Role of artificial intelligence in health communication: With special reference to smartwatch technology

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Abstract---Artificial intelligence is a transformational technology of the digital age and increasingly capturing the world. Apart from robotics, this technology is also useful in the health sector. Smartwatches are a good example of artificial intelligence and health communication. This device provides you with some specific information like blood pressure, oxygen level, sleep monitoring, etc. which is very useful for a common man to track his/her health. This device communicates to you about your primary health issue and informs you to visit a doctor. So, in this study, researchers explored and examined the role and relevance of artificial intelligence in health communication, Research evaluates the level of awareness among users and non-users of smartwatches AI technology and finds out the effectiveness of using smartwatches. For data gathering, researchers will use a survey method. In this study, a quantitative approach was used and a random sampling method has been adopted for the selection of smartwatch users.

Keywords---Artificial Intelligence (AI), Deep Learning, Digital Health, Health Communication, Machine Learning, Smartwatch, Technology.

Introduction

Artificial Intelligence, commonly referred to as AI, distinguishes itself from human intelligence which is based on cognitive behavior. However, AI is demonstrated by machines endeavoring to acquire information in the form of data that can ameliorate and assist the progress of human work due to its computational power. In recent years, AI has become hugely popular in the market economy as it is seen as an engine of productivity and economic growth among marketers, developers, and consumers. As we are moving from the information age to a connected age, artificial intelligence is considered a new means of addressing the needs of almost every industry such as healthcare, media, businesses, education, insurance, etc. According to PwC (2018), "AI holds the potential to address socioeconomic concerns such as stimulating economic growth, improving global health and education, and helping enhance the quality of life for humans".

To reap the benefits of AI, the consumer electronics market has undergone a rapid transition during the last few years and is constantly striving to integrate augmented reality experiences with everyday devices embedded with IoT sensors. Continuous innovation maneuvering the rapid emergence of new clusters of software developments has been provided by and lies in IoT opportunities. The technological changes associated with the potential benefits of machine learning and artificial intelligence are paving the way for the most staggering market for wearable devices. Developers have been drawn towards the AI ecosystem and are responding to this trend by focusing on the usage of wearable devices, particularly smartwatches that can enable data processing and analytics for better decision making. Apple Smartwatch and Fitbit are prototypical examples of wearable technology. Each device works as a nodal network due to its sensors that are fitted to enable human-machine interaction.

The anticipated impact of AI is also discernible in the healthcare sector. The use of AI applications in healthcare is broad and burgeoning around the world. Health communication proved to be a key field of study that coincides with AI technology. This implies that AI systems can be better at connecting people to their health needs. This is possible by installing and developing effective systems or devices that can communicate with patients and influence individuals' health attitudes and behavior. This will certainly prove critical in building sufficient capacity to overcome challenges related to health management. Thus, the goal stated by the AI developers is to extend the functionality of wristwatches for health purposes and personal advantages by focusing on the essential features of wearable devices. It is imperative for wearable devices to become a testbed for effective health communication and management that can monitor physiological parameters such as heart rate, arterial blood pressure, body temperature as well as additional features that can track users' calories, step count, sleep patterns, stress level, etc. Further, the automated system can also assist in interpreting information that can improve the health system and health service delivery. Utilizing smartwatches for health aid in fulfilling higher goals of fitness and wellbeing.

Despite the apparent value proposition of smartwatches, there is skepticism and disinclination among people regarding their usage of smartwatches as monitoring

assistance to achieve personal health-related goals. In order for smartwatches to become mainstream, it is indispensable to have a considerable impact on the demand and buying behaviors of consumers. This can only be achieved by examining, determining, and disseminating the usefulness of smartwatches in managing and preventing health-related issues.

Researchers and developers are beginning to explore the potential, challenges, opportunities, and trends associated with artificial intelligence and its inhabitance in wearable technology. Further research in this area also indicates the ubiquity of artificial intelligence in diverse industries. Towards this background, there appears to be a need for an increased understanding of how artificial intelligence can be embedded in the field of health communication[2]. Concurrently, it is also important to fathom how consumers can select and approach AI technology strategically to appease the need to achieve good health. Thereby, this research aims to examine the scope of smartwatches for one specific industry i.e. healthcare. This paper attempts to determine how users leverage smartwatches enabled with AI systems for health communication.

Review of literature

There is a substantial body of empirical and conceptual research on artificial intelligence, healthcare, digital health, and smartwatch technology. However, primarily these subject matters have been exclusively or dichotomously administered. Notably, researchers have also collated experiential evidence to understand the impact of AI technology and its effect on human evolution. However, one domain that needs extensive contemplation is the advancement of the automated system i.e. AI in the area of health communication, particularly in developing countries like India. Henceforth, the existing literature on artificial intelligence, healthcare, and smartwatch are reviewed in this paper to assent the value that automation has imported to smartwatch technology that can possibly offer an effective health communication system.

Mesko, et al. (2018) elucidated the potential of artificial intelligence in alleviating the healthcare workforce crisis. This paper responds to the widening health inequalities by stating three reasons i.e. doctor shortages, the aging, and burnout of physicians, and higher demand for chronic care. A simultaneous rise in the above shortcoming has paved the way for an automated system that can promulgate digital health and bridge the gap between the patient and doctor. This interpretation postulates the contribution of AI to improve the quality of care, promote healthy behavior, manage chronic diseases and decrease health costs. However, it has been categorically addressed that healthcare and practicing medicine is not a linear process. There are constraints of automation as it is a challenging task to translate 'every single element and parameter into a programming language'. In the conclusion, the researcher emphasized that AI will bring a paradigm shift in the doctor-patient relationship. Notwithstanding the fact that artificial intelligence does not act as a replacing tool for clinicians and health practitioners but instead they are considered as an add-on supplement needed for better healthcare delivery. The efficacy of AI-supported systems can enhance healthcare delivery by reducing its cost, fast access and thereby solving the workforce crisis in the healthcare sector.

Siddique and Chow (2021) highlight that the integration of machine learning vis-à-vis artificial intelligence with healthcare networks will assist clinicians and make their job more efficient. The advantage of machine learning, of course, is the opportunity to make informed clinical decisions by considering the complex preceding health data to provide an appropriate conclusion. The study focuses on different fields in machine learning such as NLP and DNN which can be applied in the healthcare sector [4]. It is rightly pointed out that the relative novelty of AI and deep learning have been capacitated by big data analytics and advancement in cloud storage modalities. Subsequently, this mechanism has also assisted in augmenting the computing power of deep learning which has thereby revolutionized modern AI. Furthermore, particularly in medicine, it has significantly impacted at three levels: by improving workflow and reducing clinical errors, imparting rapid and accurate image interpretation, and the ability to process data by the patients to promote health[4]. The study considers chatbots as an important tool in medical communication for 'fast and easy health surveys, set-up personal health reminders, communicate with clinicians, book appointments, and retrieve and analyze health data[4].

Rayan (2019) delves into the ambit of artificial intelligence and its impact on the healthcare sector. The amelioration of information technology has induced and stimulated human cognitive capacities, thereby facilitating the cultural transformation described as digital health. This has been possible due to the technological advancements in medical devices with the help of computational science. Recent advancement in the analytics system has paved the way for potential growth in technologies like wearable sensors, artificial intelligence, biotechnology, or genomics which are commercially maneuvered to produce a large quantity of data. It has certainly supported and transformed the process of healthcare as patient care is now of greatest importance with a focus on prevention, personalization, and precision. The study also highlights that there has been an increase in the saliency of evidence-based practice which further makes the base for the experience-based and trial-and-error strategy in healthcare. The growing mobile networks and wearable devices have led to a unique opportunity to assist the public with health IoT (Internet of things) solutions that can detect conditions, provide healthcare and also improve designing cure and preventive steps. The current practices of several countries prove that this technology particularly medical devices operate quickly on the data available for example in North London, an AI-driven smartphone application can manage competently to triage over one million persons to Accident & Emergency (Burgess 2017). However, there is also a considerable need to regulate and keep surveillance on data security, patient safety, and health equity in order to practice AI technology productively and securely in the field of medicine and health.

Lukowicz et.al (2004) mentions that the wearable computing concept invisibly enhances our environment with smart electronic devices.[3] (Lukowicz,2004) Notably, wearable computing systems have a very complex architecture, but in contrast, it is kept user friendly and operationalized in a wide range of mobile settings. The paper focuses on the interaction between the user, the system, and the environment. This proves to be an interdependent system that tries to develop context awareness with minimal cognitive effort from the user. The appropriate

use of context information helps in performing a wide range of tasks without any user interaction. 'This includes system self- configuration tasks as well as automatic retrieval, delivery and recording of information that might be relevant to the user in a specific situation'. Such devices can be found in health-related domains. The study uses a novel 4-layer model for describing the key aspects of wearable technology. The above model highlights that such technology is made to deal with health hazards and emergencies with a combination of physical activity tracker, eating and sleeping habits, a user-specific health monitoring system, and the medical database which can notify the user and instruct appropriate actions.

Trimpop et al. (2015) address the large and growing interest in digital health by describing its concept and implementation. An important type of system for tailoring smart health is Digital Health Companion (DHC). The smart health system is engineered in a way that can track body movement patterns to detect emergencies and allow for the prevention of health risks. The contemporary smartwatches are very germane in this regard as it combines research developments of activity, vital data, and long-term anomaly recognition technology. The wrist-mounted sensors especially smartwatches have gained immense popularity among consumers for their myriad health applications like fall detection, sleep detection, activity recognition, etc. The study analyzed and implemented different modules of the smartwatch component of the DHC system to provide a system with the desired functionality. The three modules that are commercialized in the consumer market are– the recognition module, communication modules, and additional modules. The DHC system has already been discussed in various research bodies and implemented as well. The system will be further improved and advanced in the future.

Objectives of the study

The broad objective of the current study is to understand 'The role of artificial intelligence in health communication with special reference to smartwatch users'. The researcher will attempt to do so by focusing on specific objectives:
1) To probe the role and relevance of artificial intelligence in health communication.
2) To evaluate the level of awareness among users and non-users of smartwatches.
3) To analyze the usage pattern of the smartwatch.
4) To find out the effectiveness of using the smartwatch.
5) To examine the adaptation of Artificial Intelligence Technology (AIT).

Research Methodology

This study intends to explore the intersection between artificial intelligence and health communication in the Delhi NCR region. The quantitative Approach Survey method has been selected to study the complex phenomena and patterns associated with smartwatches. A survey questionnaire was distributed randomly to 200 people in the Delhi/NCR region. However, the total participation for the study was 103 consisting of users and non-users of smartwatches. The data for this mixed research were analyzed for both descriptive and inferential statistics.

The primary data was collected from the users and non-users of smartwatches who were the students and working professionals of different age groups, educational backgrounds, and income levels. Primary data was collected through a structured questionnaire. The secondary data was collected from various research publications, journals, and websites. The Data is taken in an Excel sheet and the statistical graph is prepared via SPSS.

Data Analyses

This survey has been conducted to understand the role of artificial intelligence in health communication with regard to smartwatch technology. The goal was to understand the ubiquity of artificial intelligence while communicating about health, particularly using smartwatches thereby understanding its effort to enhance monitoring and care delivery. This survey was conducted among 87 people residing in Delhi/NCR and in other states. The structure of the survey is divided into four parts: A) Socioeconomic background (B) Awareness (C) Usage pattern and (D) Effectiveness.

A.Socio-Economic background: The first section of the survey focuses on the socio-economic background of the respondents. This section emphasizes the effect of socio-economic background in the acceptance of AI technology-based smartwatches for healthcare.

Table 1
Socio-economic background of the respondents

Factors	Frequency	Percentage (%)
Location – Delhi/NCR Other	73 30	70.9 29.1
Age- Below 18 19-30 31-45 45 & above	0 75 17 11	0 72.8 16.5 10.7
Gender- Male Female	44 59	42.7 57.3
Academic Qualification- Metric (10th) Intermediate (12th) Graduate Master Ph.D Other	0 4 48 43 6 2	0 3.9 46.6 41.7 5.8 2
Field of work Science and Technology Education	10 17	9.7 16.5

|		
Art, culture, media, and entertainment	39	37.9
Business management and administration	18	17.5
Health and Medicine	4	3.9
Other	15	15.8
Salary Slab		
0-10000	28	27.2
10001-20000	11	10.7
20001-40000	28	27.2
40001 & above	36	35

A1. Are you a resident of Delhi/NCR ?
103 responses
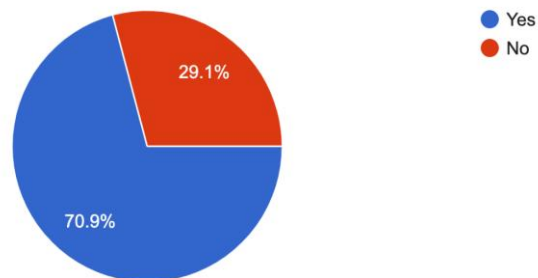
This chart shows that out of 103 respondents 73 (70.9%) of respondents are residents of Delhi/NCR and the remaining 30(29.1%)are residing in different states.

A2. What is your age?
103 responses
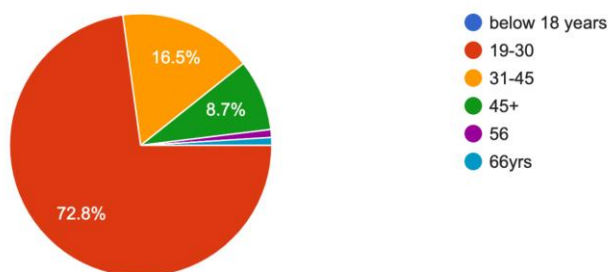
This survey aimed to collect a wide range of respondents in the sample to study the relationship between age and acceptance of technology. Therefore, the researcher included a question based on the age of the respondents. The data

A5. What is your field of work?
103 responses

Legend:
- Science and Technology
- Education
- Art, Culture, Media and Entertainment
- Business, Management and Administr…
- Health and Medicine
- Journalism and mass communication
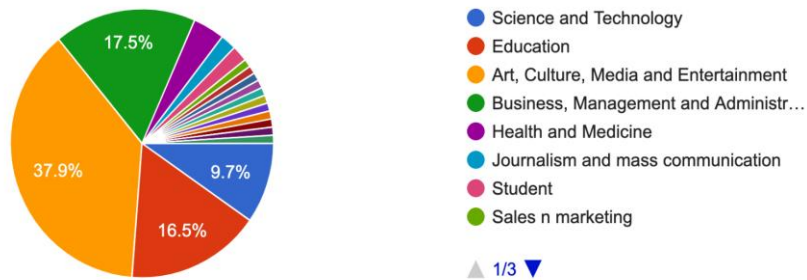- Student
- Sales n marketing

1/3

Figure 5 presents the field of work of respondents. This data is collected to understand the type of work the respondent is associated with which thereby establishes the need to use AI technology for health benefits. The data shows that 10 (9.7%) out of 103 respondents are from science and technology backgrounds, 39(16.5%) working in the education sector, 39(37.9%) are associated with art, culture, media, and entertainment, 18 (17.5%) are engaged in business management and administration, 4 (3.9%) are from health and medicine sector and 15 (15.8%) are working in another field of work.

A6. What is your salary slab?
103 responses

Legend:
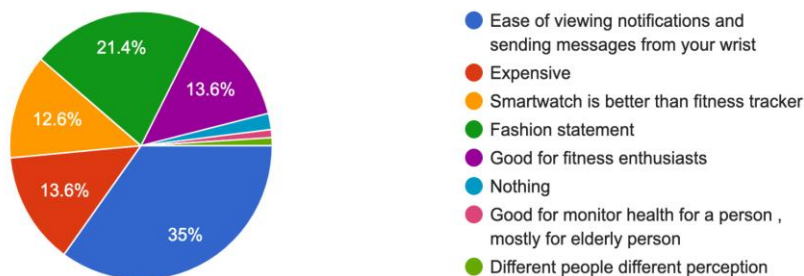- 0-10000
- 10001-20000
- 20001-40000
- 40001+
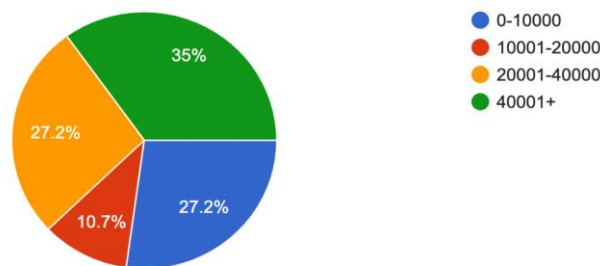
This survey attempts to collect data based on the income of the respondents. The data will assist in understanding the buying decision of smartwatches based on the financial power of the respondents. The first interval is based on the income below 10000 with 28 (27.2%) respondents. The second interval ranges from 10000-to 20000 which had only 11 (10.7%) respondents. The third interval ranges from 20000-40000 salary slabs with 28(27.2%) respondents. The last interval is based on the salary above 40000 which had the highest number of respondents. This interval included 36 (35%) respondents.

B.Awareness: The smartwatch technology took full speed in the last decade becoming one of the most stylish and smart health gadgets. The second section of the survey focuses on the level of awareness and popularity of smartwatches among the respondents.

**B1. What comes to your mind when you think about smartwatch?**
103 responses

Legend:
- Ease of viewing notifications and sending messages from your wrist
- Expensive
- Smartwatch is better than fitness tracker
- Fashion statement
- Good for fitness enthusiasts
- Nothing
- Good for monitor health for a person, mostly for elderly person
- Different people different perception

The primogenial question in the second section attempts to understand the first thought that comes to mind when the respondents think of the smartwatch. The chart reveals that 36 (35%) out of 103 respondents think of the smartwatch as a convenient gadget considering the ease of viewing notifications and sending messages from your wrist. The second highest component that comes to mind is a fashion statement with 22 (21.4%) respondents, 13(12.6%) respondents believe that smartwatch is better than fitness tracker and 14(13.6%) think that it is good for fitness enthusiasts as well as it is an expensive purchase respectively. Further, only 4 (3.9%)respondents mark their response on nothing.

**B2. Do you think there is a craze among people for smartwatches?**
103 responses

Legend:
- Yes
- No
- Maybe
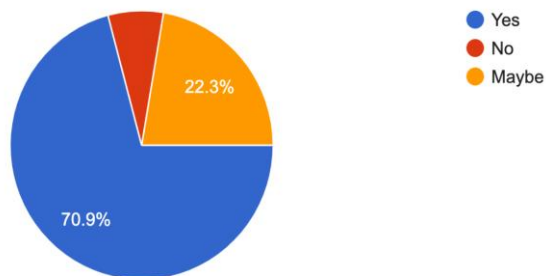
The chart shows the level of craze among people for smartwatches. The data indicates that 73 (70.9%) out of 103 respondents are fond of smartwatch technology, 7 (6.8%) respondents enjoin from such wearable and thus mark their response on no, and 23 (23.3%) respondents are yet to probe their liking towards smartwatches and thus conformed to the maybe option.

B3. Do you think smartwatch craze presents a cause for concern?
103 responses
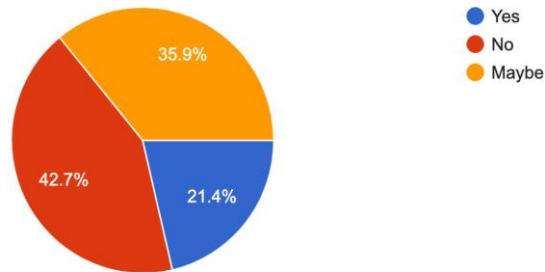
The chart accentuates the correlation between the craze of the smartwatch and if there is any concern associated with its use. According to the data, 22(21.4%) out of 103 respondents believe that the smartwatch craze is a cause for concern. However, maximal respondents i.e 44(42.7%) deny the claim of any concern, and almost tantamount respondents i.e 37(35.9%) are not sure if there is any cause for concern or not with the smartwatch technology.

B4. Did you know that the smartwatches are equipped with AI technology?
103 responses
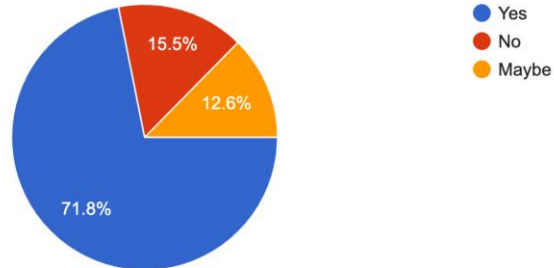
The chart reveals the knowledge level of respondents related to smartwatches. The majority of the respondents i.e 74(71.8%) are well aware that smartwatch technology is equipped with AI technology. 16(15.5%) people are absolutely unaware of it and the remaining respondents i.e. 13(12.6%) are not sure of embedded AI technology or

B5. Do you think AI enabled technology can enhance the capability of smartwatches ?
103 responses
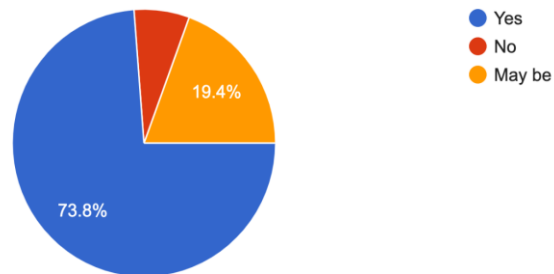
The chart reveals that 76(73.8%) out of 103 respondents reckon the case that AI-enabled technology can enhance the capability of smartwatches. 7(6.8%) divulged no as they do not believe that AI does any good to the wearable technology and 20(19.4%) are not sure and thus marked their response on maybe.

B6. Do you think health monitoring features in smartwatch are useful?
103 responses
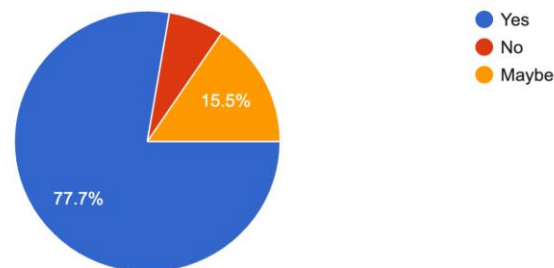
The chart gives credence to the health monitoring features in smartwatches. According to 80 (77.7%), respondents' health monitoring features are useful, 16(15.5%) opted for Maybe since there is skepticism related to the serviceability and a scanty population i.e. 7(6.8%) mentions that the health monitoring features are not useful in the smartwatch.

B7. Do you think AI enabled wearables like smartwatch can improve life quality?
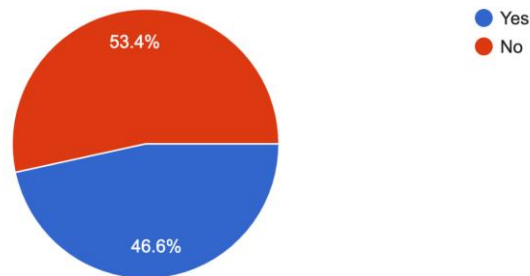103 responses
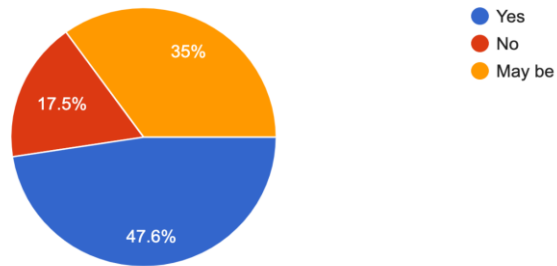
The chart tries to understand if AI-enabled wearables like smartwatches can improve life quality or not. 49(47.6%) respondents believe it to be true whereas 18(17.5%) deny the claim. 36(35%) respondents are still not sure whether AI-enabled smartwatches can improve quality of life or not.

C.Usage Pattern – Smartwatch technology is regarded as one of the most conducive tools for receiving instantaneous health informatics. Since then, technology has acquired prominence over the years all over the world. Thus, the third section of the survey emphasizes the usage pattern among the respondents.
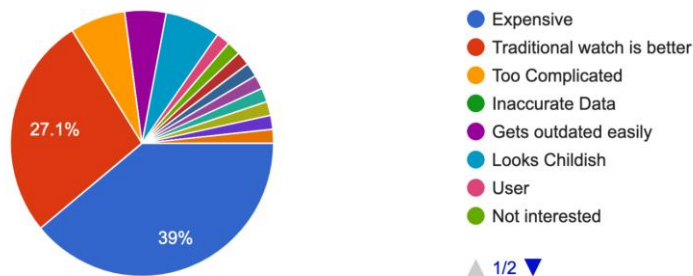
C1. Are you a smartwatch user?
103 responses

The chart reveals that out of 103 respondents only 48(46.6%) are smartwatch users, compared with 55(53.4%) of those who do not use a smartwatch.

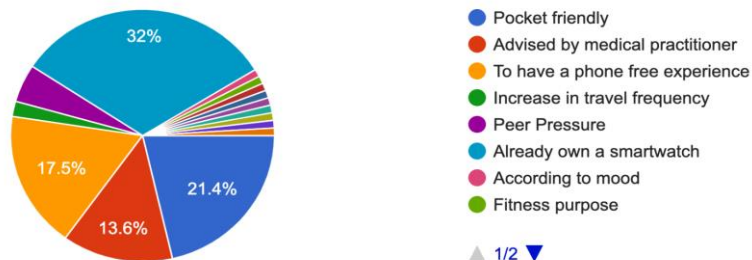## C2. If no, then what is the primary reason for not using a smartwatch?
59 responses

- ● Expensive
- ● Traditional watch is better
- ● Too Complicated
- ● Inaccurate Data
- ● Gets outdated easily
- ● Looks Childish
- ● User
- ● Not interested

▲ 1/2 ▼

The subsequent chart reveals the primary reasons for not using a smartwatch. The majority of the respondents i.e 23(39%) believe it to be an expensive gadget and thus it restricts their purchase. The second highest reason for not using a smartwatch is because 16(27.1%) respondents believe that the traditional watch is better, 4(6.8%) correspondingly point out that it is too complicated and looks childish, 3(5.1%) think it gets outdated easily. Notably, none of the respondents think that smartwatches present inaccurate data. However, 9 (15.3%) respondents have other reasons for not using a smartwatch like some of them are not interested, prefer wearing a smart band, or do not see any major utility of such a wearable technology.

## C3. Under what circumstances would you buy a smartwatch?
103 responses

- ● Pocket friendly
- ● Advised by medical practitioner
- ● To have a phone free experience
- ● Increase in travel frequency
- ● Peer Pressure
- ● Already own a smartwatch
- ● According to mood
- ● Fitness purpose

▲ 1/2 ▼

The chart put forward the possible circumstances for buying a smartwatch. 22(21.4%) respondents will only possess a smartwatch when it will be a pocket-friendly affair. 18 (17.5%) will buy to have a phone-free experience, 14(13.6%) will obtain if advised by a medical practitioner, 5(4.9%) respondents mark upon peer pressure, 2(1.9%) when there is an increase in travel frequency and 9(9%) have other reasons which can innervate them to purchase a smartwatch. The remaining percentage of respondents i.e 33(32%) already own a smartwatch.

C4. If you are a smartwatch user, then what is the duration of your use?
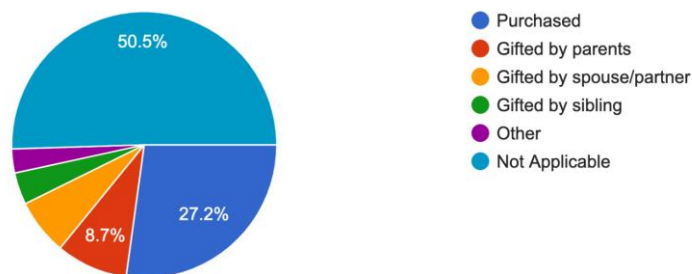103 responses
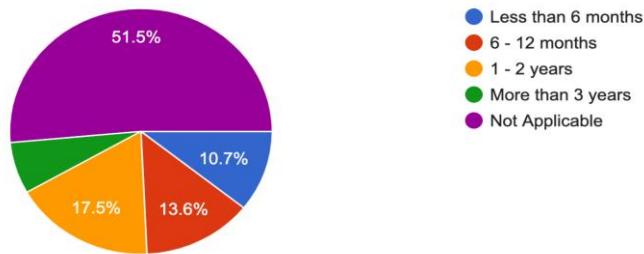
The chart reports the duration of smartwatch use among the users. The highest number of users i.e 18(17.5%) have been using a smartwatch for 1-2 years, 14(13.6%) from 6 - 12 months, 11(10.7%) less than 6 months, and only 7(6.8%) respondents are using it for more than 3years. The remaining respondents are non-users.
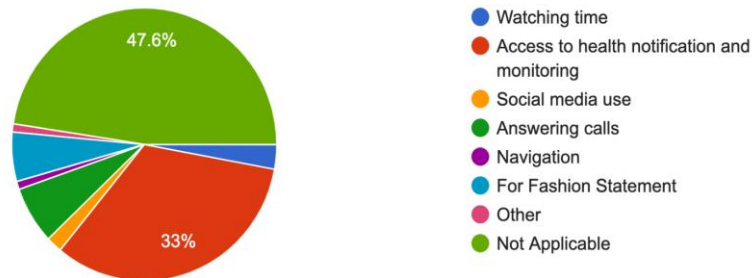
C5. How did you get the Smartwatch?
103 responses

The chart shows how the respondents got their smartwatch. The data highlights that the majority of the users purchased their smartwatch by themselves with 28(27.2%), 9(8.7%) got it as a gift from their parents, 7(6.8%) respondents got it from their spouse or partners and 4(3.9%) received it from their siblings and 3(2.9%) respondents received from other sources.
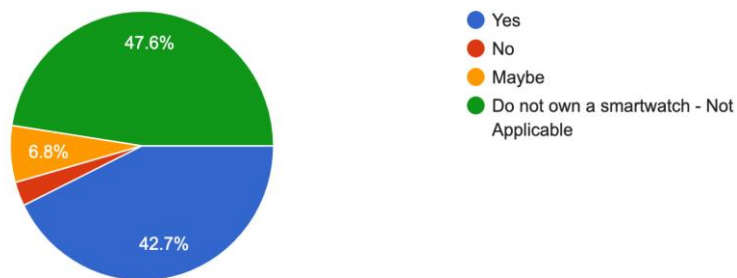
C6. Why do you use Smartwatch?
103 responses

Legend:
- Watching time
- Access to health notification and monitoring
- Social media use
- Answering calls
- Navigation
- For Fashion Statement
- Other
- Not Applicable

(Pie chart values shown: 47.6%, 33%)

The chart describes their reason for using Smartwatch. 34(33%) respondents use it to have access to health notifications and monitoring. The second highest reason for using smartwatches by 7(6.8%) respondents is for answering calls. 6(5.8%) respondents believe it to be a fashion statement. Only a small number of respondents i.e 3(2.9%) either wear it for watching time or 2(1.9%) for using social media. 1(1%) respondents use it for navigation and other purposes respectively.

C7. Does the Smartwatch helps you in tracking your health condition?
103 responses

Legend:
- Yes
- No
- Maybe
- Do not own a smartwatch - Not Applicable

(Pie chart values shown: 47.6%, 6.8%, 42.7%)

The chart comes out with the response to whether the Smartwatch helps in tracking the health conditions of the respondents. The data reports that 44(42.7%) out of the user population in the survey finds smartwatch useful in tracking their health informatics, only 3 (2.9%) respondents refute the claim, and the rest 7(6.8%) are not sure of its serviceability in tracking their health. 49(47.6%) respondents do not own a smartwatch.

## C8. How often do you use smartwatch for tracking your health?
103 responses
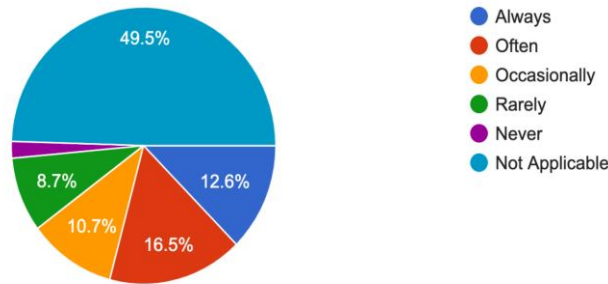
The chart specifically points out the frequency of using smartwatches to track health. The majority of the respondents i.e. 51(49.5%) are non-smartwatch users. Those who use a smartwatch confirms that they often use the smartwatch to track their health with 17(16.5%), 13(12.6%) use daily, 11(10.7%) using it occasionally, 9(8.7%) use rarely and 2(1.9%) own a smartwatch but do not use it to track health status.

## C9. Which health feature of the watch you like the most?
103 responses
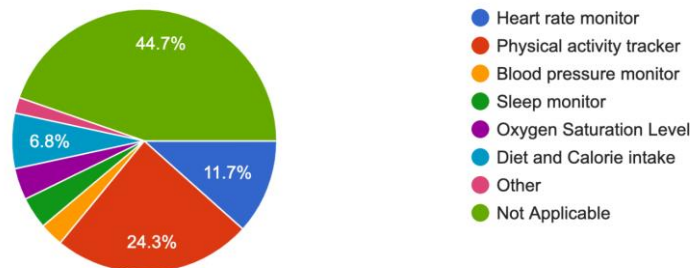
The chart identifies the health features of the smartwatch that the respondents like the most. The physical activity tracker is the most preferred health feature with 25(24.3%) respondents voting for it. The second preferred feature is the heart rate monitor with 12(11%.7), 7(6.8%) respondents like the feature of diet and calorie intake, 4(3.9%) prefer the sleep monitor feature. 3(2.9%) respondents prefer blood pressure monitors and 4(3.9%) oxygen Saturation Level features. 2(1.9%) respondents like other features of the smartwatch.

C10. What are the obstacles related to the use of health feature in smartwatch?
103 responses
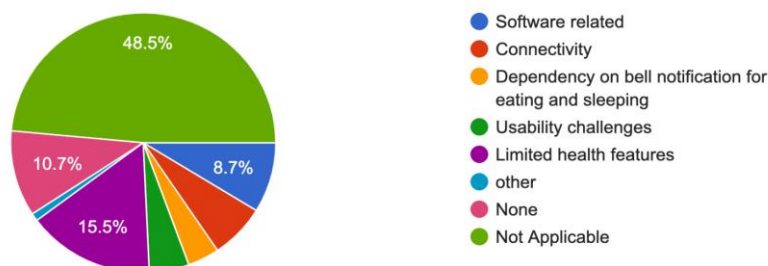
The chart reveals the obstacles related to the use of health features in the smartwatch. 16(15.5%) respondents believe that the smartwatch contains limited health features and hence it is the major reason for hindrance in its use. 9(8.7%) respondents face software-related issues which make the user experience abhorrent. 7(6.8%) respondents feel a lack of connectivity as another obstacle to smartwatch use. 4(3.9%) respondents accredited the dependency on bell notifications for eating and sleeping, 5(4.9%) the usability challenges as the obstacle related to the use of health features in a smartwatch, 1(1%) have other issues and 11(10.7%) respondents do not feel that there is any obstacle to the smartwatch use running health apps.

D. Effectiveness: The trend toward the usage of smartwatch technology is an indication of the global requirement to replace the traditional wristwatch with a technology that is AI-enabled and assists in health proliferation. In this regard, it is also imperative to analyze respondents' perceptions of the effectiveness of smartwatch technology for health communication and amelioration. Thus, this section attempts to develop an understanding of the effectiveness of AI-enabled smartwatches.

D1. Did the smartwatch help you in any way to improve your health?
103 responses
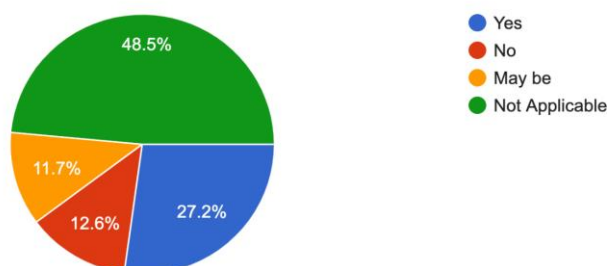
The chart unravels if the smartwatch helped the respondents in any way to improve their health. 28(27.2%) users believe that it helped, whereas 13(12.6%) refuted the statement and 12(11.7%) are not sure whether the smartwatch helped

in improving their health or not. The remaining percentage of respondents i.e. 50(48.5%) are non-users and thus the question is not applicable to them.

**D2. What benefit did you get after using a smartwatch?**
103 responses
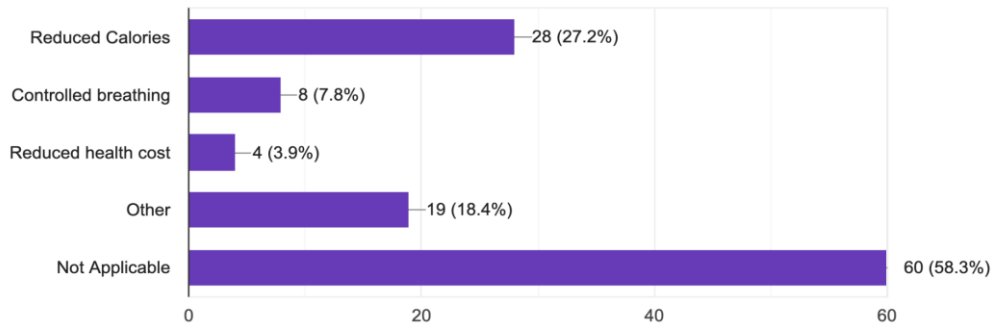
The chart presents the benefit that the respondents sought after using a smartwatch. Maximum respondents i.e. 28(27.2%) could reduce calories after using the smartwatch. 8(7.8%) could control their breathing, 4(3.9%) respondents believed that it reduced the health cost and 19(18.4%) received other benefits after using the smartwatch.

**D3. What do you do when your smartwatch gives a health warning?**
103 responses
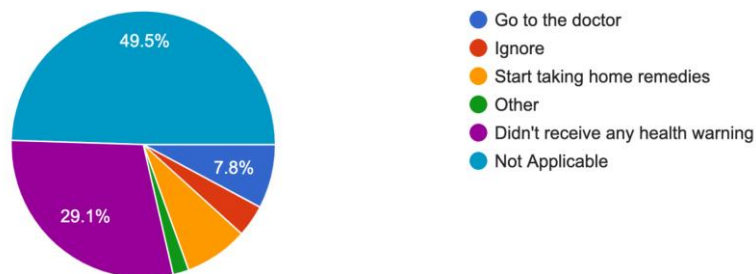
The chart presents the action of respondents when the smartwatch gives a health warning. According to 30(29.1%) respondents, the smartwatch did not give any health warning. 8(7.8%) go to the doctor or start taking home remedies respectively, 4(3.9%) ignore and 2(1.9%) do other things when their smartwatch gives health warnings.

D4. How reliable do you think your smartwatch is in tracking your health condition?
103 responses
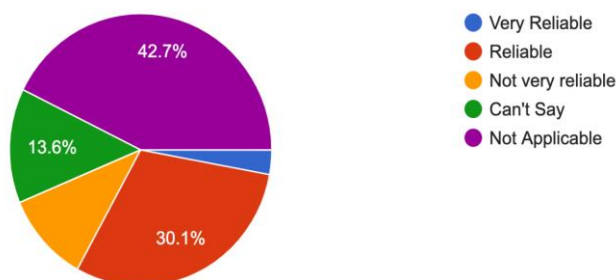
The chart presents the percentage of respondents who believe smartwatches are reliable in tracking their health condition. 31(30.1%) believe it to be reliable technology, only 3 (2.9%) mention that the technology is very reliable. 11(10.7%) feel that it is not very reliable and 14(13.6%) can't say anything. The remaining percentage of respondents have not used a smartwatch. Hence, cannot comment on its reliability.

Findings and Result

It has been reciprocated several times in a vast amount of research that the technology has stimulated the globalization process which made the standard evolution considerably fast. Using new technology like Artificial Intelligence (AI) in everyday social life will help in simulating one or more human behavior and capabilities. The very first stage of any AI-based technology must be interesting and effective to make sure that the people are able to make the best use of it in their respective domains. Thus, the result of this study shows that AI technology-based wristwatches are ascending in the consumer market particularly for communicating health information. This is because the manufacturers are able to engage the consumer's interest with the health services that are embedded in the smartwatches. This study shows that mainly people belonging to the age group of 19 -30 years are using this smartwatch technology for their health alerts. When we look at the gender of users, we found that males and females both are proportionately using AI-based health tracking system. This result is in stark contrast to the growing gender digital divide globally. As per the data, women are now increasingly purchasing digital technology and concurrently combatting the digital skill gap. The educational level shows that graduates are consuming more than 50% of this technology and people earning between Rs. 20000-40000 have occupied 70 % smartwatch market.

This study also shows that during the Covid-19 pandemic graphs of users rose exponentially which means that users are increasingly laying their trust on artificial intelligence for health related communication. Hence, this study shows that AI-based gadgets helps users to watch, record and maintain their health. Furthermore, the health information influence health decisions and promote

health education. Such health communication practice opens the pathways to health and social care especially in developing and underdeveloped countries.

Acknowledgements

Bibliography

1. Burgess, M. (2017). *The NHS is trialing an AI chatbot to answer your medical questions*. The Wired UK. Retrieved from https://www.wired.co.uk/article/babylon-nhs-chatbot-app
2. Househ, M., Borycki, E., & Kushniruk, A. *Multiple perspectives on artificial intelligence in healthcare.*
3. Kirstein, T., Tröster, G., & Lukowicz, P. (2004). Wearable Systems for Health Care Applications. *Methods of Information in Medicine*, *43*(03), 232–238. https://doi.org/10.1055/s-0038-1633863
4. Siddique, S., Chow, J. C.L (2021). *Machine learning in Healthcare communication.*MDPI. doi:10.3390/encyclopedia1010021