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Design of a Medical Diagnostic Tool For Some Selected Sexually Transmitted Diseases (MEDITSSTRAD)

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ABSTRACT

Aside HIV, sexually transmitted infections have been considered as important global health issues recently. This is as a result of its widespread and level of dominancy among young and old people especially in developing countries like Nigeria. Sexually transmitted infections, by their nature, affect not only individuals who happen to be partners but also the larger sexual networks which invariably turn to populations. However, these infections are treated as a public-health issue therefore the awareness of their symptoms; effect and preventions are given less priority. In an effort to control their widespread, development of an expert system is considered to be a suitable option. This method as well chose the deployment of the system on mobile device. This deemed necessary due to the notable increase in the usage of mobile phone among people. This research work developed an expert system, an android based mobile medical diagnostic system simply called MEDITSSTRAD which is capable of diagnosing five (5) cases of sexually transmitted diseases. The designed expert tool is intended to provide a potential assistance to the human expert to reach logical conclusions of the diagnosis of a certain diseases. Also to reduce the number of consulting point in hospital and to create a reference tool on the symptoms of the disease for researcher working in this field. In conclusion, the developed system has been tested and working properly. If accepted and properly utilized for infections diagnosis, it will in turn reduce the risk of their widespread.

Keywords: Diagnosis, Mobile App, Sexually transmitted infections, MEDITSSTRAD, Diseases, Symptoms

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1. INTRODUCTION

Recent advances in the computer technology have brought the computer technology to bear in virtually every segment of human activities including health sector. One major area in the health care delivery is the use of expert system as a tool for diagnosing several health impairment or ailments which include Sexually Transmitted Diseases (STD). In addition, mobile telecommunication firms are nowadays mouthpiece of Nigeria government to widespread the importance of healthy living. This is done by sending free text messages to mobile users to subscribe for healthy tips after message delivery. For example, Telecommunication Company like MTN sends messages to their subscribers on how to receive tips on health related issues. Such messages include “Send MED to 33128 to get latest information on healthy living at N50 weekly” and meeting your doctor on health issue etc. Such mobile broadcast by MTN has in no doubt contributed to government effort in creating awareness for every individual on the importance of healthy living.

This research wok therefore developed an expert system called **MEDITSSTRAD** an Android mobile App that provides users the access to diagnosis five (5) selected sexually transmitted diseases. This in a bid to assist medical practices and as well as providing a first-hand mobile health diagnose tool for mobile device users. Expert system are PC applications which encapsulate some non-algorithmic aptitude for taking care of particular sorts of issues. They assume parts in chess, pursuing monetary choice, arrange PC, screen constant framework, endorse insurance contracts, symptomatic applications and perform many administrations which already require human skill Chakraborty R.C, (2010). Also, the utilization of PC as guides during the time spent analysis and conceivable therapy of disease is alluded to as "clinical plan apparatus".

A design tool is a PC framework which can make sensible inferences from a collection of information in a specific field and convey to the client the logic by which it has arrived at a resolution. This information can be moved from the human plan source to the "reference motor" of a counterfeit plan by the utilization of programming so the fake plan can play out the assignment of the human plan apparatus. The medical design tool relies upon the gained information and a mind boggling course of sufficient ID of signs and side effects to analyze an illness. It then, at that point, continues through a few stages of acquiring information relating to the main issues that is a case history of the sicknesses. It arrives at a rundown of analysis alluded to as "respectful finding" and subject the client to additional assessment by means of research center test to kill everything except the genuine reason for the disease.

1.1 Nigeria Youth and Sexually Transmitted Disease

The Nigerian National Youth strategy (2001:2), characterizes youth as including all youthful people between the ages 18 and 35 years who are residents of the Federal Republic of Nigeria. As at 2006 National Population Census, Nigeria was said to have a populace of one hundred and forty million (N140Million) individuals which on the planet record makes her the most populated country in Africa. 33% of her populace is youngsters between the ages of 10 to 24 years and this class of youngsters inside in the age bunch particularly, physically dynamic teenagers matured 15-19 years and youthful grown-ups matured 20-24 years are casualties and at higher gamble of getting Sexually Transmitted Diseases (STD) because of a mix of social, organic, and social reasons.

Besides, research likewise demonstrates that portion of the world's populaces of 63 billion individuals are under the period of 25years. It is accordingly a significant choice to focus on the sexual soundness of youngsters by reducing its inescapable among them. This should be possible by giving vital instruments to lessen the high gamble (Clark et al. 2004, Rhodes et al. 2006; Zak-Place and Stern et al.2004). Gauges propose that despite the fact that youngsters matured 15-24 years address just 25% of the physically experienced populace, they gain almost 50% of all new STDs when contrasted with more seasoned grown-ups.

1.2 Causes Of STDS And Its Widespread

Reasons for the inescapable of this sickness might remember increment for sexual trial and error by youngsters during the formative time of their initial adulthood, which will in general increment (Eisenberg 2001; Flannery and Ellington, 2003), practice of 'safe sex' without the utilization of condoms. Different variables might be because of the absence of data about the side effects of STDs and troubles insight to approach the treatment (Meyer-Weitz et al.2000, Lin Y et al., 2007; Arliss, 2008)

2. RELATED LITERATURE/WORKS

2.1 Background study of Mobile Phone and Mobile App

The use of Cell phone has become part of everyday life of majority to the extent that people feel uncomfortable without a cell phone. Mobile communication started decades back and the most popular functions of mobile phones were calling and sending texts. As the years went by, the new era of technology witnessed the introduction of smartphone. A smart phone is a multifunctional device that does not only communicates, but helps to learn, earn, and have fun. And these multi-functions were made possible by the development of mobile applications.

Mobile applications date back to the end of the twentieth century. Typically, they were small arcade games, ring tone editors, calculators, calendars, and so forth. The beginning of the new millennium saw a rapid market evolution of mobile content and applications. Operating systems for smart phones (Windows Mobile, Symbian, RIM, Android, Mac iOS), are open to the development of third-party software, unlike the conventional programming environment of standard cell phones. Manufacturers tried to make their products more attractive for customers by introducing more and more applications. But quality matters as well. Cell phone development needs to be easy and intuitive. Every company tries to facilitate the process of development so that users are able to customize their devices. Mobile users demand more choice, more opportunities to customize their phones, and more functionality as well as to provide value-added content to their subscribers in a manageable and lucrative way. Also, mobile developers want the freedom to develop the powerful mobile applications users demand without restrictions and in the long run mobile phone manufacturers were able to secure, stable and affordable platform to power their devices.

First-generation mobile phones were designed and developed by the handset manufacturers as well as the mobile applications. It was during this period the first “time-waster” games begin to appear. It all begun with Nokia in 1970s with his famous video game, Snake, developed on some of its earliest phones. Other followed, adding games like Pong, Tetris, and Tic-Tac-Toe. These early phones changed the way people thought about communication. As mobile phone prices dropped, batteries improved, reception areas grew, and more and more people began carrying these handy devices. Customers began pushing for more features and more games. But handset manufacturers lack the motivation and the resources needed to build every application users demanded. Therefore the need to provide a portal for entertainment and information services without allowing direct access to the handset was considered important. The better way to address these challenges was to provide these services through the Internet i.e. Wireless Application Protocol (WAP) standard. WAP was a stripped-down version of HTTP, which is the basic protocol of the World Wide Web. WAP browsers were designed to run within the memory and bandwidth constraints of the phone. Third-party WAP sites served up pages written in a markup language called Wireless Markup Language (WML).

Probably the most famous business WAP applications that arose during this time were basic backdrop and ring tone indexes, permitting clients to customize their telephones interestingly. The WAP arrangement was extraordinary for handset producers. They could think of one WAP program to deliver with the handset and depend on designers to concoct the substance clients needed.

By the later part of the 90s, proficient Web destinations planned by web engineers were loaded with shading and stacked with text, pictures, and different sorts of media. These sites depended on JavaScript and Flash to upgrade the client experience and were regularly planned at 800×600 pixels. This was in inconsistency to highlight moved by early telephones. Early telephones had tiny monochrome low-res screens and restricted stockpiling and handling power. The locales couldn't deal with the information concentrated activities expected by conventional Web programs. The transfer speed prerequisites for information transmission were likewise expensive to the clients. Furthermore, along these lines WAP administrations could never again offer the normal types of assistance because of the featured limits hindered.

a) WAP programs become increasingly slow.
b) Typing in lengthy URLs with the numeric keypad was a gigantic aggravation.
c) Commercializing WAP applications was troublesome, and there was no implicit charging instrument.
d) Payment was taken care of through different premium-evaluated conveyance systems like Short Message Service (SMS), Enhanced Messaging Service (EMS), Multimedia Messaging Service (MMS), and WAP Push.
e) Most WAP destinations were one form and didn't represent individual telephone details. It didn't make any difference if the end-client's telephone had a major shading screen or a postage stamp-sized monochrome one.
f) The designer couldn't tailor the client's insight. The outcome was a fair and not exceptionally convincing experience for all interested parties.

Along these lines, WAP missed the mark concerning business assumptions, besides in Japan and a couple of different spots. Little handset screens were excessively little for surfing. Perusing a sentence piece at a time and then trusting that the following portion will download destroyed the client experience, particularly on the grounds that each second of downloading was charged to the client. Pundits started to refer to WAP as "Stand by and Pay." It shocked no one when clients needed more - they will constantly need more. As the year cruise by, the customary work area application designer was out of nowhere engaged with the installed gadget market, particularly with Smartphone advancements like Windows Mobile, which they saw as natural. Handset makers understood the need to change their protectionist arrangements with respect to handset plan and uncover their inside functions somewhat to sell their item. A wide range of exclusive stages arose and engineers are still effectively making applications for telephone maker. One of the first was the Palm OS (presently Garnet OS) and RIM Blackberry OS. Sun Microsystems famous Java stage became Java Micro Edition (Java ME). Qualcomm fostered its Binary Runtime Environment for Wireless (BREW). Symbian OS was created by Nokia, Sony Ericsson, Motorola, and Samsung. The Apple iPhone iOS joined the positions in 2007. Google's Android went along a year after the fact.

2.3 Background Study Of Mobile Phone And Mobile App

Mobile phone has become piece of regular day to day existence of larger part to the degree that individuals feel anxiety without a trace of their cell phone. Cell phone innovation became presence few decades back. All cell phones have fundamental elements of calling and sending messages message. As of late, as the years went by, the new period of innovation saw the presentation of cell phone. An advanced mobile phone is a multifunctional gadget that doesn't just imparts, however assists with learning, procure, and have a great time. What's more, these multi-capacities were made conceivable by the advancement of versatile applications. Portable applications date back to the furthest limit of the 20th century. Normally, they were little arcade games, ring tone editors, mini-computers, schedules, etc. The start of the new thousand years saw a fast market advancement of versatile substance and applications. Mobile phones utilize working framework which makes them available for use. The working framework incorporate Windows Mobile, Symbian, RIM, Android OS and Mac iOS which are available to the improvement of outsider programming, dissimilar to the regular programming climate of standard phones.

2.4 Types Of Mobile Application

Mobile applications are of various kinds which might be local applications, web applications or rather blended applications type. Among versatile OS, the more local an application is, the lesser the movability. The distinctions among these three unmistakable advances depend on their methodology:

2.4.1 Mobile Native Apps

A local versatile application is fabricated explicitly for a specific gadget and its working framework. Dissimilar to a web application that is gotten to over the web, a local application is downloaded from a web store and introduced on the gadget. Local applications are written in Java, Objective C, or some other programming language.

This is changing with HTML5; however usefulness is conflicting and fragmented. Blackberry is a unique case, with the RIM working framework permitting application parts fabricated utilizing web advances to be assembled into a local application with admittance to all gadget highlights. Local applications enjoy a significant upper hand over web applications the capacity to use gadget explicit equipment and programming. This implies that local applications can exploit the most recent innovation accessible on cell phones and can coordinate with on-board applications like the schedule, contacts, and email. Be that as it may, this is a two sided deal: while versatile innovation is stunningly famous, it is likewise continually changing and exceptionally divided. This makes the assignment of staying aware of the speed of arising innovation difficult and exorbitant, particularly on different stages.

2.4.2 Benefits Of Mobile Native Applications

The benefits of Mobile Native Applications are outlined below:

a) A more extravagant, really convincing client experience: Native applications can use the capacities of the cell phone, including locally available equipment (like GPS, camera, and designs) and programming (like email, schedule, contacts, picture/video display, document supervisor, and home screen gadget regions).
b) Ability to run disconnected: Since the application remains introduced on the gadget from the first download, no web association is required. Clients get maximized operation consistently, with all designs, pictures, contents and information. Information moves can resume (and yet again sync with back end applications) when the association is reestablished.
c) Better "front of brain" infiltration: Native applications place a logo in the application list screen, giving perceivability consistently.
d) In expansion, application stores remind clients to overhaul applications, so applications that update much of the time (with genuine enhancements) are all the more regularly brought to the client's consideration.
e) Native applications are "hot" at this moment. Clients are constantly searching application stores for the most recent application they can't survive without, giving items there a higher probability of being found.
f) Native applications are additionally more straightforward to adapt. Cost is set after the posting of the accessible application on an application store, and when clients get it, the seller thusly bring in cash right away (short the commission). With a web application, programming designer is of assessment to set up an installment or membership passage if adapting the application is something need to done.

2.4.2 Mobile Mixed Apps

One more sort of uses are blended applications, which depend on web innovations (HTML, falling templates (CSS), JavaScript) to create a local application with the assistance of a particular compiler (e.g., PhoneGap (Buchauer, 1999) , Titanium Mobile (Mu˜noz et al. 2003) , Rhodes (Bojovic and Bojic, 2005) . Such compilers exist for three stages: Android, iPhone and Blackberry. Blended applications enjoy a few benefits, for example, being multi-stage and permitting admittance to sensors like the camera. In any case, the improvement of blended application is right now troublesome because of the curiosity of the innovation as well as the absence of documentation and source code. In addition, a blended application would in any case have to go through Apple's App store endorsement for circulation; this endorsement isn't required for electronic applications.

2.4.3 Mobile Web Apps

A portable web application is a web application designed for cell phones and tablets, and got to through the cell phone's internet browser. Like a conventional web application, a versatile web application is worked with three center advances:

i. HTML (characterizes static text and pictures),
ii. CSS (characterizes style and show), and
iii. JavaScript (characterizes associations and livelinesss).

Since web applications are program based, they are expected to be stage and gadget autonomous, ready to run on any web-empowered cell phone or tablet. A versatile web application is typically downloaded from a focal web server each time it is run, in spite of the fact that applications fabricated involving HTML5 can likewise run on the cell phone for disconnected use. The critical benefit of portable web applications over local versatile applications is cross-stage

2.5 Mobile Devices And Health Information System

Mobilel phones are gadgets intended to be utilized anyplace, and any time, including at home, work, and everyday life while voyaging. The appeal to the utilization of cell phones is because of their size, weight and furthermore the arrangement of remote organization network that permit openness to independent applications that incorporates, instructive , games ,moving among others. The previously mentioned highlights credited to cell phones likewise give it the full practical portability as well as permits simple openness to important wellbeing applications and data anyplace any time. For instance as per Churchill, D.and Churchill, N. (2007), Lincoln, Y. and Gub, E. (1985) through their examination and exploration did, handheld gadgets, for example, cell phones, iphones ,PDAs, palmtops, and other cell phones arose as fundamental instruments in schooling. Also, consequently classes their purposes into seven significant classifications which include: (1) interactive media access apparatus, (b) scientific device, (c) catch instrument, (d) authentic device, (e) specialized device, (f) evaluation device, and (g) task making due.

2.6 Mobile Handheld Operating System

The utilization of Mobile telephones is acquiring its fame among clients because of their various elements particularly for those that can get to the web and email. However, then again, the working framework is the obscure outsider designers that demonstration behind the screen as well as safeguarding every one of the parts. The working framework depicts the presentation, security level, highlights and dynamic application programming points of interaction. Subsequently the insightful clients of cell phones rely upon the working frameworks when they choose to buy as opposed to relying upon the highlights of the cell phone simply because they know that great working framework. Portable hand held gadgets are presently running on the accompanying working frameworks (OS):

This OS incorporate;

a) Windows Mobile (Pocket PC), claimed by Microsoft.
b) Palm OS, claimed by Palm Inc.
c) Symbian OS, claimed by Panasonic, Nokia, Samsung, Siemens and Sony Ericsson.
d) BlackBerry, claimed by Research in Motion.
e) Linux-based (GPIE, OPIE/Qtopia), free.
f) Android OS

Among these OS, versatile Android OS was picked for improvement of this framework. The justification for the decision was on the grounds that more users use Android based OS phone than any other phones. (Naseer Ahmad et al. 2015)

2.7 Related Works

Ben Hassen D., 2019, discussed that technology has been a main thrust in changing the normal obligations of doctors. Progresses in versatile advancements have brought about another term: mHealth (portable Health). mHealth gadgets create large information and coordination of mHealth and enormous information into existing eHealth administrations, and the proceeded with development in inclusion of versatile cell networks are new open doors. This paper gives an outline on mHealth development and the advantages of its blend with large information investigation for different motivations behind medical care. We frame our proposed structure for versatile supported indicative frameworks. We likewise talk about the open doors and difficulties of mHealth in helping conclusion through portable advances.

Jutel, Annemarie & Lupton, Deborah. (2015) More than 100,000 cell phone programming ('applications') have been intended for the spread of wellbeing and clinical data and medical services and general wellbeing drives. This article presents a basic examination of self-analysis cell phone applications coordinated at laypeople that were accessible on the Apple App Store and Google Play in mid-April 2014. The goal of the examination is to add to the human science of determination and to basic computerized wellbeing studies by researching the peculiarity of digitized analysis through applications. We took on a viewpoint that sees applications as sociocultural ancient rarities. Our investigation of self-determination applications proposes that they occupy a challenged and vague site of importance and practice.

We found that application engineers joined cases to clinical mastery related to requests to algorithmic power to elevate their applications to expected clients. While the engineers likewise involved requests to patient commitment as a component of their special endeavors, these were subverted by routine disclaimers that clients ought to look for clinical counsel to impact a determination. More exploration is expected to examine how laypeople are arranging the utilization of these applications, the ramifications for protection of their own information and the potential consequences for the specialist patient relationship and clinical expert comparable to conclusion. Mosa, A.S.M., Yoo, I. & Sheets, L. A (2012) made a systematic review of Healthcare Applications for Smartphones. The reason for this review was to group cell phone based medical services innovations as talked about in scholastic writing as indicated by their functionalities, and sum up articles in every classification. In their examination work in April 2011, MEDLINE was looked to recognize articles that talked about the plan, advancement, assessment, or utilization of cell phone based programming for medical care experts, clinical or nursing understudies, or patients. A sum of 55 articles talking about 83 applications were chosen for this review from 2,894 articles at first got from the MEDLINE look.

An aggregate of 83 applications were archived: 57 applications for medical care experts zeroing in on infection analysis (21), drug reference (6), clinical number crunchers (8), writing search (6), clinical correspondence (3), Hospital Information System (HIS) client applications (4), clinical preparation (2) and general medical services applications (7); 11 applications for clinical or nursing understudies zeroing in on clinical instruction; and 15 applications for patients zeroing in on sickness the executives with constant ailment (6), ENT-related (4), fall-related (3), and two different circumstances (2). The infection conclusion, drug reference, and clinical number cruncher applications were accounted for as generally helpful by medical services experts and clinical or nursing understudies.

Definitively, numerous clinical applications for cell phones have been created and generally utilized by wellbeing experts and patients. The utilization of cell phones is definitely standing out in medical care step by step. Clinical applications make cell phones valuable devices in the act of proof based medication at the mark of care, notwithstanding their utilization in portable clinical correspondence. Additionally, cell phones can assume a vital part in persistent training, illness self-administration, and remote checking of patients. Adrien Depeursinge *et al.* (2011) propose portable admittance to peer-inspected clinical data in light of printed search and content-based visual picture recovery. Electronic connection points intended for restricted screen space were created to inquiry by means of web benefits a clinical data recovery motor advancing how much information to be moved in remote structure. Visual and literary recovery motors with best in class execution were incorporated. Results got show a decent ease of use of the product. Future use in clinical conditions has the capability of expanding nature of patient consideration through bedside admittance to the clinical writing in setting (Mart'ın-Campillo, *et al*., 2009). In a new study, there is a reasonable inspiration distinguished from doctors Cortizo et al. 2008 where 92% of 3482 doctors detailed utilization of their own advanced collaborators (PDAs) on numerous occasions each day to oversee schedules, access drug reference guides, and read clinical diaries. Koop and Mosges (2008) likewise utilized cell phones to store patient journals to build the nature of information and diminish the time expected to close the data set.

Lin et al. (2006) fostered an application which assisted the old with dementia, this stage, including a web administration, data set, message regulator, and wellbeing geographic data framework (GIS) server, to execute different checking plans, for example, indoor home observing and crisis salvage. (H. Shengnan et. al. 2006). In addition, the utilization of pocket (PCs) was distinguished to yield an exceptionally certain outcome by Physicians in the military Kogue et al.(2005), proposed a far off tolerant observing framework. The framework was intended for use with a 3G cell phone to notice data of different patients in an ICU (Intensive Care Unit), or a CCU (Critical Care Unit). (Burstein, Zaslavsky, and N. Arora 2005), In this study, it was discovered that the advancement of portable application for wellbeing framework has today witness a huge increment. Among them are the portable remote gets to clinics data. This Mobile Application can be utilized for recovering basic data about the casualties like sensitivities or irresistible illnesses. It along these lines works with finding and advances decision making at the mishap site). Likewise, from study, at Heidelberg University Medical Center, studies were completed on utilizing PDAs and programming based for portable clinical data frameworks (for example versatile specialists)

3. METHODOLOGY

The method adopted for designing the medistrad system includes the following;

a) Exploration of Existing Medical diagnostic System
b) Study of the relevance of medical system to diagnosis of sexually transmitted diseases
c) Consultation of Medical Practitioners for data collection on the symptoms of the five (5) sexually transmitted diseases considered for this study.
d) Design the framework for the System developed.
e) Implementation of the framework developed.

3.1 Existing Medical System

The existing system uses the following methods for medical system diagnosis and treatment:

I. MYCIN

MYCIN is a diagnostic medical system for the diagnosis and treatment of "blood treatment: it also prescribes drugs for patient of blood infections. MYCIN was described in details by short life (1976) it was adjudged to be very successful system in that, gives data, it would produce useful and correct information when MYCIN and five systems were each given a number of meningitis cases evaluation rated MYCIN preferable or equivalent to the system. It does less well when diagnosing diseases located at sites that it does not know well. Its incomplete knowledge of infection diseases of the blood keeps it from being used more widely in clerical diagnosis. Attempt to use it as a technical tool also was abortive due to the difference between its reasoning mechanism and that of human being MYCIN. MYCIN is rule based; having static and dynamic data structures and a backward charming control structures.

II. EMYCIN

A system shell was later developed from MYCIN called EMYCIN or EMYCIN MYCIN or ESSENTIAL MYCIN. It was a domain-independent frame work for constructing and running consultation programs EMYCIN was also a backward-charming production system that supports the antecedent rules of MYCIN.

III. PIP

PIP is another medical diagnostic system. It note worthiness drives from its use of interconnected frames, each of which represent a hypothesis as to the diagnosis. The appropriateness of a particular hypothesis is evaluated by considering the values in the slots. PIP takes the medical history of patient with oedema by modeling a physician taking a patient history. PIP uses its knowledge of disease path physiology and "common sense" and mines interesting problem solving strategies into integrated history taking process knowledge representation in pip is by the use of frame.

IV. INTERNIST

INTERNIST was a diagnostic system developed by POPLE in 1982 for internal diseases. It handles multiple diseases. The knowledge base was developed using actual cases from the American journal of medicine.

V. CASNET

CASNET is a diagnostic system shells for building medical system developed by WEISS ET AL (1798) and was originally specified for glaucoma. A three level semantic network is used in organizing the knowledge structure. Nodes connect to node within their own layer via casual links. Nodes connect to nodes outside their layer via association links. These systems belong to first generation of system. A lot much is being done in the medical system technology, applying different forms of tools.

3.1 Relevance of Medical Diagnosis to STD

The term diagnosis is the process of determining malfunctions and other system characteristics from observable mediators. The definition applies to all system activities. Its relevance to the diagnosis of sexually transmitted diseases involves developing a comprehensive database as well as the knowledge base system. The knowledge base is constructed using the different symptoms of diseases to design some set of production rules, which serves as the brain of the medical system. This knowledge base is like the brain of the system.

Table I: Table Showing the Diseases Symptoms

Names	Symptoms
Syphilis	Mild fever, headache, popular rash, mouth ulcers, genital ulcer, genital itching, general body rash, malaise.
Gonorrhea	Genital discharges, fever, general joint pains, popular rash, lower abdominal pains, painful urination.
Genital herpes	Genital swelling, fever, painful blisters, mouth ulcer, malaise, genital irritation.
Non-specific arthritis (NSU)	Genital discharge, painful urination.
Trichomoniasis	Vaginal discharge, soreness, irritation (local), painful urination, mucus, diarrhea.

4. METHOD OF DATA COLLECTION

An oral interview was mainly directed to the Doctors at Ogun State University Teaching Hospital and also some doctors at Med top specialist Hospital in Shagamu Ogun State. Ten doctors where interviewed. Related data on selected types of sexually transmitted diseases were gathered which include their respective symptoms and the different approach of the doctors towards the diagnosis of the diseases were discussed. The developed system was based on the knowledge acquired from the interviewed conducted.

Framework of The Newly Designed Memostrad System

Fig. 1 represents the framework of the newly design Window Mobile diagnostic tool for the selected sexually transmitted diseases (MEMOSTRAD) which consist of the home page, registration page, login page, welcome page etc. The Fig.2, 3 and 4 indicate the **login process**, **Users Registration Process and The Diagnose Process Flowchart** respectively.

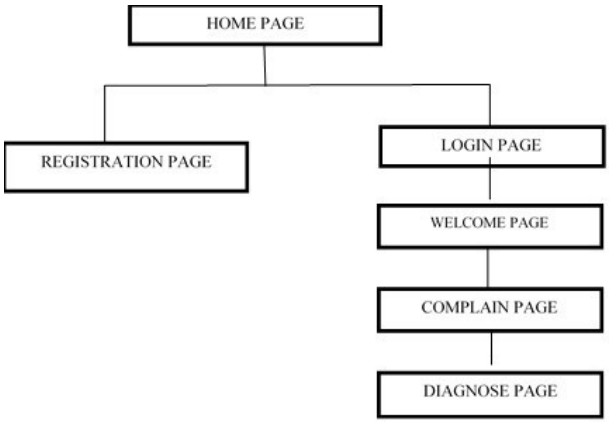

Fig.3.1: The Framework showing the Newly Designed MEMOSTRAD System.

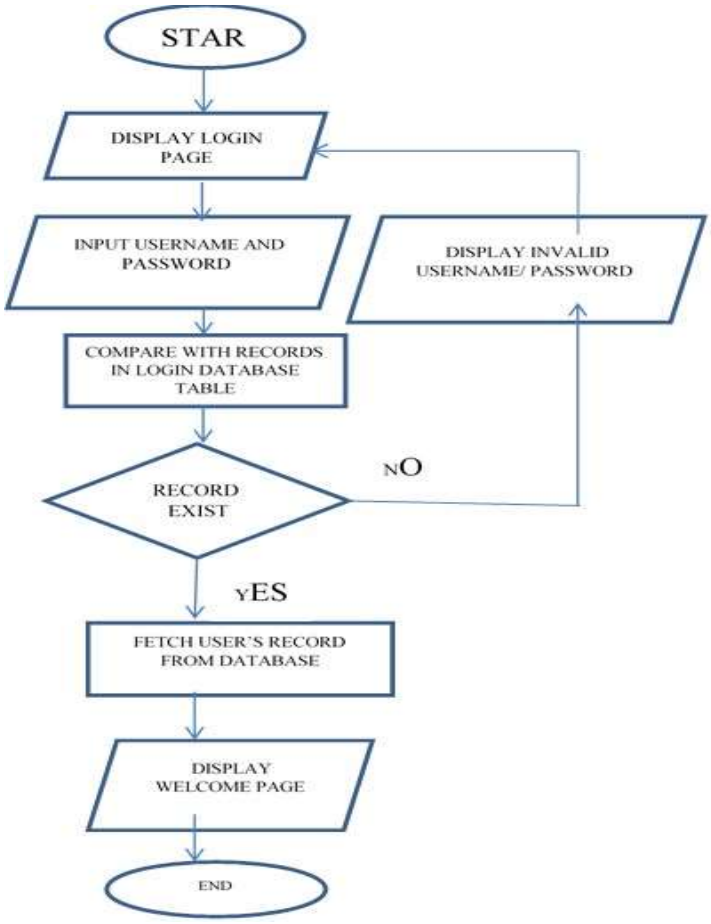

Fig. 3.2: Login Process Flowchart of MEMOSTRAD

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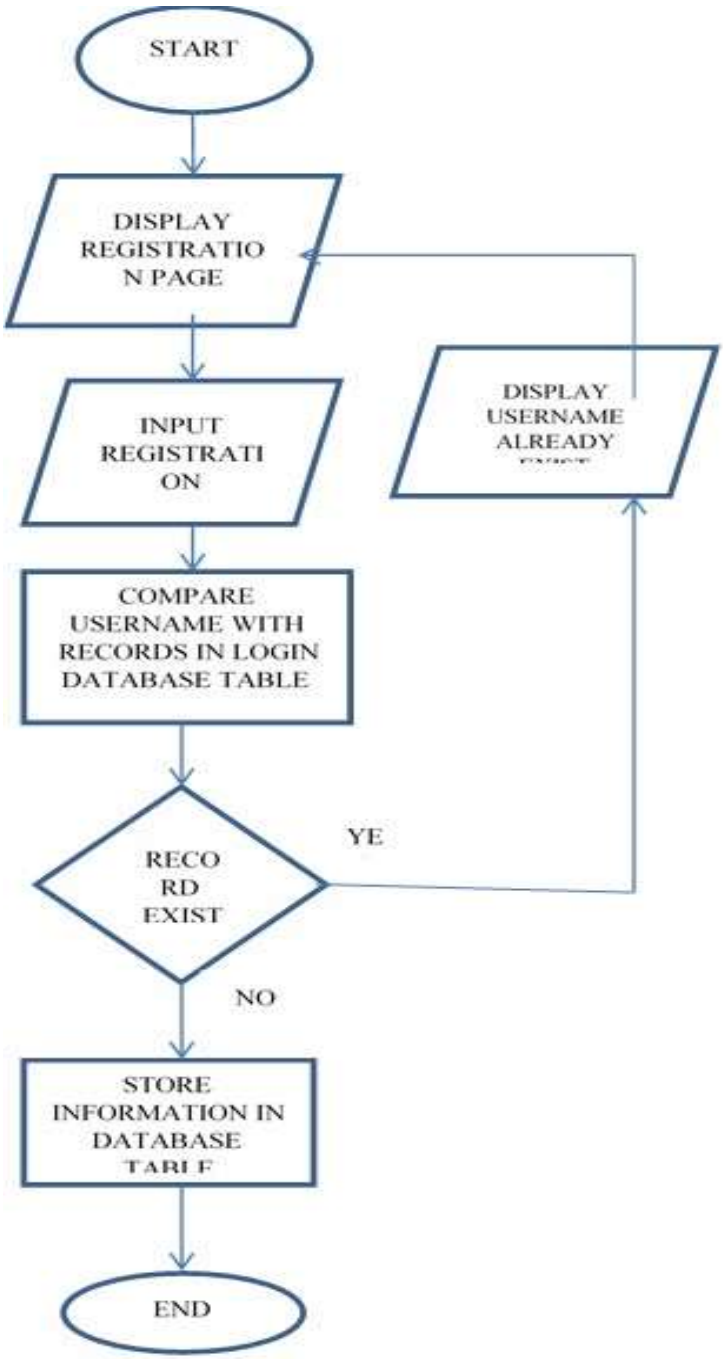

Fig. 3.3: Users Registration Process Flowchart

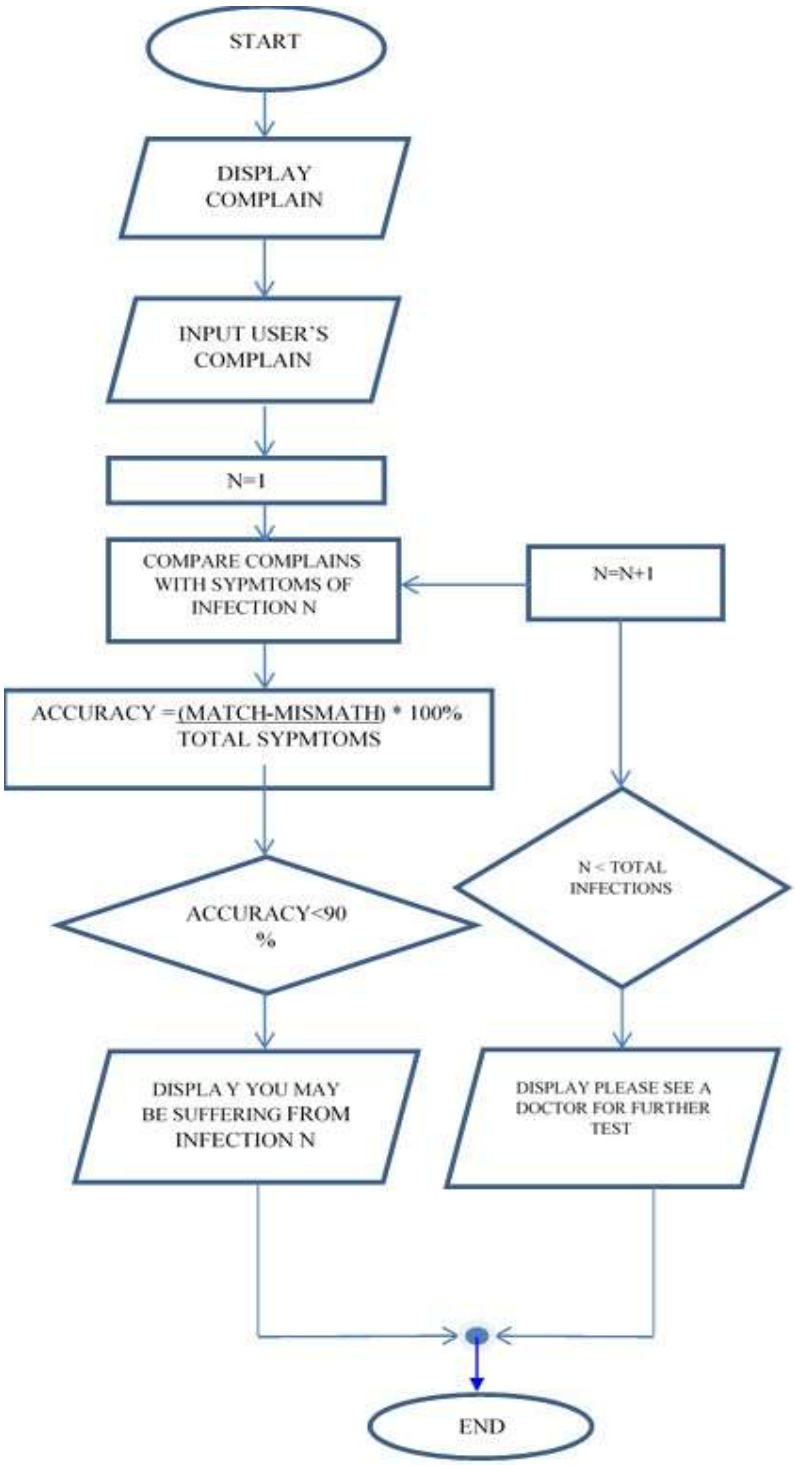

Fig.3.4: The Diagnose Process Flowchart

4. RESULT AND DISCUSSION

This research study attempts to bridge the gap between patients and health consultants by being a tool for diagnosis and assistance. To achieve this, standard computerized software has been developed in such a way that it is easier to use, accessible, user friendly and at the same time not compromising efficiency and effectiveness. The developed system consists of symptoms and the five (5) selected sexually transmitted diseases which were transformed into a designed expert system. The developed system has the following design forms;

4.1 The Splash Interface

This interface display when user loads the designed system which aftermath shows information about the system. **It has two (2) buttons requesting for new and old users login.** Fig. 1 shows the About MEMOSTRAD.

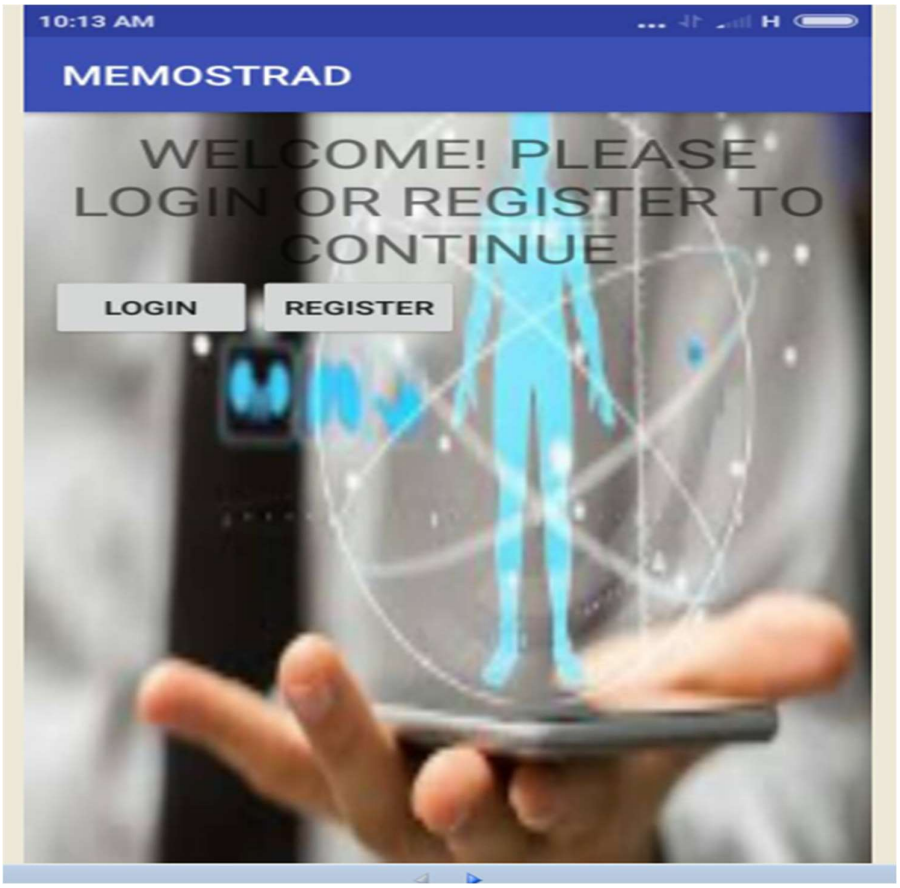

Fig.4.1: The Welcome and about MEMOSTRAD Page of the Designed Android Mobile System.

4.2. The Registration Interface

This interface is next to the welcome page. It provides **new users** the access to register their personal information which includes the username and password for authentication purpose. This is required to capture relevant information needed to secure users' information and also to personalize users' page and create direct and interactive communication session with the user.

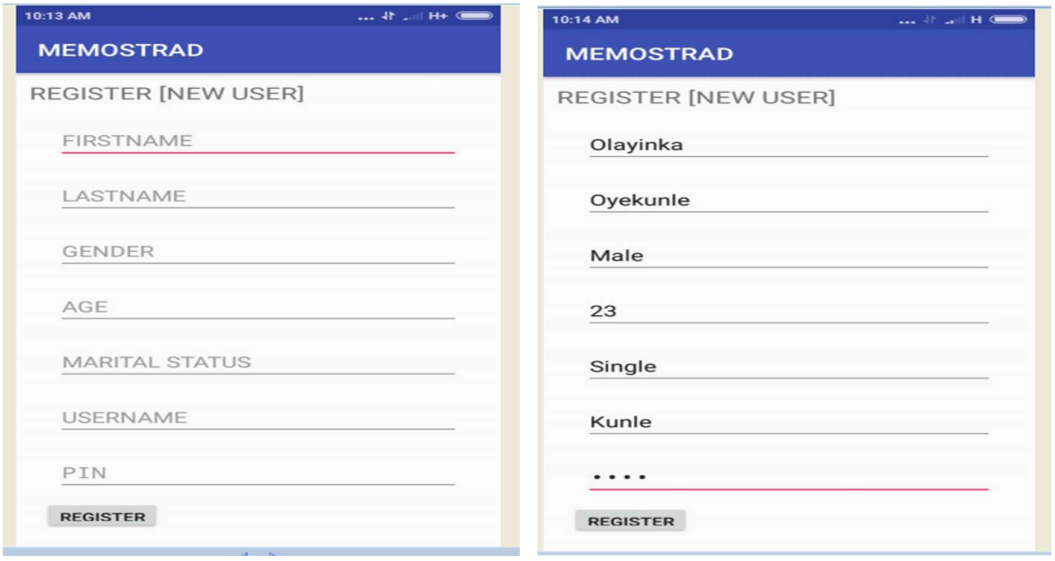

Fig.4.2: The Users Registration Page of the Developed Android Mobile MEDITSSTRAD system.

4.3 The Login Page

These pages show the new users registration completed and request users to log in with their users name and password. This interface provides the users a level of security before being used. This is done to prevent unauthorized users the access to the stored information. Therefore the username as well as the password must match before gaining access into the user data already saved otherwise the system gives an option of "wrong password" or "wrong username" and "try again". The Page is identified as "login" Page.

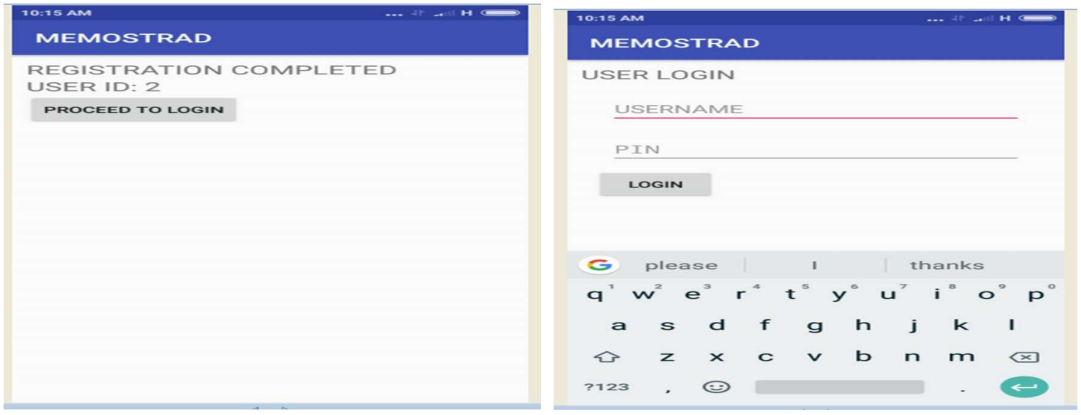

Fig.4.3: The Users Login Page of the Developed Android MEDITSSTRAD System.

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4.4 The Welcome Form

This form serves the purpose of welcoming the newly registered users whose details have been entered for use of the mobile application. This form has been timed for few seconds to display before the next page resume.

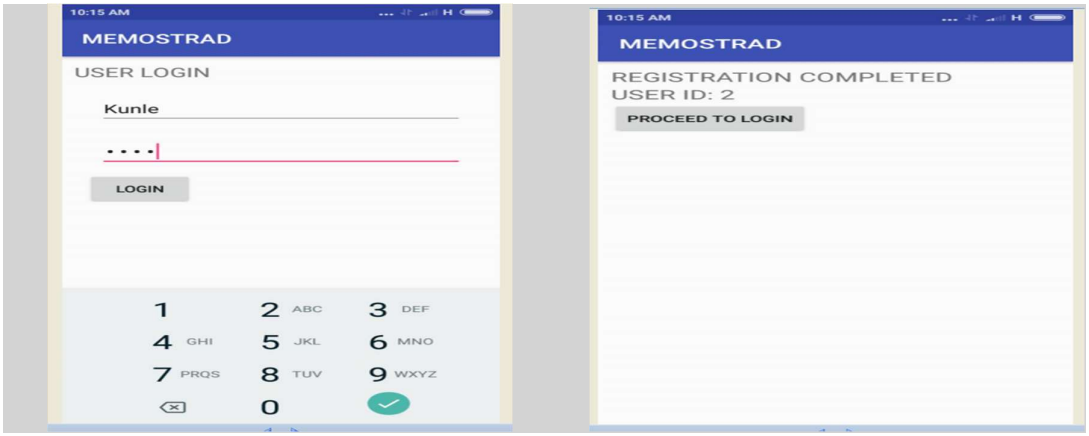

Fig.4.4: User Authentication welcome Page of the Developed MEDITSSTRAD tool.

4.5 The Complaint Form

This form serves the purpose of allowing the user to complain by selecting appropriate symptoms users is having. After selection, the user submit by selecting the diagnose button.

The complaint form and the user selected symptoms are shown in Fig 4.5

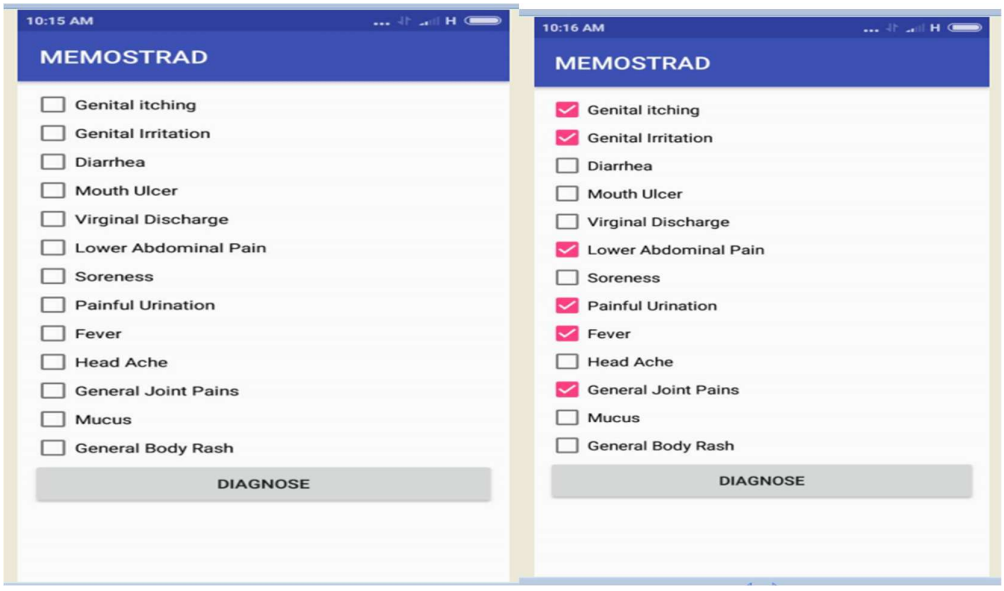

Fig.4.5: The Complaint form of MEMOSTRAD tool for Window Mobile

4.6 The Diagnose Form

This form serves the purpose of informing the user on the kind of sexual disease the user is suffering from based on the symptoms submitted using the production as the guide and with respect to the checked symptoms.

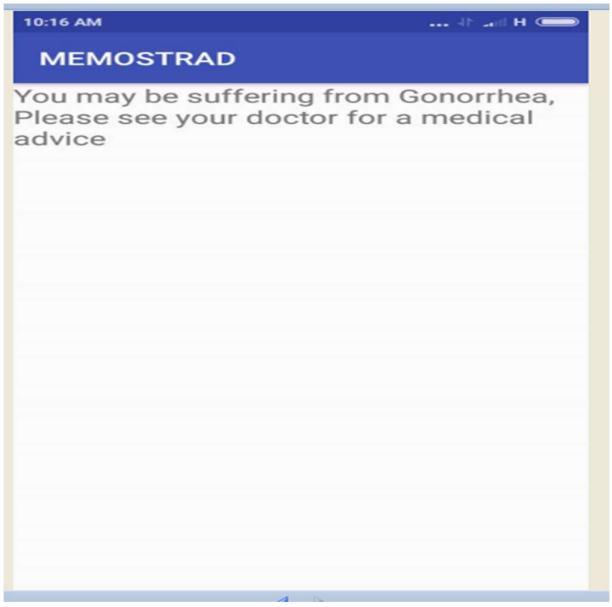

Figure 4.6 The Diagnosis form of MEDITSSTRAD tool for Window Mobile

5. CONCLUSION

In conclusion education is pedagogical to ignorance reduction and national building of health risk free environment for both young and old people. With popular saying “Ignorance is a disease”, this expert system developed is therefore considered as an important tool for creating awareness for people. It also provide support and assistance for medical practitioners and more importantly as first aid tool for infected patients to diagnosing the ailment before consulting their doctors for necessary treatment. The choice of android mobile app platform is as a result of increase in the rate of usage of Android mobile phones among peers, youth, old locally and internationally nowadays. Finally, the expert system is a tool developed to provide assistance and as well as help to reduce the risk of allowing any of the five (5) STD ailments to stay longer in the body before medical consultation

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