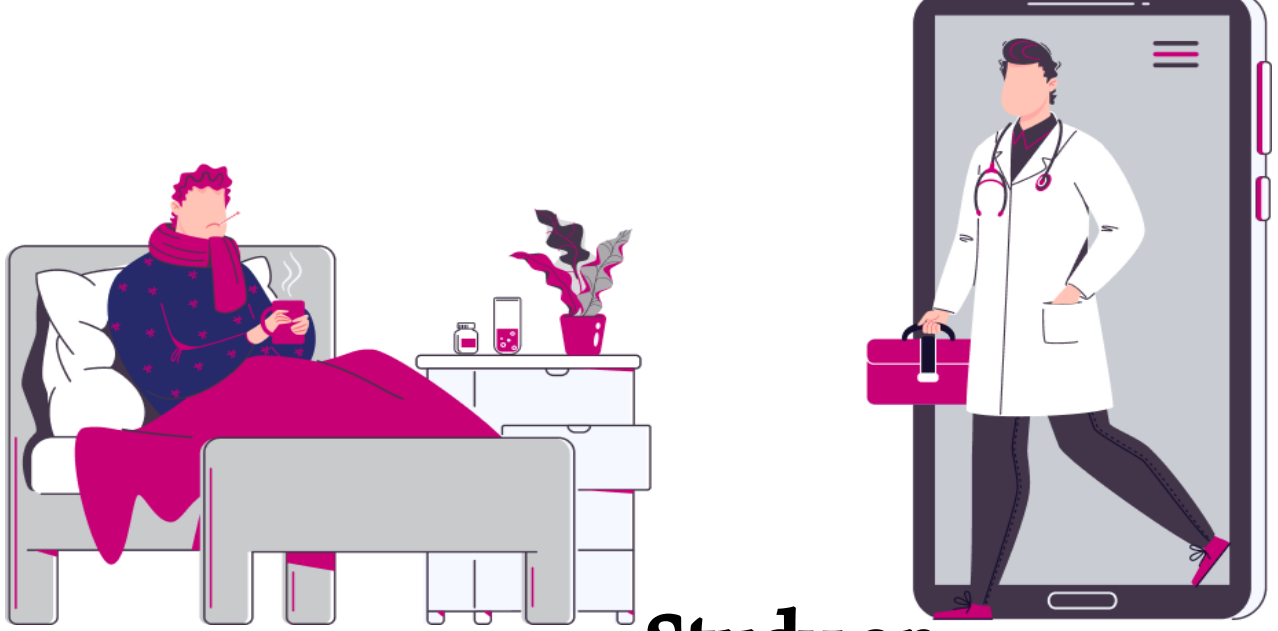

Study on

Knowledge, Attitude, and Practices of using Telemedicine in Healthcare Services in Amritsar City

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Jay Sanders, MD

"Father of Telemedicine"

JOHNS HOPKINS
SCHOOL of MEDICINE

Dr. Jay H Sanders, "Father of the telemedicine" represented the first application of **telemedicine** into correctional healthcare, and in 1991 he designed the telemedicine system for the State of Georgia that interfaced with rural hospitals, public health facilities. He is also an adjunct professor of medicine at Johns Hopkins School of Medicine and a founding board member and president emeritus of the American Telemedicine Association (ATA).

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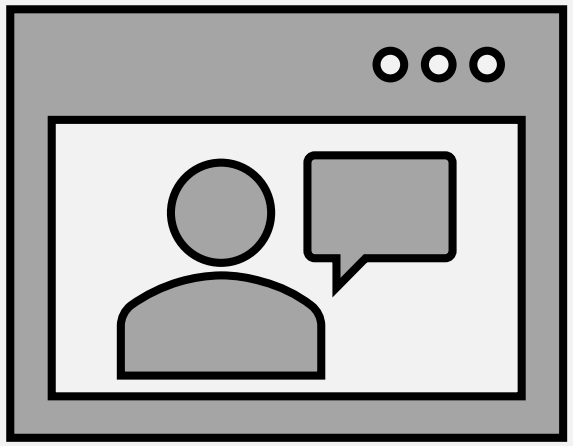
Telemedicine in India



- In India, Telemedicine was formally **launched** on March 30th, 2000, when Bill Clinton— the then president of the United States— commissioned the first **telemedicine** unit in the Southern **India**.
- ISRO (**Indian** Space Research Organization) made a modest beginning in **telemedicine** in **India** with a **Telemedicine** Pilot Project in 2001, linking Chennai's Apollo Hospital with the Apollo Rural Hospital at Aragonda village in the Chittoor district of Andhra Pradesh.

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About Telemedicine

"WHO" defines that, "The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities"

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Introduction

- The use of information technologies in the medical and health care fields shows great potential for improving the quality and effectiveness of work done by medical organizations.
- Telemedicine and telehealth are important tools for elaboration in healthcare delivery using smartphones, email, video conferencing and other tools.
- Telemedicine is the use of electronic information and communication technology to provide and support clinical care remotely.
- The success of any new technology depends on many factors including the knowledge and understanding of the concept, skills, acquired attitude, and working environment.

Study Questions

What are the national and international guidelines on the telemedicine?

What is the knowledge, attitude, practices regarding Telemedicine Services in Amritsar City?

What are the facilitating factors and barriers to use the Telemedicine in healthcare services?

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Study Objectives

To review the literature, articles, national and international guidelines on the Telemedicine.

To study the knowledge, attitude, practices regarding Telemedicine Services in Amritsar City.

To identify the facilitating factors and barriers to use the Telemedicine in healthcare services.

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Literature review

(a) Telehealth- Breaking down adoption barriers 2019 (Infosys)

Aim of the study is to bring and break down all the barrier of telemedicine and improving the health and treatment outcomes of the population. 36 interviews were conducted with leaders of healthcare organizations who have been actively pursuing a digital strategy over many years, as well leading technology suppliers. Various barriers were recognized but from past few years usage of telemedicine shown staggering growth has been seen from 5% in 2017 to 22% in 2019". But after the global pandemic this range reaches up to 55%.

(b) "Digital Health -Heaven or Hell", (KPMG 2016)

Purpose of the study is to drive the quest for well planned , high standard healthcare. This study was gathered through an extensive secondary research of the existing literature on health technology's impact on productivity and quality of care. Study concluded that technology is driving significantly and showing different relationship between patient and provider. This requires new skills for both. Provider will develop new coaching skills in order to "activate" and engage people in their care.

Literature review

(c)Telehealth -Future of healthcare [PwC Health research institute (HRI) in 2015]

Objective of the study is to determine the benefits of telehealth. Primary data collected through survey by HRI, study concluded that 48% of the consumers were surveyed by HRI indicated that they would be willing to pay for an online services or app that could diagnose and prescribe based on the signs and symptoms described by provider.

(d)Telemedicine and Health IT Bridge, [American Telemedicine Association (ATA), 2011].

Purpose of the study is o bridge the telemedicine and Health-IT together. Data collected through survey by ATA. This study identified the bridge between Telehealth and healthcare IT and shows how the virtual care can be obtained with mutual interest with HIT initiatives. The goals of telemedicine and Health IT are synergistic.

Methodology

Study Design

Crossectional Study

Study Frame

Age of 18-60 years

Respondents of Amritsar City

Duration

(21 March,2021- 21 June,2021)

Sampling

Purposive sampling

Sample size

100

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Data Collection Methods

PRIMARY

- A self-administered online survey google form was used as a tool to gather the primary data.
- Social media apps [WhatsApp, Facebook] used to reach out to respondents.
- Data was analysed in terms of percentages using Ms-excel and presented in Tabular forms.

SECONDARY

- Search engines like PubMed, Research gate, Google scholar, Direct science were used
- 25+ papers were reviewed.
- Official websites of healthcare start-ups providing telemedicine services like Practo, HCAH, Credi Health, Docs App, Doc-online, Med-life were explored

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NATIONAL DIGITAL HEALTH MISSION

- The Ministry of Health and Family Welfare, Government of India has formulated the National Digital Health Mission (NDHM) with the aim to provide the necessary support for integration of digital health infrastructure in the country. This visionary initiative, stemming from the National Health Policy, 2017 intends to digitize healthcare in India.
- Objective of NDHM is To strengthen the accessibility and equity of health services, including continuum of care with citizen as the owner of data, in a holistic healthcare Programme approach leveraging IT & associated technologies and support the existing health systems in a ‘citizen-centric’ approach.
- NDHM will provide choice to individuals to access both public and private health services, facilitate compliance with laid down guidelines and protocols, and ensure transparency in pricing of services and accountability for the health services being rendered.

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Opportunities of NDHM

- The current strong public digital infrastructure provides opportunities to streamline healthcare information through digital management.
- The experience of AB-PMJAY can be leveraged to expand the reach of digital health to all residents and develop an open and inter-operable health management system that empowers residents, healthcare providers, the Government and researchers.
- Emerging technologies such as artificial intelligence, the internet of things (IoT), blockchain and cloud computing provide additional opportunities for facilitating a more holistic digital health ecosystem, that can increase the equitable access to health services, improve health outcomes and reduce costs.

Benefits of NDHM

- NDHM will provide choice to individuals to access both public and private health services, facilitate compliance with laid down guidelines and protocols, and ensure transparency in the pricing of services and accountability for the health services being rendered.
- Similarly, health care professionals across disciplines will have better access to the patient's medical history (with the necessary informed consent) for prescribing more appropriate and effective health interventions.
- The integrated ecosystem will also enable a better continuum of care. NDHM will help digitize the claims process and enable faster reimbursement.
- At the same time, policy-makers and programme managers will have better access to data, enabling more informed decision making by the Government.
- Better quality of macro and micro-level data will enable advanced analytics, usage of health-biomarkers and better preventive healthcare. It will also enable geography and demography-based monitoring and appropriate decision making to form design and strengthen implementation of health programmes and policies.

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Results

- The survey results were presented in three sections: socio-demographic, COVID-related experiences, knowledge, attitude, and practice towards telemedicine services.

In socio-demographic section, results revealed that	Out of total 100 participants, both males (52 percent) and females (48 percent) participated in the study. The average age group of the respondents was 30 years.
	More than half of the respondents between 26-35 years age group followed by 18-25 years age group (36 percent)
	About 55 percent of respondents were unmarried, 43 percent of the respondents were married, and remaining were not preferred to disclose their status.
	About 24 percent of the respondents were Post Graduated, followed by Graduates (54 percent), diploma holders (13 percent) and rest of them had their education up to 12^{th} and 10^{th} standard.

Table 1: Percentage distribution of the respondents by their COVID related experiences (n=43)

Item	n	%
Level of severity among those who suffered from COVID		
Mild- (no need was felt to discuss medical personnel or go to health facility)	23	54
Moderate- (accessed hospital / health facility, and after testing consulted, come back and quarantine)	13	30
Severe – (serious, hospitalized etc.)	7	16
Type of "pathy"		
Allopathy	33	78
Homeopathy	5	12
Ayurvedic	5	12
Type of health facility/ provider		
Registered medical practitioner in a private hospital	15	35
Registered medical practitioner in a private clinic.	9	21
Govt. hospital	13	30
Chemist	6	14
Opted telemedicine	13	30
Call	3	23
WhatsApp	6	46
Mobile App	2	15
Registered on site	2	15
Needed hospitalization (Yes)	13	30
Current status of the patients (Alive)	33	77
Had Health problem other than covid (Yes)	16	37
Post-covid symptoms like severe body ache along with lethargy	6	37.5
Diabetes	4	25
Hypertension	1	6
Skin infection	1	6
PCOD	1	6
Restlessness, Weakness	1	6
Anaemia	1	6
Knee problem	1	6

Table 2 Percentage distribution of Knowledge about telemedicine services

Item	%
Have Knowledge about organization providing telemedicine services	51
Type of organization	
Hospital chains	25
Healthcare start-up	10
Telemedicine Kiosks	10
All	6
Have knowledge Technologies used in the Telemedicine	60
Kind of technologies	
All	28
Telemedicine Kit	5
Telemedicine Software	14
Laptop or PC	3
App	5
Internet facility	3
Mobile Medical Devices	2

Table 2 Percentage distribution of Knowledge about telemedicine services

Item	%
Have Knowledge on Telemedicine services	83
Type of telemedicine services	
All	44
Audio Consultation	17
Video Consultation	24
None	7
M-health (the practice of medicine and health care over mobile devices, tablets, PDAs, and computers.)	4
Remote patient monitoring	4
Know Platforms of telemedicine	
WhatsApp	69
CALL	10
Mobile App, website	10

Table 3. Percentage distribution of respondents by their attitudes towards Telemedicine services

Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Telemedicine is convenient way to receive care.	27	46	17	7	3
Telemedicine is compatible with current pandemic like situation	41	44	12	3	0
Telemedicine services saves time	36	47	16	1	0
Telemedicine services is cost saving	37	37	20	6	0
Telemedicine services reduce the number of visits to health facility	46	40	11	2	1
Telemedicine is future of healthcare	37	38	19	3	3
Telemedicine is viable approach for providing care to the patients	31	37	23	7	2
People in general prefer Telemedicine	23	23	28	17	9

Table 4 Percentage distribution of respondents by their practices towards telemedicine services

Level of comfort on using Telemedicine	%
Fully Comfortable.	16
Partially	69
Not at all	15
Preference of Diseases for Telemedicine services	**%**
General: Cold, Cough, Mild fever ,Disease like typhoid	89
Infectious: allergies, malaria, TB	8
Long-term diseases like Cancer, diabetes, heart related.	3

Willingness to pay (INR)	n	%
100-500	29	29
600-1000	44	44
1100-1500	7	7
1600-2000	9	9
2100-2500	7	7
2600-3000	4	4

Item	Definitely	Possibly	Probably	Probably not	Definitely not
Prefer to use telemedicine	34	31	30	3	2
Prefer to gain more knowledge on telemedicine	50	30	13	4	3
Refer telemedicine to family and peers	55	21	19	3	1

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Discussion

- The use of information technology in health care system is influenced by many issues. Among others, human-related components such as users' knowledge and attitude toward technology are of high importance.
- Telemedicine services can be advantageous to those who have limited access to health care services or have limited healthcare facilities.
- Telemedicine services has powerful market potential. In the coming years, it is expected that it will grow at a compound annual growth rate (CAGR) of 14 percent. The well-being market enabled by digital technologies (mobile applications, devices) is rapidly growing as well.

Conclusion

- As telemedicine is a new concept in health care service , its implementation has not been as much satisfactory and successful. However, the respondents of this study confirmed positive attitude toward telemedicine
- Study revealed that respondents are very much willing to learn about telemedicine. But usage of telemedicine is low among people.
- Before the deployment of this technology, it is very important to consider improving users' knowledge of the technology and demonstrate its competencies and benefits because ample knowledge and affirmative opinions of the technology are key factors to reassure users to use the technology in the future.

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References

- D. S. Edirippulige, A. C. Smith, J. Young, and R. Wootton, "Knowledge, perceptions and expectations of nurses in e-health: results of a survey in a children's hospital," Journal of Telemedicine and Telecare, vol. 12, no. 3, pp. 35–38, 2006.
- N. Demartines, O. Freiermuth, D. Mutter, M. Heberer, and F. Harder, "Knowledge and acceptance of telemedicine in surgery: a survey," Journal of Telemedicine and Telecare, vol. 6, no. 3, pp. 125–131, 2001
- P. Whitten, B. Holtz, and L. Nguyen, "Keys to a successful and sustainable telemedicine program," International Journal of Technology Assessment in Health Care, vol. 26, no. 2, pp. 211–216, 2010.
- https://ndhm.gov.in/

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References

- Telemedicine_MOHFW%20guidelines%5B9669%5D.pdf
- Field J, editor. Telemedicine: a guide to assessing telecommunications in health care. Washington DC: National Academy Press; 2006. p. 271.
- Telehealth Programs. Health resources and service administrations, https:// www.hrsa.gov/rural-health/telehealth/index.html [Accessed 21 February 2019].
- Ryu S. Telemedicine: opportunities and developments in member states: report on the second global survey on eHealth 2009 (Global Observatory for eHealth Series, Volume 2). Health Inform Res 2012; 18:153–5.

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