

Finger Print Based Child Monitoring System

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Abstract: To solve the issues related to illegal abortions in India, we have built up a tracking system and child monitoring. In our proposed system we have 2 units, one of which would be placed in a hospital and the other one would be a server unit. At whatever point the couple goes to the specialist for their enlistment, the mother needs to enroll using her fingerprint. The server unit will store this data in its information base. During and after her pregnancy whenever the mother goes for a regular check-up she'll have to verify herself using the fingerprint that she had earlier used for her registration. In the event that the patient isn't enrolled, at that point the medical clinic/specialist won't acknowledge such cases as they are viewed as illicit. When the pregnant woman is verified by the server it will send an authentication SMS to the clinic micro-controller, which will read the SMS and turn on the Sonography machine via relay. If the person is not registered then it won't turn on. The server will keep a track of the sonography scans. If any person skips regular scans then a reminder SMS is sent to the concerned person. Even after this if the person does not shown up for scans the server will send an SMS to the nearest medically authorized person for further investigation. Also, after the child has been delivered the parents would be notified after fixed intervals about the vaccinations that are needed to be carried out. Due to this tracking system the progress of all babies of registered pregnant women can be monitored by the regulatory authorities and thus no illegal abortions and especially no killing of female fetus will take place.

Keywords —Abortion, fingerprint, female fetus, SMS, sonography, tracking

I. INTRODUCTION

According to recent studies there are millions of abortions that are taking place in India. These abortions are caused by a variety of reasons such as unsafe and unhygienic living conditions, miscarriages and illegal abortions. The studies carried out by various NGO's closely working with the Ministry of Health and Family Welfare have revealed that out of these million abortions taking place in India most of them are illegal. India records 5.7 million illegal abortions every year and over 80% of pregnant women [1] do not get the recommended health care. Due to the prevalent conditions 13 women in India die everyday. The experts say that, adopting birth control measures could help save the lives of some 27,000 women every year.

The major contributing factor to such illegal abortions are the medical clinics which do not submit the monthly mandated reports under the PNDT (Pre-Natal Diagnostic Technique) Act. A strong action against such clinics to curb illegal abortion especially of female fetus must be taken to maintain the male-female sex ratio.

II. SOME IMPORTANT LITERATURE SURVEYS

The following are the review papers that we've referred:

Ted G. Jelen [1] reviewed this paper provides a critical review of empirical research on attitudes toward abortion among mass publics in India, with a view toward suggesting promising avenues for future research. We identify three such themes: Accounting for pro-life movement among mass attitudes in recent years, when the composition of the Indian population would seem to trend in a pro-choice direction; explaining the sources of party polarization of the abortion issue; and anticipating changes in abortion attitudes which might result from public debate over human cloning.

Sagar Shinde, Dhanashri Patil [2] reviewed on a recent census shows that India has fewer and fewer girls, mostly because unborn female babies are being killed at a very high rate. Many pregnant women abort their unborn child as soon as they find out it is a girl. In 1961 there were 976 girls for every 1000 boys under the age of seven. 50 years later statistics shows that this figure has dropped to 914 girls. So to stop the sex-selective abortion we have to developed

abortion tracking system, it may enough to stop the abortion of girls. The anti-abortion system includes two units a hospital unit and server unit .the pregnant women has to be registered using fingerprint connected to software. Thus progress of all babies of pregnant women monitored by regulatory authority. So there's no killing of female fetus and no illegal abortion.

Tadele Melese, Dereje Habte [3] reviewed abortion related complications and deaths are high in our setting where abortion is illegal. Mechanisms need to be devised in the health facilities to evacuate the uterus in good time whenever it is indicated and to be equipped to handle the fatal complications. There is an indication for clinical audit on post-abortion care to insure implementation of standard protocol and reduce complications.

III. SYSTEM ARCHITECTURE

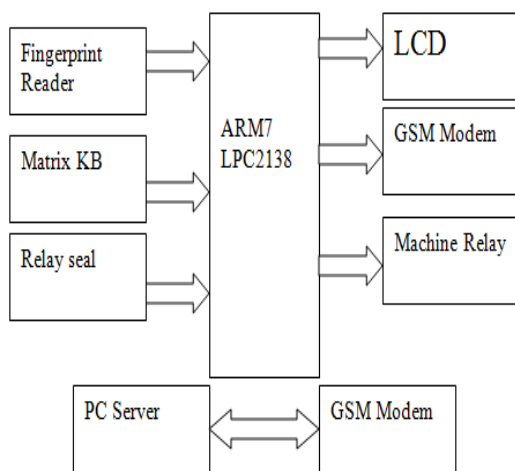


Fig 1. System Architecture

The fingerprint sensor, matrix keyboard and the relay seal provide the required data to the ARM microcontroller. The microcontroller processes this information and notifies whether the patient is registered or not on the LCD. This data is stored unto the server with the help of the GSM module. The ARM microcontroller turns on or off the sonography machine by turning on or off the machine relay respectfully.

IV. METHODOLOGY

In our project we have 2 units, Hospital unit and the Server unit. Whenever the couple comes to the doctor for their registration in the 3rd month of pregnancy the mother has to register using Fingerprint connected using serial port which is linked to the μ C via RS232.

The mother and father details (such as Name address Mobile no etc.) are filled in the Server software also the mothers Fingerprint is also registered. All this information is then sent to the server unit.

The server unit will store this information in its data base. Whenever the mother comes for a checkup or a sonography she has to first Show the Finger print using FP reader. The μ C sends an SMS with the Fingerprint ID to the server. The server will then receive the Fingerprint ID and compare it with the one's stored in its database. If the Fingerprint ID matches the remaining info is sent to the hospital unit indicating that this patient is registered.

If the patient is not registered then the hospital/doctor will not accept such cases as they are considered unauthorized.

Once the Mother is recognized by the server it will send an Authentication SMS to the hospital μ C. The μ C will read the SMS and turn on the Sonography machine via relay. If the person is not registered then the Sonography machine will not turn ON.

Also there is a seal on the M/C relay. If the seal is broken then it is considered as tampering with the sonography machine and the μ C will send the indication to server with Hospital and doctor ID for further legal action.

Server section:

Here the server will keep a track of Mother and baby's sonography scans. If any person skips the regular scans then a reminder SMS is sent to the concerned person. Even after this if the person does not shown up for scans the server will send an SMS to the nearest police station to take further investigation.If the tampering SMS is received then the server will send an SMS to the nearest police station to take further action.

V. FLOWCHART

When the system is turned on it initializes the LCD and the GSM module. The fingerprint of the patient is recognized by the help of the fingerprint reader. Each individual patient has his own fingerprint ID. This ID and report is sent to the server. If the fingerprint ID matches the ID on the database then the relay in the sonography machine is turned on and thus the sonography machine is turned on.

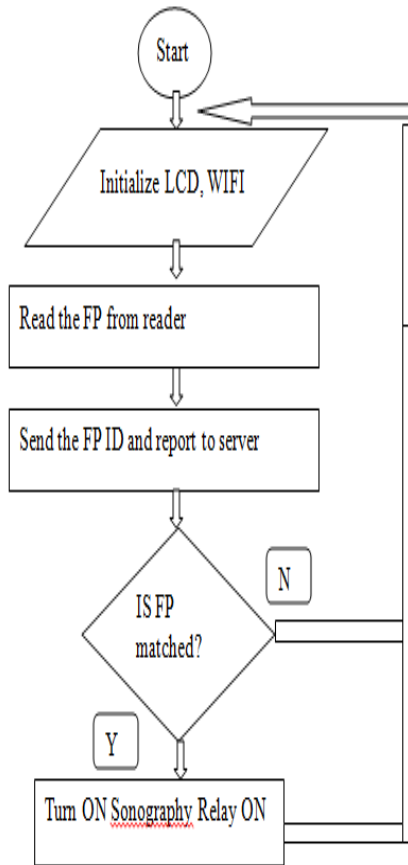



Fig.2 Flowchart of FP ID

VI. GRAPHICAL VIEW



ENTER MOTHER DETAILS

Mother name

Date of Birth

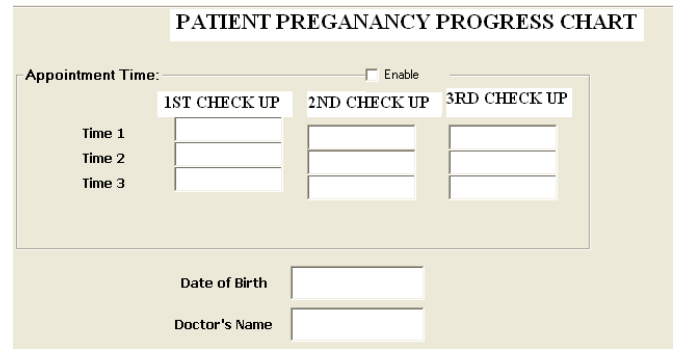
Hospital

Blood group

Other details

Reset Enter

Fig. 3. Enter Information



PATIENT PREGANANCY PROGRESS CHART

Appointment Time: Enable

	1ST CHECK UP	2ND CHECK UP	3RD CHECK UP
Time 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
Time 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
Time 3	<input type="text"/>	<input type="text"/>	<input type="text"/>

Date of Birth

Doctor's Name

Fig. 4 Progress Chart

The graphical view is created with the help of Visual Basic from Microsoft. It provides a platform for GUI applications and also grants access to the database. In the Fig 3. the information of the patient is obtained and this information is stored into the database. In the Fig 4. the GUI shows the reports of each check up and this data is maintained at the server.

VII. CONCLUSION

While considering the major cause of illegal abortion the system has been developed. The tracking system will help to monitor the pregnant lady and also the health of the child during pregnancy and also after the delivery of child. The system allows authority to keep track of illegal activities to prevent killing of female fetuses. It would also help in maintaining the good health of the new born child.

REFERENCES

- [1] www.hindustantimes.com
- [2] Ted G. Jelen, "Cause of Abortion" University of Nevada 2007.
- [3] Sagar Shinde, Dhanashri Patil. "Anti-Abortion And Babies Monitoring System" IJERA conference 2013 .
- [4] Tadele Melese, Dereje Habte. "Post-Abortion Complication" Research Gate 2017.