

**Awareness, Knowledge, Attitude, Practices regarding Telemedicine among
Indian population**

&

Lean & Six Sigma- Green Belt

Online Live Workshop

(Anexas Consultancy)

A REPORT

by

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PART – A

Awareness, Knowledge, Attitude, Practices regarding Telemedicine among Indian population

ABBREVIATIONS

TM - Telemedicine

NASA – National Aeronautics and Space Administration

ISRO – Indian Space Research Organization

KAP – Knowledge, Attitude, Practice

GDP – Gross Domestic Product

ICMR – Indian Council of Medical Research

NeHA - National e-health authority

VRCs – Village Resource Center

WHO – World Health Organization

AKAP- Awareness, Knowledge, Attitude & Practices

ABSTRACT

Introduction

Telemedicine involves using modern technology and telecommunications for doctors to visit their patients virtually. It can be in the form of live video or through still images captured and saved for their reference on a computer.

Aim

The Aim of the study is to assess awareness, knowledge, attitude, and practices of telemedicine among diverse population and provide recommendations so as to increase the Telemedicine usage in India.

Material & Methods

A cross sectional descriptive study was carried out online among Indian population. A Total of 221 participants comprising of student, working professionals and retired personnel and different age groups took part in the survey. The survey was used to assess the awareness, knowledge, attitude and practices of Telemedicine. The self-administered questionnaire was sent to the participants digitally as 'google form'. The results were analyzed using MS EXCEL office 365. The Chi-square test for Independence was done using Minitab 17 to deduce any relationship between demographic variables and AKAP regarding TM.

Results

Total of 221 respondents took part in survey and most of them (above 75%) were having good knowledge regarding Telemedicine. Attitude towards TM was also found to be more than 75% across all respondents, but only 66% agreed that Telemedicine can replace face to face consultation. Practices were found to be relatively lower as more than 80% of people have only sometimes, rarely, or never used Telemedicine. Only 20% people were found to be using Telemedicine quite often.

Conclusion

Study concludes that the practices regarding the Telemedicine usage was not in-line with the knowledge of people regarding it. As the attitude towards Telemedicine was found to be very positive, we recommend that people should be made to try Telemedicine so that their usage

and dilemma regarding the same reduces. Also, the awareness regarding the term ‘Telemedicine’ was found low, which can be enhanced by organizing trainings, webinars, courses. People have low clarity regarding if Telemedicine is already available so It’s recommended that the brands providing Telemedicine services should reach out and advertise to more people as more than 80% of people showed willingness to use Telemedicine.

Keywords

Telemedicine, KAP, awareness, knowledge, attitude, practices

INTRODUCTION

The Healthcare Infrastructure in India the Public in India is without a doubt in shambles. India’s doctor to population ratio is 0.7:1000 which is below the recommendation of world health organization. It should be 1: 1000. India has a shortage of 26 Lakh health care professionals, out of which 6 lakhs are doctors and 20 Lakhs are nurses India’s per capita public expenditure on health is just 83\$. India spends only 1.3% of its GDP, compared to 6% global average on health infrastructure [1].

The most noticeably and terrible influenced are the rural areas where access to human services is ineffectively disseminated. The financially deprivation and asset limitation causes the inability to access timely medical services. Rural areas in India have a lack of clinical experts. 74% of specialists are in urban zones that serve the other 28% of the population. This is a significant issue for accessing medical services [2]. The absence of professionals makes people resort to false or uninformed suppliers. Specialists tend not to work in rural areas because of inadequate lodging and human services, and educational facilities for their children, drinking water, power, streets and transportation. Also, there exists a lack of framework for wellbeing administrations in rural areas. Indeed, there exists a lack of health care services in rural areas. In fact in urban medical hospitals they have twice the same number of beds are in rural areas, which are inadequate in provisions.

Information and Communication Technology has advanced improvement across different components of society from bringing people together to spreading across organizations and Governments. Although there exists a divide in its availability between the high pay and low pay territories with high salary regions commonly indicating more prominent entrance of computerized innovation when contrasted with less salary created nations [3] Information and Communication Technology assumes a key job in overcoming any barrier between the low salary and high pay zones by carrying huge changes to health care system In India. It is contended that telemedicine which is using information and communication technology for providing health services to remote areas conceivably empower the augmentation of medical information and knowledge to remote regions, which can further lead to improving availability and nature of healthcare services. It could further lead to making healthcare affordable to a large section of people which could not otherwise think of availing the services).

According to World Health Organization telemedicine is

“The delivery of health-care services, where distance is a critical factor, by all health-care professionals using information and communications technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and the continuing education of health-care workers, with the aim of advancing the health of individuals and communities. Basically, Telemedicine is the use of electronic communications and software to monitor and treat patients in lieu of an inpatient visit”

Telemedicine discovered its helpfulness in the twentieth century. One of the main records was when electrocardiograph (ECG) information was transmitted over phone wires from the physiology research facility to the clinic center about a mile away. Telemedicine has made considerable progress as far as both human services conveyance and innovation is concerned. A significant role in this was played by NASA and ISRO. [4].

Indian Space Research Organization (ISRO) in 2001 helped telemedicine in paving it way in India by linking a rural hospital with an urban one which was known as Telemedicine Pilot Project, It connected Apollo Hospital which is in Chennai with the Apollo Rural Hospital at Aragonda town in the Chittoor locale of Andhra Pradesh. [4].

The advancement of telemedicine offices in India has generally been because of a consolidated effort of Department of Information Technology, ISRO, Ministry of Health and Family

Welfare Ministry of External Affairs, combined with the State Governments. This system of telemedicine has secured and associated forty-five remote and emergency clinics, (for example, islands of Andaman and Nicobar and Lakshadweep, sloping areas of Jammu and Kashmir, Medical College Hospitals in Orissa among other country clinics and fifteen specialty medical clinics)

The recent pandemic of Covid-19 which started in the end of 2019 and spread across the whole wide world in 2020 has changed the life of everyone around. Covid -19 has put a lot of pressure on the healthcare system In India. Telemedicine is the need of the hour. As the world was grappling with the Pandemic It observed the restricted access of non-COVID-19 patients to specialists and medical clinics There were numerous private and medical clinics which were shut as there was no comprehension of pandemic protocols and security necessities to manage it. Patients with needed constant follow-ups didn't know where to go and whom to address their concerns. Patients on dialysis, chemotherapy, those with mental illness saw their condition deteriorating as they found themselves lost and confused due to the unprecedented pandemic [5]. In any event, when scarcely any clinics revived, numerous patients remained away, dreading they might be at higher danger of disease. This misery of patients, as the healthcare framework battled to adapt to the infection flare-up, could have been relieved if patients were knowledgeable and professionals were fine with telemedicine due to proper guidelines.

The lack of proper guidelines in Telemedicine was majorly felt in 2018 in the case of **Deepa Sanjeev Pawaskar & Anr. Vs the State of Maharashtra**. Bombay High Court refused to grant anticipatory bail to two doctors involved in the treatment of a patient who ultimately died and the kin of the deceased filed criminal complaints against the doctors accusing them of criminal negligence. The case also used telecommunication as a medium of consultation. As there existed no legislation in India which governed the practice of telemedicine consultation, the said judgment led to medical bodies repeatedly petitioning Medical Council of India and the government to issue clear guidelines to govern Telemedicine.

On 25th March 2020 Ministry of Health and Family Welfare, Government of India paired up with NITI Aayog (Also called “The National Institution for Transforming India” and issued Telemedicine Practice Guidelines, 2020. The purpose of the guidelines is to realize the

maximum capacity of these progression in technology and innovation for health care delivery [6].

Telemedicine has been used as a tool to protect medical professionals from exposure to Covid-19 and has helped to protect the vulnerable by making them stay at home. A recent example of telemedicine helping the patients would be Common Service Centre Telemedicine in Tekaula Kalan Village in Uttarakhand which has shown tremendously good results in reducing the impact of the virus. It has also helped in keeping the mental health of people in check. The mainstreaming of telemedicine has led to bring a transformative change [7]. As the village was in a remote area and was struggling in health infrastructure, villagers had to travel to far off hospitals when there was some serious issue and ignoring the smaller issues which could go bigger in future. Telemedicine has helped more than 200 patients in the town for executing a self-guided isolation technique for controlling the infection and in adopting online monitoring to treat case remotely.

In western countries due to technology advancement and willingness to try, the penetration of telemedicine is high but In India, we are still struggling to make telemedicine a common household name a lot of it has to do with lack of awareness, proper services and backwardness of infrastructure. Telemedicine is very important for a country like India where the population is so high. We have to study the Knowledge, Awareness and Practices (KAP) of Indian Public to get qualitative and quantitative information to bridge the gap in telemedicine usage and as to plan to keep in mind the respective population involved

According to CNBC Telemedicine visits could reach one billion by the end of 2020, which is totally different scenario from the last few years wherein telemedicine was a hard sell

AIM

The aim of this study is to find out the current scenario from the people's viewpoint in India regarding the Telemedicine awareness, knowledge, attitude, and practices. The study is aimed to identify the gaps in Telemedicine usage among Indians and formulate recommendations to increase the TM usage. Telemedicine can help strengthen the healthcare system of India and is an emerging trend throughout the globe.

LITERATURE REVIEW

Search Strategy

For structuring the basis of this study, a lot of literature has been reviewed. Several published studies were explored on the platforms like PUBMED, Google Scholar, EBSCO, Sciencedirect, Researchgate. Search was done with two objectives a) to find the basis for KAP questionnaire formulation b) to find the exploratory studies done on Telemedicine. After the reviewing of studies or guidelines published on how a KAP study should be formulated and reviewing the papers regarding the Telemedicine studies, a final questionnaire was developed. The published studies regarding TM helped in finding the gap in literature.

Guideline for Conducting a Knowledge, Attitude and Practice (KAP) [8]

The Guidelines Provides the Knowledge, Attitude and Practice study of diabetes and diabetic retinopathy and takes within its ambit the management of the same. In the beginning, the basics are defined to understand the scope of The Knowledge, Attitudes and Practices in diabetes and diabetic retinopathy.

The steps in preparation of KAP study requires domain identification, question preparation and validation of questions. In the domain identification, the suitable domain has to be selected on which the study will be conducted. In the Question Preparation step, the questions which are relevant are stated on the Knowledge, Attitude, and Practice section of the study respectively. Multiple choice questions are avoided as it limits the knowledge because of guessing the answer. Questions incorporated in the attitude section should asses any prevailing attitude, belief or misconception among the population.

Exploring the knowledge, attitudes and practices (KAP) of health care professionals on viral hepatitis [9].

The knowledge, attitude, and practices of health care professionals regarding viral hepatitis A, B C in two hospitals of Gauteng province in South Africa was to be accessed in the study. The participants were the nurses and doctors in the hospital

Overall, knowledge on notification of viral hepatitis was found to be low among health care professionals. Proper training on viral hepatitis, notification process, roles and responsibilities of professionals to notify and providing knowledge of various effects of viral hepatitis is advised to improve reporting rate of diseases and referrals for improving care.

Awareness, Knowledge, Attitude and Skills of Telemedicine among Health Professional Faculty Working in Teaching Hospitals [10].

The purpose of the study was to access the Awareness, Knowledge, Attitude and Skills of telemedicine among the various health care professionals along with patients and get recommendation for improving telemedicine efficiency and delivery in India. The responses from the survey was converted into Quantitative variables then Statistical analysis (Mean, SD, and Percentage) was done.

Most of the doctors had poor knowledge about Telemedicine but majority had positive attitude towards telemedicine. This concluded that generating awareness is important. More clarity should be provided on its usage and areas of implementation.

Awareness and attitudes towards telemedicine in India [11].

The study was conducted from 16th April to 16th June 2013 with a total of 121 patients representing thirteen different states.

Elderly patient's awareness of telemedicine was unclear and require further study

Most of the participant except elderly patients have positive attitude towards Telemedicine and found it useful. According to them it saves money and is comfortable to use. They consider it to be beneficial for both urban and rural patients but still they think it can't replace face to face consultations.

Knowledge and Attitude of Health Professionals toward Telemedicine [12]

health professionals possessed limited knowledge regarding Telemedicine. Among physicians more than half had good understanding about TM.

Health professionals were positive regarding, compatibility, relative advantage and trial ability of the TM, and found complexity and observable issues with Telemedicine. More than half of the respondents know and agree that Tele medicine saves time and transportation costs.

Most of the Health Practitioner have limited knowledge regarding Tele medicine but they're positive regarding its usage. So, the study recommends that training is required to bridge the knowledge gap.

Indian doctors' knowledge, attitudes and practice regarding telemedicine and e-health. [13]

People acknowledged that internet is required for knowledge and education. Many people find telemedicine as a budding tool in future health-care practices in India. Thirty five percent were aware of Telemedicine benefits

Study showed that current utilization of e-health tools by Indian physician is not extensive though Indian doctors are keen to obtain further definite training in the field

Knowledge, experience and attitudes of doctors to telemedicine. [14]

Most of the doctors had very basic knowledge about Telemedicine, only few had in-depth and practical knowledge.

Some of the agreed advantages by doctors were faster and accurate diagnosis/consultation, patient needn't travel, better accuracy of diagnosis. Common advantages as per the General Practitioner were, educational value of telemedicine, diagnostic and management reassurance

and less time spent in travelling. Major concern was related to confidentiality. Others included inaccuracy due to tech limitations, no direct contact of patient to doctors made it impersonal.

Knowledge, attitudes, and practices towards COVID-19 [15]

Most respondents (of relatively high socio-economic status) were knowledgeable about covid-19. Most of them had optimistic view towards fight against covid-19. Higher knowledge was found to be associated with lower negative attitude and good practices. Practices of not going to crowded place and wearing a mask were associated with demographic group variables (gender, age, occupation, place of residence, marital status).

Awareness and attitudes to telemedicine among doctors and patients in India [16].

Most of the doctors found telemedicine important and had knowledge about it. It was used by more than half of the doctors. While using telemedicine three quarters wanted it to be available at the desktop. Two Third of the doctors felt uncomfortable while talking to their fellow remote doctors. More than half of the doctors wanted monthly roster for the use of telemedicine.

In patients, Majority of the patients were not aware of telemedicine but when told about it most of them were positive towards it. Some patients found it satisfactory as they had previously used it

National Knowledge, Attitudes and Practices (KAP II) Study on Ebola Virus [17].

Many respondents had the knowledge of one key method of Ebola transmission and one key symptom of Ebola. Contact with bodily fluid as a method for Ebola Transmission was preferred known over the other methods for transmission which is contact with individuals who have passed on from Ebola, or people who are sick of Ebola or sex with Ebola survivors

Attitude of people towards Ebola survivors was positive and welcoming.

People developed good practices that can be done to prevent the disease like frequent hand washing, not shaking hands

Gap In Literature

After extensive literature review it was found that most of the studies either have been done on health professionals/doctors or some cohort of patients. No study has been found which was done among general public and taken practices regarding Telemedicine into account. That is why this study was conducted to assess the awareness, knowledge, attitude and practices regarding Telemedicine among population of India.

OBJECTIVES

The study was carried out with objectives –

- a) To assess the awareness, attitude, knowledge, and practices regarding Telemedicine among population of India
- b) To find out the reasons for the poor penetration of TM services in India and provide recommendations for the improvement

RESEARCH METHODOLOGY

Study Design and Setting

A descriptive cross-sectional study was conducted in India using the survey questionnaire between May to July 2020. The self-administered questionnaire was in the form of 'Google forms'. The study was conducted online among a total of 221 participants from India. The survey had a good response rate as mostly everyone responded, only a total of 3 participants did not complete the survey.

Material & Methods

A total of 221 respondents were there. Primary data was collected using self-administered online questionnaire which consisted of 30 questions divided majorly in two parts:

First part consisted 5 questions regarding demographic details wherein questions about age, gender, education, place of residence, occupation was asked.

The second part consisted of 25 questions to assess awareness, knowledge, attitude, and practices of Telemedicine. Questions were mapped on 5-point Likert scale. This part was divided into 4 sub sections namely awareness, knowledge, attitude, and practices. Awareness section asked question regarding the familiarity with TM and a total of 6 questions were asked. Knowledge section were based on facts regarding TM and consisted of 7 questions. The attitude section asked question on people's viewpoint regarding TM and consisted 6 questions. Practice section of the questionnaire asked details regarding the usage of TM and consisted 6 questions. All the responses were collated in google sheets.

Analysis

Descriptive analysis of the responses was done in MS Excel office 365. Frequencies of 5-point Likert scale responses were used for the description of findings and pie charts, bar graphs are used for the visual demonstration of the data collected. The Chi-square test for Independence was done using Minitab 17 for analyzing the association between the demographic variables and AKAP regarding TM

RESULTS

Total number of respondents were 221 out of which 3 people did not agree to go ahead with the survey.

The male participants were in majority comprising of 83% and female comprised of 17.4%. The participants in the age group of under 25 were 25.2%, between 25-40 were 12.9%, between 40-60 were 35% and in the age group beyond 60 were 59%.

Out of the 221 participants, only 4 participants were from a rural setting and majorly from urban areas.

The participants were from diverse fields, 46% were working professionals, 28% were retired personnel, and students comprised 22%. Health care Professionals mainly 2% also participated in the survey. House maker comprised of 3.2%.

AGE OF THE PARTICIPANT	Number	Percent
Under 25	55	25.2
25-40	28	12.8
40-60	76	34.8
60+	59	27.06
Grand Total	218	100

Table 1 Age of participants

PLACE OF RESIDENCE	Number	Percent
Rural	21	9.7
Urban	197	90.3
Grand Total	218	100

Table 2 Place of residence

GENDER	Number	Percent
--------	--------	---------

Female	38	17.4
Male	180	83
Grand Total	218	

Table 3 Gender

LEVEL OF EDUCATION	Number	Percent
School	2	0.0091
Graduation	84	38.5
Post-Graduation	132	60.5
Grand Total	218	100

Table 4 Level of education

PROFESSION	Number	Percent
Healthcare Professional (Student or Working)	4	1.8
House maker	7	3.2
Retired	60	28
Student	47	22
Working Professional	100	46
Grand Total	218	

Table 5 Profession

Null Hypothesis Statement	Pearson Chi-square Value	P-Value	Decision (Accept/Reject)
There is No relationship between the Profession and awareness regarding TM	7.352	0.118	Accept

There is no relationship between the Profession and Knowledge regarding TM	20.541	0	Reject
There is no relationship between the Profession and Attitude regarding TM	7.842	0.098	Accept
There is no relationship between the Profession and Practices regarding TM	0.621	0.961	Accept
There is no relationship between the Age and Awareness regarding TM	0.029	0.999	Accept
There is no relationship between the Age and Knowledge regarding TM	21.107	0	Reject
There is no relationship between the Age and Attitude regarding TM	7.555	0.056	Accept
There is no relationship between the Age and Practices regarding TM	1.948	0.583	Accept
There is no relationship between the Gender and Awareness regarding TM	0.203	0.652	Accept
There is no relationship between the Gender and Knowledge regarding TM	6.492	0.011	Reject
There is no relationship between the Gender and Attitude regarding TM	1.642	0.2	Accept
There is no relationship between the Gender and Practices regarding TM	0.232	0.63	Accept

Table 6 Chi-square test of independence

Awareness

- The response of the participants indicated that most of the people were in somewhat awareness zone (71/218) regarding Telemedicine.
- 44% off respondents were having good familiarity with the term TM. More than half of the respondents were not aware of the same.
- Overall awareness of people regarding Telemedicine was also in somewhat familiarity zone, around 45% people were aware regarding the virtual consultation with the doctors. 52% People think that you need to be very sound of technology to avail TM services.
- People were more aware regarding the online delivery (66%) of medicine rather than the term 'Telemedicine'

- There is no relationship between the demographic variables and the awareness regarding TM

To what extent are you familiar with the word Telemedicine

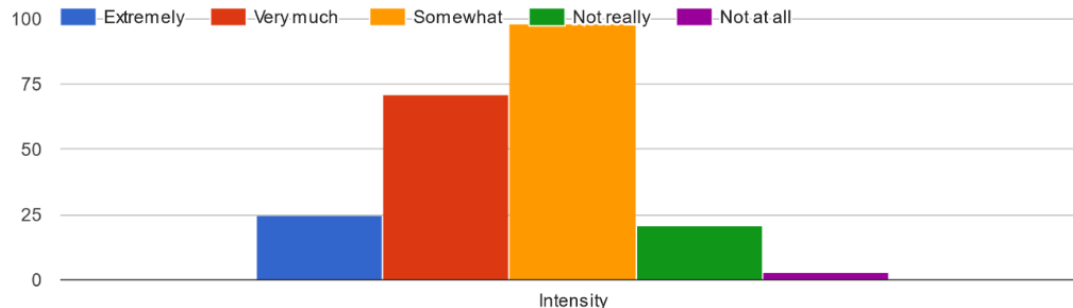


Figure 1. 1 No of people familiar with the word Telemedicine

Knowledge

- More than 80% people were knowledgeable that Telemedicine, saves times (81.6%), saves efforts (83.9%), reduces transportation cost (87.6%), can provide real time information (80.27%), can help record and share medical data more conveniently (84.8%) and can increase the reach of remote places to healthcare facilities (84.8%).
- Around 78% knew that TM is already available in India.
- Chi-square test of independence revealed an association between the Gender & the knowledge regarding TM. Males were found to have higher knowledge of TM compared to females
- Profession and knowledge regarding TM were found significantly associated, working professionals and retired people were found to have more knowledge compared to housewives or students
- The knowledge regarding TM & the age of person were found in relationship. People aged 40-60 & 60+ were found to have more knowledge compared to people aged less than 40 yrs.

Attitude

- The study revealed that majority (more than 75%) of the people were having positive attitude regarding TM.
- 83.4 % people were willing to know more about TM
- 78 % were ready to consult doctors through a digital medium
- 82.1% were comfortable regarding digital consultation
- 77 % were in favor that TM will strengthen the healthcare system and should be incorporated
- 89.4 % wanted their doctor to keep an eye on them remotely
- Among these only 66% people were agreeing that TM can replace face to face consultation for many health issues.
- There was no relationship between attitude regarding TM and demographic variables of the participants

Would you like to know more about Telemedicine

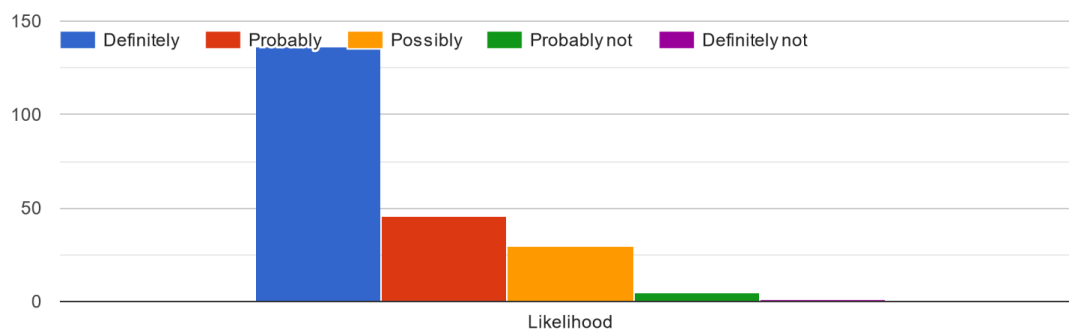


Figure 1. 2 No of people who would like to know more about Telemedicine

Practices

- The study revealed that majority of the people know about Telemedicine but doesn't use it quite often.
- About 15.4% people always and about 40% people sometimes use digital platforms to know about their health conditions

- About 2.7 % people always consult a doctor over call/video or text messages while 49% people use it sometimes.
- About 14.2% people use online diagnostic apps like Thyrocare, Lalpathlabs, SRL diagnostics to get their diagnostics done, while 23% people consider tele consulting apps like Practo, DocsApp. Online medicines are purchased via online pharmacy apps like 1mg, Netmeds etc by about 23 % people.
- After an in-person visit to a doctor, only about 2.3 % always connect to doctors via digital medium for follow-ups

How frequently do you consult a doctor over call/video or text messages

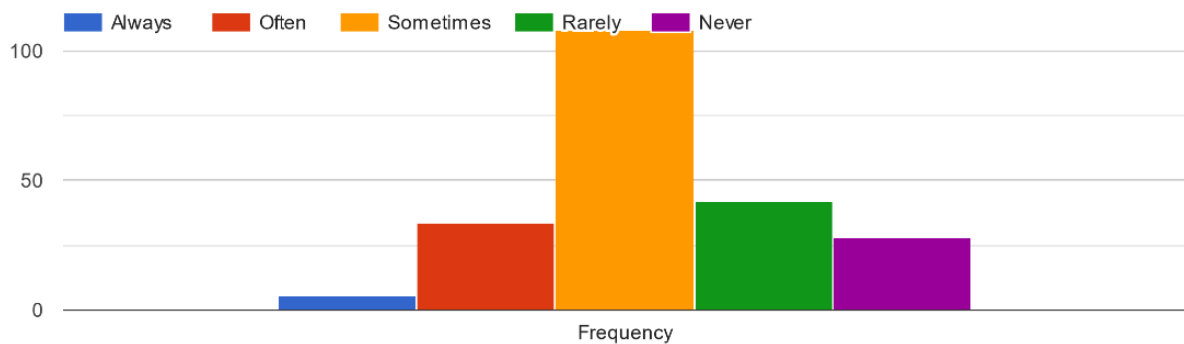


Figure 1. 3 No of people who consult a doctor over call/video/text message

DISCUSSION

As the Telemedicine is an emerging trend and necessity throughout the globe. India being a nation with huge population of more than 1.21 billion (census 2011), it is very necessary to find ways on incorporating the distribution of healthcare services fairly among the public. Telemedicine with its ability to reach the remote places can be a very viable option for India to achieve the same.

Our study revealed that people are very much willing to learn more about TM and the usage of Telemedicine is very low among people. Most of them had a viewpoint that it requires very sound knowledge of technology to avail the TM services & were not aware with the availability of TM services. This could be the probable reason for not practicing TM as expected from the results of Knowledge and Attitude regarding TM

The Gender, Profession & Age are found to be significantly associated with the knowledge regarding TM via Chi-square test of Independence. This suggests that the reach, courses, and other learnings of TM are not available to everyone, or TM is not taught on a wide scale. We need to pay attention that the TM knowledge should be provided to everyone and it should be widely accessible by all the demographic profiles, otherwise there will always remain a roadblock in paving the path for TM in India

COMPARITIVE STUDY: comparing present paper findings with literature review

TELEMEDICINE					
S.no	Year	Previous Study title	Authors	Conclusion	Findings from the present study
1.	2018	Knowledge and Attitude of Health Professionals toward Telemedicine in Resource-Limited Settings: A Cross-Sectional Study in North West Ethiopia- [12]	Kirubel Biruk and Eden Abetu	It was concluded from the study that 37.6% of the health professionals were possessing good knowledge regarding Telemedicine of which Telemedicine of almost (57.4%) were from the fellow mates. Among physicians more than half i.e. 54.5% were having good understanding about	The health professional didn't constitute that major number in the participants. They comprised 1.9% of the participants and majority had good knowledge about telemedicine The overall attitude of the health care professionals' participants was very positive

				TM. -Health professionals were positive regarding, compatibility, relative advantage and trial ability of the TM, and found complexity and observable issues with Telemedicine. More than half of the Health Practitioners found Telemedicine to be complex and more than 3/4th of the respondents believe that telemedicine requires more mental efforts. More than half of the respondents know and agree that Tele medicine saves time and transportation costs. Most of the Health Practitioner have limited knowledge regarding Tele medicine but they're positive	regard to knowing more about telemedicine. Most of the participants were of the view that telemedicine saves time, efforts and transportation costs.
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				regarding its usage. So the study recommends providing training to bridge the knowledge gap.	
2.	2013	Awareness and attitudes towards telemedicine in India- [11]	S.K Meher, S.Kant.	It showed that the majority of patient have positive attitudes towards telemedicine, and they find it very beneficial for rural patients; • patients agreed that telemedicine will save both time and money, • patients find telemedical consultations comfortable, • Much after positive teleconsultation	Our study suggested that the majority of participants had positive attitude towards Telemedicine and majority wanted to know more about Telemedicine. • Participants definitely think that Telemedicine saves time, efforts and transportation cost. • Majority of participants found telemedicine conformable and they were fine with virtual consultation • Most Participants had a conclusion that telemedicine

				s, patients despite everything find telemedicine can't replace up close and personal discussion	for sure could replace face to face meeting.
3.	2016	Awareness, Knowledge, Attitude and Skills of Telemedicine among Health Professional Faculty Working in Teaching Hospitals [10]	Zayabalara djane Zayapragas sarazan, & Santosh Kumar	The conclusion of the study was as follows :- The knowledge level of the respondents was found to be good with 41% of the respondents, 35% possess fair knowledge and 24% don't have adequate knowledge of telemedicine. With regard to the attitude towards telemedicine 39% of the respondents possess high attitude, 31% possess moderate attitude and 30% possess low level of attitude.	The response of the participants indicated that they had little knowledge regarding Telemedicine as 45% of the participants opted for "somewhat knowledge". 33% of the participants had a decent knowledge regarding the term and 12% had extremely good knowledge. 1.4% had absolutely no clue about the term Telemedicine. The overall attitude of the participants was very positive as almost 62.4% of them wanted to know more about telemedicine and its uses Followed by a close second of 21.1.% who will probably be likely to know about telemedicine.

				Investigations on the skills of the respondents on telemedicine showed that 19% respondents are highly skilled or experts, 25% are moderately skilled which includes learners or beginners, and 56% are unskilled in handling telemedicine and its related equipment's.	50% of the participants had the opinion that they sometimes used call/ video or text messages to consult a doctor, 16% often did it and 19% rarely did it.
4.	2009	Awareness and attitudes to telemedicine among doctors and patients in India [16]	Sushil K Meher, Rajeshwar S Tyagi and Tanushree Chaudhry	Doctors- Most of them find telemedicine important. Most of the doctors had knowledge of TM. TM was used by more than half of the doctors. Majority of the hospitals (11/14) Implemented TM. Three quarters of doctors wanted TM at their desktop. 2/3rd of the doctors felt uncomfortable while talking to their fellow remote doctors. More than half of the doctors wanted monthly use	Majority of the health professionals had good knowledge about telemedicine The overall attitude of the health care professionals was very positive towards about telemedicine. The response of the participants indicated that they had little knowledge regarding and the overall attitude of the participants was very positive Therefore, this study is in the line with the previous study about the knowledge and

				roaster of TM. Patients- Majority of them weren't aware of TM, but when told, most of them were positive towards TM use. Patient who've previously used TM found it satisfactory. Most of them were willing to pay INR 100 for teleconsultation.	attitude of people towards Telemedicine
5.	2000	A survey in the Grampian region of the knowledge, experience and attitudes of doctors to telemedicine [14]	Hugh Ruddick-Bracken, John A Brebner, Eileen Brebner and Kendon M Macdonald	Most of the doctors have very basic knowledge about TM, only few have dept and practical knowledge. Majority of them doctors and Health consultants agreed that TM has potential to help in their specialty of medicine, areas where they think TM can be used for better are dermatology, accident and emergency, radiology, cardiology	The health professional didn't constitute that major number in the participants. They comprised 1.9% of the participants and majority had good knowledge about telemedicine The overall attitude of the health care professionals' participants was very positive regard to knowing more about telemedicine. Most of the participants were of the view that telemedicine

				and ophthalmology. Some of them agreed advantages by doctors were faster diagnosis/consultation, patient needn't travel, better accuracy of diagnosis. 1/3rd of the doctors see no advantages. Common advantages as per the GPs were, educational value of TM, diagnostic reassurance and less time spent in travelling. .Major concern was related to Confidentiality, other being inaccuracy due to tech limitations, no direct contact of patient to doctors called as impersonal. Doctors were concerned that TM use could further pressurize the system.	saves time, efforts and transportation costs Therefore, this study is not in the line with the knowledge of previous studies but in both the studies attitude of health professionals are positive.
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Table 7 Comparative study

CONCLUSION

Our study has shown that people have a good knowledge regarding Telemedicine benefits, but they are not aware of the ‘Telemedicine’ availability and its aspects. People are not aware regarding the technology aspects of Telemedicine as majority of them agreed that one needs to be very much sound of technology to avail Telemedicine services. Vast Majority of the people showed positive attitude towards Telemedicine. People were very positive regarding digital consultation with the doctors and most of them agreed that incorporation of Telemedicine would strengthen the Indian healthcare system and would increase the reach of remote places to healthcare facilities. The usage of Telemedicine was found to be very low among the people, the reasons for the same, that could be assessed from the study was that the majority is of the viewpoint that it needs too much technical aspect to use Telemedicine, and also the lack of awareness regarding availability of such services.

The Knowledge was found to be varying with the demographic profiles of the people. So, it should be kept in mind to teach everyone regarding the TM and more efforts are needed to be done with respect to females, people having age less than 25 yrs. And students as well as housewives.

Recommendations

The issues that came to light with the findings of our study are that people are not familiar with term TM, availability of the same and despite knowing the benefits of TM, the usage is very low. It is recommended to organize trainings, webinars, courses around TM, as most of the people have very positive attitude to know and learn more about TM. Also, people need to be made aware that it does not take much command on technology to avail the telemedicine services. So, to increase the usage, the entities providing TM services should reach out to more people, make them try the services 2-3 times so that get to know what all services are being provided and they are easy to use. TM can help strengthen Indian healthcare system and can increase the reach of remote places to healthcare facilities, so they can avail healthcare services more effectively and conveniently. During the current situation of Covid-19 pandemic, it is high time that we pay attention on the gaps that are not letting the people of India to use TM,

keeping in mind the same, NITI Ayog released the revised guidelines for TM usage in India. These guidelines should be implemented as soon as possible so that the TM practices can increase among Indians

Limitations

- The survey was self-administered, so there might be chances of people using other sources to answer
- Sample being studied may not be representative of the overall population and might have selection bias

REFERENCES

- [1] B. Potnuru, "Aggregate availability of doctors in India: 2014–2030," *Indian Journal of Public Health*, vol. 61, no. 3, p. 6, 2017.
- [2] W. (. o. Pennsylvania, "Knowledge@Wharton," 28 January 2020. [Online]. Available: <https://knowledge.wharton.upenn.edu/article/technology-changing-health-care-india/>.
- [3] D. M. Amit Kapoor, "Bridging the digital divide," 28 July 2016. [Online]. Available: <https://www.thehindu.com/opinion/op-ed/Bridging-the-digital-divide/article14511451.ece>.
- [4] N. A. Y. N. T. Vinoth G. Chellaiyan, "Telemedicine in India: Where do we stand?," *Journal of Family Medicine and Primary Care*, vol. 8, no. 6, p. 5, 2019.

- [5] O. T. (. Herald), "Telemedicine: Briding the gap," 17 June 2020. [Online]. Available: <https://www.deccanherald.com/opinion/panorama/telemedicine-bridging-the-gap-850414.html>.
- [6] "Telemedicine Practice Guidelines," MoHFW and NITI Ayog, 2020.
- [7] CSC, "tele-medicine-reducing-the-impact-of-coronavirus-pandemic-in-tikola-kalan-village-uttarakhand," 11 June 2020. [Online]. Available: <http://www.thecscnews.in/2020/06/11/csc-tele-medicine-reducing-the-impact-of-coronavirus-pandemic-in-tikola-kalan-village-uttarakhand/>.
- [8] K. Kaliyaperumal, "Guideline for Conducting a Knowledge, Attitude," *AECS Illumination*, vol. IV, no. 1, 2004.
- [9] J. M. M. A. M. P.-S. Eva D. Mathatha, "Exploring the knowledge, attitudes and practices (KAP) of health care professionals on viral hepatitis notification in Gauteng, South Africa, 2015," *Archives of Public Health*, p. 6, 2018.
- [10] S. K. Zayabalaradjane Zayapragassarazan, "Awareness, Knowledge, Attitude and Skills of Telemedicine among Health Professional Faculty Working in Teaching Hospitals," *JCDR (Journal of clinical and diagnostic research)*, p. 4, 2016.
- [11] S. K. S.K. MEHER, "Awareness and attitudes towards telemedicine in India," *Gerontechnology Journal*, vol. 13, no. 2, 2014.
- [12] K. B. a. E. Abetu, "Knowledge and Attitude of Health Professionals toward Telemedicine in Resource-Limited Settings: A Cross-Sectional Study in North West Ethiopia," *Hindawi Journal of Healthcare Engineering*, vol. 2018, p. 7, 2018.
- [13] K. S. R. a. A. A. Jyothis T George, "A survey in India of doctors' knowledge, attitudes and practice regarding telemedicine and e-health," *Journal of Telemedicine and Telecare*, vol. 13, 2007.

- [14] J. A. B. E. B. a. K. M. M. Hugh Ruddick-Bracken, "A survey in the Grampian region of the knowledge, experience and attitudes of doctors to telemedicine," *Journal of Telemedicine and Telecare*, vol. 6, no. 1, 2000.
- [15] "Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey," *International Journal of Biological Sciences*, vol. 16, no. 10, p. 8, 2020.
- [16] R. S. T. a. T. C. Sushil K Meher, "Awareness and attitudes to telemedicine among doctors and patients in India," *Journal of Telemedicine and Telecare*, vol. 15, no. 3, 2009.
- [17] The MOH, Health Communication Capacity Collaborative (HC3) Project, "National Knowledge, Attitudes and Practices (KAP II) Study on Ebola Virus Disease in Liberia," Ministry of Health, 2017.

PART – B

COURSE REPORT ON

SIX SIGMA- GREEN BELT

INTRODUCTION

Lean

Lean was developed in Toyota as part of the Toyota Production System, which was built around the work of Shewhart and Deming. Lean runs on the basis of elimination of wastes. In fact, the Lean methodology can be put as , "a set of tools that assist in the identification and the steady elimination of waste."

Six Sigma

Six Sigma was first developed at Motorola during the late 1980s. The goal was to upgrade the process on how the quality and measurement systems functioned.

The Six Sigma methodology aimed on finding and removing anything that was source of variation in the process. When the variation is removed, the process results can be accurately forecasted. A system is to be designed so that the forecasted results fall under what customer is willing to accept and so to remove the errors.

Lean and Six Sigma

Lean Six Sigma is a blend of two constantly improvement-oriented methods – Lean & Six Sigma, so as to make the way for better efficiency, and effectiveness within the process for organisations

Combining Lean & Six Sigma

Lean Six Sigma provides a structured appeal and a blended toolkit to assist employees construct their problem-solving skills. Lean & Six Sigma are based on the Scientific Method and together they assist the organizations eyeing to construct a problem-solving environment. This means that “continuous improvement” becomes a routine

Two methods :

- Lean suggests the PDCA—Plan-Do-Check-Act/Adjust—method & tools like 5S, 8 Wastes to attain constant improvement.
- Six Sigma applies the DMAIC— Define-Measure-Analyze-Improve-Control— method and tools like Control Charts and FMEA to attain efficiency and effectiveness

Attitude and discipline

1. Customer Focus
2. Meet customer expectations every time

Operational Excellence

Eighty-five percent of the reasons for failure to meet customer expectations are related to deficiencies in systems and processes, not to the fact that our employees are not up to the challenge

“The Manager's role is to promote process improvement.”

Sigma level

Sr.No.	Sigma Level	DPMO- Defects Per Million Opportunities	Percentage of successful outputs or operations
1.	ONE	691,462	30.9
2.	TWO	308,538	69.1
3.	THREE	66,807	93.3

4.	FOUR	6,210	99.4
5.	FIVE	233	99.98
6.	SIX	3.4	99.99966

Table 1. 1Sigma Level

OBJECTIVE

- Learn how to understand the current process in statistical forms
- Applying Lean & six sigma method to improve any process and bring more efficiency & effectiveness in the current process

DMAIC: An Improvement Methodology

DMAIC Roadmap

1. DEFINE: Set direction for improvement
2. MEASURE: Collect reliable data to understand current process performance
3. ANALYSE: Identify problem's root causes through process and data analysis
4. IMPROVE: Determine new improved process design
5. CONTROL: Ensure improvement effectiveness over time

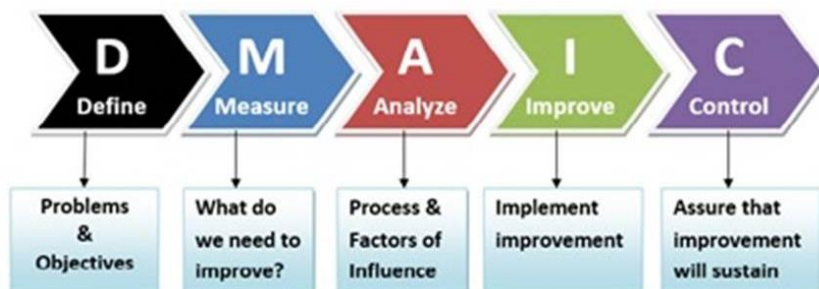


Fig 3. 1 DMAIC Roadmap

DEFINE

Objectives: Set direction for improvement

Steps

- Have a high-level view of the process – SIPOC
- Know the customers' needs and identify their key performance requirements -CTQs
- Formalize the charter of the improvement project – Charter

MEASURE PHASE

Objective:

Collect reliable data to understand current process performance

95% of the population is within approximately ± 2 standard deviations of the mean

The sigma of a process

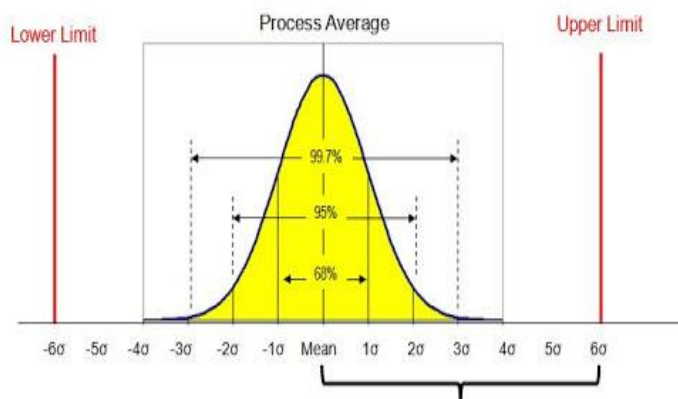


Fig 5. 1 The Sigma of a Process

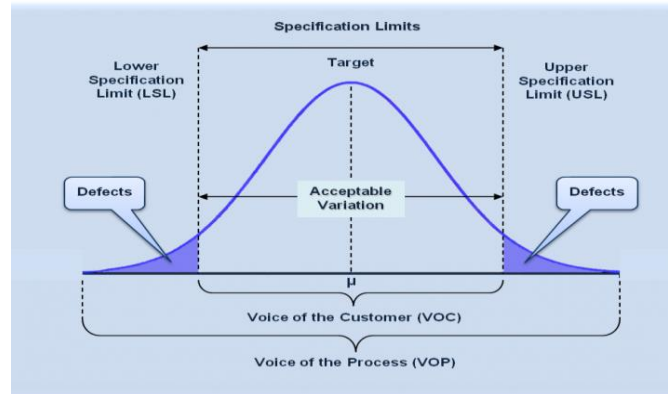


Fig 5. 2 VOC and VOP

ANALYSE PHASE

Objective: Identify problem's root causes through process and data analysis

Steps:

1. Cause and Effect Diagram
2. Control Impact matrix
3. Pareto chart
4. Value analysis using process map

Cause and Effect diagram-

A **Cause and Effect Diagram** is used to display the causes of a particular effect. It is also known as a fishbone diagram or an Ishikawa diagram

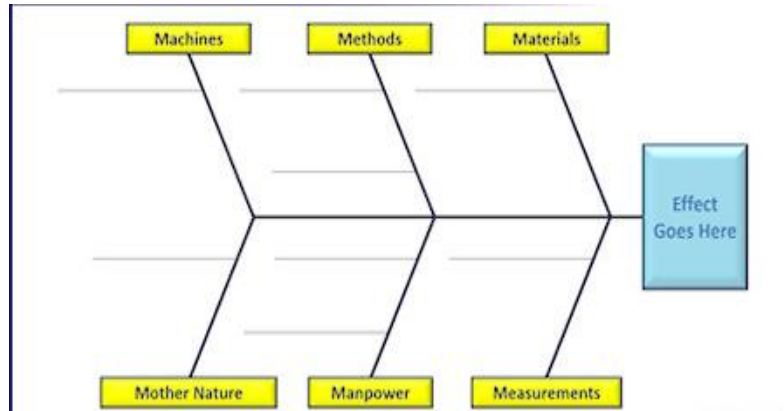


Fig 6. 1 Cause & Effect diagram

Control Impact Matrix

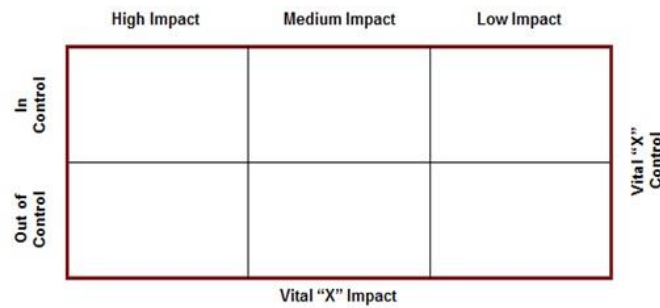


Fig 6. 2 Control Impact Matrix

Pareto chart

A tool to graphically represent the discrete data in categories and identify the few causes basic to most of the defects (the 80 / 20 principle)

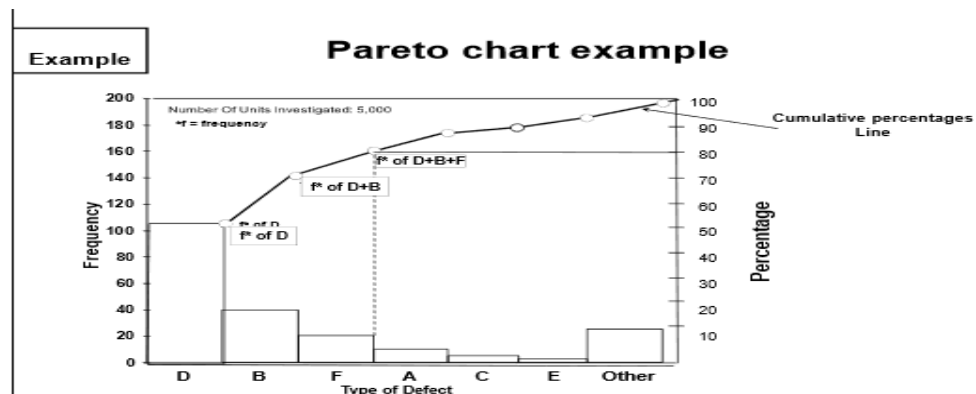


Fig 6. 3 Pareto Chart

Process map

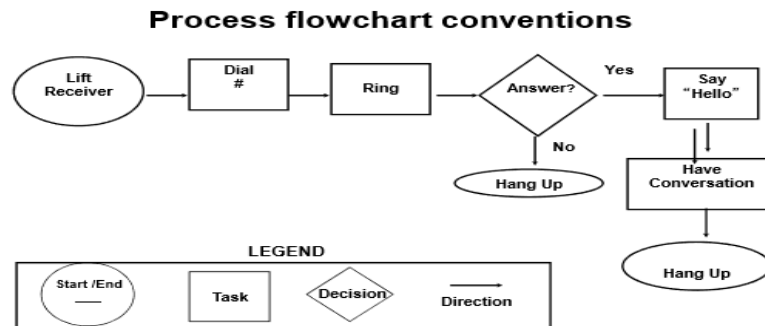


Fig 6. 4 Process Flowchart

7 (8) Wastes (Muda)



Fig 6. 5 Types of waste (Muda)

Improve Phase

Objective

Determine new improved process design

Steps:

Generate solutions Select and test solutions

Idea Generation

Creativity approaches

1. **Process benchmarking**
2. **Best practices**
3. **Brainstorming**

Control Phase

Objective: Ensure improvement over time

Steps:

- Create control tools (documentation and dashboard)
- Organize process reviews by Process Owner

The CONTROL phase naturally leads to Process Management as the purpose of that phase is to deliver the tool set for ongoing management of the process performance by Process Owner.

Control = implement process management

Five S

- Sorting -Selecting or separating
- Simplifying -Straighten and store
- Sweeping- Scrub and shine
- Standardizing
- Self-discipline -Systematize

LEARNING METHDOLOGY

Live video classes, followed by one case study analysis and final online exam for certification

KEY LEARNINGS

Benefits of Using Lean Six Sigma

Organizations face rising costs and new challenges every day. Lean Six Sigma provides a competitive advantage in the following ways:

- How to define the current process
- Converting variables/feedbacks into measurable terms
- Analyze the data using statistical tools
- Finding solutions to improve the existing process
- Sustaining and keep a check on the improved process

Fully Executing Lean & Six Sigma methods from Green Belt perspective to improve a process being followed in any organization

CERTIFICATE

6σ
**Certified
Green Belt**

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CONSULTANCY GE

ANEXAS EUROPE Lean Six Sigma Green Belt Certificate

Awarded to

UTKARSH GUPTA

for successfully completing
Lean and Six Sigma Green Belt during
May 2020; passing the examination conducted by
Anexas Europe and getting certified as Green Belt
by demonstrating adequate competence in application
of Lean Six Sigma tools and techniques.



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Amitabh Saxena
CEO

May 25, 2020

Certificate No. GBIND160520/1606/26

ANNEXURES (PART A)

Questionnaire

Awareness, Knowledge, Attitude & Practices (KAP) towards Tele-medicine

Demographic Questions

Q1. How old are you- (<25, 25-40, Above 40-60, Above 60)?

Q2 Are you - (Male/Female/Transgender/Prefer not to say) (Gender)

Q3. You're a – Student, Working Professional, Healthcare professional(student/working), Housemaker (Profession), other

Q4. Level of education (School, Diploma, Graduation, Post-Graduation, Others)

Q5. Place of Residence – (Urban/ Rural)

Awareness about Telemedicine

Scale- INTENSITY

- Extremely
- Very Much
- Somewhat
- Not really
- Not at all

Q1. To what extent are you familiar with the word telemedicine

Q2. To what extent are you familiar with virtual appointments and prescriptions of doctors?

Q3. How familiar are you with the online delivery of medicines?

Q4. How familiar are you about the telemedicine in India?

Q5. To what extent do you think technology plays a role in Telemedicine?

Q6. Do you agree with the statement that one need to be very sound with technology to avail the telemedicine in India?

Knowledge about Telemedicine

Scale -

- Definitely
- Probably
- Possibly
- Probably Not
- Definitely Not

Q1. Telemedicine saves time

Q2. Telemedicine saves efforts

Q3. Telemedicine saves Transportation cost

Q4. The telemedicine is already available in India

Q5. Telemedicine can help record & share medical data more conveniently

Q6. Telemedicine can provide real time information

Q7. Telemedicine can increase the reach of remote places to healthcare facilities

Attitude related to telemedicine

Scale- LIKELIHOOD

- Definitely
- Probably
- Possibly
- Probably Not
- Definitely Not

Q1. Would you like to know more about telemedicine?

Q2. Would you feel secure over connecting to doctors on call or via video conferencing?

Q3. Are you willing to see doctor over the call/video conferencing?

Q4. Do you think digital connection can replace face to face consultation for many health conditions, if not all?

Q5. Do you think digitally connecting to Doctors can strengthen the healthcare system of India and should be incorporated?

Q6. After Treatment would you want doctor to remotely keep an eye on your health condition?

Practices related to Telemedicine

Scale - FREQUENCY

- Always
- Often
- Sometimes
- Rarely
- Never

Q1. How frequently do you consult a doctor over call/video or text?

Q2. Which apps/websites do you use?

- Pacto/Lybrate/Docsapp/Apollo 24*7/Myupchar/similar apps (Tele consultation)
- 1mg/Phareasy/Netmeds/Medlife/Medibuddy/similar apps (E-Pharmacy)
- Thyrocare/lalpathalbs/SRL diagnostics/similar apps (E-Diagnostics)
- None
- Others

Q3. How frequently do you use the said apps?

Q4. After an in-person visit to a doctor, how frequently do you connect to doctor digitally for follow-ups/medications?

Q5. How frequently do you transfer your medical data like diagnosis reports digitally to your healthcare providers?

Q6. How frequently do you use internet or digital mediums to know more about a health condition?

Chi-square test of Independence Cross Tabulation

	AWARENESS		
AGE	High	Low	Grand Total
25-40	13	15	28
40-60	34	42	76
60+	27	32	59
Under 25	25	30	55
Grand Total	99	119	218

	AWARENESS		
GENDER	HIGH	LOW	Grand Total
Female	16	22	38
Male	83	97	180
Grand Total	99	119	218

	AWARENESS		
PROFESSION	HIGH	LOW	Grand Total
Healthcare Professional (Student or Working)	3	1	4
Housemaker	0	7	7
Retired	20	40	60
Student	17	30	47
Working Professional	40	60	100
Grand Total	80	138	218

	KNOWLEDGE		
AGE	HIGH	LOW	Grand Total
25-40	8	20	28
40-60	43	33	76
60+	32	27	59
Under 25	12	43	55
Grand Total	95	123	218

	KNOWLEDGE		
GENDER	HIGH	LOW	Grand Total
Female	11	27	38
Male	93	87	180
Grand Total	104	114	218

	KNOWLEDGE		
PROFESSION	HIGH	LOW	Grand Total
Healthcare Professional (Student or Working)	1	3	4
Housemaker	2	5	7
Retired	33	27	60
Student	10	37	47
Working Professional	58	42	100
Grand Total	104	114	218

	ATTITUDE		
AGE	HIGH	LOW	Grand Total
25-40	12	16	28
40-60	42	34	76
60+	35	24	59
Under 25	20	35	55
Grand Total	109	109	218

	ATTITUDE		
GENDER	HIGH	LOW	Grand Total
Female	13	25	38
Male	82	98	180
Grand Total	95	123	218

	ATTITUDE		
PROFESSION	HIGH	LOW	Grand Total
Healthcare Professional (Student or Working)	2	2	4
Housemaker	2	5	7
Retired	27	33	60
Student	13	34	47
Working Professional	51	49	100
Grand Total	95	123	218

	PRACTICES		
AGE	HIGH	LOW	Grand Total
25-40	12	16	28
40-60	34	42	76
60+	31	28	59
Under 25	30	25	55
Grand Total	107	111	218

	PRACTICES		
GENDER	HIGH	LOW	Grand Total
Female	20	18	38
Male	87	93	180
Grand Total	107	111	218

	PRACTICES		
PROFESSION	HIGH	LOW	Grand Total
Healthcare Professional (Student or Working)	2	2	4
Housemaker	3	4	7
Retired	30	30	60
Student	25	22	47
Working Professional	47	53	100
Grand Total	107	111	218