AN ORGANISED REVIEW ON THE PERSPECTIVE OF COMPUTER APPLICATION IN THE PHARMACY WORLD

Shivangi Sharma[*1],Sarbjot Singh[*2],Munish Goyal[*3],Diksha Sharma[*4]

[*1,2,3]Aakash Institute of Medical Sciences, Nalagarh,District Solan(H.P.)

[*4]KC Institute of Pharmaceutical Sciences, Pandoga,Una(H.P.)

Abstract

Computer is obligatory in this advanced era and pharmacy and related subjects are not special case for it. This review mostly centers around the different applications, softwares and utilization of computers in pharmacy. Computer science and technology is profoundly used in pharmacy field everywhere like in hospital pharmacy, pharmacy colleges, pharmaceutical industries, research centers and many more. Computer altogether lessens the time, expenditure, and workforce required for any kind of work. Development of different softwares makes it trouble-free to handle huge data. So, computers are playing critical role in pharmacy field, without computers pharmacy research will be enduring and costly.

KEY WORDS: Computer Science, Softwares, Pharmacy, Research, Computer Applications, Pharmaceutical Industries.

Introduction

Pharmacy field plays a significant role in patient healthcare. It is a tremendous field which is present worldwide. To run pharmacy field professionally and productively, it requires huge management and workforce. But now a day's utilization of computers in pharmacy field diminished the workforce and time. Computers are nearly connected with each edge of pharmacy field [1]. These are used in the drug design technique, hospital and clinical pharmacy retail pharmacy shop, clinical research centers, crude drug identification, clinical research centers, drug storage and business management, in pharmacy colleges for

computer assisted learning. Web (Internet) is immense assortment of information. It is accessible in only a single click. Different search tools like Google, Yahoo, Rediff, Bing help in searching online data related to pharmacy field [2]. The drug discovery, designing, manufacturing and analysis have become virtually possible only through the development of upcoming various hardwares and softwares [3]. Receiving the details, storing it and processing it and its dissemination is the main role of computers and this continuous flow of information shows effective functioning of any system [4].

Utility of Internet In Pharmacy

Throng of huge data that is internet The all data is available within seconds just a one click. Internet is a major tool in literature survey. The pdf files of books used in pharma are also available on the internet. Various research journals or review articles can be easily accessed via internet. There are number of web-sites which are related to pharmacy field.[5,6]Some of these web sites are as follows:

1. www.pharmweb.net/pwmirror/pwk/pharm webk.html

    It includes listing of international pharmaceutical regulatory bodies including the US Food and Drug Administration.

2. http://www.fda.gov/default.htm

This site is useful for checking adverse reaction reports for dietary supplements and drug interactions. The Orange book approved drug products is also available on-line here, as well as orphan drug products. It also contains an alphabetical listing of drugs licensed in the US and the corresponding package inserts.

3. www.phrma.org

    Representing America's pharmaceutical research companies provides details of drug development, industry news, and health guides.

4. www.pfizer.com/main.html

    This site is about research projects and career opportunities at this Pfizer pharmaceutical. Includes health education and pharmaceutical advice section.

5. www.pharmweb.net/pwmirror/pwk/pharm webk.html

    Listing of international pharmaceutical regulatory bodies including the US Food and Drug Administration.

6. www.fda.gov/cvm/

    Searchable listing provides facts and figures on all animal drug products approved by the FDA.

7. http://www.sciencedirect.com
    It contains review and research articles related to pharmacy field.

8. www.biogen.com
    Contains genetically-engineered human pharmaceuticals. With career advice, and drug information.

UTILITY OF COMPUTER IN RETAIL PHARMACY SHOP

Computers are used by community pharmacist for various purposes. Some major functions are like preparation of prescription label, calculating total prescription cost providing a receipt for patient, generation a hard copy record of transactions, automatically ordering the low quantity products via electronic transitions, preparation of annual withholding payrolls. Management functions that is generation of multiple sales analysis for a day, month, weak and to date for number of prescriptions handled and amounts in cash. To estimate the profits and financial ration analysis, calculation of number of prescription handled per unit time, printing of billing and payment details.[7,8]

COMPUTERS IN EDUCATION

Computers become essential to pharmacy field education along with teaching. Various methods getting integrated in teaching process that is "Chalk to talk" approach is changing to the "Display and

deliver" approach. Use of multimedia packages, digital libraries, web based education, multimedia based education, intelligent tutoring system, simulation laboratories, tele-education are finding place in normal teaching process at post graduate as well as undergraduate level and it leads to increase day by day. The use of computers in relate education to pharmacy students has been found captivating and satisfying. "Computer Aided Learning" (CAL) is becoming an important part of education system.[11]

E-learning

E-learning is ordinary referred to the deliberately use of networked information and communications technology in teaching and learning. A number of other terms are also applied to e-learning like online learning, virtual learning, distributed learning, network and web based learning.[11]

Digital Libraries

Digital libraries are an collection that is electronic of virtual or real resources which is available in online or offline form. Digital Libraries have received large interest in the recent years because they allow access to digital information from anywhere across the world. They have become widely accepted and even preferred information sources in areas of education, science and others. The expansion of Internet and the increasing interest in development of digital library related technologies and collections helped to speed up the digitization of printed documents in the past few years.[9,10]

MAJOR APPLICATIONS OF COMPUTERS IN PHARMACY

1. Computer aided learning
2. Computational modeling of drug disposition
3. Diagnostic laboratories
4. In Research Publication
5. Usage of computers in the retail pharmacy
6. Computer aided design of drugs (CADD)
7. Use of Computers in Hospital Pharmacy
8. Information system in Pharmaceutical Industry
9. Clinical trial management
10. Adverse drug events control

11. Data storage and retrieval

12. Computers in pharmaceutical formulations

13. Recent development in bio computation of drug development

14. Digital Libraries

15. Computers in Toxicology and Risk Assessment [1].

REFERENCES

1. Shivraj Jadhav, Komal Nikam, Anand Gandhi, Narendra Shinde, Kishor Salunkhe" 2012, "Application of computer science in pharmacy: An Overview", *National Journal of physiology, Pharmacy & Pharmacology*, vol 2, (1), 1-9.

2. Ekins Sean, 2006, "Computer Application in Pharmaceutical Research and Development", *Wiley Interscience: A John Wiley and Sons, INC., Publication*, 3, 37.

3. Ramu Bandameedi, 2016, "Provenance of Computers in Pharmacy", *Bandameedi, Clin Pharmacol Biopharm*, 5:1

4. Sean E 2006, "Computer Application in Pharmaceutical Research and Development", Wiley Interscience: *A John Wiley and Sons Publication*.

5. Patil D. J., 2008, "Hospital and Clinical Pharmacy", Published by Nirali Prakashan, Second Edition, 10.1 – 10.5.

6. "Pharmacy website" submitted by Aadepu on Saturday, 11/29/2008 – 16:51 available at http://www.pharmainfo.net/og/pharmindia/pharma cy-websites last cited on 7 September 2011.

7. Mr. Sachdev Yadav, Mrs. Meena Yadav, 2009, "Computer assisted pharmacy services [CAPS] – A step towards pharmacy automation", Pharma buzz-A national pharma monthly magzin, Vol. 4, (10), 24-29.

8. Yadhav A. V., Yadhav B. V., 2008, "Hospital and clinical pharmacy", Second year diploma in pharmacy, *published by Nirali prakashan,* fifteenth edition, 153-154.

9. Ambati V., Balkrishnan N. Reddy R., Pratha L., Jawahar C. V., "The digital library of India project: Process, Policies and Architecture", 1.

10. Sood A., Chandrasekharan U., 2004, "Digital libraries in India – A baseline Study", A report commissioned by Educational Development Center (EDC), 3,10. 11.

11. Naidu Som, 2006, "E-learning-A guidebook of Principles, Procedures and Practices", Published on behalf of the commonwealth educational media center for Asia by Dr. Usha V. Reddi, Director, CEMCA, New Delhi, 2nd revised edition, 1-3.