

Online Medical Consultation System

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Abstract: Background: The Internet has proved to be a constant source of knowledge for a wide variety of fields and one of the most growing fields which used the power of the Internet for proliferating its growth is the medical field. The Online Doctor Consultation System is not present internationally with some very diverse features that enable a person to get the best out of the Distance consultation.

Method: This study reports a review of the literature on the Online Doctor Consultation System from various platforms and various surveys and reports published to explore their major themes, structures, costs, and coverage. These features are studied in order to enhance the working of the online doctor consultation and to get the best outcome by overcoming current drawbacks

Consequences: There are a variety of names allotted to online doctor consultation systems from different platforms and the reach of online consultation is increasing at a significant rate, It includes several interaction models that enable a patient to connect with the doctor by following some simple directions. The feature that makes the online doctor consultation, most desired is that it is present on the internet(worldwide).

keywords: Distance Consultation

1. Introduction

The Online Doctor Consultation System (ODCS) is the term used in this paper to address internet-based remote medical consultation, it aims at the objective of providing medical consultation to its user through various remote channels the term "Remote Consultation" refers to "consultation via remote telecommunications, generally for the purpose of diagnosis or treatment" (NLM, 2014). Continuing, this paper.

distinguishes ODCS from remote consultations in three prime aspects. First, the definition of ODCS ostracizes non-internet-based consultations like consultations over the call or consultations in which the patient has to be physically present in the clinic. Furthermore, ODCS introduce a new method in the way patients seek medical consultation, where they can independently book any slot from the available slots for medical consultation in the same way they do for online shopping or any other online services. Third, ODCS is about direct patient-doctor consultations, therefore it will not include any third-party provider for consulting with the doctor like any mediator (provider-provider) consultations or consultations for health education and other purposes.

Thus, it is only for consultation purposes not for education purposes. ODCS as a concept goes beyond the contemporary consultation practices which are usually in specific criteria of medical categories for patients within specific geographical/geopolitical regions. ODCS offers a smart appointment booking system that provides patients or any user with an easy way of booking a doctor's appointment online. This is a web-based application that overcomes the issue of managing and booking appointments. Thus, doctors can be selected from a wide variety of doctors present according to the patient's choice or demands. Thus, they are not under specific criteria for choosing the doctor from their locality only, they can select the doctor around the globe for the appointment.

The aim of the research reported in this paper is to explore ODCS practices around the globe and examine the features and themes evident in the literature and in a range of currently operating OMC services.

2. Method

2.1 Design phase:

The main objective of this project is to provide the best and finest features of a medical consultation over the internet in a hassle-free manner. It manages the details of patients, doctors, and all the billing details with some new features like introducing an online pharmacy option and also including features for directly booking slots for various medical tests like MRI, CT-SCAN, etc., that too in online mode. Initially, it will guide the user on how to get one-on-one meetings with the doctor, and also it will help the user to explore various other features that are mentioned above. Users can get the instructions again at the time of need and can easily book the appointment. The patient will be provided with a wide variety of doctors who will be listed according to their field of expertise so that patient can easily make their choice and can opt for the desired doctor. The consultation will be on a good quality one-on-one video call that will ensure the privacy of the patient. After the appointment, the patient can download the prescription given by the doctor and can traverse the online pharmacy for buying the medicines, if needed, these medicines can be delivered to the doorstep for a minimal charge and the patient can opt for the self-pickup option as well, as per the need.

Overall, the new approach will save a lot of time for both the patient and the doctor and will be beneficial in saving the resources that are to be used in keeping on-paper records.

2.2 Literature review

Various Databases including MEDLINE and Inspect were traversed for pertinent journals mainly within the term the past five years. Multiple examination terms were used, combining "online consultation" with "health or medical", using the medical term "remote consultation", or using "electronic consultation", and "video consultation".

2.3 Review of Literature

The Online Doctor Consultation system is a bridge Between patients and doctors. The advent of modern technology made it easier for patients and doctors to perform their tasks more efficiently. With the aid provided by modern Technology, it has become easier for patients And doctors across the world to stay in touch with Each other and connect with each other seamlessly. The Online

Doctor Consultation system is a rectification of various problems that doctors, as well as patients, face during pandemic situations. This project aims to make use of modern technology for helping both patients and doctors stay connected. Also, to maintain the records without any hassle and save many resources wasted on keeping paper records. In this project, we are building a prototype of an Online Doctor Consultation System in which an application would be pivotal for carrying out various operations of a doctor's clinic.

2.4 Findings from the Review

In the study assignment, explanations for conferring with a doctor through Distance Consultation: a survey of various users was done and it was discovered that since computers or smartphones are relatively common in the contemporary world, in residences as well as in functioning environments, in most developed nations and in the developing nations too, it is quite apparent why convenience was a noteworthy factor behind participants selecting up Distance consultations. Moreover, the non-chronological access to the Internet-based consultation of the doctor service enables users to get the services at any point of the day and at any part of the world, this component was lauded by many of the participants of the survey.

Survey

According to the study performed in the Southern part of England, it was witnessed that patients were substantially more probable to utilize the Distance Consultation service towards the start of the week. Out of all Distance consultations, 58.8% occurred from the start of the week, that is, Monday to the mid of the week, that is, Wednesday, with usage gradually falling towards the end of the week: just 12.4% of Distance consultations were done at the weekend. A time pattern was also observed in the study, It was discovered that 69.9% of the Distance Consultations happened between 7 am and 5 pm, with peaks seen between 10 am and 2 pm. There was some up-surge for evening usage, but this was much lower than daytime utilization(19.4% between 7 pm and evening, with a peak around 8 pm)(19.4% between 7 pm and evening, with a peak around 8 pm)

Privacy

The Online Doctor Consultation System is built in such a way that the safety of the user is at first priority. The system will be fully end-to-end encrypted so that the privacy of the user is never hindered. If we give glance at the previously appointed system for consultation, i.e., Physically being present in the clinics, the privacy of the patient is never an important aspect because you have to be available publicly in the crowd to see the doctor. The medical records are handled by the staff of the clinic; Thus, it might be possible that the information about the medical condition of the patient can be leaked. However, in an Online Doctor consultation model, this is kept between you and your doctor alone with no other human interaction in between. So all data about the patient is maintained and remain very confidential. There might be some cases in which the patient or any person may feel embarrassed to ask any question because of the people present in the clinic In such cases online doctor consultation wins the game by providing an option of assigning the consultation with any anonymous name, More than 30% of the users appreciated the option of being able to ask questions anonymously, suggesting that this feature may augment regular health care rates. In previous studies "health advice seekers" also appreciated the anonymity of searching the Internet for medical information. Thus, Online Doctor Consultation System satiates the major requirement of a user which is privacy.

Cost-effective

The President of the United States of America, 2009, recognized the biggest threat to the nation's balance sheet is the skyrocketing price of health care. The charges of hospital and medical resources are sky-touching, While the hospital charges you for its hygiene and maintenance, these out-of-the-box charges are not included in a Distance Consultation since there is no infrastructure involved, trenching the cost of consultation nearly half of the price that will cost in consultations requires being physically present in the hospital. An average doctor visit in India can cost around 500-1000/-Rs. The average cost for Online Doctor Consultation is about 300-400/-Rs, based on the experience and popularity of the doctor. Thus, Online Doctor Consultation System has reduced the cost of the consultation to near.

Alternate Expertise

There was a survey in which many patients expressed a need for an alternate opinion to be fully sure about their medical situation, This is one of the main features that come under play in ODCS. If any patient feels the need to get a consultation with any other doctor, they can simply do so by traversing the list of doctors and choosing the desired one, Also, as the reports of the patients are stored in the database, it will be easier for the new doctor to have the overview of patient's condition and to provide the best possible medications.

3. Online Doctor Consultation System Analysis.

Online Doctor Consultation System services have grown at an exceptional rate of 150% every five years since the year 2000.

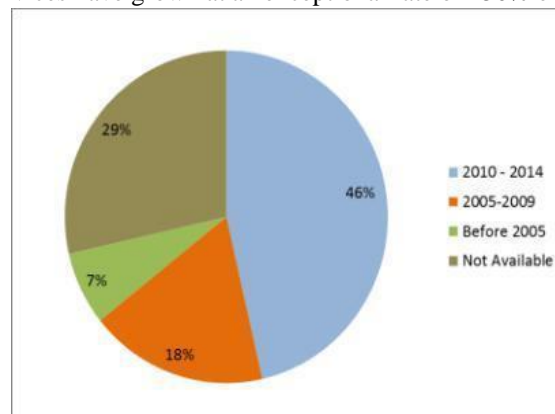


Figure 1: Year of the launch of different ODCS.**4. Topics of Concern**

- Some situations in which the internet connection is not proper or the connection is disrupting continuously may lead to the perturbed experience of the Online Doctor Consultation.
- Several fields like Orthopaedics or medical fields in which physical examination is important cannot be carried out in Online Consultation.
- Sometimes a false assumption done by the doctor because of the lack of physical diagnosis can lead to deleterious results for the patient.
- Though, Online Doctor Consultation keeps the privacy of the user as the main aim, any Database breach can lead to loss of data and can raise security concerns.

5. Suggestions

- An amenable environment should be created between doctors and the patients before initiating the Consultation.
- A list of symptoms should be provided to the patient before the consultation and that list should be presented to the doctor so that the diagnosis of the patient will require less time.
- Waiting time should be properly managed by the application, In case of non-availability of the doctor, an approximate waiting time should be allotted to the patient.
- The environment of the application should be user-friendly. so that, the user can easily carry out the required task without any hassle.

6. Reference

1. Online Medical Consultation System by Reeva Lederman., Ibrahim Al-Mahdi, Kathleen Gray,.
2. Janet B. Prince. Healthcare crisis in United states of America. 6th ed. New York, NY: Nova Science Publishers, Inc; 2006.
3. Edwards HB, Marques E, Hollingworth W, Horwood J, Farr M, Bernard E, et al. Use of a primary care online consultation system, by whom, when and why: evaluation of a pilot observational study in 36 general practices in South West England *BMJ Open*. 2017;7:e016901.
4. Zuehlke E. What do Consumers Want from Virtual Visits? 2017. Available at: <https://www.advisory.com/research/market-innovation-center/research-briefs/2017/virtual-visits-briefing>.
5. Slater C. The Doctor of the Future, 2013. Available at: <http://www.fastcompany.com/1266043/doctor-future>. Accessed 20 January 2018.
6. Susannah F. The online health care revolution: How the web helps Americans take better care of themselves. Washington, DC: The Pew Internet & American LifeProject; 2000. Available at: <http://www.pewinternet.org/reports/toc.asp?Report=26>. Accessed 20 January 2018.
7. Rideout V. Generation Rx.com: how young people use the Internet for health information. 2001.
8. :<http://www.kff.org/content/2001/20011211a/GenerationRx.pdf>.