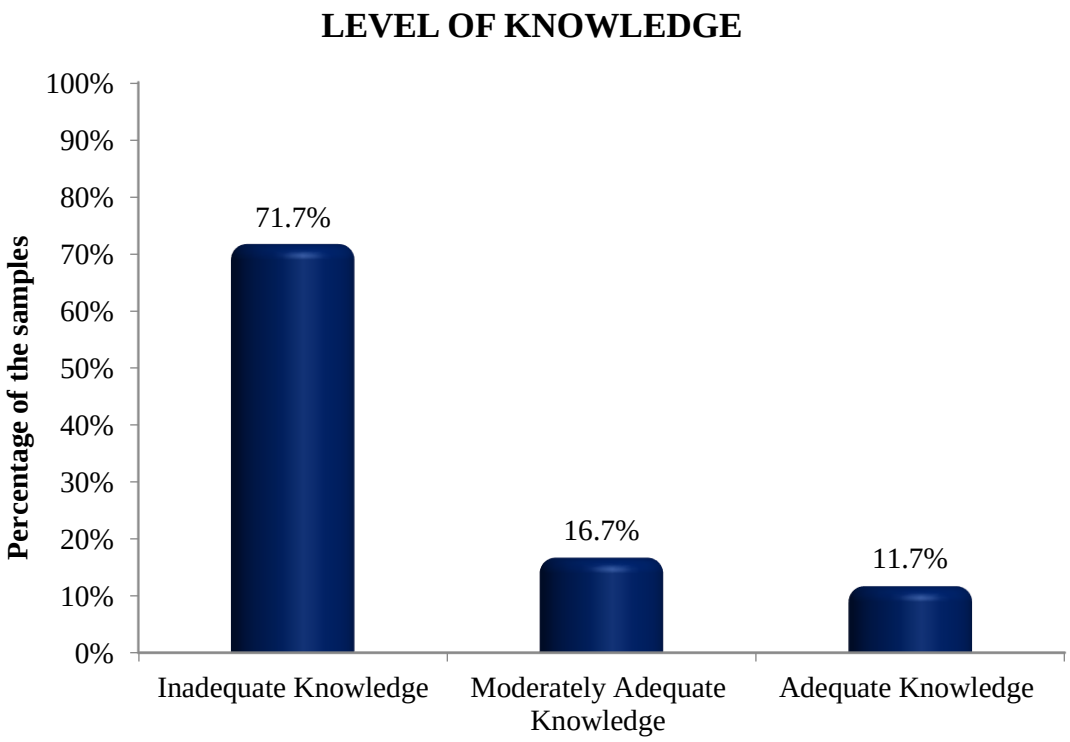


Fig 1: Percentage wise distribution of samples according to their level of knowledge regarding artificial intelligence in health care

Fig 1: shows that item wise analysis on level of knowledge regarding Artificial Intelligence in Healthcare among college students, majority of them 71.67% have Adequate knowledge,16.67% of students have Moderate knowledge and 11.66 % of students have Inadequate knowledge.

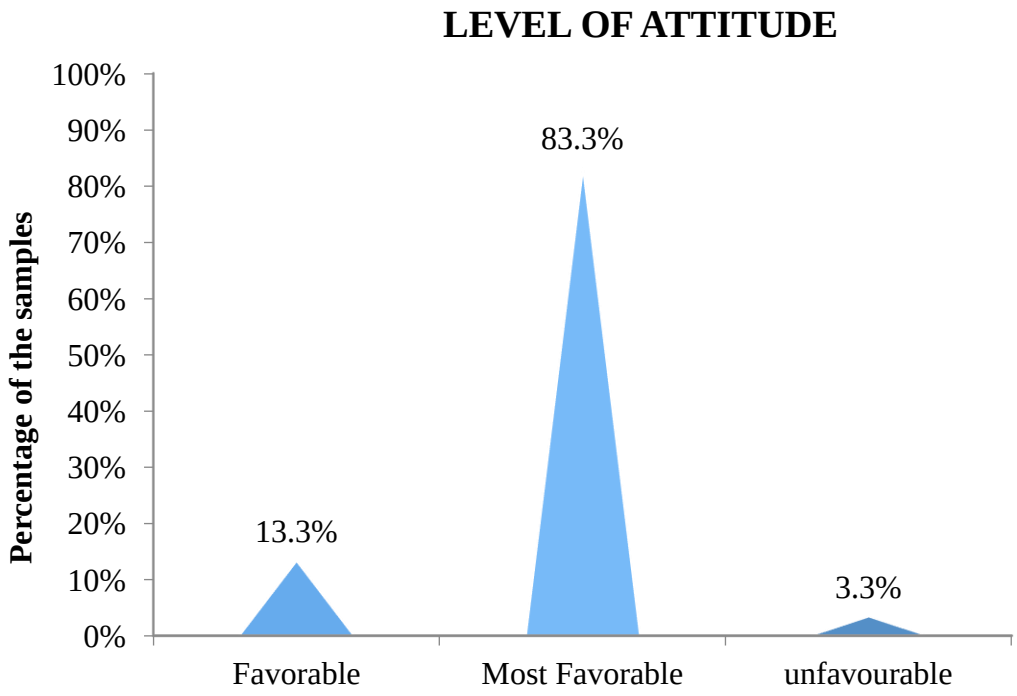


Fig 2: Percentage wise distribution of samples according to their level of attitude regarding artificial intelligence in health care

Fig 2.: Shows that item wise analysis on level of Attitude regarding Artificial Intelligence in Healthcare among college students, majority of them 83.33% have Moderately favourable attitude, 3.33 % have unfavourable attitude, however, 13.33 % of the nursing students have Favourable attitude.

The association between selected demographic variables and the level of knowledge and attitude regarding artificial intelligence among nursing students. Among all the variables analyzed, age showed a statistically significant association with the outcome ($\chi^2 = 6.35$, $p = 0.041$), indicating that the level of knowledge and attitude varies significantly across different age groups.

The association between selected demographic variables and the level of attitude regarding artificial intelligence among nursing students. Among all the variables analyzed, previous knowledge of AI showed a statistically significant association with the outcome ($\chi^2 = 9.44$, $p = 0.051$), indicating that students who had prior knowledge of AI differed significantly in their level of knowledge and attitude. Additionally, educational background was also found to have a significant association ($\chi^2 = 3.74$, $p = 0.880$) as indicated.

DISCUSSION

The present study assessed the knowledge and attitude regarding Artificial Intelligence (AI) in healthcare among nursing students. The findings revealed that **71.67%** of students had adequate knowledge regarding AI, with a mean knowledge score of **8.95 ± 2.66**. This finding is consistent with the study by Khaled and Elborai (2024), who reported that nursing students had satisfactory knowledge of AI and recognized its importance in improving patient care. Similarly, Dhende et al. (2025) found that nursing students demonstrated moderate to good knowledge of AI, emphasizing the need for its integration into nursing education.

The present study also showed that **83.33%** of students had a moderately favourable attitude towards AI in healthcare, with a mean attitude score of **50.10 ± 5.97**. This finding agrees with the systematic review by Baigi et al. (2023), which reported that healthcare students generally had positive attitudes toward AI despite limited practical exposure. Likewise, Kwak et al. (2022) found that nursing students exhibited positive behavioural intentions toward AI, particularly when they had greater awareness and confidence in its use.

The study identified a significant association between **age and knowledge** ($p = 0.041$), while **previous knowledge of AI** was significantly associated with attitude. These findings are supported by Al-Mahasneh et al. (2024), who reported that educational exposure and prior knowledge positively influence students' acceptance of AI in healthcare.

Overall, the findings suggest that nursing students possess adequate knowledge and a positive attitude toward AI; however, structured AI education, practical training, and curriculum integration are essential to enhance their competency and readiness for AI-enabled healthcare practice.

CONCLUSION

The study concludes that nursing students possess adequate knowledge and a moderately favourable attitude towards artificial intelligence in healthcare. Despite this, gaps still exist in terms of deep understanding and positive attitude development.

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