Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/13848
DOI URL: http://dx.doi.org/10.21474/IJAR01/13848

RESEARCH ARTICLE

KNOWLEDGE, ATTITUDE AND PRACTICE ON E- LEARNING AMONG B.SC. NURSING STUDENTS

Vadivazhagan Alias Rathinam J.[1], Nivethitha K.[2], Sridevy S.[2] and Felicia Chitra A.[3]

1. M.Sc Nursing Student, College of Nursing, Mother Theresa Post Graduate and Research Institute of Health Science, Puducherry, India.
2. Associate Professor, Dept. of MSN, College of Nursing, Mother Theresa Post Graduate and Research institute of Health Science, Puducherry, India.
3. Principal cum HOD, Dept. of MSN, College of Nursing, Mother Theresa Post Graduate and Research institute of Health Science, Puducherry, India.

Manuscript Info

Manuscript History
Received: 30 September 2021
Final Accepted: 31 October 2021
Published: November 2021

Key words:-
E-Learning, Impact, Modern Technology & Online Classes

Abstract

Background: The sudden outbreak break of crisis made the educational institution to switch over the mode of teaching from traditional method to E-Learning. The main objective of the present study is to assess the existing level of Knowledge, Attitude and Practice about E- learning among B.Sc Nursing Students in selected Nursing colleges, to correlate all the outcome variables with each other.

Methodology: A cross sectional descriptive survey study was conducted among B.Sc Nursing Students in selected Nursing colleges, Puducherry with 400 samples, selected through cluster random sampling technique. Quantitative approach was used for this study and the design was descriptive cross-sectional design. Data was collected by using self-structured questionnaire prepared by the researcher.

Results: The results revealed that, out of 400 samples, nearly more than half of the samples 211(52.8%) had inadequate Knowledge about E-Learning. Further, the data was analyzed by using the Karl Pearson's correlation and it had shown positive correlation which is found to be statistically significant at $p<0.01$ level between all three variables. Regarding the association, previous experience of attending classes online classes, gender and total family income per annum had shown significant association with Knowledge, educational status of the mother, total family income per annum and sibling having separate gadgets for attending E-Learning had shown statistically significant association with Attitude, use of gadgets by the subject's siblings having separately for attending E-Learning had statistically significant association with Practice at $p<0.05$ level.

Conclusion: The study concludes that the E-Learning should be recommended for the Students to update their Knowledge and practice with desirable attitude changes to adapt E-learning for their learning platform.

Corresponding Author:- Nivethitha K
Address:- Asso.Professor in Nursing.

Introduction:-

Education is board spectrum of teaching and learning aspect which makes the learner to learn and makes them to improve their life.[1,2] The education system is modeled such way to increase the knowledge in various aspects and to have good satisfactory level towards their goal.

During the crisis situation the improvement of technology has made everything easily accessible. The emerging modern world transfers this learning process through electronic media. A blended learning becomes a choice in the method of teaching learning process which is commonly practiced by every schools and Colleges. Now a days the changes in the mode of learning is well accepted by higher education during this pandemic period. There are many Apps available to acts as plate form for teaching in the present scenario.

The medical and nursing education is mostly taught by the traditional methods for many years. Since, it is highly skill-oriented profession and now there is a need for changes[3,4].Because, the advancements in education are also needed to update their knowledge & skill with the use of modern gadgets in this new era[5]. Nowadays younger generation do not to be book worms; instead, they prefer technology for their regular classes[6]. The modern technology is made very easy for all Age groups[6]. Now learning through online is very common due to pandemic compared to the previous decade, it was very difficult[7]. Before 10 to 20 years there were less gadgets or devices, but that was also high in cost which cannot be rendered by common man.[8]

According to their view article published by **Deepika.V, Soundariya.K, Kartikeyan.K, Kalaiselvan.G, (2020)** E-Learning is best method of learning for the Students which is adopted by various institution for upgrading their Knowledge and grade.[9] Similarly electronic media is considered to be very useful for conducting online classes in this present scenrio.[10]

Use of technology or change in traditional learning method requires good cooperation, since the perception of Students is different and it was also found that most (77%) of the samples had negative perceptions towards E-learning in the study conducted by **Abbasi.S, Ayoob.T, Malik.A, Memon.S.I, (2020).**[11]

The present situation made the researcher to realize that the E- learning is mandatory for every profession to upgrade their knowledge and skill. Hence, the researcher wanted to assess the Knowledge, Attitude and skill of Students regarding E-Learning, Since the nursing profession is highly skill-oriented program for which higher form of technology is necessary to make them skillful through offline mode and it is newer for the Students and the faculty as well. So, the present study is planned to assess the Knowledge, Attitude and Practice of attending classes through electronic media among the Nursing Students.

Problem Statement:

A study to assess the Knowledge, Attitude and Practice about E- learning among B.Sc. Nursing Students in selected Nursing Colleges, Puducherry.

Objectives:-

1. To assess the existing level of Knowledge, Attitude and Practice about E- learning among B.Sc. Nursing Students.
2. To correlate the Knowledge with the Attitude, Knowledge with Practice and Practice with Attitude about E-learning among B.Sc. Nursing Students.
3. To find out the association between the level of Knowledge, Attitude and Practice about E- learning with selected demographic variables.

Research Methodology:-

The researcher adopted the quantitative approach with cross sectional descriptive survey design for this study. Eisner's connoisseurship model (1976) was adopted to conceptualize the study. The structured questionnaire was developed by the researcher after several research reviews and incorporated the suggestion received from medical and nursing expects in the questionnaire. The questionnaire consists of mainly two section which includes Section – A demographic variables and Section –B self-Structured questionnaire for assessing Knowledge, Attitude and Practice. Further, Section – B is divided into 3 subsection consists of 35 multiple choice question for assessing Knowledge and Practice and 5-pointLikert scale with 20 statements for assessing Attitude towards E-learning.

Cluster random sampling technique was adopted to select the samples for the study in which, the four years B.Sc nursing students were grouped as two groups in each selected College by using odd and even numbers that is 1yr and 3yr as one group and 2yr and 4yr as another rgroup and then, in the second step, the researcher selected only one batch from each group that is 2yr from first group and 3yr from another group by lottery method in every selected college. Finally, in the third step, subjects were drawn out from each selected group that is 40 students from 2yr (first group) and 40 students from 3yr (second group) totally the samples were around 80 as per sample size calculation in each selected College by using the same lottery method. Data was collected among 400 samples by survey. Self-structured questionnaire was used to collect the data and the results were analyzed by descriptive and inferential statistics.

Ethical Consideration:
The ethical clearance was obtained from institutional ethical committee and the prior permission was also obtained from the respective college Principals. Before the collection of data, informed consent and permission was obtained from every samples in selected Nursing Colleges. The samples were selected based on inclusion criteria. The samples were given freedom to withdraw from the study at any time of the study period.

Results & Discussion:-

Distribution of demographic variables: -
In this study total sample size is 400, out of total samples, the half 209(52.2%) of subjects are between the Age group of 20 to 22 years, 324(81%) were females, Regarding education of the parents of the samples, most of their father 141(35.3%) and mother 145(36.3%) had high school education respectively. With regards to the occupation of parents, 124 (31%) are elementary workers. The most 205(51.3%) of the Students are residing in urban area and the remaining 195(48.7%) in rural area.

The total number of sibling in a family, 238 (59.5%) of adolescence are having one siblings, 101(25.2%) of adolescence are having two siblings. 39(9.8%) of adolescence are having more than three siblings, and 22 (5.5 %) of adolescence are not having siblings in their family.

Regarding total number of smart phone availability in a family, 157(39.3%) of subject's family members are having two smart phones, 102(25.5%) of subject's family members are having three smart phones, 75(18.7%) of subject's family members are having more than four smart phones, 64(16%) of subject's family members are having one smart phones, and 2(0.5%) of subject's family members don't have smart phones at all.

With respect to availability of separate gadgets for siblings for attending E-Learning, 209(52.3%) of members does not have separate gadgets and 191(47.7%) of members have separate gadgets for attending E-Learning.

Regarding previous experience of attending online class, 267(66.7%) of subjects have previous experience and 133(33.3%) of subjects does not have previous experience in attending online class.

The data was analyzed as per objectives stated:-
The first objective of the study is to assess the existing level of Knowledge, Attitude and Practice about E- learning among B.Sc. Nursing Students.

Regarding Knowledge, the result revealed that out of 400 subjects. Just more than half of the subject's 211(52.8 %) are having inadequate Knowledge, 185(46.2%) subjects are having moderate Knowledge and only 4(1%) subjects are having adequate Knowledge which shows there are very less number of subject's are having Knowledge on E-Learning. So, there is a huge need of imparting Knowledge on E-Learning which is essential for the Students in this present scenario (table no 1).

Further the investigator analyzed the Knowledge items wise, all most all the subjects had good knowledge in all segments regarding E-learning that is 184(46%) subjects have Knowledge on introduction to E-Learning, 193(48.25%) have Knowledge on components of E-Learning, 180(45%) have Knowledge on importance of E-Learning, and 253(63.25%) have Knowledge on drawbacks of E-Learning.

Regarding Attitude the present study results revealed that, 379 (94.8%) of subject's are having uncertainty which means neutral where they are not able to decide neither good or bad, very few that is 18(4.4%) of subject's are

having satisfactory and surprisingly only 3(0.8%) of subject's are having unsatisfactory (table no 1). The results of the present study are consistent with the study conducted by **Waldman.L, Perreault.H, Alexander.M, Zhao. J, (2006)** which revealed that nearly half of subjects (79.8%) had positive Attitude towards online classes, and another half (79.3%) had neutral Attitude. None of them had negative Attitude.[12] This might be due to the force made on the society by the pandemic situation which changes in mind set of people that it is necessary for the life. This made the technology to reach deep in the society and became one among the basic need of them. Further, the attitude was analyzed by its item that is majority 121 (30.25%) of the subjects strongly agree regarding the strength of perception towards E-Learning, and most 121 (30.25%) of the subject's had strongly agreed that they had issues in attending E-Learning,

Regarding Practice, 183(45.8%) of subject's are having moderate Practice, 171(42.8%) of subject's are having adequate Practice and 46(11.4%) of subject's are having inadequate Practice in attending E- learning (Table no 1) and it is again analyzed based on its item such as 316 (46%) have Knowledge on Practice in using gadgets for attending E-Learning,234 (58.5%) have Knowledge on Practice in using apps for attending E-Learning, 207 (51.75%) have Knowledge on Practice in attending activity based E-Learning, 202 (50.5%) have Knowledge on Practice in preparing E-documents and 198(49.5%) have health issue while attending E-Learning

Table 1:- Frequency and percentage distribution of Knowledge, Attitude and Practice on E-Learning. N = 400.

Level of Knowledge	**Frequency**	**Percentage**
Inadequate Knowledge (<10)	211	52.8
Moderate Knowledge (10 – 15)	185	46.2
Adequate Knowledge (>15)	4	1.0
Level of Attitude	**Frequency**	**Percentage**
Unsatisfactory (<50)	3	0.8
Uncertainty (50 – 75)	379	94.8
Satisfactory (>75)	18	4.4
Level of Practice	**Frequency**	**Percentage**
Inadequate Practice (<5)	46	11.4
Moderate Practice (5 – 7)	183	45.8
Adequate Practice (>7)	171	42.8

The second objective of the study is to correlate the Knowledge with the Attitude, Knowledge with Practice and Practice with Attitude about E- learning.

The investigator analyzed the correlation between the three study variables such as Knowledge, Attitude and Practice by using Karl Pearson's correlation test. The results of the present study shows that the correlation r value is found to be statistically significant between all there variables such as between Knowledge and Practice($r = 0.318$ at $p=0.0001$), Knowledge and Attitude ($r = 0.243$ at $p=0.0001$), and Practice and Attitude ($r = 0.207$ at $p=0.0001$).This study finding is consistent with the similar study conducted by **Matsunaga.S, (2016)** shows that there is a positive correlation of perception at the level of $r=0.547, p<0.05$ about delivering the content through the online classes is more effective.[13]

The result infers that when Knowledge increases, Attitude and Practice will also be increased.

The third objective is to associate the level of Knowledge, Attitude and Practice about E- learning with selected demographic variables

Regarding association between Knowledge and demographic variables, the findings of the present study showed that there was a statistically significant association between level of Knowledge and demographic variables such as the student's prior experience of attending online classes($x^2 = 14.406$, $p=0.001$), Gender ($x^2 = 8.126$, $p=0.017$) and total family income / year ($x^2=24.215$, $p=0.019$) at $p<0.05$ level.

Further, the researcher used regression analysis to analyze the association between outcome variables and selected demographic variables of this study. In this regard, knowledge was analyzed primly which again shows that there was a significant relationship between Age ($p=0.029$), Gender ($p=0.003$) and total family income per year ($p=0.009$) with a R2 value of 6.7%. Table shows the multiple regression combination of the demographic variables as small

linear relationship to mean difference score of Knowledge R^2 value is 6.7%. An 6.7% of estimated variance of the demographic variables can be accounted for multiple regression combination on predictors on Age, Gender, year of study, education of father, occupation of father, education of mother, occupation of mother, total family income per year, residence, siblings, members in your family having smart phone, sibling having separate gadgets for attending E-Learning and having prior experience of attending online class (Table no 2).

Regarding association between Attitude and demographic variables, there was a statistically significant association between Attitude and demographic variables such as Educational status of the Mother(x^2=21.439, p=0.044), total family income per year (x^2= 22.250, p=0.035) and availability of gadgets separately for the siblings(x^2=7.156, p=0.028) at p<0.05 level and this was analyzed again by using regression analysis which showsthere was a significant relationship between Age (p=0.034), and sibling have separate gadgets for attending E-Learning (p=0.031) with a R2 value of 5.6%. Table shows the multiple regression combination of the demographic variables as small linear relationship to mean difference score of Practice R^2 value is 5.6%. An 5.6% of estimated variance of the demographic variables can be accounted for multiple regression combination on predictors on Age, Gender, year of study, education of father, occupation of father, education of mother, occupation of mother, total family income per year, residence, siblings, members in your family having smart phone, sibling having separate gadgets for attending E-Learning and having prior experience of attending online class (Table no 3).

This present study finding is consistent with the similar study conducted by **Smart.L.K(2006)** shows that there was a significant association between the prior awareness of online module & the level of perception (p=0.004) and prior awareness of completion of module in online (p=0.047) & the level of perception at p<0.05 level[14].And it is also consistent with an another study conducted by **Platt.A.C, Raile.W.N.A, Yu.N, (2014)** which revealed that association between the demographic variables and perception towards online classes such as general equivalence(F=3.78), comparative flexibility (F=7.72), comparative interaction (F=10.57), comparative Knowledge gained (F=9.72) and comparative ease(F=2.28) with the perception about online classes had shown statistically significant at p=0.01 level with multiple regression analysis.[15]

Regarding association of Practice with demographic variables, the present study shows that there was a statistically significant association between separate gadgets availability for siblings in a family (x^2=13.416, p=0.0001) and demographic variables at p<0.001 and the multiple regression analysis results reveals that there was a significant relationship between Gender (p=0.042), occupation of mother (p=0.004) and total family income per month (p=0.000) with a R2 value of 7.7%. Table shows the multiple regression combination of the demographic variables as small linear relationship to mean difference score of Attitude R^2 value is 7.7%. An 7.7% of estimated variance of the demographic variables can be accounted for multiple regression combination on predictors on Age, Gender, year of study, education of father, occupation of father, education of mother, occupation of mother, total family income per year, residence, siblings, members in your family having smart phone, sibling have separate gadgets for attending E-Learning and having prior experience of attending online class (Table no 4).

Table 2:- Multiple regression analysis of Knowledge score and demographic variables N = 400.

Demographic Variables	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**95.0% Confidence Interval for B**	
	B	**Std. Error**	**Beta**			**Lower Bound**	**Upper Bound**
Age	**.662**	**.303**	**.127**	**2.189**	**.029***	**.067**	**1.257**
Gender	**1.008**	**.343**	**.150**	**2.942**	**.003***	**.335**	**1.682**
Year of study	-.219	.303	-.041	-.723	.470	-.814	.377
Education of Father	-.075	.115	-.039	-.655	.513	-.300	.150
Occupation of father	.057	.060	.051	.953	.341	-.061	.175
Education of Mother	-.140	.121	-.068	-1.155	.249	-.379	.098
Occupation of mother	.086	.054	.084	1.585	.114	-.021	.193
Total family income per year	**-.225**	**.086**	**-.142**	**-2.612**	**.009***	**-.395**	**-.056**
Residence	-.189	.270	-.036	-.698	.486	-.719	.342

Siblings	.003	.182	.001	.018	.986	-.354	.360
Members in the family having smart phone	-.250	.151	-.094	-1.659	.098	-.547	.046
Sibling having separate gadgets for attending E-learning	-.451	.285	-.085	-1.581	.115	-1.012	.110
Prior experience of attending online class	.470	.285	.084	1.649	.100	-.091	1.031
Percentage of R^2 value – 6.7%							

*p<0.05, S – Significant

Table 3:- Multiple regression analysis of Attitude and demographic variables N = 400.

Demographic Variables	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**	**95.0% Confidence Interval for B**	
	B	**Std. Error**	**Beta**			**Lower Bound**	**Upper Bound**
Age	.800	.718	.064	1.114	.266	-.612	2.211
Gender	**1.654**	**.812**	**.103**	**2.036**	**.042**	**.057**	**3.251**
Education of Father	.150	.272	.032	.552	.581	-.384	.684
Occupation of father	.101	.142	.038	.714	.476	-.178	.381
Education of Mother	-.108	.287	-.022	-.378	.706	-.673	.456
Occupation of mother	**.371**	**.129**	**.152**	**2.879**	**.004**	**.118**	**.625**
Total family income per year	**-.809**	**.203**	**-.213**	**-3.981**	**.000**	**-1.209**	**-.410**
Residence	.071	.640	.006	.111	.911	-1.187	1.329
Siblings	-.021	.375	-.003	-.057	.955	-.758	.715
Members in your family having smart phone	-.150	.256	-.034	-.587	.557	-.654	.353
Sibling have separate gadgets for attending E-learning	-.475	.665	-.038	-.714	.475	-1.782	.832
Having prior experience of attending online class	1.075	.676	.080	1.591	.113	-.254	2.404
Percentage of R^2 value – 7.7%							

*p<0.05, S – Significant

Table 4:- Multiple regression analysis of Practice and demographic variables N = 400.

Demographic Variables	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**	**95.0% Confidence Interval for B**	
	B	**Std. Error**	**Beta**			**Lower Bound**	**Upper Bound**
Age	**.521**	**.245**	**.124**	**2.127**	**.034**	**.039**	**1.002**
Gender	.086	.277	.016	.312	.756	-.459	.632
Education of Father	-.007	.093	-.004	-.074	.941	-.189	.175

Occupation of father	-.068	.049	-.075	-1.396	.164	-.163	.028
Education of Mother	-.010	.098	-.006	-.104	.917	-.203	.183
Occupation of mother	.036	.044	.044	.826	.409	-.050	.123
Total family income per year	-.086	.070	-.067	-1.228	.220	-.223	.052
Residence	-.004	.219	-.001	-.017	.987	-.433	.426
Siblings	-.047	.147	-.016	-.320	.749	-.336	.242
Members in the family having smart phone	.036	.122	.017	.295	.768	-.204	.276
Sibling having separate gadgets for attending E-learning	**-.501**	**.231**	**-.118**	**-2.169**	**.031**	**-.955**	**-.047**
Prior experience of attending online class	-.320	.231	-.071	-1.388	.166	-.774	.133
Percentage of R^2 value – 5.6%							

*p<0.05, S – Significant

Conclusion:-

The study result shows that the majority of the subjects had poor Knowledge, moderate Practice and neutral level of Attitude towards E-Learning. So, the researcher concludes that there is need of more educational sessions regarding E-Learning which is more essential in the present scenario and researcher also insists that the E-Learning should be recommended for the Students to update their Knowledge.

Conflict Of Interest:

The authors declare that they have no conflict of interest related to the publication of this article.

Bibliography:-

1. Aggrawal JC. Principles, Methods and Techniques of Teaching. 2nd ed. New Delhi :Vikas Publishing House Pvt Ltd; 1996. 231 p.
2. Basavantappa BT. Nursing Education. 1st ed. New Delhi :Jaypee Brothers Medical Publications (P) Ltd; 2003. 147 p.
3. Clement I. Textbook on communication and educational technology. 2nd ed. Bangalore: EMMESS Medical Publishers; 2010. 162 p.
4. Chanda E. Introduction to Nursing education. 3rd ed. New Delhi: Pee Vee Publishers; 2011. 320 p..
5. Mansoor Iqbal. App Download and Usage Statistics (2020). October 30,2020. Available from: https://www.businessofapps. com /data/app-statistics/
6. The online education industry in India –present and future. 2020. Available from: http://www.aurumequity.com/the-online-education-industry-in-india-present-and-future
7. Sudarshan Jain. Healthcare goes mobile: Evolution of teleconsultation and e-pharmacy in new Normal. September 2020. Available from:https://assets.ey.com/content/dam/ey-sites/ey-com/en_in/topics/health/2020/09/healthcare-goes-mobile-evolution-of-teleconsultation-and-e-pharmacy-in-new-normal.pdf
8. Sharma K Sharma R. Communication and educational technology in Nursing. 4th ed. New Delhi: Elsevier; 2012. 179p.
9. VelusamiDeepika, Krishnamurthy Soundariya, KaliaperumalKarthikeyan, GanapathyKalaiselvan. 'Learning from home': role of E-Learning methodologies and tools during novel coronavirus pandemic outbreak. Postgrad Med J.2020 Nov 5;postgradmedj-2020-137989. Available from: https://pubmed.ncbi.nlm. nih.gov/33154099/. DOI: 10.1136/postgradmedj-2020-137989. PMID: 33154099
10. Robyn-JeniaWilcha. Effectiveness of Virtual Medical Teaching. During the COVID-19 Crisis: Systematic Review. JMIR Med Educ. 2020Nov 18;6(2):e20963. Available from: https:// pubmed.ncbi.nlm.nih.gov/ 33106227/ DOI: 10.2196/20963. PMID: 33106227. PMCID: PMC7682786

11. Ahmed Alsoufi , Ali Alsuyihili, Ahmed Msherghi, Ahmed Elhadi, Hana Atiyah, AimenAshini, ArwaAshwieb, Mohamed Ghula, Hayat Ben Hasan, SalsabilAbudabuos, Hind Alameen, TaqwaAbokhdhir, Mohamed Anaiba, TahaNagib, AnshirahShuwayyah, RemaBenothman, GhaleaArrefae, AbdulwajidAlkhwayildi, AbdulmuetiAlhadi, Ahmed Zaid, MuhammedElhadi. Impact of the COVID-19 pandemic on medical education: Medical Students' Knowledge, Attitudes, and Practices regarding electronic learning. PLoS One Journal. 2020 Nov 25;15(11):e0242905. Available from:https://pubmed.ncbi. nlm.nih.gov/ 33237962/.DOI: 10.1371/journal.pone.0242905. PMID: 33237962
12. Lia Waldman, HeidhiPerreault, Melody Alexander, Jensen Zhao. Comparing the perceptions of online learning between Students with experience and those new to online learning. Information Technology, Learning, and Performance Journal. April 2006; 25(2): 20-28.
13. SackikoMatsunaga. College student's perceptions of online learning: Knowledge gain and course effectiveness. The Online Journal of Distance Education and E-Learning. April 2016; 4(2). Available from: www.tojdel.net.
14. Karl L Smart. Student's perceptions of online learning: A Comparative study. Journal of information Technology Education Research. June-2006; 5:201-219. available from: DOI:10.23345/243.
15. Carrie Anne Platt, Amber N.W. Raile, Nan Yu. Virtually the same? Student perceptions of the equivalence of online classes to face-to-face classes. MERLOT Journal of online learning and teaching. December 2014; 10(3):489-503.