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**Research Article****Study on Awareness and Acceptance towards Computer Assisted Learning (CAL) Among Undergraduate Medical Students**Archana P Kumar<sup>1\*</sup>, Abirami V<sup>2</sup>, Visalam<sup>3</sup>, Padmavathi R<sup>4</sup><sup>1,2</sup>Assistant Professor, <sup>3</sup>III Year Postgraduate, <sup>4</sup>Professor and Head, Department of Physiology, Sri Ramachandra University, Chennai, Tamilnadu, India**\*Corresponding author**

Archana P Kumar

Email: [archanaprabukumar@gmail.com](mailto:archanaprabukumar@gmail.com)

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**Abstract:** Computer Assisted Learning (CAL) is a method of acquiring knowledge using electronic media which is gaining recognition among students. This requires access to computers and considerable awareness on information technology. The current study aims to assess the awareness and acceptance towards CAL among first year undergraduate medical students. Institutional Ethical Clearance obtained. A cross sectional study was conducted where first year medical students participated. A pre-tested semi-structured anonymous questionnaire was administered and data analysis was done using SPSS software. Majority of the students owned a computer with internet connection. Many of them were confident in using Microsoft Office® applications along with online tools like Facebook Wikipedia and YouTube. Significant gender difference in social media usage was observed. Few students lacked basic computer skills and were uncertain about the applications of e-learning. Many acknowledged the advantages of interactive and multimedia-enhanced learning material and strongly approved on incorporating them in their curriculum. This study shows that majority of the students have access to computers and other facilities required for CAL. Even though the use of computers for academic purposes was low they expressed a positive attitude towards CAL. This highlights the need for assistance on the use of available resources for CAL. The study has emphasized that CAL can be a useful tool in enhancing the learning experience but the lack of technology and resource can be a challenge for implementation.

**Keywords:** CAL; Social Media; Internet Access; medical students; Awareness.

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**INTRODUCTION**

Computer Assisted Learning (CAL) is a method of teaching and learning using electronic media [1]. CAL is also known as E – learning, Web-based learning, online learning, distributed learning, Internet-based learning and computer- assisted instruction[2]. Before the wide use of internet the other form of teaching and learning was multimedia learning where there was two or more mediums of delivery for example text with audio or video or text with images etc. which would help the learners retain better[2]. The latest system that is being used widely these days is blended learning where teacher teaching multimedia classes are combined with E-learning technology[1]. Earlier studies show that multimedia Computer Assisted Learning enhances the experience of both teaching and learning and it is the easiest method available for updating and use at ease Medical education is constantly increasing at a rapid speed and to keep the upcoming doctors and established physicians in par with the competitive world. CAL has become a necessary tool and the platform most commonly used is Learning Management System (LMS).LMS simplifies the assessment, evaluation and supervision of the content delivered via E-learning[1]. Introduction of CAL into academics had

made learning more active and teachers as facilitators and mentors [3]. CAL plays an important role and an E-learner is a person who uses the online material for learning purposes, he is fairly independent, reads in his comfortable time and space[4]. On the other hand E-teaching is directives given via an electronic media in both virtual and face to face classrooms and E-teaching enable online communications and online sharing of course material. E-learning can be used in medical education to improve the efficacy of academic deliverance and make the learning sessions more captivating and retainable[4]. Developing countries are growing in the consumption of computer and internet based learning compared to the usage in the last decade. The major challenge faced by the growing countries is availability of computers and access to internet, financial support in terms of administration and faculty time and training[5]. This survey is conducted to investigate human behaviour related to certain topic. It identifies what students know (Awareness) and how they feel (acceptance) about CAL in medical education[6]. This study is conducted in order to document the existing awareness and willingness for newer changes as a betterment of current occurrences. It is also used for diagnostic purposes, implemented to

increase insights in present situation and help design suitable specific interventions and used as an evaluation tool to assess effectiveness of interventions[6].

**MATERIAL AND METHODS**

This study was conducted among students studying I Year MBBS in Sri Ramachandra University, Porur, Chennai. The study was approved by institutional ethics committee and all students gave consent to participate in this study. Structured questionnaire was administered to students after an initial brief description and motive of the study. For better understanding and earnest reciprocation the questionnaire was set in easy English, it was divided into 10 parts and researchers were present for any clarification. Likert scale was used

to minimize mixed options and to score the question. Data analysis was done using SPSS – software version 17. Questionnaire was in multiple choice questions format and students were asked to select their preferred option

**RESULTS**

All the participants possessed a laptop, desktop, palmtop or mobile internet. Most of them had more than one technological gadget and 80% of them had access to computer and internet round the clock. Nearly two third of the participants were highly satisfied with the internet connectivity they use. All of them used internet and computers on a daily basis.

**Table 1: Awareness about Computer applications**

Knowledge	Confident %	Not confident %
Using microsoft word	52.4	4.8
Creating ppt	57.2	4.8
Using excel sheet	33.3	14.3
Drawing using ‘paint’	66.7	4.8
Sending email attachments	71.4	0
Creating a blog/web page	33.3	33.3
Writing a computer program	14.3	61.9
Analyzing data with statistical package	19.1	52.4
Accessing information on CD ROM	47.6	28.6
Performing an online search	71.4	9.5
Downloading health information from internet	71.5	0
Creating computerized patient record	47.6	28.6

**Table 2: Preferred Resources Used for Studying and References**

	Always %	Never %
Text books	61.9	0
Internet	28.6	0
Lecture notes	28.6	0
CD ROM	9.5	9.5
journals	14.3	38.1

**Table3: Percentage of Students Agreeing and Disagreeing on E-Learning and Education – Acceptance levels**

	Strongly agree	Strongly disagree %
E learning is a method of teaching and learning using electronic media	76.2	0
It is restricted to distribution of notes over internet	38.1	4.8
Limited application in medical/dental education	47.6	23.8
Crucial for acquiring more competency	28.6	0
All lectures should be replaced by e learning	28.6	23.8
It should be used as supplementary tool	71.4	0
Should be encouraged in teaching institutions	81	0

**Table-4: Reasons for Preferring E - Learning**

	Strongly agree ( % )
Time saving	57.1
Availability	52.4
Updated information	57.1
More interactive	71.4
Scope for self-assessment	66.7

## DISCUSSION

Out of all the students 71 % are confident in online searching and downloading along with using Microsoft word processor. 61% still prefer studying with text books as they are always available and widely in use. 76 % strongly agree that e learning is method of learning and teaching method using electronic media and 71 % think that it should be used as a supplementary tool in teaching curriculum[8,9]. Internet is widely used for online searching, browsing, entertainment and chatting whereas only 5% use it for online transaction, 19% for therapeutic guidelines and 14% for recent advances. Internet in the form of e-learning should be more used for academic purposes. 77% and 68% prefer Computer Assisted Learning for interactive sessions and scope for self-assessment respectively. 78% feel that inclusion of animations, images and videos would make Computer Assisted Learning more beneficial and understandable and can retain better[10]. Availability of internet is considered a major limitation for Computer Assisted Learning by 76% of students as in India the accessibility and the speed of internet is still under the developing arena [11]. More number of female participants preferred studying with text books. More number of boys use internet to send emails compared to girls. Otherwise, all the other parameters and their awareness and acceptance towards Computer Assisted Learning were more or less equal between both the genders[12].

## Limitations

This study is conducted among students belonging to the same course and college which in turn implies that they belong to the same cultural background and same socio economic group leading to a biased result. Awareness and Acceptance towards Computer Assisted Learning among faculty and postgraduate students could not be assessed.

## CONCLUSION

The study has emphasized that Computer Assisted Learning can be a useful tool in enhancing the learning experience and students are more open towards the upcoming change in teaching methods. The lack of knowledge in computer skills along with poor technological infra-structure and resource can be a challenge for implementation of Computer Assisted Learning.

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