National College of Ireland

An exploratory study of Perception and acceptability by older adult Patients for a virtual consultancy from a technical and personal point of view in Mumbai.

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Abstract

In present times the healthcare industry is a crucial industry for society, with the increase in workload on this industry due to the pandemic and the changing working environment it is the necessity of time to dig deep into the various aspects of this industry. The whole paradigm and method of service in this industry have changed due to the present pandemic situation. Online medical consultancy has become a new fad nowadays. Evaluating the efficiency, efficacy and acceptance of this new system by the patients and patient party is a question to research and find the answer to.

The age group which has the maximum number of hindrances in shifting from the in-person to this new mode of medical consultancy is the elderly and 60+ age group, citizens. They are not that tech-savvy and have various difficulties in using these new technologies partly due to lack of education or inability to learn new things at this age.

To know this and to find the answer to these specific research questions we did a survey of close to 110 respondents, of the age group 60+ who are located in and around Mumbai. The location Mumbai was chosen because the majorly hit city due to covid-19 in Maharashtra was Mumbai. This in turn raised the number of patients going for online medical consultancy in Mumbai drastically and more prominently when compared to other cities.

The main focus of our study is to know the main factor in action for making online medical consultancy easy or difficult for the elderly population, especially in the 60+ years age group.

Submission of Thesis and Dissertation

National College of Ireland

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Date: 16/08/2021

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Chapter: 1

Introduction

Introduction:

The Healthcare industry is one of the most important industries in today's life. It is directly related to our life in several ways. Health and the associated industries act as the backbone of any country and its economy. So, the growth of this industry helps build a strong nation. This industry provides products and services which are useful to treat patients within a preventive, curative and therapeutic way. The organizations related to the healthcare industry play major responsibilities in the treatment, diagnosis and nursing of various diseases, and injuries. Also, they offer production of drugs, clinical services, and necessary machines, supply support services like health insurance etc. A large number of people are related to the healthcare industry like doctors, nurses, healthcare workers, medical administrators, pharmacists, medical equipment manufacturers etc. As our civilization progresses, health-related complications are increasing. To cope with those problems, the need for the healthcare industry is growing day by day. The players of this industry are modifying themselves to cope with the new challenges and problems.

This industry is growing at a significant rate and has very good future potential. Similar to other industries, technology plays a pivotal role in the growth of the healthcare industry. The application of innovation and technology is very much important for the growth of any industry. This industry is not an exception. Technology will help to increase the efficiency and accuracy of various processes related to healthcare, ease the working life of the people associated with it. Also, patients can be treated in a much better way. Both the diagnosis and treatment procedures can be made easier, simpler and more efficient than before with the use state of the art technologies. Earlier these procedures were very time consuming and the patients had to suffer a lot. Several times, the patients died due to improper diagnosis and treatment procedures. As the use of technology has improved these things a lot, the life expectancy of the patients has increased than before. A significant part of this industry consists of various services and modern digital technology can be of great use to enhance the quality of those services. The cost of diagnosis and various medical procedures has been reduced and it can be beneficial for both the companies providing services and the end-users i.e. the patients.

Nowadays, electronics and associated technologies are already widely used in this industry quite successfully. Digital technologies are also being used here. The mobile apps can also be used in the healthcare industry with proper planning in future. Mobile applications are very convenient to use and the number of users is very big. With the advent of android and iOS, our life has changed a lot. These have changed the way of working as opposed to what we did before. Companies have understood the fact that mobile apps are very necessary for the growth of their business. As a result, they try to present their products and services through their apps to the customers. In today's world, only having a web platform is not sufficient enough for various businesses. Having an efficient and functional app is a must to survive in a highly competitive market. Apps are installed in the mobile devices which we carry everywhere and use anytime we want. So, people find it very convenient to access and enjoy any service

they want via mobile apps. In several cases, mobile apps are more effective than web applications. If a company in the healthcare sector try to provide its products and services on an app-based platform, customers can find it very helpful. The things that were not possible to do in the past, can be done easily by using a mobile app. In several cases, the mobility of the patients is a huge problem. For example, it is very difficult for old patients to go to the doctor's place. Mobile apps can be very useful in those cases.

The application of AI, ML can widen up the scope and opportunities in the healthcare sector. Several critical works which are done by a human can be done very efficiently with the use of AI and ML. The power of cloud computing can add extra benefits to the businesses of the healthcare industry. The things which seem to be impossible nowadays can be performed with a minimum effort after the application of mobile apps in several fields of the healthcare industry. So, it can be said that mobile apps can open up a new horizon in the healthcare industry. In this research, we will try to find out how mobile apps can transform the healthcare industry and explore various benefits and opportunities resulting from the application of mobile apps in this industry.

Chapter: 2

Literature Review

Literature Review:

Mobile and smartphone-based healthcare is gaining popularity. The people associated with it are also benefited by it. The 'internet of people' is gradually transforming the entire healthcare industry into a mobile phone-based sustainable, value-based industry, called ''mhealth'' (Gita Khalili Moghaddam and Christopher R. Lowe, 2018). The entire digital technology is changing mobile phones and smartphones day by day. As the state of the art smartphones and the associated technologies are put in to the various fields of the healthcare industry, various processes in this industry are becoming more and more simplified. For instance, patients can reach the doctors, get proper consultation very easily by the use of smartphones and the applications installed in them (Dora, 2020). The use of sensors has facilitated the collection of various important data health-related of the patients. In several cases, the cost of the services has reduced a lot after the introduction of mobile phone-based technologies in the healthcare industry. Nowadays, mhealth is very much important for several organizations of this industry from the strategic point of view. The patient-centric solutions of health aim to enhance the convenience and standards of treatment to the patients.

The use of digital technologies and IT can influence and improve various business processes in the healthcare industry (Erena Laurenza, Michele Quintano, Fransesco Schiavone and Demetris Vrontis, 2018). The business processes of the organizations of the healthcare industry are somehow related to the services the patients i.e. the end consumers get. An improvement of the business processes in this industry will be beneficial for the patients. Healthcare processes are very complex and dynamic and a large amount of personnel are involved with them. As a result, a huge amount of data is needed to be managed day by day. So, an effective business process management system is very much needed. Business Process Management (BPM) is very much crucial for any business for gaining competitive advantages and adding value. Advanced smartphone-based digital technologies can help companies in this regard. It can bring new insights and facilitate higher performance. The study found that digital technologies have the potential of not only improving the efficiency of the healthcare services but also reducing the response time and improving the quality of the same. The use of medical digital devices and technologies can result in an innovative process management system.

The use of smartphones and tablets may play a major role in the self-management of various indications of long-term conditions (L. Whitehead and P. Seaton, 2016). The outcome of this study suggests that mobile phone-based applications can improve the conditions of health of people having chronic diseases. Further improvement in these apps and technologies will be more helpful for the management of the long-term conditions of the patients.

The mobile phone and the associated technologies are very much useful in managing emergency health conditions (Rani R. Shetty and G.S. Thyagaraju, 2014). Mobile healthcare is an outcome of the rapid uses of mobile

technology in today's world. Nowadays, monitoring of patients via mobile healthcare is not restricted only to hospitals. Smartphones and sensor-based technologies have given the facility of monitoring various health parameters continuously to all of us in a convenient way. Sensors can monitor various health-related data from our bodies and send it to the smartphone via Bluetooth. After that, the smartphone app will send data to the healthcare centre. Next, the medical experts in the healthcare centre can assess those data and assist the patients. In an emergency condition, this arrangement can save the life of a patient. The privacy of the data of the patients will be maintained. Not only that, but the patients will have an option if they want themselves to be monitored continuously or not. The overall scheme of this mobile phone-based healthcare system is described in this study in detail.

The recent advancements in mobile devices like smartphones, tablets etc. have the potential to improve the entire healthcare system (C. Chaudhary, J. Albertson, C. Andrews, A. Anglin, L. Bulloch, T. Dennison, J. Elder, C. Holliday, C. Lyron, E. Smith, R. Smith, and V. Gallicchio, 2014). The mobile has already impacted the entire healthcare industry and can enhance the diagnosis, treatment and therapeutic outcomes in a more positive way. The overall cost of various healthcare services can be reduced after the integration of the state of the art digital technologies in this industry. The study also reveals that mobile phone technologies can enhance the quality of care for patients without threatening their privacy of the patients. Various important works like communication between physicians, training of the healthcare workers etc. can easily be done by smartphone and tablet-based system.

Cloud technology is rapidly developing nowadays. Most of the businesses are adopting this new age technology in their businesses. This technology can be used effectively by physicians and healthcare organizations for various medical practices (T.C. Hsu, C.H. Chang, W.C. Chu, S.Y. Ho, N.L. Hsue and W.B. Lee, 2013). Sensors based technologies will be used for capturing real-time data from the patients which will be used by the medical professionals for further processes. The entire healthcare IT market can significantly affect the Geriatrics and Gerontology Healthcare System.

Cardiovascular diseases (CVD) are a matter of serious concern. These are very dangerous. A huge number of people die of CVD every year. So, an easy and early detection system for this disease will be very much helpful to mankind. Smartphones and smartphone-based technologies can be deployed for the early detection of CVD (J.J. Oresko, Z. Jin, J. Cheng, S. Huang, Y. Sun, H. Duschl, A.C. Cheng, 2010). ECG is used for the detection of this disease. But, the patients have to go to the clinics or hospitals for this purpose and face several inconveniences. Nowadays, we spend a significant amount of time with our smartphones. So, a patient can continuously monitor the condition of his/her heart by using this smartphone-based ECG solution and take prior decisions regarding

heart diseases. This study proposes smartphone-based solutions where the useful features of the heart monitor and the potential of real-time processing of resting ECG machines will be there.

As per the World Health Organization (WHO), a rising trend of chronic diseases has been observed over recent years and these ailments are the major reason of death in the globe. So, the number of deaths are also rising proportionately. Nowadays, mobile phones are being extensively used by us. Not only that, but its popularity is also increasing day by day. As a result, mobile phones are also used in various healthcare services. These devices can be used for the early detection of various chronic diseases (Hao Wang and Jing Liu, 2009). Several technical works can be easily done by these devices. Sensor and communication technology are the two major digital technologies that are used in the healthcare industry (Kaur, 2020). Also, mobile phones are very much effective in the delivery of healthcare services and the personal health promotion. Several technical approaches causing patented mobile phone-based healthcare services have been discussed. In some cases, the existing medical devices are modified with additional features with the help of the previously mentioned technologies. The study discussed the future projection of these things also.

The significant improvement in mobile handheld technology is helpful for doctors because they get access to the required information at the right time (Mirela Prgomet, Andrew Georgiou and Johanna I. Westbrook, 2009). An application like Personal Digital Assistant (PDA) can be developed for smartphones. As per this study, these PDAs have the potential to improve rapid response, prevention of errors, management of medical data and accessibility. PDA is very much helpful in cases, where time and rapid response are very crucial. Sometimes, it is very difficult for the doctors to reach the patient's place at the proper time. These types of applications can be very helpful in those cases. The application of these mobile phone-based technologies has a positive impact on healthcare delivery also. But, some planning is needed to implement these practices in the real world scenario.

The mobile healthcare solution can ameliorate the condition of the existing healthcare industry. The challenges of all the major four sections of this industry i.e. technology, service, finance and organization can be mitigated to a great extent by the use of this mobile phone and smartphone-based platforms (Y.Y. Shieh, F.Y. Tsai, A. Anavim, M.D. Wang and C.C. Lin, 2007).

So, it was found that mobile and smartphone-based technologies are very much useful in managing various healthcare-related issues (Meshram, C., Lee, C.C., Meshram, S.G., Jagdish, R. and Meshram, A., 2020). These technologies are already being successfully used in many parts of the globe. Various studies have also found the future potential of mobile and the smartphone-based healthcare system. As time progresses, the scope and application of this type of healthcare system will increase.

Search engines happen to be the first stop for many persons looking for health tips. A study by Pew Research found that of online health seekers, more than 70% started with commercial search engines (Fox & Duggan 2013).

The most common Internet health information searches included searches for information about specific health conditions or medical issues (55%), disease treatment (43%), and weight control (27%) (Fox & Duggan 2013). Similarly, White and Horwitz report that approximately 42% of Internet searchers have searched for at least self-diagnostics (Ryen & Horvitz 2009). People reported the success of online health searches. Ingress to good-quality online information related to health can assist people better know their health, make sophisticated decisions about ingress to services related to health and options for treatment, and assist in testing of hypothesis and differential diagnosis (Qing et. al., 2014).

Searching online for the data related to health, however, doesn't come back without risks and struggling. The quality, entireness, trustworthiness, convenience and presentation (understand ability) of online information related to the health changes across the websites. Folks looking out during this context usually make enigmatic and underspecified queries, that successively aren't effective (Keselman et. al., 2018). People's previous medical information affects their potency in composing queries related to the health. In addition, this earlier knowledge might not be essentially correct, though they believe on it, alongside previous ill-health circumstance, as a guide for self-diagnosis. Lastly, most of the time, the seekers for health related information are susceptible to several biases, e.g., availability, anchoring, these biases cause wrong elucidation of search results related to the health (Frederick, et al., 2012).

Research problems and aims of research:

As the use of online consultancy has grown exponentially due to the present pandemic worldwide, it is very necessary to know the perception and acceptability of this mode of medical consultancy more specifically in the 60+ age group. For this we would like to know two criteria i.e; subjective perception and technical viability of the process from patients and patient party of 60+ age group. This area is very new and untouched by researchers till now. There is a wide gap at present in this area regarding the acceptance or meeting of the pre perceived level of satisfaction which is expected by the receiver (patient/patient party) in the medical field. By our research, we would like to find and observe these two areas i.e.; subjective perception of quality and technical acceptability from the point of view of our target group.

The main research questions for our study are:

- How does the perception and acceptability of the patient and patient party affect the accessibility of medical consultancy online?
- What are the major factors in making online medical consultancy services more accessible in the senior citizen age group (60+ age group)?

More detailed and expanded reasons and elements in the two major questions mentioned above are shown in the analysis and findings chapter.

Methodology:

Healthcare is not the same as any other product that a consumer buys. It is far more than that for a consumer as well as for the service providers including doctors and the supporting staff.

This is also seen in the laws and regulations framed to regulate this service industry. There is the presence of medical licenses, quality control, and malpractice law for this industry. But in the present situation when the dimensions and limits of medical consultancy are changing somehow every day, we need to understand how and to which extent this mode is effective.

We believe that the role of internet and mobile applications have given a boon to this mode of consultancy but, does it meet the perceived or technical level of quality is the question to which we need to find the answer. Along with this, we would also try to analyze whether online consultancy gives the level of satisfaction to the patient in comparison to the traditional face to face consultancy.

For this, we plan to do an in-depth interview of the patients of the 60+ age group based on the factors mentioned above, followed by a structured questionnaire to analyze this scenario both in qualitative and quantitative terms.

The population for our research topic is the patients of the 60+ age group in Maharashtra. The sample will be from patient groups in Mumbai. The reason for taking Mumbai for the sample is that this was the very region that was in the media in the recent past for its growth in online medical consultancy during the rise of covid-19 cases.

Materials and Methods Used in survey

Survey design

A standard form was forwarded to older with the assistance of common contacts and online mediums in Mumbai, India. The survey for this research was done between June 2021 to July 2021. The sole criteria of inclusion were being present over the age of sixty years. Participation in this survey was voluntary. Also, obscurity was permitted. All participants of this survey obtained written info describing the goal of this study and the process of their information. No distinguishing data apart from age, gender and education were composed. Hence, it can be assumed that the data are anonymous and also the Indian data protection rules don't apply. Also, the native committees of ethics of all taking part centres have proclaimed normal waivers for surveys with data which are anonymous. By filling up the questionnaire, participants consented to the utilization of the info provided by them.

Questionnaire

1. Gender: Male ☐ Female ☐

2. Age

3. Annual family income:

☐ Under Rs 5,00,000

☐ 5,00,000-10,00,000

☐ 10,00,000-15,00,000

☐ 15,00,000-20,00,000

☐ above 20,00,000

4.What is your highest level of education?

☐ Less than high school

☐ High School degree

☐ Some college or Technical Degree

☐ College Degree

☐ Post-Graduate Degree

☐ Other

5. Do you or your family have a home computer?

☐ Yes ☐ No

If not, have you ever used your computer to search for information on the Internet?

☐ Yes ☐ No

6.Do you believe the Internet could be used to find medical information that will be useful to manage your health care?

a. Yes

b. No

c. I do not know

7. For making a video call:

a. I do it myself

b. Someone else does it for me.

8.What stops you from using online medical consultancy regularly?

☐ Do not have easy access.

☐ No desire to use one.

☐ Too time consuming to learn how to operate.

☐ Had no need to use one.

☐ Had no opportunity to learn how to use.

☐ Other _____

9. There are no correct answers to these statements. They are designed to permit you to indicate the extent to which you agree or disagree with the ideas expressed. Circle the answer that corresponds to your feeling toward the following statements:

Strongly Agree **Slightly Agree** **Slightly Disagree** **Strongly Disagree**

a. I am not good with computers.

b. I plan to take online consultancy next time I need to visit a doctor

c. My level of satisfaction with online medical consultancy is high

d. I have a positive perception of the effectiveness of online medical consistency

e. Online media gives effective doctor-patient communication

f. The effectiveness of online consultancy in disease diagnosis is good.

g. I can gather information to facilitate accurate diagnosis by the doctor in online media

h. The effectiveness of online consultancy in establishing caring relationships with patients by a medical professional is positive

i. You can understand the instructions and recommendations given by doctors over the internet

j. Doctors in online media seem to be empathically connected with the patient.

k. Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue

l. I check the online rating of the doctor before online consultations

m. A high positive online rating is important for me to try a new doctor.

n. A high number of degrees of a doctor is necessary for me to consult a doctor online

o. Experience of the doctor is important for me to consult a doctor online

10. Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:

a. ☐ Medical consultancy using telecommunication media

b. ☐ In-person consultancy with the doctor

Chapter: 3

Theoretical Framework

Functional literacy is a key factor for older adults to access healthcare online. With growing age and the pace at which the technology changes gives little scope for these older adults to keep along (Baker et al, 2000). In present times, several works have been done to make it easier for the older persons to access health websites with the help of tutorial videos and simple instructions (Xie et al, 2011). Older adults when compared to younger adults are not good at formulating search queries which would lead them to the correct websites for health care services (Sit, 1998). Older adults are more likely to use direct links to a web page as they are comparatively easy to access, are more visible to them and happen to be less complicated to do.

Technology and the internet boon have had a great impact on how the medical care process is changing recently and especially in this pandemic era (Adeli, M., Bagheri, N. and Meimani, H.R., 2021). The increasing number of internet users and also the senior citizens in India has given the opportunities for the health sector to cater to the needs of this section of the society more efficiently and most importantly: quickly by saving the travelling time and risks.

Older adults comprise a significant portion of a rising trend of health end users using the power of internet as a resource for information related to health, this movement is linked to the creation of participatory or health models related to the consumers that increase the rights and liberty of older people. their conditions and treatments, government efforts to contain costs, reduce doctors' time to patients, an importance on prevention and self-care and a grown interest in a substitute propositions to health care (Cline & Haynes, 2001).

Popular health topics on the Internet consist weight, alternative medicine management, disease control and treatment, prescription drugs, affordable therapies, and health promotion products (Korp, 2006).

It is very necessary, therefore, to outline packages for aged people in order that they'll benefit from the abilities and ability to use the benefits of Internet generation which can make higher contributions to their independence, health, protection and wellbeing (Hill & Weinert, 2004). Although the number of aged persons using the internet for health consultancy and advice has increased, many users lack the expertise to see the standard of information related to heath on the net (Rideout et al., 2006). One reason for this can be the stereotypical expectation that older adults or senior citizens will be less responsive to new innovation and the present technology, leading to fewer interventions for this population group (Wagner & Jimison, 2003).

With the introduction of new technologies for the elderly, resources on information of health specifically designed for this age group have exploded. The data available on some of these websites has been thoroughly researched and tailored to the needs of the elderly (Taiwo, O. and Ezugwu, A.E., 2020). MedlinePlus and NIHSenior Health

are useful resources on health covering a huge number of matters from the ageing process to preventing falls and diseases which are common and conditions particularly related to ageing. According to the recommendations of these institutions and other health bodies, Professional companies, commercial and societies websites have begun to evolve and market their own websites containing health related information for the elderly to meet the needs of community information on health and lifestyle. This has led to the emergence of a large number of resource directories, which are only suitable for the elderly and the health problems of the elderly.

Although there are a few research articles discussing the effectiveness of elderly Internet use, the science and comprehension behind this idea have not been fully studied or established. No empirical study can be found out to summarize what the Internet's cognition and impact are. The effectiveness of the elderly and how this behaviour, in turn, affects behaviours which promote health.

We by our study aspire or plan to analyse this and try to clear out the view to see how easy it is for older adults to access online medical consultancy. What are the hindrances they face and scribe out suggestions which can be implemented to make this an easy and beneficial process for the elderly adults and the medical staff?

From now on, in order to establish evidence-based medicine practices, it is relevant to determine the factors that lead to specific health behaviours, in this case, computer confidence, computer self-efficacy and computer anxiety. which till present is only in its initial phase. Exploring the link between the effectiveness of the Internet and the health literacy of the elderly will reveal a series of feasible solutions for health professionals to design and develop materials related to promotion of health and information on health that fully meet the needs of the population, thereby promoting better health and in turn increase the reach of medical service to the home of patients.

The trend of obtaining information on the Internet is an inseparable part of our society, regardless of age, race or ethnicity (Vázquez-de Sebastián, J.; Ciudin, A.; Castellano-Tejedor, C, 2021). The Internet is known for its effectiveness in providing health information on a global scale. Health information is one of the most searched topics on the Internet today. Credit for this can be given to the pandemic and the basic nature and requirement of the masses to understand the symptoms and precautions for a disease. This creates a habit in the minds of the public to look online for solutions that can help them in proper health management (Marcussen, L., & Marinus, J. 2021).

People aged 50 to 64 report that they have 24% more choices for health information online compared to traditional information from books, television, radio, and newspapers (Kaiser Family Foundation, 2005).

When it comes to health-related decisions, the need for information will increase because older people are especially active health consumers (Abugabah, A., Nizamuddin, N. and Abuqabbeh, A., 2020). Many elderly people learn the uses of internet and computers only because they want to have answers to their medical problems. According to reports, this group of computer-savvy seniors are better able to cope with their illnesses and treatments, make proper decisions about their care of health, and this behaviour gives rise to a system in which they are able to manage their health more effectively (Cotten & Gupta, 2004).

The hindrances

Although technological advances with internet access have increased in the past decade and health information can be provided to consumers on the World Wide Web, there are still potential shortcomings. Not all citizens or senior citizens who use information of health of consumers on the Internet can appreciate the information they receive. Since relevant subtle advertising and marketing gimmicks can subconsciously endanger their own health, it is necessary to draft intervention plans so that the aged persons can acquire the skills and abilities to obtain reliable information and thus make a greater contribution to their health (Hill & Weinert, 2004).

The Internet can market itself as a powerful tool, and it is expected to expand its ability to provide information to low-income groups (such as people with disabilities, people in remote areas which now thanks to better connectivity have access to the internet, and people with socially stigmatized health problems). However, the extent to which technology and the Internet have penetrated socio-economic societies is still questionable.

Chapter: 4

Analysis and Findings

Hypothesis build-up:

Null Hypothesis

1: H0: There is no significant statistical relationship between Gender and the history of using the internet to search for information.

2: H0: There is no significant statistical relationship between Gender and the ability to make a video call.

3: H0: There is no significant statistical relationship between Gender and choice of going for an online or in-person consultancy.

4: H0: There is no significant statistical relationship between Gender and the respondent being good at using computers.

5: H0: There is no significant statistical relationship between Gender and him/her being comfortable about consulting a doctor online.

6: H0: There is no significant statistical relationship between the level of education and him/her having a history of using the internet to search for information.

7: H0: There is no significant statistical relationship between the level of education of the respondent and the ability to make a video call.

8: H0: There is no significant statistical relationship between the level of education of the respondent and the choice of going for an online or in-person consultancy.

9: H0: There is no significant statistical relationship between the level of education of the respondent and being able to use computers.

10: H0: There is no significant statistical relationship between the level of education of the respondent and being comfortable about consulting a doctor online.

11: H0: There is no significant statistical relationship between the age of the respondent and him/her having a history of using the internet to search for information.

12: H0: There is no significant statistical relationship between the age of the respondent and his/her ability to make a video call.

13: H0: There is no significant statistical relationship between the age of the respondent and his/her choice of online or in-person medical consultancy.

14: H0: There is no significant statistical relationship between the age of the respondent and him/her being good with computers.

15: H0: There is no significant statistical relationship between the age of the respondent and him/her being comfortable about consulting a doctor online.

This section gives us an overview of the data collected

Statements of respondents in the interview process

Health at my age is the biggest concern which my children hold. Being a patient of heart and kidney disease it is very crucial for me to consult my medical professional regularly. This pandemic made me stay at home for a very long time. During this time my regular visits to the doctor were postponed indefinitely. The online medical consultancy was a thing which I have never used before and I felt initially challenged in availing the facility. In the beginning, my son and grandson helped me to do the video calls with my doctor. People need to understand that at my age (65 years) it becomes difficult to learn new things.

I am a single person living in this metropolitan city. My only contacts are my maid, buildings watchman and my doctor. When this pandemic started, every other doctor in town started to practice their consulting profession online. It became very difficult for me to learn this form of doctor visits. I don't even use a smartphone because of its complications. I only have a feature phone and an old computer which belonged to my late husband. The medical staff at my doctor's clinic were kind enough to guide me step by step to come over a video call from my computer. In the end, I am still doubtful about the efficiency of this mode of medical consultancy.

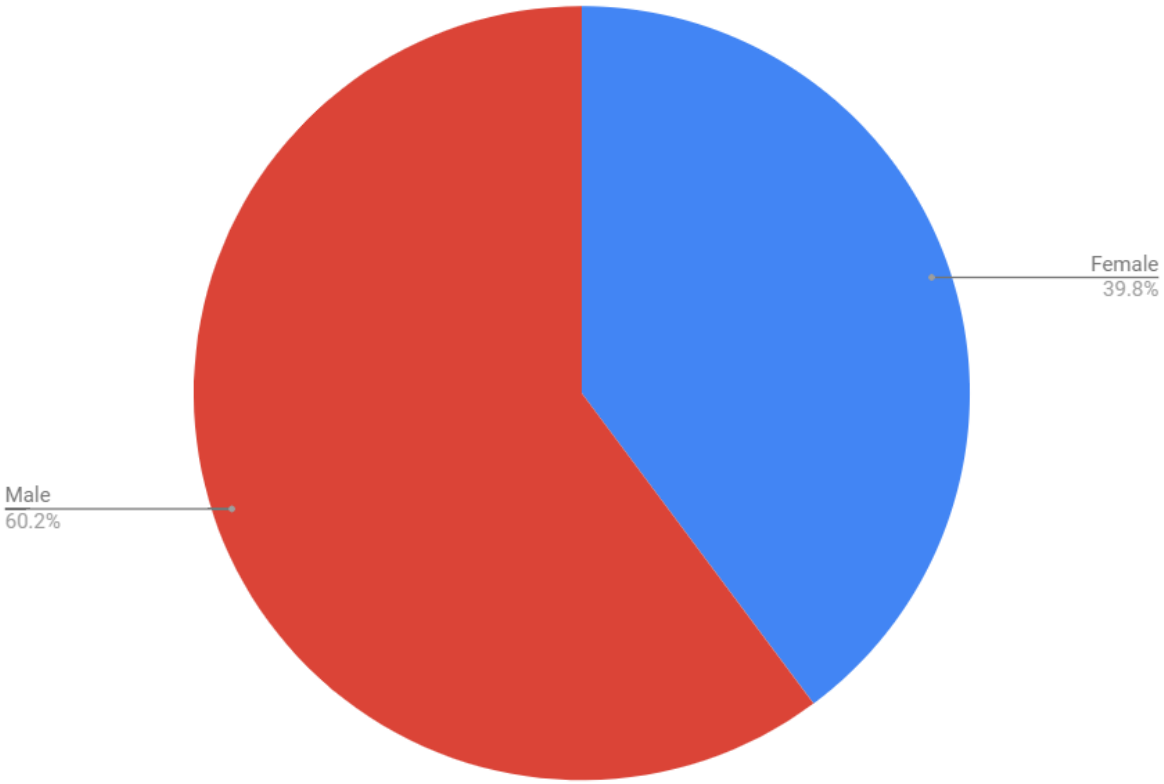
My wife had recently been through bypass surgery. She was recovering from this just when the second wave of covid-19 started. I was very scared and concerned for her health because she had comorbidities. Online medical consultancy came as a blessing to us. I was a bit relieved that now we don't have to risk our lives and go out just to visit our doctor.

At 68 years, I still don't have any age-related illness. One thing which I do regularly to keep myself healthy is to constantly attend my yoga classes. Due to lockdown and restrictions imposed due to the spread of the virus my yoga classes also got cancelled. For the initial days, I tried practising yoga at home by myself, but I was not getting the experience that I used to get with my trainer. Thankfully my trainer started giving online classes. This mode might not be comparable to the real classes but still, it is better than nothing.

My wife passed away last year due to the covid-19 disease and the comorbidities she had. After that, my son became extra curious about my health. We don't have access to major hospitals as we live in a suburban area. Earlier also when things were normal before the pandemic we had to travel close to 30 km by road to reach the closest hospital. I believe that this mode has brought the world closer by giving the opportunity and access to everybody to get a consultation from a doctor irrespective of where they stay, either close or far they still can get help from a doctor.

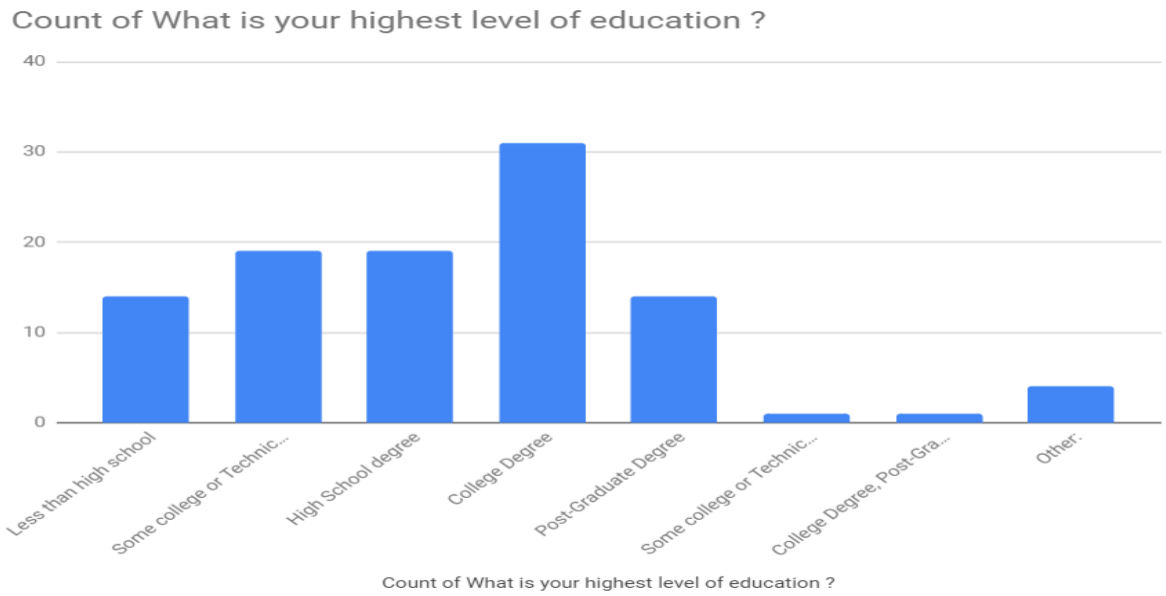
Representation and analysis of data collected

Gender



Out of a total of 103 responses received 62 were received from males and 41 were received from females. This ensured that our survey questionnaire reached the respondents without any gender biases.

Highest level of education



From the responses received the majority were individuals who have a college degree the 2nd most common topmost level of education was a degree in high school or some technical degree. The exact number of individuals having a different level of education is given below.

Less than high school: 14

Some college or technical degree: 20

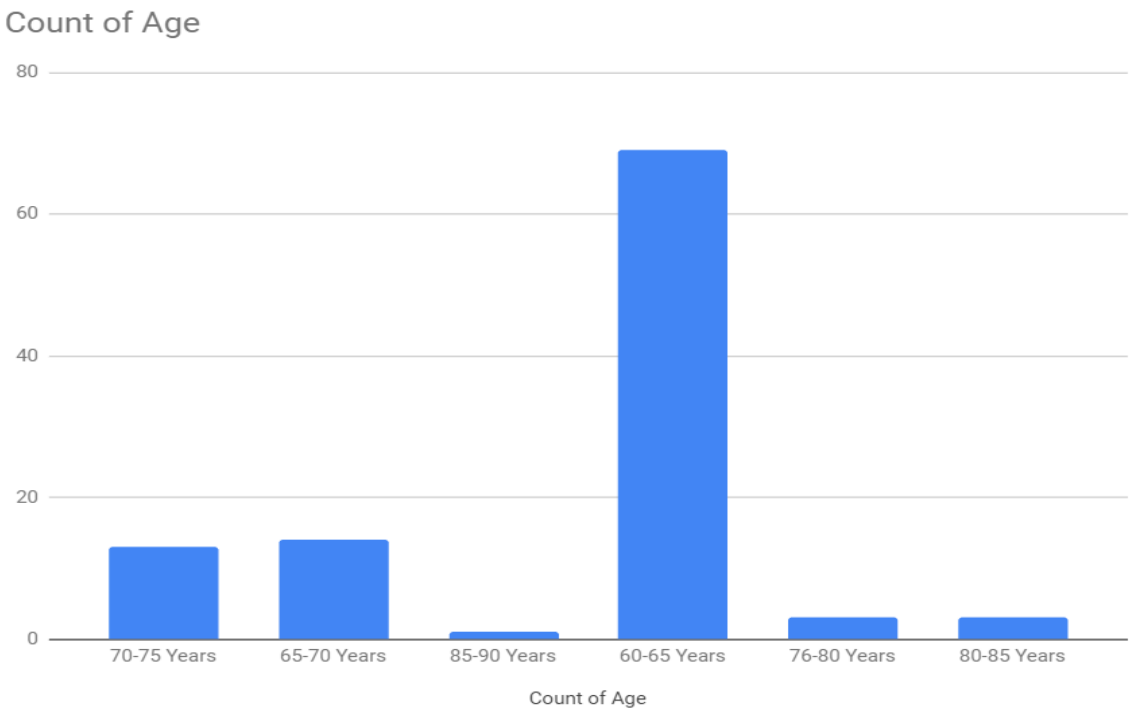
High school degree: 19

College degree: 32

Postgraduate degree:13

Other: 4

Age

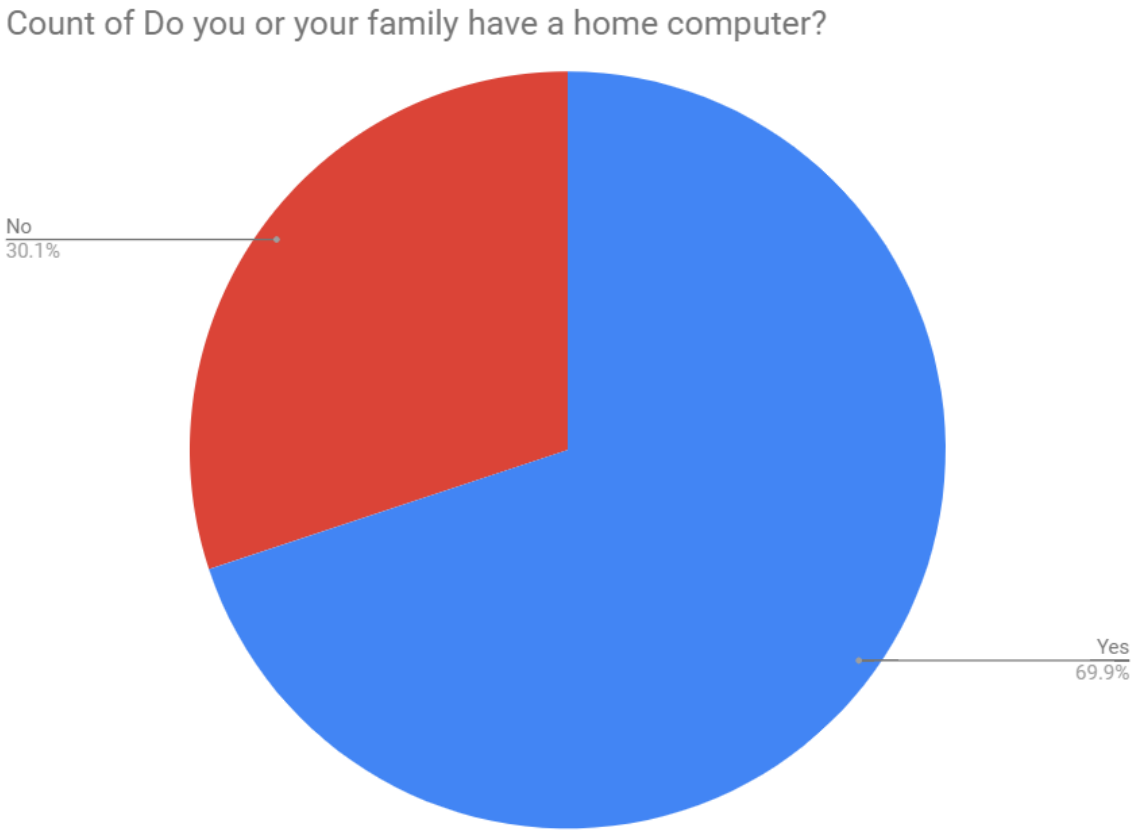


The majority of respondents were from the age group 60-65, the second most common group was 65-70 which was followed by the 70-75 years age group.

Age group count:
60-65 years: 69
65-70 years: 14
70-75 years: 13
75-80 years: 03
80-85 years: 03

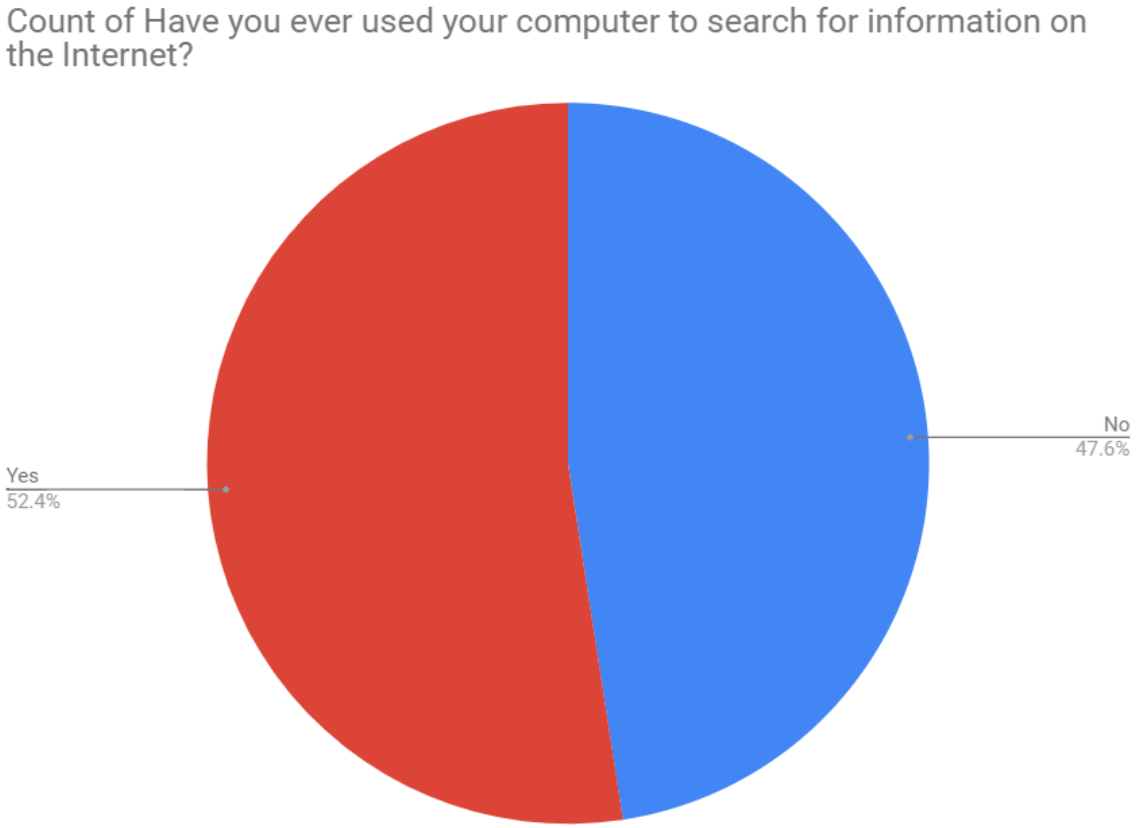
The reason for the majority of responses coming from the 60-65 years age group can be linked to old age diseases and deaths which reduces the population of the higher age groups.

Count of the respondents having a computer at home



In our responses, it was seen that 69.9%(72) of the individuals have a computer at home but 30.1%(31) stated that they don't have a computer at home. This shows that still there is a wide population which does not have access to a computer at their homes.

Have you ever used a computer to search for information on the internet?



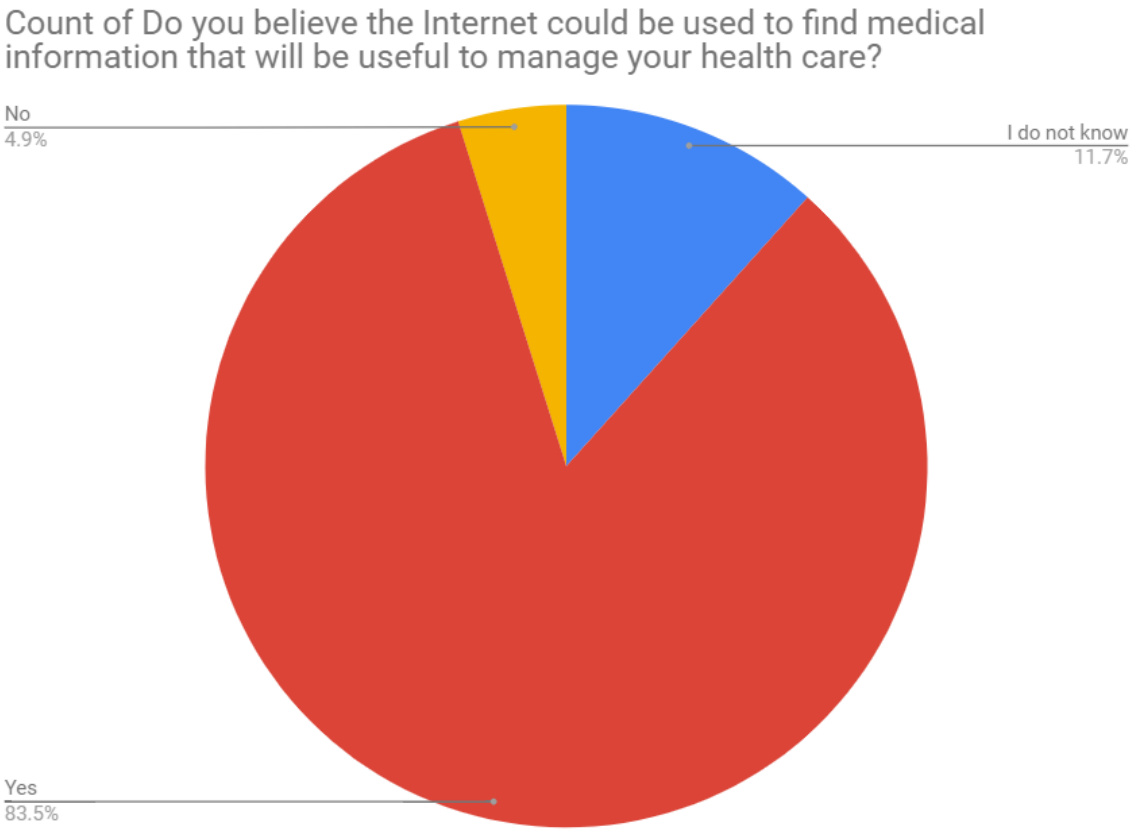
When observing this pie chart, we can see that nearly 50% of the respondents have not used computers to inquire into information on the internet.

Used computer to search information over the internet: 54(52.4%)

Never used the computer to inquire into information over the internet: 49(47.6%)

There still exists a digital divide in the population. A major chunk of the population is not used to searching information over the internet. Educating and training them at this age is a difficult task to take on.

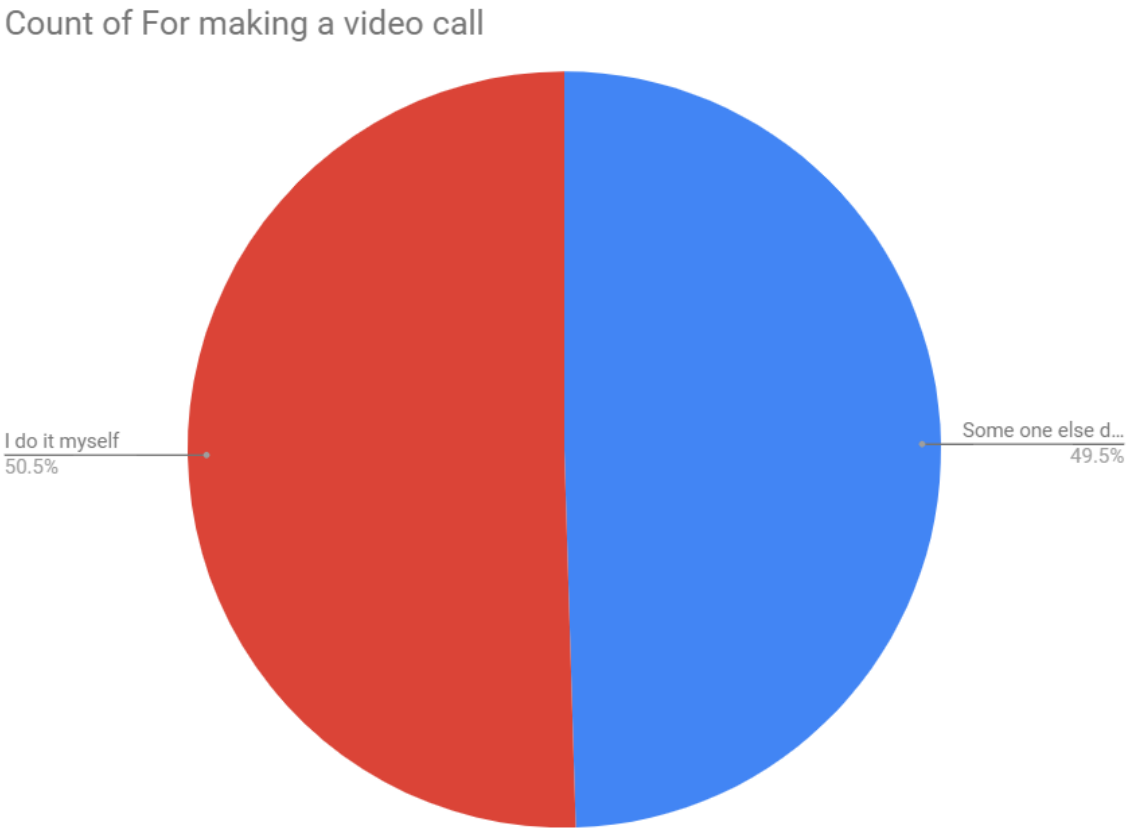
Do you believe that the internet can be used to find medical information that will be useful to manage your health care?



This pie chart shows that even though a big chunk of the population has never used the internet to inquire into for insights and information, the majority believes that it can be used to find medical information to manage their health care.

83% (86) of respondents replied with a yes when asked if they think that the internet can be used to gather information about their health care. 4.9% (5) replied with a “No” when asked the question and 11.7%(12) replied that they don't know or are uncertain.

Who makes a video call for you?



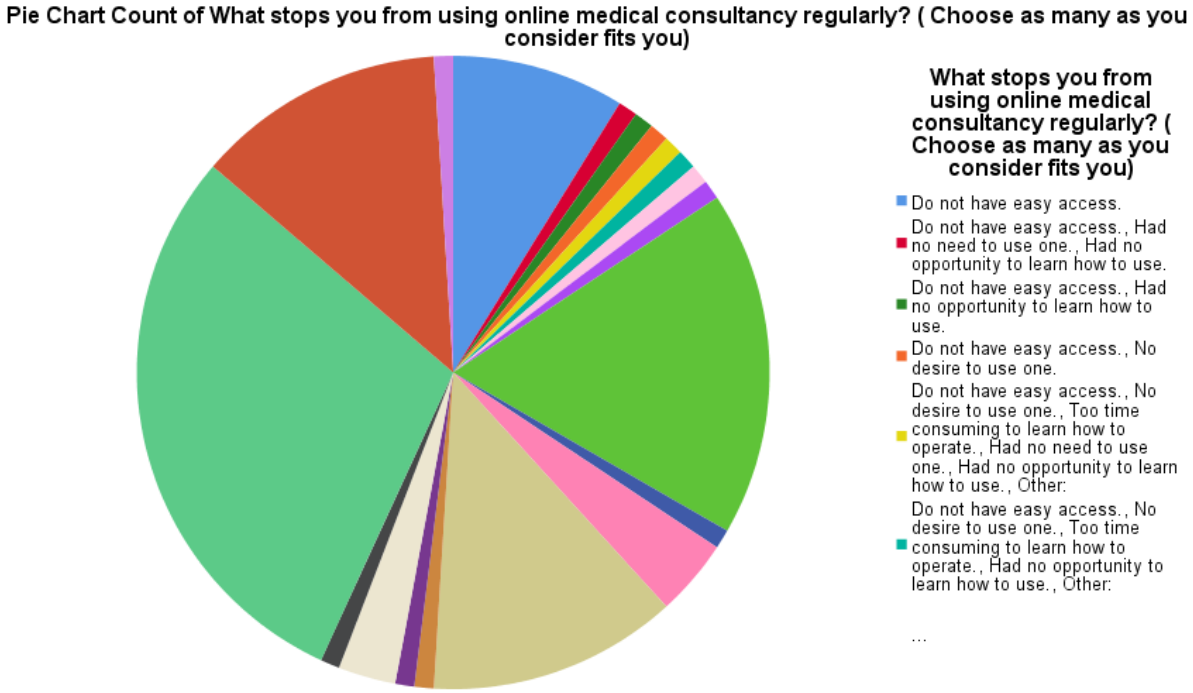
When asked about who makes a video call the response was as follows:

I do it myself: 50.5%(52)

Someone else has to do it for me: 49.5%(51)

Half of the population is accustomed to making a video call while the other half needs someone's help to make a video call.

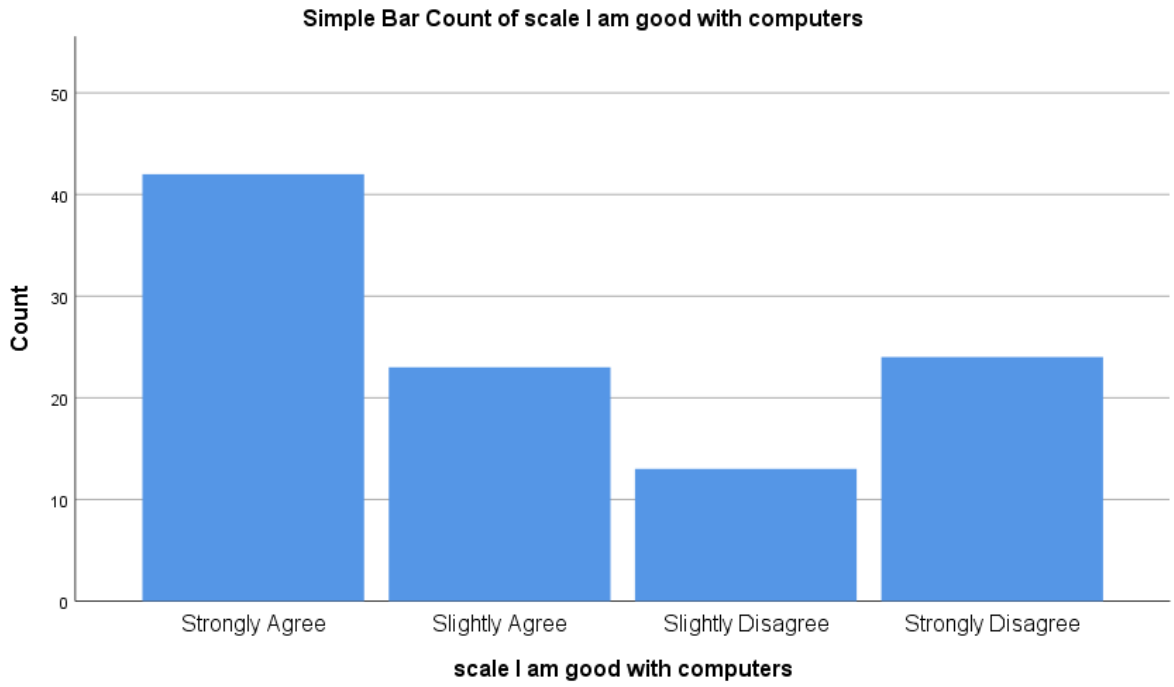
What stops the population from using online medical consultancy.



When asked what stops you from using online medical consultancy the prime reason chosen was that they do not have any access, have no desire to use one, it is too time-consuming to learn how to operate and have no opportunity to learn how to use it.

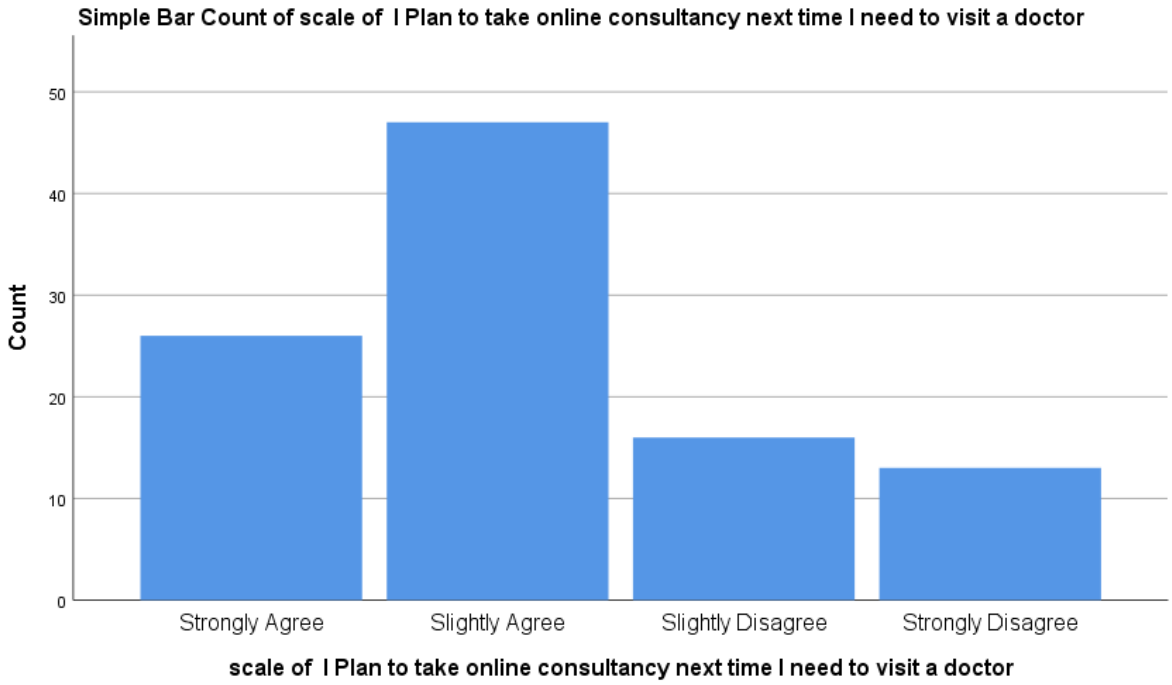
The majority of the respondents chose the above reasons for their inability to access online medical consultancy.

When asked to rate the scale on the statement: I am not good with computers the responses revealed that most individuals of the research population are not good with computers. The responses are summarised below in the graph.



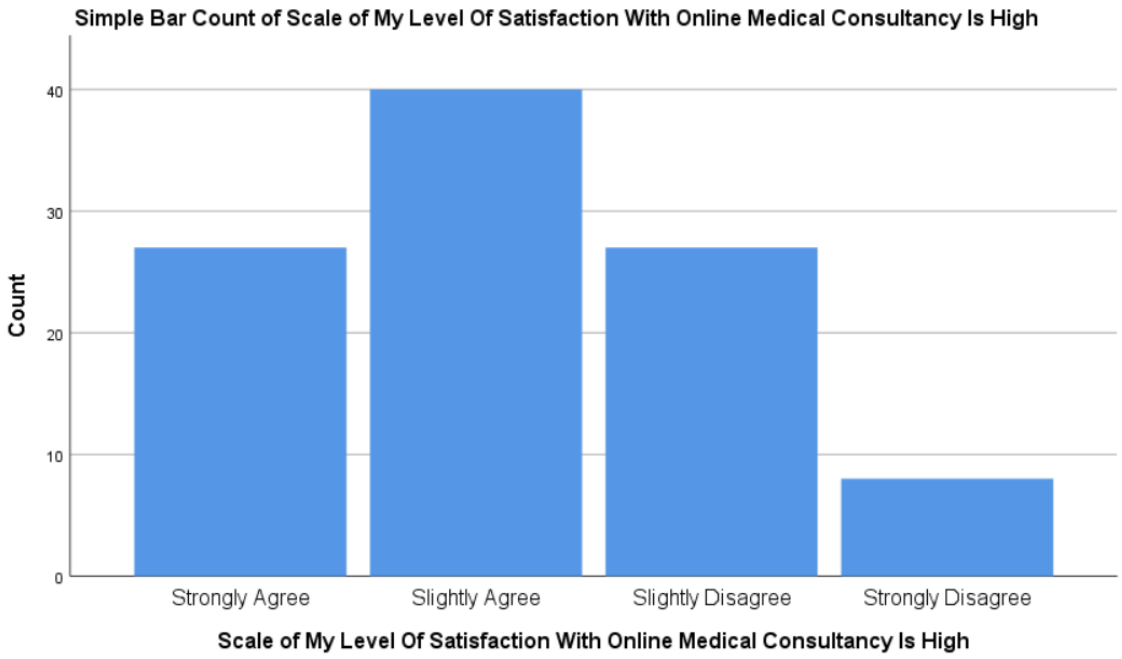
The highest frequency of responses came in the Strongly Agree option. This shows that most of the elderly population is not comfortable using computers.

Do you want to take online consultancy next time you need to take medical consultancy?



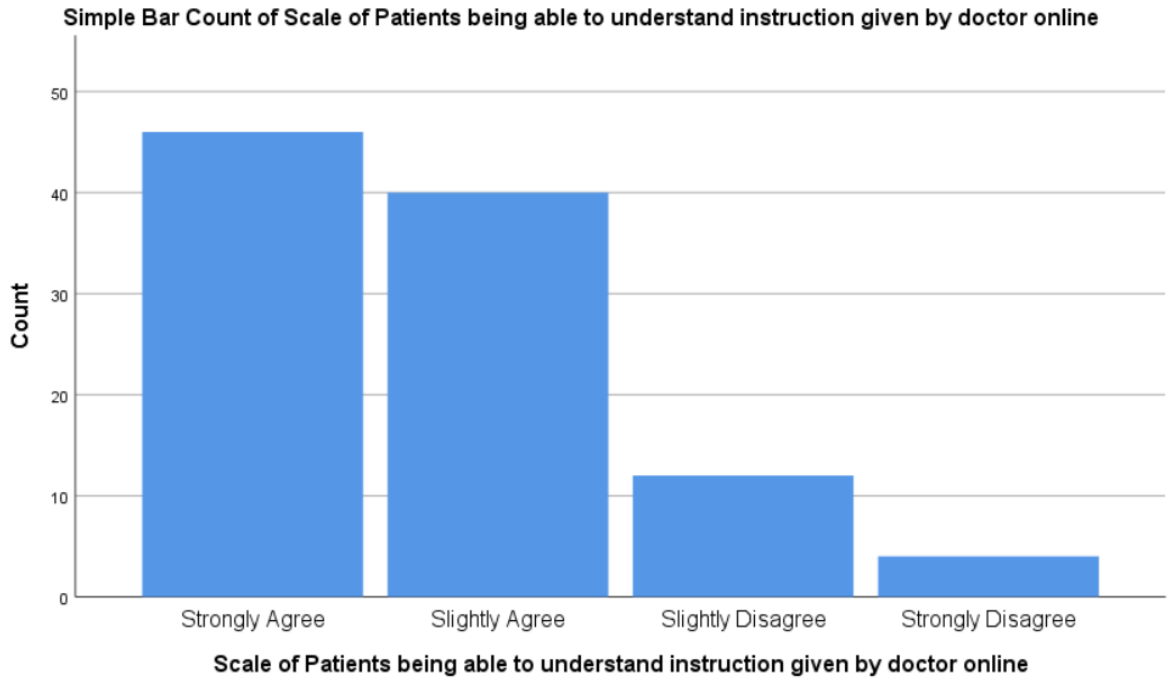
When asked about their preference on taking an online consultancy next time you need medical consultancy. The majority replied with the slightly agreed option, this shows that there is a slight hesitancy in the mind of the population to use online medical services for their medical consultancy requirement.

Level of satisfaction with online medical consultancy among the sample group



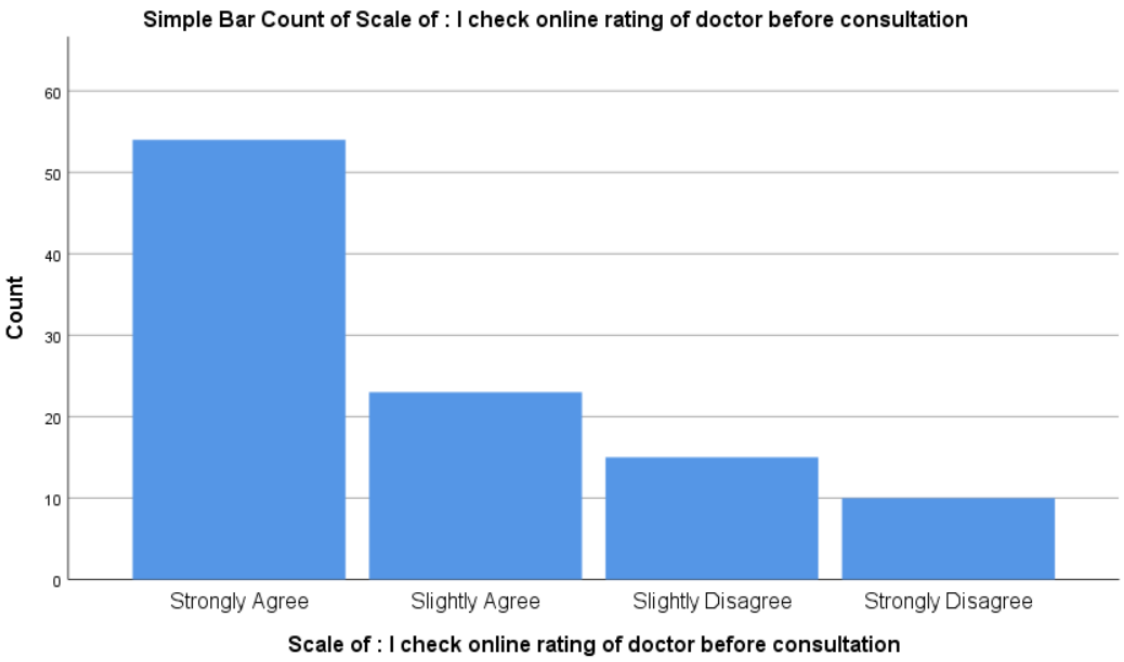
When the respondents of the survey were requested to rate their level of satisfaction being high with online medical consultancy more than 50% of the respondents were marked in the slightly agree and slightly disagree category. Only a few admitted that they are completely satisfied with the online medical consultancy service.

Ability to understand the instruction given by the doctor in online medical consultancy



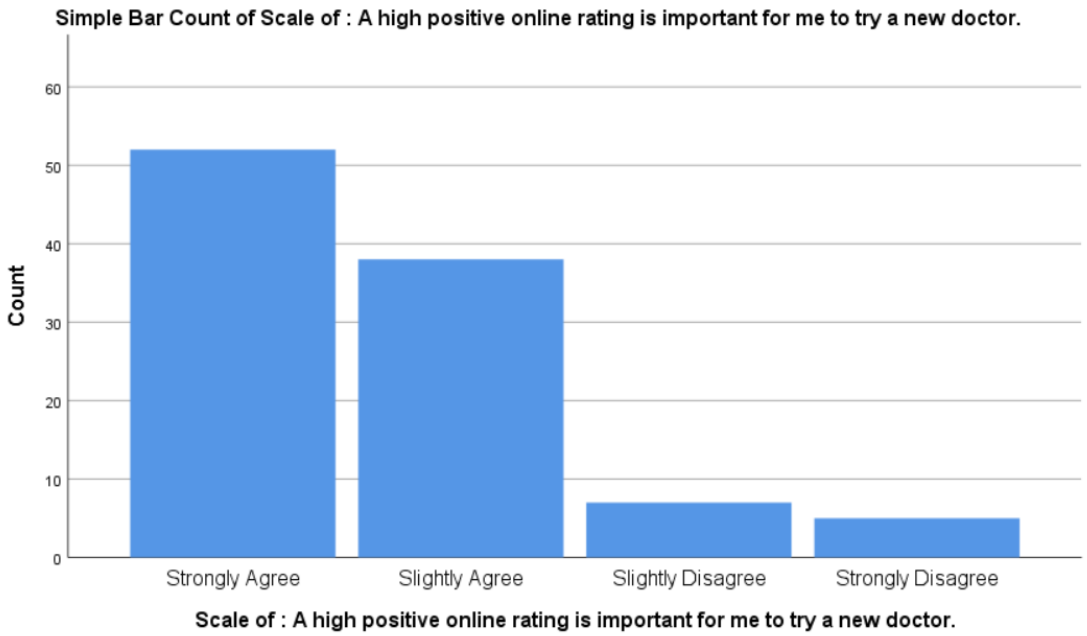
When the question was asked whether they understand the instructions given by medical professionals online a very large chunk of the population agreed that they can understand the instructions given by the doctor. This shows that once connected with the doctor the patients are comfortable in getting a recommendation for their health the basic problem, which is evident in previous graphs also, is that the older population is not comfortable in using the new technology to communicate online because of various reasons like technical illiteracy, unavailability of computing device, etc.

Checking the online rating of a doctor before the consultation



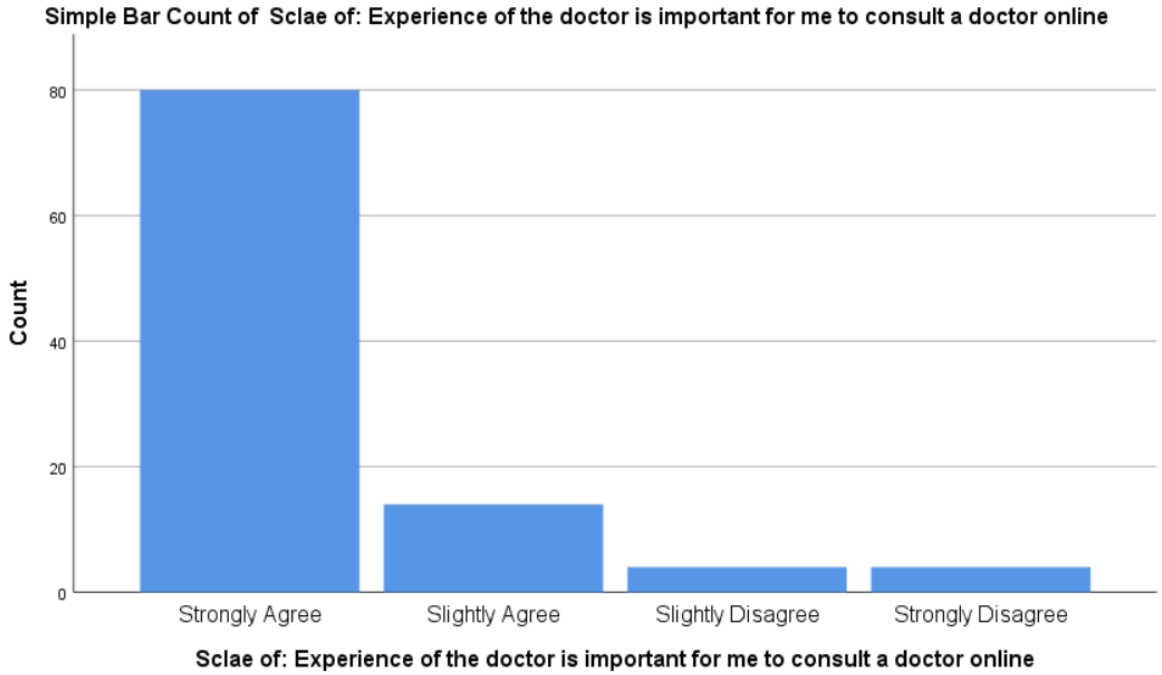
When asked whether they check the online rating of a doctor before consulting him/her for the first time the majority of the sample group replied that they strongly agree that they do check the doctor's online rating. This shows that the part of the population who has access to the computing and internet do check the online rating of the doctor before deciding to go to a specific doctor.

A high positive online rating is important for me to try a new doctor



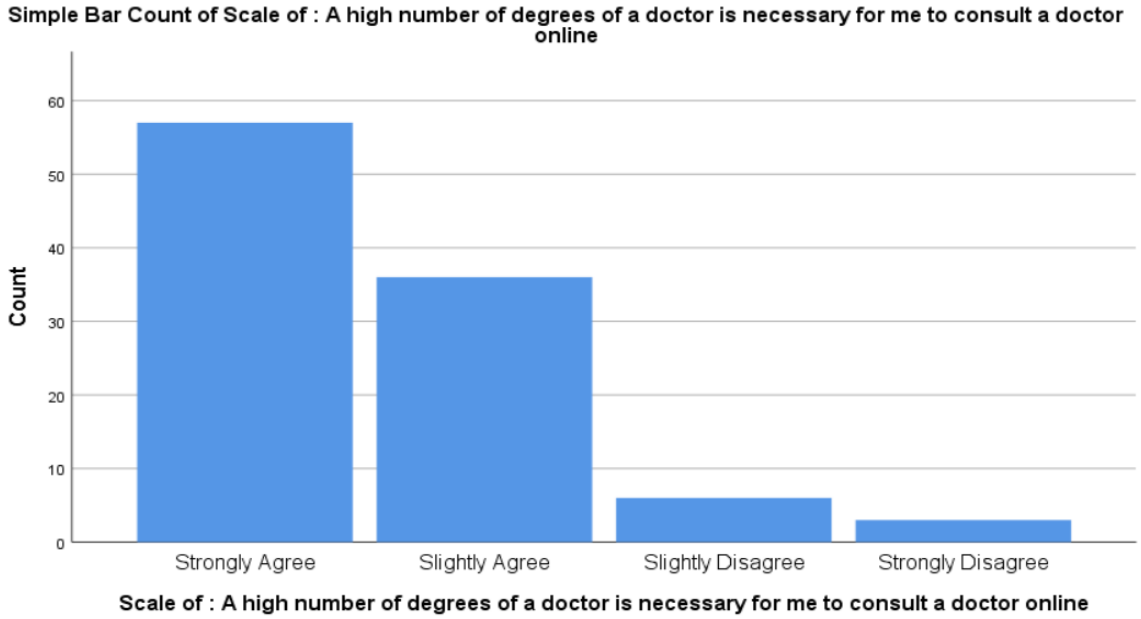
As evident from the previous graph as well the respondents replied similarly to this question. Patients nowadays do check online ratings of the doctors before visiting them for the first time and along with this a high positive rating of the doctor is also an important factor in choosing which one to visit for their needs.

Importance of experience of a doctor to consult online.



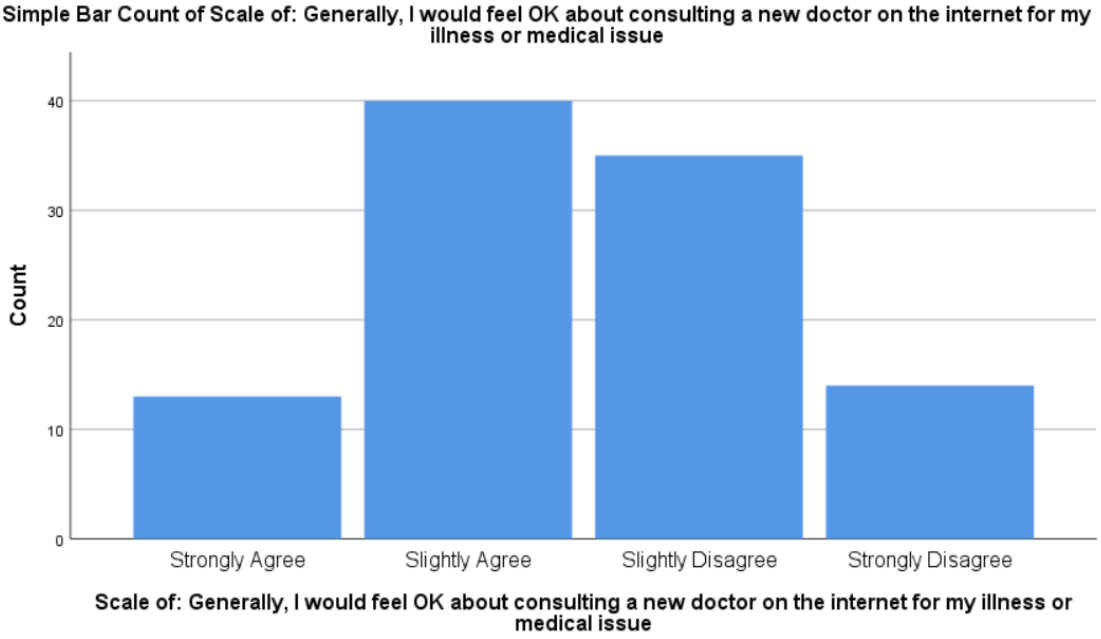
When asked how important is the experience of a doctor while consulting online the responses were skewed towards the option strongly agreed. The experience which a doctor has happens to be a major deciding factor in making the decision of choosing a doctor to consult online.

Importance of the high number of degrees a doctor holds.



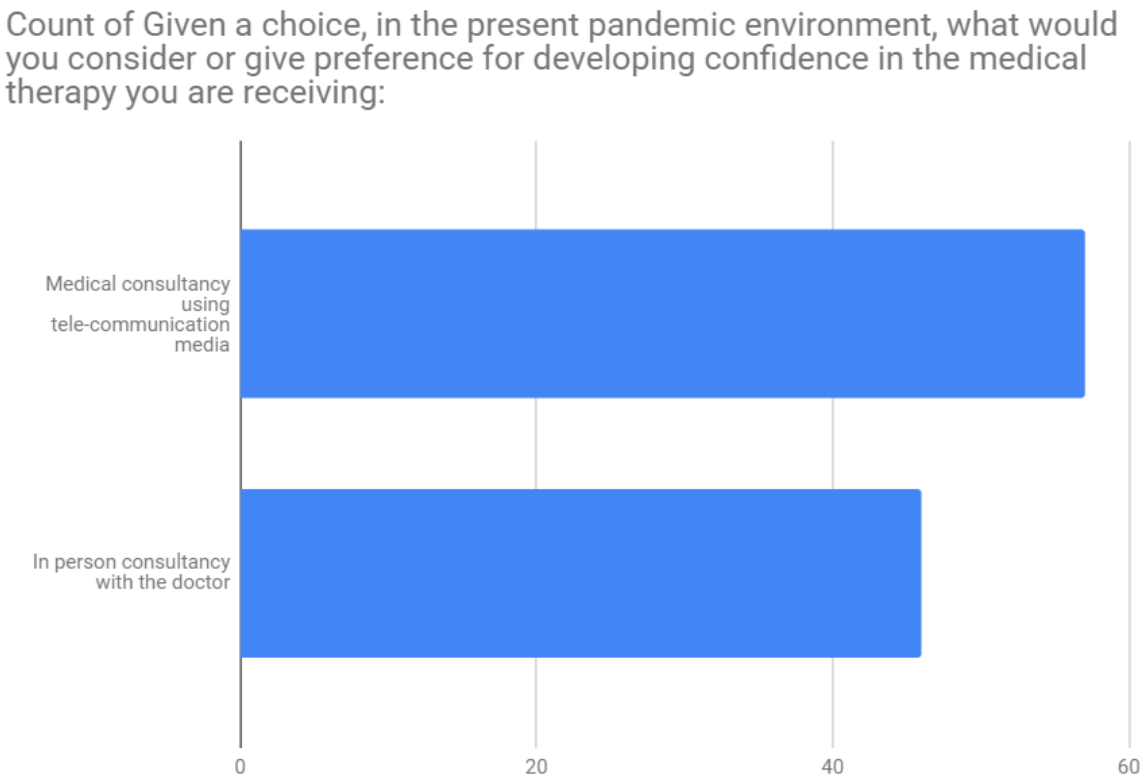
Similar to the observation in the previous graph, the number of degrees a doctor has is very important for a patient or patient party when deciding to go for an online medical consultancy for the first time.

Acceptability to try online medical consultancy



When asked whether they would feel comfortable about consulting a new doctor on the internet for their medical issue the responses came normally distributed. The majority were in the range of slightly agree and slightly disagree options and few responses were in the strongly disagree and strongly agree on option. This reveals that a major percentage of the entire population is comfortable in trying out a new doctor online.

The choice between medical consultancy using telecommunication media and in-person consultancy with the doctor



When asked about the preference, amidst this present pandemic condition, between online medical consultancy and in-person consultancy 55.3%(57) respondents chose online medical consultancy over in-person consultancy. 44.7 % of the respondents chose in-person consultancy for their medical requirements.

This reveals that even when a major percentage of the entire population is comfortable in taking online medical consultancy there still lies a major chunk that prefers in-person medical consultancy even in this pandemic situation.

Cronbach' alpha test for scale reliability

In order to verify the reliability of the collected data, the Cronbach alpha test was performed on the responses collected. For a data set to be reliable, the score should come either equal to or greater than 0.5.

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	102	100.0
	Excluded[a]	0	.0
	Total	102	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.879	15

Using Spss we did the above test. The Cronbach's Alpha score is .879 which assures us that the data is reliable enough to proceed with further testing.

Next, we will be analysing whether demographic identities have any effect on the choice and preference of the patient to choose options mentioned in the questionnaire or not. For testing this we would be using spss software to run the tests.

Gender and history of using the internet to search information

We would be doing a statistical test to know if there is any relationship between the gender of the respondent and his/her history of using the internet to search for information.

Hypothesis

H0: There is no significant statistical relationship between Gender and the history of using the internet to search for information.

H1: There is a significant statistical relationship between Gender and the history of using the internet to search for information.

Correlations

			Gender Name	Have you ever used your computer to search for information on the Internet?
Kendall's tau_b	Gender Name	Correlation Coefficient	1.000	.128
		Sig. (2-tailed)	.	.199
		N	102	102
	Have you ever used your computer to search for information on the Internet?	Correlation Coefficient	.128	1.000
		Sig. (2-tailed)	.199	.
		N	102	102
Spearman's rho	Gender Name	Correlation Coefficient	1.000	.128
		Sig. (2-tailed)	.	.201
		N	102	102
	Have you ever used your computer to search for information on the Internet?	Correlation Coefficient	.128	1.000
		Sig. (2-tailed)	.201	.
		N	102	102

As both, the tests above show a significant value which is more than 0.05, the null hypothesis is accepted and it can be said that no significant relationship is there between these two.
The use of a computer to search the internet is not dependent on the gender of the respondent.

Gender and making a video call

We would be doing the statistical test to know if there is any relationship between the gender of the respondent and his/her ability to make a video call.

Hypothesis
H0: There is no significant statistical relationship between Gender and the ability to make a video call.

H1: There is a significant statistical relationship between Gender and the ability to make a video call.

Correlations

			Gender Name	For making a video call
Kendall's tau_b	Gender Name	Correlation Coefficient	1.000	-.040
		Sig. (2-tailed)	.	.686
		N	102	102
	For making a video call	Correlation Coefficient	-.040	1.000
		Sig. (2-tailed)	.686	.
		N	102	102
Spearman's rho	Gender Name	Correlation Coefficient	1.000	-.040
		Sig. (2-tailed)	.	.689
		N	102	102
	For making a video call	Correlation Coefficient	-.040	1.000
		Sig. (2-tailed)	.689	.
		N	102	102

As both, the tests above show a significant value which is more than 0.05, the null hypothesis is accepted and it can be said that no significant relationship is there between these two.
The ability to make video calls is not dependent on the gender of the respondent.

Gender and choice of choosing online or in-person medical consultancy

We would be doing statistical tests to know if there is any relationship between the gender of the respondent and his/her choice of going for an online or in-person consultancy.

Hypothesis
H0: There is no significant statistical relationship between Gender and choice of going for an online or in-person consultancy.
H1: There is a significant statistical relationship between Gender and choice of going for an online or in-person consultancy.

Correlations

			Gender Name	Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:
Kendall's tau_b	Gender Name	Correlation Coefficient	1.000	.079
		Sig. (2-tailed)	.	.426
		N	102	102
	Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:	Correlation Coefficient	.079	1.000
		Sig. (2-tailed)	.426	.
		N	102	102
Spearman's rho	Gender Name	Correlation Coefficient	1.000	.079
		Sig. (2-tailed)	.	.429
		N	102	102
	Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:	Correlation Coefficient	.079	1.000
		Sig. (2-tailed)	.429	.
		N	102	102

As both, the tests above show a significant value which is more than 0.05, the null hypothesis is accepted and it can be said that no significant relationship is there between these two.

This test shows that there is no relationship between gender and the preference of the respondents for online or in-person medical consultancy.

Gender and being good with computers

We would be doing statistical tests to know if there is any relationship between the gender of the respondent and him/her being good at using computers.

Hypothesis

H0: There is no significant statistical relationship between Gender and the respondent being good at using computers.

H1: There is a significant statistical relationship between Gender and the respondent being good at using computers.

Correlations

			Gender Name	scale I am good with computers
Kendall's tau_b	Gender Name	Correlation Coefficient	1.000	.038
		Sig. (2-tailed)	.	.681
		N	102	102
	scale I am good with computers	Correlation Coefficient	.038	1.000
		Sig. (2-tailed)	.681	.
		N	102	102
Spearman's rho	Gender Name	Correlation Coefficient	1.000	.041
		Sig. (2-tailed)	.	.683
		N	102	102
	scale I am good with computers	Correlation Coefficient	.041	1.000
		Sig. (2-tailed)	.683	.
		N	102	102

As both, the tests above show a significant value which is more than 0.05, the null hypothesis is accepted and it can be said that no significant relationship is there between these two.

The results from the test show that there is no significant relationship between the gender of the respondents and them being good with computers.

Gender and being comfortable about consulting a doctor online

We would be doing statistical tests to know if there is any relationship between the gender of the respondent and him/her being comfortable about consulting a doctor online.

Hypothesis

H0: There is no significant statistical relationship between Gender and him/her being comfortable about consulting a doctor online.

H1: There is a significant statistical relationship between Gender and him/her being comfortable about consulting a doctor online.

Correlations

			Gender Name	Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue
Kendall's tau_b	Gender Name	Correlation Coefficient	1.000	-.023
		Sig. (2-tailed)	.	.803
		N	102	102
	Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue	Correlation Coefficient	-.023	1.000
		Sig. (2-tailed)	.803	.
		N	102	102
Spearman's rho	Gender Name	Correlation Coefficient	1.000	-.025
		Sig. (2-tailed)	.	.804
		N	102	102
	Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue	Correlation Coefficient	-.025	1.000
		Sig. (2-tailed)	.804	.
		N	102	102

As both, the tests above show a significant value which is more than 0.05, the null hypothesis is accepted and it can be said that no significant relationship is there between these two.

The results from the test show that there is no significant relationship between the gender of the respondents and they're being comfortable about consulting a doctor online.

Level of education and history of using the internet to search information

We would be doing statistical tests to know if there is any relationship between the level of education of the respondent and his/her history of using the internet to search for information.

Hypothesis

H0: There is no significant statistical relationship between the level of education and him/her having a history of using the internet to search for information

H1: There is a significant statistical relationship between the level of education and him/her having a history of using the internet to search for information.

Correlations

			What is your highest level of education ?	Have you ever used your computer to search for information on the Internet?
Kendall's tau_b	What is your highest level of education ?	Correlation Coefficient	1.000	-.244**
		Sig. (2-tailed)	.	.006
		N	102	102
	Have you ever used your computer to search for information on the Internet?	Correlation Coefficient	-.244**	1.000
		Sig. (2-tailed)	.006	.
		N	102	102
Spearman's rho	What is your highest level of education ?	Correlation Coefficient	1.000	-.273**
		Sig. (2-tailed)	.	.005
		N	102	102
	Have you ever used your computer to search for information on the Internet?	Correlation Coefficient	-.273**	1.000
		Sig. (2-tailed)	.005	.
		N	102	102

**. Correlation is significant at the 0.01 level (2-tailed).

As both the tests above show a significant value which is less than 0.05, the null hypothesis is rejected and it can be said that there is a significant relationship between these two.

To see the type of relation between the two we do crosstabs

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
What is your highest level of education ? * Have you ever used your computer to search for information on the Internet?	102	100.0%	0	0.0%	102	100.0%

What is your highest level of education ? * Have you ever used your computer to search for information on the Internet? Crosstabulation

Count

		Have you ever used your computer to search for information on the Internet?		
		Yes	No	Total
What is your highest level of education ?	Less Than High School	2	12	14
	High School Degree	8	11	19
	College Degree	20	12	32
	Post Graduate Degree	10	3	13
	Some College or Technical Degree	12	8	20
	Others	2	2	4
Total		54	48	102

From the table, it can be observed that with the increase in the level of education the history of use of computers to search information online also increases.

Level of education and ability to make a video call

We would be doing statistical tests to know if there is any relationship between the level of education of the respondent and his/her ability to make a video call.

Hypothesis

H0: There is no significant statistical relationship between the level of education of the respondent and the ability to make a video call.

H1: There is a significant statistical relationship between the level of education of the respondent and the ability to make a video call.

Correlations

			What is your highest level of education ?	For making a video call
Kendall's tau_b	What is your highest level of education ?	Correlation Coefficient	1.000	.239**
		Sig. (2-tailed)	.	.007
		N	102	102
	For making a video call	Correlation Coefficient	.239**	1.000
		Sig. (2-tailed)	.007	.
		N	102	102
Spearman's rho	What is your highest level of education ?	Correlation Coefficient	1.000	.267**
		Sig. (2-tailed)	.	.007
		N	102	102
	For making a video call	Correlation Coefficient	.267**	1.000
		Sig. (2-tailed)	.007	.
		N	102	102

**. Correlation is significant at the 0.01 level (2-tailed).

As both the tests above show a significant value which is less than 0.05, the null hypothesis is rejected and it can be said that there is a significant relationship between these two.

To see the type of relation between the two we do crosstabs

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
What is your highest level of education ? * For making a video call	102	100.0%	0	0.0%	102	100.0%

What is your highest level of education ? * For making a video call Crosstabulation

Count

		For making a video call		
		Someone else does it for me	I do It myself	Total
What is your highest level of education ?	Less Than High School	11	3	14
	High School Degree	13	6	19
	College Degree	13	19	32
	Post Graduate Degree	4	9	13
	Some College or Technical Degree	8	12	20
	Others	2	2	4
Total		51	51	102

From the table, we observe that as the level of education increases the ability to make video calls also increases.

Level of education and choice of choosing an online or in-person medical consultancy

We would be doing statistical tests to know if there is any relationship between the level of education of the respondent and his/her choice of going for an online or in-person consultancy.

Hypothesis

H0: There is no significant statistical relationship between the level of education of the respondent and the choice of going for an online or in-person consultancy.

H1: There is a significant statistical relationship between the level of education of the respondent and the choice of going for an online or in-person consultancy.

Correlations

			What is your highest level of education ?	Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:
Kendall's tau_b	What is your highest level of education ?	Correlation Coefficient	1.000	-.287**
		Sig. (2-tailed)	.	.001
		N	102	102
	Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:	Correlation Coefficient	-.287**	1.000
		Sig. (2-tailed)	.001	.
		N	102	102
Spearman's rho	What is your highest level of education ?	Correlation Coefficient	1.000	-.321**
		Sig. (2-tailed)	.	.001
		N	102	102
	Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:	Correlation Coefficient	-.321**	1.000
		Sig. (2-tailed)	.001	.
		N	102	102

**. Correlation is significant at the 0.01 level (2-tailed).

As both the tests above show a significant value which is less than 0.05, the null hypothesis is rejected and it can be said that there is a significant relationship between these two.

To see the type of relation between the two we do crosstabs

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
What is your highest level of education ? * Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:	102	100.0%	0	0.0%	102	100.0%

What is your highest level of education ? * Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving: Crosstabulation

What is your highest level of education ? * Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving: Crosstabulation

Count

		Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:		
		Medical consultancy using tele-communication media	In person consultancy with the doctor	Total
What is your highest level of education ?	Less Than High School	3	11	14
	High School Degree	7	12	19
	College Degree	21	11	32
	Post Graduate Degree	7	6	13
	Some College or Technical Degree	16	4	20
	Others	2	2	4
Total		56	46	102

From the table, we observe that as the level of education increases the tendency to accept medical consultancy using telecommunication media also increases.

Level of education and being good with computers

We would be doing statistical tests to know if there is any relationship between the level of education of the respondent and him/her being able to use computers efficiently.

Hypothesis

H0: There is no significant statistical relationship between the level of education of the respondent and being able to use computers.

H1: There is a significant statistical relationship between the level of education of the respondent and being able to use computers.

Correlations

			What is your highest level of education ?	scale I am good with computers
Kendall's tau_b	What is your highest level of education ?	Correlation Coefficient	1.000	.195*
		Sig. (2-tailed)	.	.017
		N	102	102
	scale I am good with computers	Correlation Coefficient	.195*	1.000
		Sig. (2-tailed)	.017	.
		N	102	102
Spearman's rho	What is your highest level of education ?	Correlation Coefficient	1.000	.231*
		Sig. (2-tailed)	.	.019
		N	102	102
	scale I am good with computers	Correlation Coefficient	.231*	1.000
		Sig. (2-tailed)	.019	.
		N	102	102

*. Correlation is significant at the 0.05 level (2-tailed).

As both the tests above show a significant value which less than 0.05, the null hypothesis is rejected and it can be said that there is a significant relationship between these two.

To see the type of relation between the two we do crosstabs

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
What is your highest level of education ? * scale I am good with computers	102	100.0%	0	0.0%	102	100.0%

What is your highest level of education ? * scale I am good with computers Crosstabulation

Count

		scale I am good with computers				
		Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree	Total
What is your highest level of education ?	Less Than High School	12	0	0	2	14
	High School Degree	10	3	2	4	19
	College Degree	7	12	7	6	32
	Post Graduate Degree	4	1	1	7	13
	Some College or Technical Degree	9	4	3	4	20
	Others	0	3	0	1	4
Total		42	23	13	24	102

From the table, we observe that as the level of education increases the ability to use computers also increases.

Level of education and being comfortable about consulting a doctor online

We would be doing statistical tests to know if there is any relationship between the level of education of the respondent and him/her being comfortable about consulting a doctor online.

Hypothesis

H0: There is no significant statistical relationship between the level of education of the respondent and being comfortable about consulting a doctor online.

H1: There is a significant statistical relationship between the level of education of the respondent and being comfortable about consulting a doctor online.

Correlations

			What is your highest level of education ?	Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue
Kendall's tau_b	What is your highest level of education ?	Correlation Coefficient	1.000	-.187*
		Sig. (2-tailed)	.	.023
		N	102	102
	Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue	Correlation Coefficient	-.187*	1.000
		Sig. (2-tailed)	.023	.
		N	102	102
Spearman's rho	What is your highest level of education ?	Correlation Coefficient	1.000	-.233*
		Sig. (2-tailed)	.	.018
		N	102	102
	Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue	Correlation Coefficient	-.233*	1.000
		Sig. (2-tailed)	.018	.
		N	102	102

*. Correlation is significant at the 0.05 level (2-tailed).

As both the tests above show a significant value which is less than 0.05, the null hypothesis is rejected and it can be said that there is a significant relationship between these two.

To see the type of relation between the two we do crosstabs

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
What is your highest level of education ? * Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue	102	100.0%	0	0.0%	102	100.0%

What is your highest level of education ? * Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue Crosstabulation

Count

		Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue				
		Strongly Agree	Slightly Agree	Slightly Disagree	Strongly Disagree	Total
What is your highest level of education ?	Less Than High School	1	0	10	3	14
	High School Degree	2	8	4	5	19
	College Degree	5	16	7	4	32
	Post Graduate Degree	3	4	5	1	13
	Some College or Technical Degree	1	10	8	1	20
	Others	1	2	1	0	4
Total		13	40	35	14	102

From the table, we observe that as the level of education increases the acceptability to consult medical advice online also increases.

Age history of using the internet to search for information

We would be doing statistical tests to know if there is any relationship between the age of the respondent and his/her history of using the internet to search for information.

Hypothesis

H0: There is no significant statistical relationship between the age of the respondent and him/her having a history of using the internet to search for information.

H1: There is a significant statistical relationship between the age of the respondent and him/her having a history of using the internet to search for information.

Correlations

			Age	Have you ever used your computer to search for information on the Internet?
Kendall's tau_b	Age	Correlation Coefficient	1.000	.170
		Sig. (2-tailed)	.	.071
		N	102	102
	Have you ever used your computer to search for information on the Internet?	Correlation Coefficient	.170	1.000
		Sig. (2-tailed)	.071	.
		N	102	102
Spearman's rho	Age	Correlation Coefficient	1.000	.180
		Sig. (2-tailed)	.	.071
		N	102	102
	Have you ever used your computer to search for information on the Internet?	Correlation Coefficient	.180	1.000
		Sig. (2-tailed)	.071	.
		N	102	102

As both, the tests above show a significant value which is more than 0.05, the null hypothesis is accepted and it can be said that no significant relationship is there between these two.

This shows that the history of internet use does not depend on the age of the respondent.

Age and ability to make a video call

We would be doing statistical tests to know if there is any relationship between the age of the respondent and his/her ability to make a video call.

Hypothesis

H0: There is no significant statistical relationship between the age of the respondent and him/her ability to make a video call.

H1: There is a significant statistical relationship between the age of the respondent and him/her ability to make a video call.

Correlations

			Age	For making a video call
Kendall's tau_b	Age	Correlation Coefficient	1.000	-.059
		Sig. (2-tailed)	.	.530
		N	102	102
	For making a video call	Correlation Coefficient	-.059	1.000
		Sig. (2-tailed)	.530	.
		N	102	102
Spearman's rho	Age	Correlation Coefficient	1.000	-.063
		Sig. (2-tailed)	.	.532
		N	102	102
	For making a video call	Correlation Coefficient	-.063	1.000
		Sig. (2-tailed)	.532	.
		N	102	102

As both, the tests above show a significant value which is more than 0.05, the null hypothesis is accepted and it can be said that no significant relationship is there between these two.

This shows that the ability to make a video call does not depend on the age of the respondent.

Age and choice of choosing online or in-person medical consultancy

We would be doing statistical tests to know if there is any relationship between the age of the respondent and his/her choice of online or in-person medical consultancy.

Hypothesis

H0: There is no significant statistical relationship between the age of the respondent and his/her choice of online or in-person medical consultancy.

H1: There is a significant statistical relationship between the age of the respondent and his/her choice of online or in-person medical consultancy.

Correlations

			Age	Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:
Kendall's tau_b	Age	Correlation Coefficient	1.000	-.162
		Sig. (2-tailed)	.	.087
		N	102	102
	Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:	Correlation Coefficient	-.162	1.000
		Sig. (2-tailed)	.087	.
		N	102	102
Spearman's rho	Age	Correlation Coefficient	1.000	-.170
		Sig. (2-tailed)	.	.087
		N	102	102
	Given a choice, in the present pandemic environment, what would you consider or give preference for developing confidence in the medical therapy you are receiving:	Correlation Coefficient	-.170	1.000
		Sig. (2-tailed)	.087	.
		N	102	102

As both, the tests above show a significant value which is more than 0.05, the null hypothesis is accepted and it can be said that no significant relationship is there between these two.

This shows that the preference between online or offline medical consultancy does not depend on the age of the respondent.

Age and being good with computers

We would be doing statistical tests to know if there is any relationship between the age of the respondent and his/her choice of online or in-person medical consultancy.

Hypothesis

H0: There is no significant statistical relationship between the age of the respondent and him/her being good with computers.

H1: There is a significant statistical relationship between the age of the respondent and him/her being good with computers.

Correlations

			Age	scale I am good with computers
Kendall's tau_b	Age	Correlation Coefficient	1.000	-.138
		Sig. (2-tailed)	.	.112
		N	102	102
	scale I am good with computers	Correlation Coefficient	-.138	1.000
		Sig. (2-tailed)	.112	.
		N	102	102
Spearman's rho	Age	Correlation Coefficient	1.000	-.157
		Sig. (2-tailed)	.	.116
		N	102	102
	scale I am good with computers	Correlation Coefficient	-.157	1.000
		Sig. (2-tailed)	.116	.
		N	102	102

As both, the tests above show a significant value which is more than 0.05, the null hypothesis is accepted and it can be said that no significant relationship is there between these two.
This shows that being good with computers does not depend on the age of the respondent.

Age and being comfortable about consulting a doctor online

We would be doing statistical tests to know if there is any relationship between the age of the respondent and him/her being comfortable about consulting a doctor online.

Hypothesis

H0: There is no significant statistical relationship between the age of the respondent and him/her being comfortable about consulting a doctor online.

H1: There is a significant statistical relationship between the age of the respondent and him/her being comfortable about consulting a doctor online.

Correlations

			Age	Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue
Kendall's tau_b	Age	Correlation Coefficient	1.000	-.065
		Sig. (2-tailed)	.	.455
		N	102	102
	Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue	Correlation Coefficient	-.065	1.000
		Sig. (2-tailed)	.455	.
		N	102	102
Spearman's rho	Age	Correlation Coefficient	1.000	-.075
		Sig. (2-tailed)	.	.453
		N	102	102
	Scale of: Generally, I would feel OK about consulting a new doctor on the internet for my illness or medical issue	Correlation Coefficient	-.075	1.000
		Sig. (2-tailed)	.453	.
		N	102	102

As both, the tests above show a significant value which is more than 0.05, the null hypothesis is accepted and it can be said that no significant relationship is there between these two.
This shows that being comfortable about consulting a doctor online does not depend on the age of the respondent.

Findings from the hypothesis testing

The pandemic environment and rising trend of online medical consultancy inspired us to explore this domain and it was tried to see how this system of medical consultancy affects and gets accepted by the senior citizens. The results which we got is elaborated below

1: Null hypothesis accepted, this shows that there is no significant statistical relationship between Gender and history of using the internet to search information.

2: Null hypothesis accepted, this shows that there is no significant statistical relationship between Gender and ability to make a video call.

3: Null hypothesis accepted, this shows that there is no significant statistical relationship between Gender and choice of going for an online or in-person consultancy.

4: Null hypothesis accepted, this shows that there is no significant statistical relationship between Gender and the respondent being good at using computers.

5: Null hypothesis accepted, this shows that there is no significant statistical relationship between Gender and him/her being comfortable about consulting a doctor online.

6: Null hypothesis rejected and alternate hypothesis accepted, this shows that there is a significant statistical relationship between the level of education and him/her having a history of using the internet to search information. Apart from this, we observe that as the level of education increases the history of use of computers to search information online also increases.

7: Null hypothesis rejected and alternate hypothesis accepted, this shows that there is a significant statistical relationship between the level of education of the respondent and the ability to make a video call. Apart from this, we observe that as the level of education increases the ability to make video calls also increases.

8: Null hypothesis rejected and alternate hypothesis accepted, this shows that there is a significant statistical relationship between the level of education of the respondent and the choice of going for an online or in-person consultancy. Apart from this, we observe that as the level of education increases the tendency to accept medical consultancy using telecommunication media also increases.

9: Null hypothesis rejected and alternate hypothesis accepted, this shows that there is a significant statistical relationship between the level of education of the respondent and being able to use computers. Apart from this, we observe that as the level of education increases the ability to use computers also increases.

10: Null hypothesis rejected and alternate hypothesis accepted, this shows that there is a significant statistical relationship between the level of education of the respondent and being comfortable about consulting a doctor online. Apart from this, we observe that as the level of education increases the acceptability to consult medical advice online also increases.

11: Null hypothesis accepted, this shows that there is no significant statistical relationship between the age of the respondent and him/her having a history of using the internet to search information.

12: Null hypothesis accepted, this shows that there is no significant statistical relationship between the age of the respondent and his/her ability to make a video call.

13: Null hypothesis accepted, this shows that there is no significant statistical relationship between the age of the respondent and his/her choice of online or in-person medical consultancy.

14: Null hypothesis accepted, this shows that there is no significant statistical relationship between the age of the respondent and him/her being good with computers.

15: Null hypothesis accepted, this shows that there is no significant statistical relationship between the age of the respondent and him/her being comfortable about consulting a doctor online.

Discussion on the findings:

Based on the results of the survey and various statistical and hypothesis testing, several things can be observed. It can be found out from the first five hypothesis testing that gender and the various key things related to internet usage like internet search, making a video call, online consultancy etc. are not statistically related significantly. Over the last few decades, the internet has rapidly spread over countries across the globe. Especially, countries like India have seen rapid growth in terms of the internet, computer and smartphone usage. Nowadays, the internet is equally available to all genders because there are no barriers to using the internet. As everyone is getting similar kinds of benefits from the usage of the internet, there is no difference of perception regarding the various services offered by it. This is one of the reasons for having no significant statistical relationship between gender and the various key things related to internet usage like internet search, making a video call, online consultancy etc. The perception is quite uniform across the gender.

But, hypothesis testing numbers six to ten show that there is a significant statistical association between the education level and the various key things related to internet usage like internet search, making a video call, online consultancy etc. Though the internet is widely available across India, still a significant percentage of its entire population struggle to use it and is unable to get all the benefits out of it due to the lack of education. As a person gets more educated and knowledgeably, it is highly probable that he/she will be able to use various internet services more easily and get more and more benefits. Especially, in the countries like India, several people are not educated. It is very difficult for them to use the internet and the benefits out of it.

The last five hypothesis testing show that the age and the various key things related to internet usage like internet search, making a video call, online consultancy etc. are not statistically related significantly. Today, the internet is available across all age groups. Everyone can use it and get the benefits out of it. People across all age groups are getting almost similar kinds of benefits. This is one of the reasons for having no significant statistical relationship between age and the various key things related to internet usage like internet search, making a video call, online consultancy etc. The perception is quite uniform across the various age groups.

The rapid growth of the internet and modern digital technologies led to rapid improvement in the field of medical science. Disease detection, treatment has become way easier than in the past. Nowadays, critical diseases can be detected at an early stage and then cured as fast as possible by the use of advanced medical

equipment. Also, people can easily access various medical services from their homes by the means of a video call, WhatsApp etc. Various doctors and medical professionals are using the power of the internet in serving their patients. Especially, at the time of the pandemic, this is very much beneficial for both the patients and the doctors. We have made these observations from our survey response too.

Conclusion

Participants in this survey belong to the elderly, that is, the age group over 60+, who need medical advice in the current pandemic environment. They are ready to receive the video consultation, but they still need some guidance to get started. According to the study and the responses gathered from the participants, the advantage of video consultation is that it reduces the number of visits and trips. The most common shortcomings are the inability to perform a physical examination and the lack of random results. Data security is not the main issue for patients in the study. Given the current pandemic, these results may be more favourable.

The specific results of the hypothesis testing have already been given out which shows some very interesting findings. Some of the worth noting findings have been listed below:

There is no significant statistical relationship between Gender and the history of using the internet to search for information.

The ability to make a video call does not depend on the age of the respondent.

The choice of taking on a video or online medical consultancy does not depend on the gender of the respondent

Being good at using a computer or any other computing device does not depend on the gender of the respondent.

As the level of education raises the history of use of computers to search information online also increases.

As the level of education raises the ability to make video calls also increases.

As the level of education increases the tendency to accept medical consultancy using telecommunication media also increases.

As the level of education increases the ability to use computers also increases.

As the level of education increases the acceptability to consult medical advice online also increases. More findings have been duly explained and noted down previously.

Future scope of the study

There are different tests and various aspects which have been left out due to time constraints, as when working with raw and real data the test process is normally time-consuming. The future scope can be of a deeper analysis of particular consumer and service provider relationships and transactions. Further research can be on new proposals to try different methods or simple curiosity.

This research was completed by collecting data from senior citizens in Mumbai, more work can be done by incorporating different geographical locations and see what the observation and statistical tests show.

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