

Mobile Application for Creating Social Awareness About Gonorrhoea

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Abstract

Since, Mobile Phones and hand-held devices such as iPad, tablets, etc. are used on large scale globally, there is tremendous growth of people using mobile applications. We suggest using mobile applications to create awareness and teach about sensitive issues like STDs, Cancer, etc. In developing countries these issues are not taken seriously due to cultural taboos, social awkwardness, gender inequality and social barriers. Through this paper we provide a simple and effective solution to this problem. As these applications can take care of privacy, there won't exist any hesitation to use as compared to talking to real person. We are providing an interactive mobile application which delivers correct knowledge to remove the misconception, provides preliminary diagnosis, and provides appropriate guidance and several other features.

Keywords

STD: Sexually Transmitted Disease, STI: Sexually Transmitted Infection

I. Introduction

STIs are a global cause of infertility, acute illness, long term disability and even death with serious psychological and medical consequences to millions of men, women and infants. There are more than 30 bacterial, viral, parasitic pathogens that can be transmitted sexually [1].

Gonorrhoea is one of the most common STD. It is also referred to as "the clap". The disease is caused by bacteria *Neisseria Gonorrhoeae* which causes inflammation of glands. The bacteria generally grows and multiplies in the warm moist areas of the body. It primarily affects urethra in men and cervix in women. Gonorrhoea of rectum is also possible.

Gonorrhoea has progressively developed **resistance to the antibiotic drugs** prescribed to treat it. An estimated 88 million cases of Gonorrhoea, out of 448 million cases of all curable STIs each year. Teens are at more risk of getting contact with STD. One of the primary defense in the fight against STIs is **awareness**. With right information, individuals can make informed choices and protect themselves and their partner in a better way.

In developing countries like India it is difficult to provide education about STD among rural population and make them understand reasons behind it and provide solutions to them.

There is a wide variety of applications in help and fitness category. Applications range from interactive games to simple health parameter loggers which saves data regarding weight, sugar level, blood pressure, etc. Some apps which are designed to help users are usually for health professionals. Therefore, providing information in health related terminologies to a layman makes it hard for him/her to understand and there is no option to check his/her understanding about the topic. Users can't connect to other people undergoing similar diseases maintaining anonymity. There is no provision to connect with qualified doctors and get expert advice especially socially and economically backward people who are generally misguided by unreliable sources.

Our application will be designed and built solving issues aforementioned.

II. Related Work

There is a variety of application in health and fitness category. Applications ranging from interactive games which help increasing memory performance to simple health parameter loggers with save data regarding Blood pressure, Weight, sugar

level, etc. Some of the app which help users to know more about diseases. These applications are designed for health professional. They provide definition to health related terminologies.

Even some of the applications which are designed for gonorrhoea related issues they are just having information and there is no option to check user understanding regarding that topic neither do they give any preliminary diagnosis to the user.

III. Implementation

The app developed is focused mainly on disease Gonorrhoea. The goal is to spread accurate Knowledge via offline data access and online articles referred, connect people facing similar issues, provide preliminary analysis, let doctor interact with people via application. As mobile application users are increasing at a very fast pace, so it will be the best platform to fight against such diseases for which people are scared to even talk about it.

The app has been developed for iPhone and iPad which operate on iOS platform which is a linux based operating system.



Fig. 1: Login page

These are the four major section of the application:

A. Daignosis

This Section provides a preliminary diagnosis based on his Body Mass Index, Age and 8 symptoms of Gonorrhea. Naive Bayes Classifier is being used to create summaries which are integrated in application through which the probability of person having a disease or not, is being calculated and the higher one is displayed as a result.

Naive bayes classifier uses the Gausssian model and it better fit for the medical data as it easily handles the missing data cases. It outperforms other predictive data analysis techniques especially for Medical data.

The algorithm is being implemented in python and the summaries are being integrated in the application. Training set and Test set ratio is 67% and 33% respectively and was chosen randomly. The Accuracy of the Prediction was 72% and the size of the dataset considered as 768 rows.

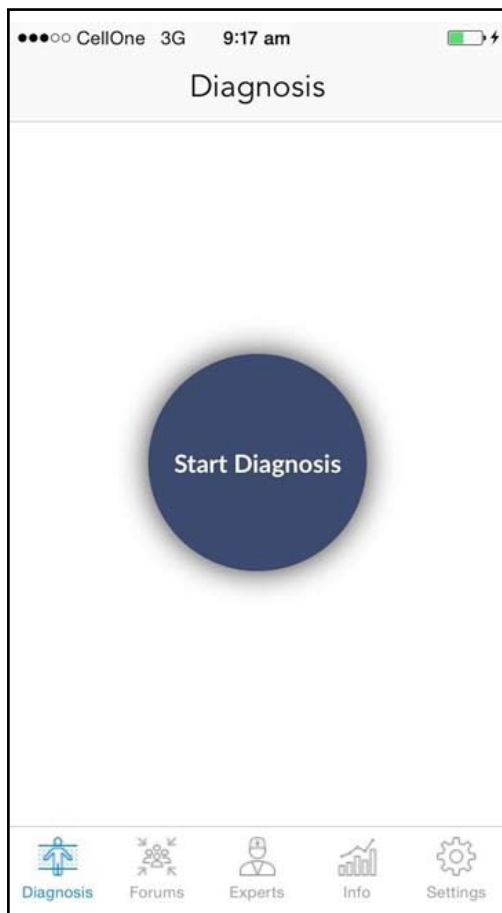


Fig. 2: Diagnosis-1

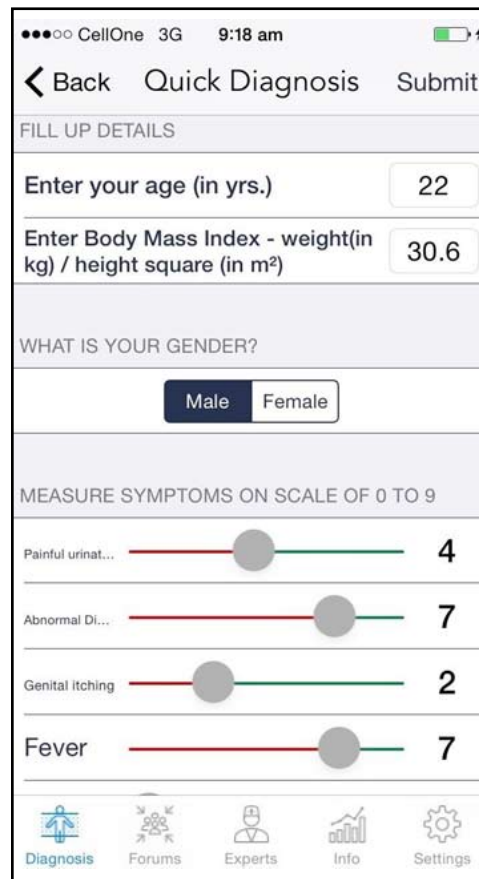


Fig. 3: Diagnosis-2

B. Discussion Forum

This section provides a facility for people to connect with each other to express their views, discuss their problem, share their experiences and get expert's advice.

A user can start a discussion on any new topic or post on older ones. The experts have an option to give their advice to people and the messages sent by them will be highlighted.

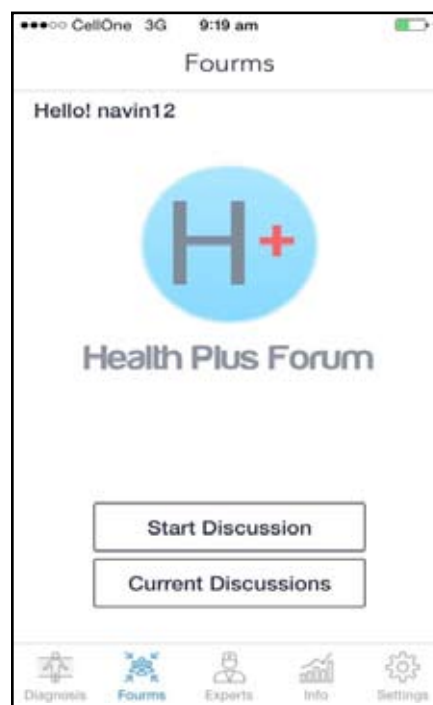


Fig. 4: Discussion Forum

C. Expert's Advice

A list of well qualified doctors is being listed on this section. A user can consult a doctor based on his qualifications or locality, etc. A user also have a facility to see the topics in which the doctor has participated and how well the doctor has addressed the issues.

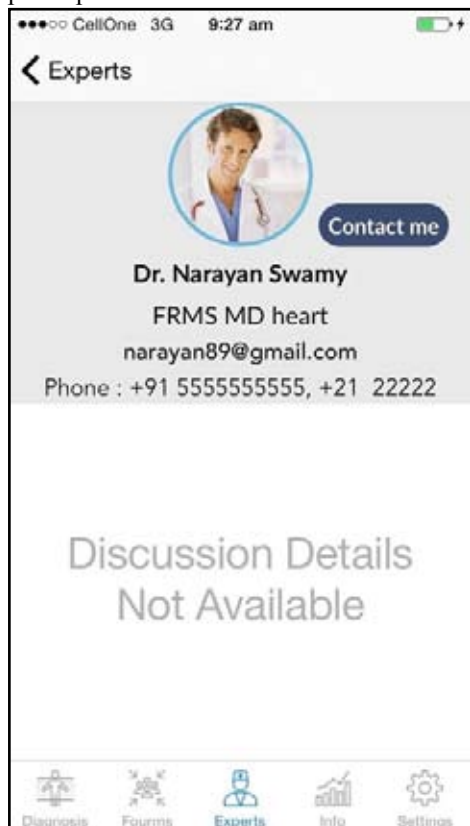


Fig. 5: Expert's Advice

D. Online/Offline Info.

Offline information will have a general knowledge and Frequently Asked Questions for Gonorrhoea. Online information will contain recent articles related to Gonorrhoea and he/she can be up to date about the current news about the disease.



Fig. 6: Online/Offline Info.

IV. Acknowledgment

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References

- [1] Global incidence and prevalence of selected curable sexually transmitted infection - 2008, WHO
- [2] www.aidsmeds.com/articles/1667_28033.shtml
- [3] <http://techcrunch.com/2015/06/02/6-1b-smartphone-users-globally-by-2020-overtaking-basic-fixed-phone-subscriptions/#.iqn1t20:RPIH>
- [4] WHO Library Cataloguing-in-Publication Data - Global incidence and prevalence of selected curable sexually transmitted infections - 2008.ISBN - 978 92 4 150383 9 (NLM classification: WC 140)
- [5] Educating and Creating Social awareness for sensitive topics using mobile application, 2013IEEE International Conference in MOOC.
- [6] www.cdc.gov/std/gonorrhoea - CDC Publications No.99-8828.
- [7] Bosch FX et al. Epidemiology and natural history of human papilloma virus infections and type-specific implications in cervical neoplasia. Vaccine, 2008, 26S:K1- 16.
- [8] Official portal of iOS development, <http://developer.apple.com/resources/ios>.
- [9] Sexually Transmitted Infections Pamphlet. Public Health Agency of Canada, 2007.

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