International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 13 Issue: 08 | Aug 2026 www.irjet.net p-ISSN: 2395-0072

SwasthyaSathi: Design and Development of a Preventive Healthcare and Health Accessibility Platform for Improving Digital Health Literacy in India.

Tanishka Dhumal[1], Arya Kalbhor[2], Prof. Yogesh Golhar[3], Prof. Suvarna Joshi[4]

[1,2]UG scholar ,[3,4]Assistant Professor, Department of Computer Science and Engineering MIT Art, Design and Technology University Pune, Maharashtra, India .

Abstract - *There are many individuals who search for health-related information over the internet but find it difficult to understand this information and make an informed decision. This is because of their limited health awareness, limited access to information, and limited use of healthcare services. SwasthyaSathi is an Internet application that can be used for preventive healthcare, assessing the risk of diseases through completion of a questionnaire, and healthcare facilities nearby.*

Key Words-Preventive Healthcare, Digital Health Literacy, Healthcare Accessibility, Health Awareness, Web Application

1. INTRODUCTION

Due to the increasing presence of technology, people have had an increased opportunity to access information about healthcare through online media. One can search for various symptoms, gain knowledge about their health, healthcare services provided by the government, and a variety of other things through just one click of the mouse on their computer. While gaining access to information through technological means has certainly had its advantages, this does not imply that people would be able to make sense of the information that they receive or even use it in any way. It has proven difficult for many people to find credible sources for healthcare information and comprehend its implications for themselves.

This has been a significant problem for many people living in regions where there has been little knowledge or information regarding healthcare. Preventive healthcare has proven itself to be extremely successful at minimizing risks and enhancing general well-being. Nevertheless, there is no single repository containing all the informationabout healthy lifestyles, regular check-ups, and the currently existing facilities of the healthcare sector, which makes it necessary for a user to navigate through many sites and apps in order to access it. The idea of SwasthyaSathi has been conceptualized based on the understanding that there was a requirement for such an interface that could offer all kinds of healthcare services in one place. This is what SwasthyaSathi is all about.

1.1 LITERATURE REVIEW

However, this development has resulted in the appearance of different digital platforms that have one objective – to increase access to health care services and information as well as to participate in the process of delivering health care. One of the problems scholars have started to address recently is the issue of digital health literacy. There are several issues related to poor digital health literacy, and such issues have been identified from the researches carried out in India. It has been established that although there are many sources of health care information available on the Internet, people find it difficult to understand such information. The other way through which it can be shown that the adoption of technology in healthcare communication is highly effective is by using healthcare chatbots and health assistants. This ensures that the users are able to get health care information.

However, most of the technologies currently available in healthcare are geared towards industries in health care and not necessarily for health education purposes. As it has been observed from the literature review, the current practices being followed by the researchers focus on the individual aspects of healthcare including telemedicine, healthcare monitoring, chatbots, and dissemination of healthcare information. However, not much effort has been made towards the development of platforms which could integrate all three dimensions of healthcare. Based on the findings derived from the literature review, there is a requirement for developing an application which could be used for the purpose of streamlining the information related to health and promoting proactive health care. It is this gap which forms the basis of SwasthyaSathi application.

1.2 RESEARCH GAP AND PROBLEM STATEMENT

The review of the literature has revealed that there have been several developments in the field of digital health care, health informatics, and accessibility of healthcare. There have been numerous studies carried out on topics like digital health literacy, health care bots, telemedicine service, and health information system. However, what can be said about all these available tools is that these tools have been designed to perform certain particular tasks like making appointments, virtual consultation, health monitoring, or

delivering health information. While these tools do offer various important functionalities, one thing that can be said about these tools is that these tools assume that the user knows his health needs. Another important concern highlighted by the review includes the gap between health care information and health care knowledge. It may be possible for individuals to access health care information via the internet; however, it might not necessarily be the case that the same individuals will have the ability to use this information while making decisions concerning health care. Another area of concern involves the lack of knowledge regarding health care services. It should be clear that health care information is disseminated across several platforms.

Hence, it becomes quite difficult for an individual to access all the relevant information from one single source. The means of communication that exist today have not been successful in merging health care information, health care knowledge, and health care resources into a single platform. From the findings of the above research, the problem statement could be articulated in the following way: "The poor level of health literacy, lack of individual counseling about preventive health care, and insufficient understanding of health care services continue to pose an impediment for timely health decision-making mainly among vulnerable groups." To solve the above problem, this research is directed towards developing a system that will make health care information easily accessible."

2 . PROPOSED METHODOLOGY

SwasthyaSathi will be an internet based portal, which would create awareness regarding preventive healthcare and at the same time make healthcare information and resources accessible to people. It would be a user oriented portal that would help users to access healthcare information easily. Operation of the system starts once a user logs into the portal and creates his/her own account in the portal. Users will be able to get healthcare information, preventive healthcare measures and resources from various modules of the portal.

The system has been developed in such a way that it helps the user to access healthcare information effectively. A. Technical Implementation The software SwasthyaSathi follows the three-layered module-based architecture, which includes Presentation layer, Application layer, and Database layer. The presentation layer has been developed using HTML, CSS, JavaScript, and React.js technology. The application layer was created using Node.js and Express.js for processing the requests made by the users, storing the health assessment data and helping with the communication between the client-side and the database.

The database used is MongoDB, where users' profile, health assessment data, wellness scores and healthcare resources are stored. In the Health Assessment module, data such as age, gender, height, weight, habits, sleeping habits, exercise habits, stress level, and medical history are collected. The analysis of these data follows some rules, which will help evaluate the wellness status and give preventive health care advice. This feature may be integrated into future versions of the application without changing anything in the present system. This includes health suggestions that utilize AI, multilingual functionality, wearable integration, and health services from the government.

2.1 SYSTEM ARCHITECTURE IMPLEMENTATION

A. Architecture of the System : The architecture used by the SwasthyaSathi system is that which is web-based and includes frontend, backend, and database layers. Access to the system by users is via the browser-based frontend interface where they can make use of various features related to health care including getting information regarding health care and its evaluation. Communication between the frontend layer and backend layer involves such activities as user's request processing and storage of data for the application.

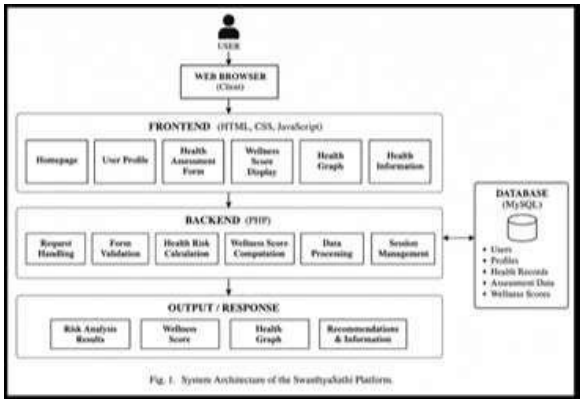

Fig -1: Overall System Architecture of the SwasthyaSathi Platform.

B. User Flow: The users are able to navigate throughout the system because of the design of the platform that makes navigation easy. It is done by the access to the homepage and following the various options available in the healthcare industry. They may change to other sections of the platform according to their needs. B. System Workflow The system workflow of SwasthyaSathi has been structured in such a manner that it is easier for the user to go through the entire process while increasing awareness about the idea of preventive healthcare. The first step of the entire process is the login procedure where the user logs in into the app. After that, the user is directed towards the homepage of the

application. These modules include Health Assessment, Health Information, Health Resources, and Wellness Score. In Health

Assessment, the users enter specific information into the system; such information is categorized as demographic information, lifestyle information, and health information. The information entered will then be analyzed using some sort of logic to determine the health information and wellness score. This site is also capable of providing the user with information about preventive healthcare and government resources for healthcare. All the activities done on the site are managed by the application server whereas the database contains all the data related to users' assessments. The modularity of the system design enables modules to run independently while ensuring that there is proper communication among the front end, the back end, and the database. This will ensure that maintenance becomes easy and will allow us to incorporate other healthcare services, sophisticated analytics, and decision-making tools.

Fig -2: SwasthyaSathi Platform web page

2.1 RESULTS AND DISCUSSION

SwasthyaSathi application available at present proves that combining awareness about preventive healthcare, health assessment, wellness assessment, and healthcare information in one web-based application is feasible. The developed prototype successfully integrates all services of the healthcare sector in one interface such that the user can access multiple modules using one application. During the test phase, the modules constructed were tested for their efficiency and compatibility among themselves. It became clear from the observations that the homepage module, user login, health assessment, healthcare information, healthcare resource availability, and wellness dashboard module all functioned as expected in the prototype environment.

The navigation through the modules was smooth and the user inputs were being processed efficiently by the application. Although the current prototype is functional, it has not yet been subjected to scale testing or validation clinically. The results obtained through the current research are based on evaluation of the prototype only and expert judgment. More research will be undertaken with emphasis on carrying out usability test for both medical professionals and the general public. The implementation illustrates how important the involvement of digital platforms in spreading awareness about healthcare and promoting preventive healthcare measures could be. The inclusion of healthcare information and health advice is done to reduce the difference between the awareness about healthcare and making decisions regarding healthcare. Though there have not been enough tests by the users, the development of the prototype serves as a very good starting point for further development.

A. **Expert Evaluation**: For gaining feedback in respect of the developed prototype, SwasthyaSathi was presented to two practicing doctors for an independent evaluation. The aspects that were evaluated included usability of the prototype, relevance of the features suggested, navigability, and suitability of the prototype as a tool for preventive healthcare awareness. Constructive suggestions have been provided in the process of reviewing as well. The constructive suggestions include better performance of the system, more customizations, and even more user validation. The remarks made by the physicians are being recorded to consider in future iterations of the system.

Table -1: Summary of Expert Evaluation

Evaluation Aspect	Observation
Number Medical Experts	2
Prototype Reviewed	SwasthyaSathi Web Platform Prototype
Review Method	Prototype Demonstration
User Interface	Well Organized
Ease of Navigation	Positive

B. Discussion and Novelty of the Proposed Platform: It is evident from the establishment of SwasthyaSathi that it is possible to incorporate multiple preventive healthcare services within one web-based application without complicating the use of

the platform.

The web-based platform will offer all the preventive healthcare services that are not provided by other healthcare applications that have focused on offering a specific service such as appointment booking, fitness management, telemedicine etc. Both these features have been taken into consideration during the development of the platform so that the people having different levels of computer knowledge can use the system without any difficulty.

Rather than trying to substitute the role of a medical practitioner, the aim of SwasthyaSathi is to facilitate the process of preventive healthcare for the users. Another factor that makes this platform unique compared to other platforms is the modular architecture of the platform. All modules are independent from each other but they all use common backend and database. Such an architecture allows for future integration of multi-lingual support, wearable health gadgets, health tips using artificial intelligence, and healthcare in general to be fairly easy to integrate.

Feedback received from experts in the process of prototype evaluation highlights the applicability of the approach used in this research as well as provides useful suggestions for further system improvement. Though this paper presents only the prototype of the system, it lays a firm foundation for future research.

3. FUTURE SCOPE

The development of SwasthyaSathi can be said to be a working prototype for generating awareness about preventive health care. Even though the proposed system proves to be a viable way of integrating different health care services into a single web application, there are many ways of improving the system further. For future research, we would focus our efforts on conducting a usability test of the system on end users who are part of the general public and those in the healthcare industry. This data would then be used to enhance the usability and accessibility of the system. The platform can be further expanded by incorporating multilingualism that would help make the system accessible for people speaking different languages.

The future versions of the platform will integrate the platform with health devices, EHRs, and e-healthcare initiatives taken up by the government for personalized health care services to the users via one platform. Some other sophisticated technological processes like machine learning could also be analyzed in order to provide customized wellness recommendations based on the health profile of the users. Nevertheless, it is imperative that such measures should be subjected to extensive tests and approvals before being implemented within the program. The future enhancements will focus on scaling up the program while not straying away from the initial objective of avoiding any health problems.

4. LIMITATIONS OF THE CURRENT WORK

As at now, the SwasthyaSathi is only a prototype which has not been tried out practically by any user. It provides awareness and assessment of one's health condition but can never be used as a replacement to professional advice on any disease or health condition. The accuracy of the results obtained may be dependent on the information provided by the user before taking the assessment.

5. SOCIAL IMPACT

The suggested platform will be able to bring many advantages in enhancing the awareness of the health information of the public by making the information of healthcare more available and accessible. In other words, preventive health care services and information which will help people make decisions will make them take an active part in the health matters on the platform.

4. CONCLUSIONS

In this research paper, the development of SwasthyaSathi web-based platform that tries to spread the awareness regarding preventive healthcare and digital health literacy has been described. All information regarding healthcare, health checkup, wellness tips and services related to healthcare can be accessed easily via one platform. In this research paper, the role of modular web application for the provision of healthcare information to the users and for encouraging them to have preventive healthcare has been demonstrated.

The prototype of the application has been developed, evaluated and improved by taking into consideration the views of the experts in the field of healthcare. Although the current version of the prototype of the application is quite simple, it can act as the foundation for future researches. Some of the features that can be added in the future include usability testing, addition of other services related to healthcare, multi-language support and data analysis according to the healthcare guidelines. SwasthyaSathi can be considered as the first step towards digital health literacy through digital technology.

ACKNOWLEDGEMENT

This research was developed as part of the TechForGood 2026 Internship Program conducted in collaboration with the IEEE MIT ADT University Student Branch and IEEE Maharashtra Section. We express our sincere gratitude to the IEEE MIT ADT University Student Branch and IEEE Maharashtra Section for providing the platform, mentorship, resources, and support that facilitated the successful completion of this research work.Being a part of the TechForGood 2026 initiative enabled us to enhance our technical, research, and professional skills while transforming innovative ideas into impactful solutions addressing real-world challenges.

REFERENCES

[1] P. K. Gupta, A. Gupta, and A. Kumar, "Impact of Digital Health Literacy on Prevention of Health Behaviors," Journal of Preventive Medicine and Public Health, vol.

58, no. 4, pp. 421–432, 2025. M. Young, The Technical Writer's Handbook. Mill Valley, CA: University Science, 1989.

[2] S. W. Andersson, S. N. Larsen, and J. N. Sørensen, "Digital Health Literacy: The Key to Unlocking the True Potential of Digital Health Technologies," Frontiers in Digital Health, vol. 7, Art. no. 1461342,

10.3389/fdgth.2025.1461342. 2025, doi:

[3] K. N. Patel, T. N. Popatji, and C. U. Hareshkumar, "Digital Health Literacy and Health Information-Seeking Behaviour among Young Adults: A Literature Review," International Journal of Medical and Pharmaceutical Research, vol. 7, no. 1, pp. 3231–3236, 2026.

[4] S. Ban and H. Lee, "Digital Health Literacy: A Concept Analysis," Digital Health, vol. 10, 2024, doi: 10.1177/20552076241287894.

[5] Y. Bhandari, S. Sharma, and P. Singh, "Digital Literacy of the Indian Health Workforce: A Core Competency for Future Healthcare Delivery," Journal of Social Sciences Research, vol. 14, no. 1, pp. 15–24, 2025.

[6] A. Ranjan, R. Kumar, and S. Gupta, "Adoption, Digital Health Literacy, and Patient Satisfaction of Ayushman Bharat Digital Mission Services in India," BMC Health Services Research, vol. 26, Art. no. 14314, 2026.

[7] S. S. K. Srinivasan, M. Kumar, and P. Singh, "Unpacking Personal Health Informatics: An Investigation of Awareness, Understanding, and Leveraged Utility in India," arXiv preprint arXiv:2509.01231, 2025 .