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A Study to Assess Smart Device Usage and Attitude Towards Artificial Intelligence Among Undergraduate Nursing Students in Selected Nursing College Belagavi

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ABSTRACT:

Background: Students use of smart devices has expanded dramatically due to the quick development of digital technology, raising issues like smart device usage. Simultaneously, artificial intelligence is becoming a significant part of healthcare practice and education. To prepare nursing pupils for contemporary healthcare settings, it is crucial to comprehend how they use smart gadgets and how they see artificial intelligence. **Objectives:** The study objectives were to assess the level of smart device usage in nursing students,to assess nursing student's attitude of artificial intelligence,to analyze the correlation between smart device usage and attitude towards artificial intelligence and to find out the association between socio demographic variables with smart device usage score and artificial intelligence attitude scale. **Methods:** The use of smart devices & attitudes toward AI among undergraduate nursing pupils at Belagavi nursing colleges were evaluated using a quantitative descriptive research design. A non-probability sampling method was utilized to choose 174 individuals in total. A sociodemographic survey and established instruments, such as the AIAS Scale & the SAS Scale, were used to information. The data was analysed using both descriptive and inferential statistics. **Findings:**Baseline results showed there is a correlation of Smart Phone Addiction Scale with Artificial Intelligence(r=0.389) therefore, there is somewhat positive association. Association between Sociodemographic factors with smartphone addiction or AI attitude were not found ($p > 0.05$). **Conclusion:** According to the study's findings, nursing learners are highly dependent on smart devices but have a favourable opinion of artificial intelligence. To improve professional competency, it is necessary to encourage safe device use and incorporate artificial intelligence instruction into nursing courses.

INTRODUCTION:

Educational systems have undergone substantial change as a result of technology, and smart phones have been essential in this development. As a result, mobile phones are now essential for communication and information access in daily life.[1]

The word "smartphone" may be used to differentiate advanced feature-rich portable devices from simple feature phones. In 1997, for instance, Ericsson introduced the word "smartphone," which was referring to their GS 88 "Penelope" idea for a transportable digital device. This phrase originally essentially launched into the marketplace for a novel category of cellular phones that offer bundled services originating in the computer, communications, and portable industries, including cordless interaction capabilities, voice conversations, e-mail, and personalized management of information capabilities.Additionally, 70 percent of people look at handset gadgets within an hour of waking up in the early hours, 56 percent inspect these individuals before sleeping, 48 percent use them across weekends, 51 percent frequently check them while on holiday, and 44 percent said that they might experience extreme anxiety and irritability when they avoided using their smartphones every single week.[2]

Gambling and gaming disorders are category of "disorders due to addictive behaviours" (ICD-11.) "Other specified disorders due to addictive behaviours (6C5Y)" may apply to additional problematic habits. Three meta-level criteria are proposed to assess such conditions: theoretical embedding (alignment with established addiction models), Scientific evidence (self-report data, clinical research, and biological findings showing similar mechanisms to known addictions), and clinical relevance (evidence of harm and impairment in daily life). This includes habits like excessive social networking, obsessive purchasing, and problematic pornography use. Crucially, while identifying clinically serious diseases that require public health attention, researchers warn against over pathologizing routine practices. These standards are meant to direct clinical practice as well as research.[3]

The primary distinction between smart phone models and other wireless, personal gadgets that convey cultural identity and position is that the former has constant access to both the World Wide Web as well as, as a result, all of its troublesome and desirable information. Many advantages, including interaction, enjoyment, knowledge retrieval, scheduling, ways to cope, and cultural identity preservation, are provided by technological devices.[4]

By providing internet access, instant messaging, and a variety of leisure options including music, movies, games, and photography, smartphones transform communication. Additionally, they increase productivity through mobile flexibility and GPS navigation. But there are drawbacks to their extensive use. Drivers and pedestrians may become dangerously distracted by problematic smartphone use, increasing the likelihood of an accident. Use at night interferes with the generation of melatonin, which lowers the quality of sleep. Overuse is associated with musculoskeletal problems such headaches, eye strain, and neck and shoulder pain. Exposure to blue-violet light can impair eyesight and possibly cause macular degeneration. Academic achievement and physical fitness are also impacted by overuse. Given that 43% of people worldwide use a smartphone, it is critical to weigh the advantages of smartphones against careful use to avoid health and safety issues.[5]

Over many decades, mankind was thought to be the only intelligent species on the planet. This concept of "intelligence" allowed people to think creatively. Replicating one's own cognitive ability is one such unconventional idea that humans have created, created, and developed; this is known as artificial intelligence. Similar to how a human body is necessary for intelligence to exist and demonstrate its true capacity, artificial intelligence (AI) requires hardware in order to evaluate knowledge and provide valuable data.[6]

The term AI, or machine learning, refers to the process of creating technology that think and behave like human beings. AI is frequently utilized in drug research, long-lasting illness administration, screening, and health care delivery. It has the capacity to identify important relationships in medical imagery. These technologies are employed to track medical facilities, such as medical caregiving & recovery, client assessment, standardized testing, and diagnostic equipment.[7]

In the future, machine learning is expected to play a significant role across the health and medical domains. AI should be incorporated into medical and nursing school curricula in order to prepare healthcare practitioners because it offers efficient training and professional skill development, integrating Using cutting-edge technology in traditional nursing education is particularly beneficial in environments where clinical mentoring is scarce.[8]

Artificial intelligence (AI) technology, particularly robots powered by AI, offers a comparatively wide range of application in medical treatment from hospitalization through discharge as well as residential rehabilitation services after release. Portable interactive guide robotics are extremely important enhancing ambulatory services, improving clients' ambulatory experiences, and relieving caretakers stress in overcrowded hospital postoperative rooms. Robotization with various roles, such as logistical and disinfecting machines, therapy bots, and clinical help equipment, help to lessen the workload of caregivers in intensive care units at hospitals and meet individual needs. Medical staffs are always at danger of contracting an illness while providing care to the individuals with infections receiving seclusion. The use of cellular bots improves the quality & efficacy of treatment without reducing the danger of contamination. Compared to assistance with mobility and walking artificial beings can perceive the user's intention & the surrounding environment, enabling flexible walking assistance and lowering the likelihood of adverse events for individuals who have been released but have walking issues or limitations.Exoskeleton-based bots can aid in the rehabilitation and mobility improvement of victims of stroke.[9]

MATERIAL AND METHODS:

The research technique specifies the overall pattern of structuring the approach for collecting accurate and reliable data for examination. The entire study is based on it.

The study involved 174 participants who were enrolled in B.sc Nursing Programme, at KAHER Institute of nursing Sciences, Belagavi. Samples were selected by non-probability convenient sampling technique. The study design was based on quantitative descriptive research design. Descriptive Cross-sectional research design was employed. A set of 33 questions from Smart Addiction Scale and Artificial Intelligence Attitude Scale were used to gather information about Smart device usage and attitude towards Artificial Intelligence.

Data was collected by administering the questionnaires. Analysis of the results were done using descriptive statistics such as a: frequency, percentage, mean and inferential statistics such as: paired-t test, chi-square test.

Prior permission was obtained from the concerned authority of KAHER Institute of Nursing Sciences Belagavi. Consent was taken from study participants. The researcher gave a brief introduction, choose one hundred and seventy-four nursing students those who are enrolled in B.sc nursing programme based on inclusion criteria, and informed the samples of the study's goal. Applied socio-demographic tool to obtain information about the smart phone usage. Smartphone Addiction Scale was used to measure Smartphone usage and Artificial Intelligence Attitude Scale is used to measure attitude to use artificial intelligence. By using these questionnaires data was gathered, collate, and examined.

RESULT:

Table 1 Distribution of participants by socio demographic characteristics.
n=174

		N	%
Age	<=20	94	54.0
	>20	80	46.0
Gender	Female	97	55.7
	Male	77	44.3
Current residency type	Hostel	61	35.1
	PG	54	31.0
	With Family	59	33.9
Area of region	Rural	21	12.1
	semi-urban	5	2.9
	Urban	148	85.1
Institution name	KLE	174	100.0
Year of study	2nd semester	32	18.4
	3rd semester	68	39.1
	7th semester	74	42.5
Do you own a smart device	Yes	174	100.0
Have you ever heard of artificial intelligence	Yes	174	100.0
Have you used any AI-based tools	Yes	174	100.0

Table 2: Distribution by level of Smartphone Addiction Scale
n=174

		N	%
SAS	Low	2	1.1
	Moderate	5	2.9
	High	167	96.0

Table 2: Most of the respondents (96.0%) reported a high degree of smart device usage, according to the SAS scale participant distribution. Just 2.9% of participants showed moderate smartphone addiction, while only 1.1% showed low levels of smartphone addiction. These findings demonstrate that excessive smartphone use is a prevalent behavioural trend and show a very high incidence of smartphone addiction among the research population.

Table 3: Distribution by level of Artificial Intelligence Attitude Scale
n=174

		n		%
AIAG	Negative	3		1.7
	Moderate	8		4.6
	Positive	163		93.7

The distribution of participants based on the Artificial Intelligence Attitude Scale revealed that the vast majority of respondents (93.7%) had a positive attitude toward artificial intelligence. 4.6% of respondents had a moderate attitude toward AI, while only 1.7% expressed a negative opinion. All things considered, these findings demonstrate that the research population views and accepts artificial intelligence in a fairly positive light.

Table 4: Correlation of SAS scale and Artificial intelligence Attitude Scale
n=174

		AIAS
Smartphone Addiction Scale	Pearson Correlation	.389
	Sig. (2-tailed)	<0.05*
	N	174

A correlation coefficient of r = 0.389 is found in the correlation study between the SAS and (AIAS). This suggests that the two variables have a somewhat positive association. This indicates that individuals' levels of smartphone addiction likely to rise when attitudes toward cell phones grow more positive or favourable. To put it another way, people who see smartphone use more favourably are more likely to have higher levels of smartphone addiction. The relationship's moderate rather than strong strength, however, indicates that although attitude is a significant factor, it is not the only one that influences smartphone addiction. Additional elements that could be involved include usage habits, psychological aspects, peer pressure, and lifestyle choices.

Table 5 association between socio demographic characteristics and Smart phone addiction scale
n=174

		Smartphone Addiction Scale						Chi-square (Sig.)
		Low		Moderate		High		
		n	%	N	%	n	%	
Age group	<=20	1	1.1	2	2.1	91	96.8	0.740 (0.831)
	>20	1	1.3	3	3.8	76	95.0	
Gender	Female	1	1.0	3	3.1	93	95.9	0.396 (1.000)
	Male	1	1.3	2	2.6	74	96.1	
Current residency type	hostel	1	1.6	2	3.3	58	95.1	1.759 (0.968)
	pg	0	0.0	2	3.7	52	96.3	
	With Family	1	1.7	1	1.7	57	96.6	
Area of region	rural	0	0.0	1	4.8	20	95.2	2.691 (0.685)
	semi-urban	0	0.0	0	0.0	5	100.0	
	Urban	2	1.4	4	2.7	142	95.9	
Institution name	KLE	2	1.1	5	2.9	167	96.0	-
Year of study	2nd	0	0.0	0	0.0	32	100.0	3.395 (0.436)
	3rd	1	1.5	4	5.9	63	92.6	
	7th	1	1.4	1	1.4	72	97.3	

Do you own a smart device	yes	2	1.1	5	2.9	167	96.0	-
Have you ever heard of artificial intelligence	yes	2	1.1	5	2.9	167	96.0	-
Have you used any AI-based tools	yes	2	1.1	5	2.9	167	96.0	-

There was no statistically significant association found between sociodemographic traits of smartphone addiction levels with any of the variables that were chosen. There was no statistically significant association between age group & smartphone addiction ($\chi^2 = 0.740$, $p = 0.831$), although both participants under the age of 20 (96.8%) and those over 20 (95.0%) had high levels of smartphone addiction. Likewise, there was no statistically significant association between gender and smartphone addiction ($\chi^2 = 0.396$, $p = 1.000$), since both males (96.1%) and females (95.9%) had high levels of smartphone addiction.

Additionally, there was no significant association between current residence type and smartphone addiction ($\chi^2 = 1.759$, $p = 0.968$), with high levels of addiction constantly seen across persons living with family, in PG accommodations, and in hostels. Additionally, there was no significant association between geography and smartphone addiction ($\chi^2 = 2.691$, $p = 0.685$), with the majority of participants being rural, semi-urban, and urban. Despite high rates of smartphone addiction in all academic years, year of study was not significantly related with smartphone addiction ($\chi^2 = 3.395$, $p = 0.436$).

Because participant replies were consistent, it was not possible to statistically assess the following: institution name, smart device ownership, artificial intelligence awareness, and use of AI-based instruments. therefore, the results show that high rates of smartphone addiction were consistent across all sociodemographic categories, indicating that smartphone addiction is common and not greatly impacted by the sociodemographic traits under investigation.

Table 6: Association between socio demographic characteristics and Attitude Scale
n=174

		Artificial Intelligence Attitude Scale						Chi-square (Sig.)
		Poor		Average		Good		
		n	%	N	%	N	%	
Age group	<=20	1	1.1	4	4.3	89	94.7	0.740 (0.787)
	>20	2	2.5	4	5.0	74	92.5	
Gender	Female	2	2.1	5	5.2	90	92.8	0.422 (0.889)
	Male	1	1.3	3	3.9	73	94.8	
Current residency type	hostel	2	3.3	2	3.3	57	93.4	2.566 (0.677)
	pg	0	0.0	2	3.7	52	96.3	
	With Family	1	1.7	4	6.8	54	91.5	
Area of region	rural	0	0.0	1	4.8	20	95.2	1.358 (1.000)
	semi-urban	0	0.0	0	0.0	5	100.0	
	Urban	3	2.0	7	4.7	138	93.2	
Institution name	KLE	3	1.7	8	4.6	163	93.7	-
Year of study	2nd	0	0.0	0	0.0	32	100.0	4.992 (0.213)
	3rd	2	2.9	6	8.8	60	88.2	
	7th	1	1.4	2	2.7	71	95.9	
Do you own a smart device	yes	3	1.7	8	4.6	163	93.7	-
Have you ever heard of artificial intelligence	yes	3	1.7	8	4.6	163	93.7	-
Have you used any AI-based tools	yes	3	1.7	8	4.6	163	93.7	-

There is no statistically significant association found between sociodemographic traits & attitudes toward AI. The

majority of participants in both the ≤20 years (94.7%) and >20 years (92.5%) age groups reported having a positive attitude toward AI, and age group did not significantly associate with AI attitude ($\chi^2 = 0.740$, $p = 0.787$). Similarly, the majority of participants, both male (94.8%) and female (92.8%), showed a positive attitude toward AI, indicating that gender did not significantly associate with AI attitude ($\chi^2 = 0.422$, $p = 0.889$).

Furthermore, there is no statistically significant association between current residency type & AI attitude ($\chi^2 = 2.566$, $p = 0.677$), with those who lived in hostels, PGs, and families having the most positive AI attitudes. Regional location was also not substantially associated ($\chi 2 = 1.358$, $p = 1.000$), and almost all participants from urban, semi-urban, and rural locations had positive opinions about AI. Although a positive attitude toward AI was consistently high throughout all academic years, the year of study did not show a significant association with this attitude ($\chi^2 = 4.992$, $p = 0.213$).

Majority (46.0%) of participants were over 20, and more than half (54.0%) were under 20. The percentage of female participants was slightly greater (55.7%) than that of male participants (44.3%). Participants' current residences were spread nearly evenly, with 33.9% living with their families, 31.0% in paying guest lodgings, and 35.1% in hostels. Most of the participants (85.1%) were from metropolitan areas, while a lesser percentage were from semi-urban (2.9%) and rural (12.1%) locations.Every participant (100%) came from the KLE nursing college. According to academic year, the largest percentage of students (42.5%) were in their seventh semester, followed by those in their third (39.1%) and second (18.4%) semester. Interestingly, every participant (100%) said they had a smart device, had heard of artificial intelligence, and had used AI-based products. This suggests that the study population was exposed to and used digital and AI technology universally.

DISCUSSION:

This study is conducted to Assess Smart Device Usage and Attitude Towards Artificial Intelligence Among Undergraduate students enrolled in KAHER Institute of Nursing Sciences Belagavi. Inferential and descriptive statistics were both employed in the data analysis.The study found that most nursing students had high smartphone addiction (96%) while also showing a positive attitude towards artificial intelligence (93.7%). This indicates that students are highly engaged with digital technology and are open to using AI in education and healthcare.A moderate positive correlation ($r = 0.389$) was observed between smartphone usage and AI attitude, suggesting that students who use smartphones more tend to have a better perception of AI.However, there was no significant association between socio-demographic variables and both smartphone addiction and AI attitude ($p > 0.05$), indicating that these factors did not influence the results.Overall, the study shows that although students are highly dependent on smart devices, they have a favourable attitude towards AI, highlighting the need for controlled usage and integration of AI in nursing education.

CONCLUSION:

It can be concluded that there is a statistically significant positive correlation between smart device usage and attitude towards artificial intelligence ($r = 0.389$) among undergraduate nursing students, and there is no statistically significant correlation between selected sociodemographic characteristics and smart device usage as well as attitude towards artificial intelligence scores ($p > 0.05$). The results of this study showed that 96% of nursing students had a high level of smartphone addiction, while 93.7% had a positive attitude towards artificial intelligence. Thus, we can conclude that higher smart device usage is associated with a favourable attitude towards artificial intelligence among nursing students.

The study's conclusions were corroborated by studies conducted among students to assess digital device usage and perception of artificial intelligence. The findings showed that students with higher exposure to smart devices demonstrated better acceptance and positive perception towards artificial intelligence technologies, indicating a significant relationship between digital usage and AI attitude. Based on the findings, it can be said that smart device usage can help nursing students develop a positive attitude towards artificial intelligence, which is beneficial for improving learning and future clinical practice.

LIMITATIONS AND FUTURE RECOMMENDATIONS:

The study used a limited sample size, which may restrict the findings' generalizability. A cross-sectional study design was adopted, which limiting the ability to establish cause-and-effect relationships. The study design also prevented assessment of changes over time in smart device usage and attitude towards artificial intelligence.

Similar research can be undertaken with a larger sample size to improve the generalizability of the results. Studies using experimental or longitudinal designs are recommended to establish causal relationships between smart device usage and attitude towards artificial intelligence. Further research can be conducted to assess long-term patterns and changes in smart device usage and Artificial intelligence attitude among nursing students. Studies in different colleges and regions could also help in better understanding and comparison of findings.

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