

## Original Article

## E-HEALTH AS A COMPONENT OF SCHOOL HEALTH SERVICES IN LAHORE

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**Objective:** Facilitating health provision to masses involving internet is an emerging aspect of medical profession. This exploratory study aims to assess the adequacy of such services in schools of Lahore & form basis for further work up in this aspect.

**Material and Methods:** Out of 1400 schools registered with BISE, Lahore, private (43) and public (16) schools of Lahore were included in the study (purposive sampling by inclusion criteria) who had web pages (n=59); Data was collected by data extraction form through internet & descriptive analysis was done using SPSS version 17. It was a self-financed study.

**Results:** Our results concluded that 53% schools (n=59) had well-equipped computer laboratories; out which 40% were private & only 13% were public, however not all of them provided access to internet. 39% of the schools regularly updated their websites; 29% were private & only 10% were public. 28% of the 59 schools provided their telephone numbers which the parents can contact in case of any emergency or otherwise. 14% of the total schools had health related content available on their website. Only 3% each of both the schools displayed messages regarding health education.

**Conclusion:** This study implies that the provision of e-health services in the schools of Lahore is almost negligible. Internet is a rising technology in Pakistan and steps should be taken to incorporate internet based innovations in the school health policy of Pakistan.

**Key words:** E-health, lahore, school health, cross sectional.

### Introduction

AE health is defined by WHO as, "E-health is the transfer of health resources and health care by electronic means".<sup>1</sup> The value of E-Health has grown substantially in the modern times when internet has turned the world into a global village and new and faster means of communication are being developed.<sup>2</sup> E-health has shown hypothesized benefits in improving better understanding of disease and prompt communication.<sup>3</sup> Some schools provide with internet facilities and well equipped computer labs, so it was important to know the situation of E-Health in the schools, role of teachers and involvement of health care professionals in this matter. This is the first of its kind study on this subject in Pakistan as it has not been conducted previously. Our aim was to find out if E-Health is practiced in schools of Lahore, how many schools have internet connectivity and how many are active online to promote E-health.

**Rationale:** The E-health is very important for modern times. Our aim was to find out its prevalence in the schools because no such study has ever been conducted in Pakistan before. It is important to know the ground reality of E-Health in our country. We also wanted to know the interest of teachers and

their qualification to promote E-health and the utilization of healthcare professionals for this purpose. This is very important for planning the health policy and related strategies in the future at local, provincial and national level.

### Literature Review:

E-health gives us the glimpse of modern medicine. E-health projects like "hello health", which is a Brooklyn based primary care practice is an excellent example of paper-less, web-based practice.<sup>4</sup> Survey for assessment of influence of internet health information conducted by Pew Internet & American Life Project published by Elsevier in 2005 provides us with a multivariate result, with few individuals being highly aware of health usage of internet, whereas many were completely ignorant of the matter. The strongest influence to search for a health problem online was interestingly, female gender.<sup>5</sup> A study conducted in 2007 in England, published by Elsevier showed people trust the information provided to them by internet so distinction between "trust" sites is important. It promotes informed choices.<sup>6</sup> In 2001 A survey was conducted to find 40% of internet users use internet for health related queries 94% said it had no effect on their visits to physician, 5% admitted using internet for a prescription<sup>7</sup>. A study was

conducted in 13 countries about sending messages and reminders about diseases like diabetes & asthma, and showed significant improvements in compliance with medicine taking, asthma symptoms, HbA1C, stress levels, smoking quit rates, and self-efficacy.<sup>[8]</sup> A study was conducted in December 2011 in colleges & universities around the world showed that although college students are highly connected to, and feel comfortable with, using the Internet to find health information, their E Health literacy skills are generally sub-par.<sup>[9]</sup> Another study in Netherlands in 2012 states that even rural application of E health services is an emerging field which should not be undermined<sup>[10]</sup>. Mixed findings were reported in a study conducted in 2014 in Netherlands by Maastricht University about the effectiveness of E health interventions in lifestyle to reduce smoking habits in youth<sup>[11]</sup>. However in a randomized control trial conducted in Canada in 2008, it was concluded that smoking intervention programme helped adolescents in avoiding heavy smoking<sup>[12]</sup>.

## Methodology

This is a descriptive, cross-sectional study. The sampling technique followed was non probability, purposive sampling. 1400 schools of Lahore both public and private were included as two strata. Sampling unit was website of each school. The data was collected by a data extraction form through internet.

**Inclusion criteria:** Only the schools that had proper web addresses were included. E.g. Official website or any social media page. Descriptive analysis was done by using the software SPSS version 17.

A List was made of 127 schools after applying the inclusion criteria. (Only the schools that had web addresses were included).<sup>3</sup>

A Second list of 59 schools was made after excluding 68 non-functional/ fake/bogus web addresses.

All the 59 schools were included in the study.

## Results

From a total of 59 schools, 39% of the schools regularly updated their websites; 29% were private & only 10% were public, indicating that the websites are not often used as a platform by the schools to communicate with the public in general. However, just 23.72% had any health related content available in any section of the website. 54.2% of the websites were linked to social networking sites (Facebook). 53% schools (n=59) had well-equipped computer laboratories; out of which 40% were private & only

13% were public, however not all of them provided access to internet. There were discussion forums for the users and students on the website of 32.2% schools and only 10.1% of them were active. NO school had the facility to calculate BMI on their page. 28 of the 59 schools provided their telephone numbers which the parents can contact in case of any emergency or otherwise. 14% of the total schools had any type of health related content available on their website where as 6.8% gave contact information for healthcare professionals on their websites.

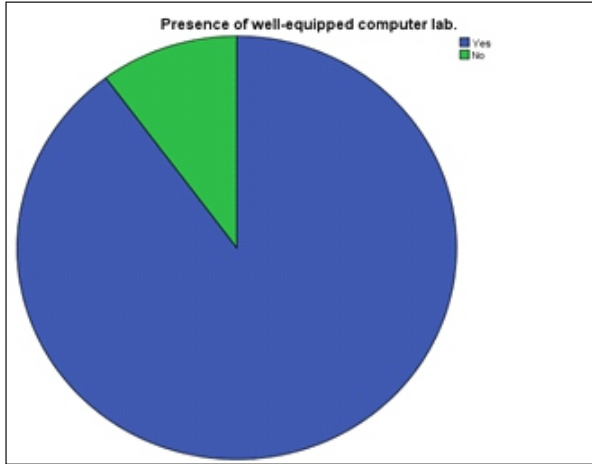
## Discussion

E-Health literacy refers to the ability of individuals to seek, find, understand, and appraise health information from electronic resources and apply such knowledge to addressing or solving a health problem. While the current generation of school students has not appreciable access to a multitude of health information on the Internet, access alone does not ensure that students are skilled at conducting Internet searches for health information. Ensuring that school students have the knowledge and skills necessary to conduct advanced E-Health searches is an important responsibility. The information obtained in our study indicates that the provision of E-health in our education system is negligible, due to the lack of awareness, and scarcity of resources.

A systematic literature review was conducted at Department of Health Education and Behavior, University of Florida, Gainesville, FL 32611, USA, to summarize and critically evaluate the evidence from existing research on E-Health literacy levels among college students between the ages of 17 and 26 years attending various 4-year colleges and universities located around the world. It highlights similar fact that in spite of availability of internet and all type of electronic media it does not mean that today generation in schools have access to multitude of health. These results coincide with the findings in our study as our data collection clearly evaluated & focused on this aspect.

A report was published by Ray Jones PhD FFPH, Heather Skirton and Miriam McMullan in July 2006, to evaluate methods for using information and communication technologies to involve academic staff, students and patients in a common synchronous E-learning environment. Limitations in accessibility Have been demonstrated for both satellite broadcasts and videoconferencing. Having identified a feasible synchronous method we can now investigate hypothesized benefits for staff, students, and patients

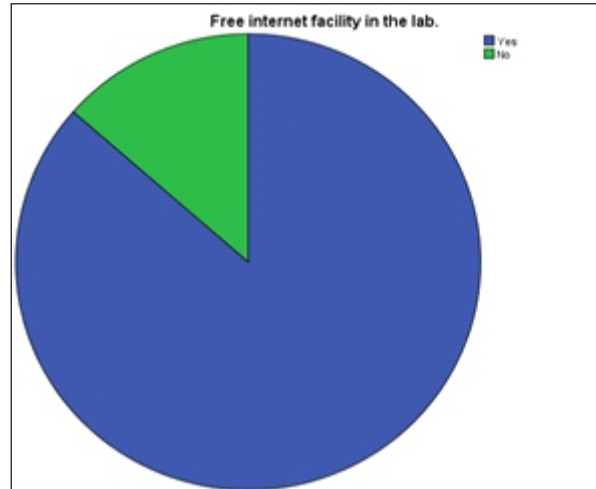
Of combined e-health e-learning. An article published in American Journal of Preventive Medicine in 2007 corresponds with the results of our study, and states that interventions that feature interactive technologies need to be refined and evaluated to fully determine their<sup>4</sup> potential as tools to facilitate prevention, diagnosis & treatment. These strategies are currently lying in their infancy<sup>13</sup>



**Fig-1:** Presence of well equipped computer lab.

**Table-1:** Provision of telephone number by school in case of emergency.

	Frequency	Percentage
Yes	91.04±7.6	47.5
No	178±9.7	52.5
Total	31.7±13.5	100.0



**Fig-2:** Free internet facility in the lab.

**Conclusion**

Websites were not up to date with health related issues and no particular advice by healthcare professional was given. No forums dedicated for health related queries of students. Medical reports, BMI calculators, lifestyle improvement interventions were sub-par. E-health provision is negligible in the schools of Lahore.

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