IMPACT OF COVID-19 PANDEMIC ON PEOPLE'S AWARENESS AND PERCEPTION TOWARDS HOME HEALTHCARE SERVICES: A STUDY.

Dissertation Submitted to

The IIHMR University, Jaipur

for the partial fulfilment for the award of the degree of
Master of Business Administration (MBA)
in
Hospital and Health Management
by

Dr Aishwarya Laxman Shityalkar

Under the Supervision and Guidance of

Dr Deepti Sharma

2021

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled Impact of COVID-19 pandemic on people's awareness and perception towards home healthcare services: A study is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

(Signature)
Name of Student: Dr. Aishwarya Laxman Shityalkar
Date: July 02, 2021.

INTERNSHIP CERTIFICATE

ONE LIFE
HOME HEALTHCARE

Internship Completion Certification

CERTIFICATE

This to certify that **Dr. Aishwarya Laxman Shityalkar** in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur has successfully completed her internship at **Tattva Home Healthcare Private Limited,** Chennai from **March 03, 2021, to June 19, 2021**.

We wish her all the best for her future endeavors.

For Tattva Home Health Care Pvt Ltd.,

Rakesh Inkollu
Assistant General Manager – Human Resources

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Khivraj Complex II, First Floor, No. 480, Anna Salai, Nandanam, Chennai - 35 1800 425 199 99 www.onelifehomehealthcare.in
A Tattva Group Company

CERTIFICATE

This is to certify that dissertation titled: Impact of COVID-19 pandemic on people's awareness and perception towards home healthcare services: A study, is a record of the research work undertaken by Dr Aishwarya Laxman Shityalkar in partial fulfilment of the requirement for the award of the degree of MBA (Hospital and Health Management) from IIHMR University, Jaipur under my guidance and supervision and his approach to the research study has been sincere, scientific, and analytical.

Faculty Guide	School Dean
Dr. Deepti Sharma	
IIHMR University, Jaipur	IIHMR University, Jaipur
Date:	Date:

ABSTRACT

Title: Impact of COVID-19 pandemic on people's awareness and perception towards home healthcare services: A study**.**

Background: COVID-19 pandemic has acted as an innovation catalyst in healthcare. Due to its contagious nature and stay at home protocols all businesses and sectors have shifted to provide services at the doorstep. This also applies to healthcare sector where virtual health, telemedicine, home care services seeped into India which was not much accepted earlier. This study aims to understand the impact of the pandemic on changing peoples' perception and awareness of towards home healthcare services.

Objectives: To investigate the knowledge and perception of the general population towards home healthcare services in India, and to understand the impact of COVID-19 pandemic in changing the population's perception towards availing healthcare services at home.

Methodology:

The study is based on primary data collected through online questionnaire. A total of 319 participants were involved in the study. The population sample included were in the age group of 18 plus years and the convenience sampling method was applied.

Results: The results showed majority of the study participants were aware of the home healthcare services and are knowledgeable regarding the care. 70 % of the participants have knowledge of homecare services. Most respondents have inclination towards availing elderly care services, physiotherapy services, nursing services or post-operative care and doctor visits at home. 94 % of the respondents have agreed that COVID-19 pandemic has created awareness regarding the home healthcare services. Similarly, a shift of perception and awareness has been seen post pandemic with increased inclination towards availing home care in the future as accounted by 68 % of the participants.

Conclusion: With the home care market being new in India and COVID-19 pandemic acting as an innovation catalyst there has been a definite growth for this domain. However, the awareness of the market is not disseminated equally amongst the population. The perception of population towards the services might be positive however, when related with the fee for service it sees a downward trend. Thereby more awareness or rather marketing of the healthcare services and products must be done to positively push the customer education norms in India.

ACKNOWLEDGEMENTS

Firstly, I would like to express my sincere thanks to Dr Deepti Sharma (Associate Professor, Faculty Mentor, IIHMR University) for her guidance and kind supervision for this report. The inspiration, encouragement and timely suggestions has helped me to shape and deliver my report.

I extend my sincere thanks to Mr. TR Narayanaswamy (Co-Founder and Group Managing Director of the Tattva Group and CEO of One Life Home Healthcare) for providing me an opportunity to do my internship at their esteemed organization. His support and suggestions have been vital for my dissertation.

I would also like to thank my colleagues at One Life who have supported me and have always been a constant help during the completion of the project as well as in the lockdown situation.

Finally, I would like to thank my friends and family for their support.

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1. INTRODUCTION/BACKGROUND

On January 31, 2020, the World Health Organization declared the coronavirus outbreak a Public Health Emergency of International Concern (PHEIC) and a pandemic on March 11, 2020. The Wuhan Municipal Health Commission (WMHC) recorded 27 cases of viral pneumonia on December 12th, with seven of them very ill. Most of the patients had been exposed to wildlife animals at Wuhan's Huanan Sea-food wholesale market. This was identified to be caused by a newer coronavirus which was later identified as SARS-CoV-2. (1,2)

As of June 20, 2021, the total cases worldwide are 179,147,193 with 11,567,574 being active cases and has taken a death toll of 3,879,320. Looking at the cases in India, the total cases stand at 29,934,361 with 709,668 being active and 388,164 being the death toll for the country (3). With the continued spread of the same, India is currently battling a second wave. The public health response has been focused on 'flattening the curve', through the dual ideas of containment and preventive measures. The contagious nature of the virus has led to the interventions around isolation, maintaining social distancing, avoiding crowds and to say the least gave out the message of 'stay at home'. All this has certainly fuelled the rise of virtual health, use of medical equipment's at home, telemedicine, and home healthcare models in India (4).

1.1: Global home-healthcare domain market:

The global home healthcare market size is forecasted to be USD 274.7 billion by the year 2025. Currently as of 2020, the market size stands at USD 181.9 billion with a compound annual growth rate of 8.6 percent during the projected period (5). Along with this the popularity around telehealth services and developing nations which are untapped present growth opportunities for various players in the home healthcare domain.

The tentative growth being fuelled by rapid growth in the elderly population along with rise in chronic diseases, technological advancements of home care devices as well as growing want for cost-effective delivery. Nonetheless, limited insurance coverage, changing reimbursement policies in few countries, to patient safety being a concern the growth of this sector is also seeing some limiting factors.

Other challenges of this segment can be shortage of home care workers. According to US Bureau of Labor Statistics the demand for home health employees and providers as well

as personal care aides is estimated at 2.9 million for 2016 to 2026. Thereby home healthcare players need approximately 2.9 billion home care workers to keep up with the rising demand.

Also skilled nursing services has taken up the largest share of home care services market in the year 2019 according to a report from markets and markets. Skilled nursing and medical care not only provide comfort for the patients at home but also is more comforting compared to residing at a hospital, nursing care homes or assisted living centres. (5)

The home healthcare market globally has seen a good and established trend in the nations of North America and Europe regions. This can be attributed to the favourable regulations and policies here. Thereby the market being saturated now, market players are now shifting their focus towards emerging economies of Asia Pacific as the concept of home healthcare in counties like China and India is at the emerging phase. (5,6)

1.2: Home healthcare market in India:

As seen globally Indian home healthcare market sized USD 5.2 billion in 2019 and is forecasted to grow four times to USD 20 billion by 2027; with a CAGR of 19.2 percent. (4,6) The growth in Indian healthcare market has been attributed to the need for better post-operative care and technological advancements. (6) This in addition to the increasing aged population segment is boosting the demand for healthcare and also leading to burden on health systems of the country. This can be attributed to the aging population being more prone to chronic diseases.(5) According to the World Health Organization the healthcare expenditure in India is expected to increase due to chronic and lifestyle diseases over the upcoming 25 years. This thereby aids favour to the home healthcare market as it enhances the overall reach and access to healthcare along with reduction in unnecessary visits, hospital readmissions, and saves time and cost involved. (6)

In the Indian context a study named Longitudinal Ageing Study of India (LASI) commissioned by Health Ministry was conducted by International Institute for Population Sciences, (IIPS), Mumbai in collaboration with the University of Southern California, the Harvard School of Public Health, the National Institute on Ageing and the United Nations Population Fund (UNFPA). The study suggested that according to 2011 census the 60 plus aged population took up 8.6 percent of the total population and was accounted to be 103 million of elderly people. And this will see an upward trend by a growth of 3 percent annually, thereby accounting the number to 319 million of elderly people by the year 2050; suggesting a threefold growth trend. The study further indicated that 75 percent of

the older population suffer from some chronic disease, about 40 percent have some disability and 20 percent have issues related to mental health. (7)

According to a report by new RedSeer Consulting analysis the Indian home care market is forecasted to grow due to factors like increasing consumer receptiveness towards home healthcare. Also, other contributing factors are rising doctors' acceptance of home healthcare, improved insurer's willingness to cover the home care expenses and significant scope of growth considering the same pattern as of developed economies. Additionally, the factors of poor bed to patient ratio at seven beds for each hundred patients and significantly low nurses to patient ratio being single nurse for every 1000 patients; the home sector is only pushed to grow. Moreover, 25 percent of patients in India are prone to the risk of hospital acquitted infections (HAI). Even if half of the inpatient expenditure comes from chronic or lifestyle diseases which account for regular care and check-ups then 50 percent of patients in India are being exposed to HAI's risks regularly. Nonetheless the high costs of hospital care can range in the bracket of Rs. 35000 to Rs. 50000 per day for an ICU care. All these factors along with care being provided at the comfort of the home and personalised on nature at low cost, home healthcare is only expected to boom in demand going forward. (8)

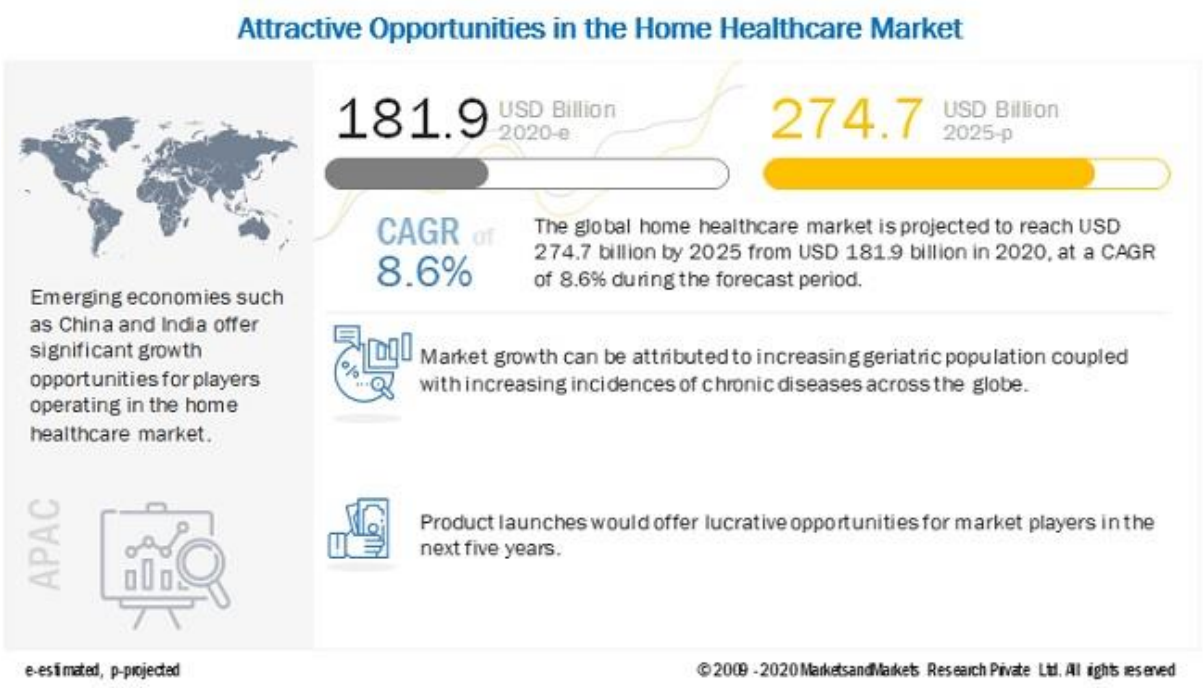

Figure 1.1: Global market of home healthcare; source: MarketsandMarkets (5)

1.3: Home healthcare:

Home healthcare refers to a range of healthcare services a patient can render at home. The home healthcare can be divided roughly in two as service line and products line.

Home care services can be referred to as professional support services that aid in assistance of living, managing healthcare concerns, medical or post-operative care, rehabilitation as well as palliative care for patients. The care given can be both short as well as long-term depending on the disease prognosis of the patient. Similarly, the product line of home healthcare can be divided into therapeutic, diagnostics and mobility care products. Table 1.1 shows the types of home healthcare segments and the related market forecasts and growth trends (5,6,9,10)

Table 1.1: Types of home healthcare segments and their market forecasts

Types of home healthcare segments	**Examples**	**Related market forecast and growth trends**
Home care services	▪ Skilled nursing ▪ Physician/doctor visits ▪ Rehabilitation therapy services ▪ Hospice and Palliative care services ▪ Physiotherapy, occupational or speech therapy ▪ Respiratory therapy ▪ Infusion therapy ▪ Pregnancy care ▪ Lifestyle/chronic disease management services ▪ Cancer care services	The skilled nursing dominated the largest share of services in home healthcare market in 2019. The overall skilled segment had over 85 percent revenue share attributing to prevalence of lifestyle diseases and rising demand of quality and affordable care as of 2019. Also, the services segment overall had a share of 83 percent in 2019. The comforting solution over residing in hospital or assisted living, favourable insurance coverage, avoiding unnecessary hospital stays for caregivers and patients, reduction in medical expenditure, growing demand of personalized care and rise in disposable income contributes to the segment growth and thereby is expected

	▪ Basic support or Companion services (unskilled care services) ▪ Diagnostics and pharmaceutical services at home	to support the growth of the market during the forecast period. Even the unskilled homecare services are witnessing growth as they tend to address the gaps in care and help in the unmet needs which are not covered by skilled care.
Home care products	▪ **Therapeutic segment:** C-PAP, Bi-PAP, ventilators, nebulizers, oxygen delivery systems, IV equipment, dialysis equipment, inhalers, insulin delivery, ostomy devices etc. ▪ **Diagnostics and monitoring products:** Blood glucose monitors, blood pressure monitors, pulse oximeters, heart rate monitors, HIV test kits, home sleep testing devices, coagulation monitoring products, ovulation and pregnancy test kits, Holter and event monitors, cholesterol monitoring devices, colon cancer test	Therapeutic segment accounted for largest revenue share of over 40 percent in 2019; attributed to home respiratory therapy equipment. Diagnostics segment accounted at 35 percent revenue share in 2019 and is forecasted to have the fastest CAGR in the upcoming period. This will likely propel due to accurate and timely diagnosis using strapless heart monitor, TQR heart rate watches etc,. Mobility assistive market is forecasted to grow owing to increasing incidents of trauma, arthritis, growing geriatric population and rise in orthopaedic disorders and physical disabilities.

	kits, activity monitors and wristbands etc,. ▪ **Mobility care products:** Wheelchairs, walkers, canes, crutches and mobility scooters.

1.4: Impact COVID-19 on home healthcare market:

According to a report published by MarketsandMarkets the pandemic has made a mixed impact on the home care market at a global level. The products or equipment market has seen a positive impact as health monitoring products like temperature monitors, blood glucose monitors, blood pressure monitors, pulse oximeters. However, service sector of home healthcare has seen a decline in the business as reported by many agencies and providers in this market. The report also sheds light on the fact that the downturn can be temporary and the service lines will get back to normal in the coming future as people are recovering from COVID-19. (5) A similar trend was seen in a research study done in Massachusetts which highlighted that the home care agencies experienced a decrease in demand for home visits attributing to clients' concern of infections or aides being unavailable for work. (11)

On the other hand, with the nature of the virus and cases increasing at alarming rate and India's lockdown, home care services are being chosen as a safer and cost-effective alternative as opposed to hospital for non-emergency or chronic cases. Similarly, the 'stay at home' message pushed due to the contagious nature of the virus has made newer ways to deliver services. The pandemic has led to the rise and growth of virtual health as well as telemedicine and home healthcare services in India. The pandemic also triggered the need for services being accessible anytime and anywhere inclusive of 24/7 digital access to primary care physicians, remote care at home, and reduction in hospital visits. Furthermore the demand for remote home health inclusive of telemedicine, diagnostics at home, pharma at home, health monitoring etc,. also has pushed the home healthcare market ahead in India. Reports suggest tele consult platforms have seen 500 percent jump in transaction volumes, 60 percent users of diagnostic or pharma at home were first time

users which hints towards the market being pushed ahead in India due to the pandemic. (4,6)

Nonetheless the pandemic has been a health care innovation catalyst which has reinforced the benefits and growth potential of home healthcare market in India.

2. REVIEW OF LITERATURE

TITLE	AUTHORS (YEAR)	SALIENT FEATURES
Impacts of the covid-19 pandemic on home health and home care agency managers, clients, and aides: a cross-sectional survey, March to June, 2020	Susan R. Sama, Margaret M. Quinn, Catherine J. Galligan, Nicole D. Karlsson, Rebecca J. Gore, David Kriebel, Julia C. Prentice, Godwin Osei-Poku, Charles N. Carter, Pia K. Markkanen, and John E. Lindberg. (December 2020)	**Study location:** Massachusetts USA **Sample size**: 94 surveys across various agencies which employed 14,272 aides and provided care to 46,633 clients that month **Sampling technique**: Convenience sampling **Features**: This study was conducted in Massachusetts where home care agency managers were surveyed to identify and assess the impact of COVID-19 on agencies, their clients, and aides. Most agencies which accounted for 98.7 percent saw a decrease in demand for home care as the client base was concerned of the infection, aides being unavailable or positive or family members assuming the duties. Also, the survey denoted

		that manager's time spent on developing newer policies, training and procedures increased with a rise in time spent on scheduling. (11)
Exploring health care providers' perceptions about home-based palliative care in terminally ill cancer patients	Heshmatolah Heydari, Suzanne Hojjat-Assari, Mohammad Almasian, Pooneh Pirjani (2019)	**Study location:** Iran **Sample size:** 17 individual interviews and focus group meeting with 8 people. **Sampling technique:** Purposive sampling **Features**: This study was conducted to explore the healthcare providers' perception towards the home-based care for terminally ill cancer patients and palliative care. The opportunities highlighted post the qualitative study was cost effectiveness and moving towards socializing health. The challenges highlighted are efficiencies in inter-sectoral and interprofessional cooperation, challenges related to management of death, lack of infrastructures for end-of-life care etc. To conclude the home-

		based palliative care requires the government's support for structural and process modification in home based healthcare sector. (12)
Users' perception and satisfaction of current situation of home health care services in Jordan	Dawani, H., Hamdan-Mansour, A. and Ajlouni, M. (2014)	**Study location:** Jordan **Sample size:** 82 users of home health care services **Sampling technique:** Convenience sampling **Features**: The study was conducted to understand the perception of users and providers regarding the quality of home health care services. The users had low to fair satisfaction regarding quality of care (30.5% to 69.5%), and moderate satisfaction about the information received (72.0% to 81.7%) and a low to fair satisfaction about education related to goal of treatment and medication given (53.3%). The users however had a high level of agreement that health agencies provided interpersonal care. (13)
Perception and knowledge of	Alia Almoajel	**Study location:** Riyadh

health care professionals toward home health care in Riyadh		**Sample size**: 74 home health care members and 61 health care practioners (total n=135) **Sampling technique:** Simple random sampling **Features**: The study was conducted to investigate the knowledge and perception of health professionals towards home healthcare and identifying difficulties faced during practice. Findings suggest most home care members had a good (28.4%) to excellent (59%) knowledge about the services. Other health professionals were aware of the services provided at home (95.1%). The concern finding was 62.2 % members stated that health educator was not a part of their team and thereby there is a lack of understanding of patients and their family regarding treatment at home. Thereby education of patients and families is needed for acceptance and positive perception towards the services. (14)

3. METHODOLOGY:

Research question: Has COVID-19 pandemic affected the general populations' knowledge and perception towards home healthcare?

Objectives of the study:

-To investigate the knowledge and perception of the general population towards home healthcare services in India.

-To understand the impact of COVID-19 pandemic in changing the population's perception towards availing healthcare services at home.

Study Design: Cross-sectional descriptive study design

Study setting: India

Sampling technique: Non-probability, convenience sampling

Data type: Primary data

Inclusion and Exclusion Criteria: The target population was set to be people above 18 years of age who are residents of India and own a smartphone. Population below 18 years of age were excluded from the study.

Sample size: 324 individuals

Research procedure:

The data collection process was done via an online platform using google forms which helped compose an electronic questionnaire. This questionnaire was distributed using electronic platforms. To ensure confidentiality the participants' personal information were not included. Only post providing their consent to proceed with the survey they were directed to the first section of the e- questionnaire.

The first section included the demographic details of the participants like age, gender, their geographic region (state/union territory), education and employment status. The second section had questions to understand the awareness of towards home care services prior to the pandemic and gauge their comfort for hospital care. The third section focused on understanding the knowledge and perception of the participants towards home healthcare services. This included multiple one-liners which were to be rated using Likert scale for understanding their perception. Further questions were to gauge participants knowledge about the services and could be answered by choosing multiple options. Several binary questions (yes-no/agree-disagree) were used in the survey. The last section had questions which focused on participants change of awareness or perception towards

the home healthcare services post the COVID-19 pandemic and its related influence in the change if any.

Statistical methods applied: Data was collected using google form platform and the analysis was done using IBM SPSS version 26.0 and Microsoft Excel as needed. IBM SPSS was used to perform univariate analysis for descriptive and frequencies whereas Microsoft Excel was used for formulating graphs where needed.

Ethical considerations: An informed consent was taken prior to deploying the e-questionnaire. The design of the e-questionnaire was set to proceed to the first section only if the participant agrees. No confidential data or personal details were collected using the questionnaire.

4. RESULTS AND DISCUSSIONS:

4.1: Results:

The e-questionnaire was sent using electronic platforms in which 324 responses were collected. Amongst the 324 responses five participants disagreed to participate: thereby the sample size n=319 is used for the following analysis. The descriptive mean age of the sample (μ) is 29.08 with a standard deviation of 8.472 indicative of participants being of the age group of 21 to 37 years of age.

Table 4.1: Demographic characteristics of respondents (N=319)

VARIABLE	CHARACTERISTICS	FREQUENCY	PERCENT
Gender			
	Male	176	55.2
	Female	141	44.2
	Do not prefer to mention	2	0.6
Residence			
	Rural	22	6.9
	Semi-urban	57	17.9
	Urban	240	75.2
Education			
	No formal education	0	0

	Primary Education	2	0.6
	Secondary Education	10	3.1
	Graduation	133	41.7
	Postgraduate	174	54.5
Employment status			
	Employed	174	54.5
	Business	10	3.1
	Unemployed	33	10.3
	Student	101	31.7
	Retired	1	0.3
State of respondent			
	Andhra Pradesh	5	1.6
	Bihar	5	1.6
	Chandigarh	2	0.6
	Chhattisgarh	3	0.9
	Delhi	20	6.3
	Gujarat	6	1.9
	Haryana	1	0.3
	Himachal Pradesh	3	0.9
	Jammu and Kashmir	2	0.6
	Jharkhand	2	0.6
	Karnataka	20	6.3
	Kerala	4	1.3
	Madhya Pradesh	9	2.8
	Maharashtra	171	53.6
	Meghalaya	1	0.3
	Odisha	2	0.6
	Puducherry	1	0.3
	Punjab	2	0.6
	Rajasthan	10	3.1
	Tamil Nadu	24	7.5
	Telangana	11	3.4

	Uttar Pradesh	8	2.5
	Uttarakhand	1	0.3
	West Bengal	6	1.9

Table 1.1 describes the demographic characteristics of the sample. Out of 319 respondents 55 % were males and 44 % were females; about two respondents did not prefer to mention their gender. About 75 % respondents of the study belonged from urban areas while 18 % and 7 % belonged to semi-urban and rural areas, respectively. In terms of their educational status all the participants have had some kind of formal education. Amongst the respondents 55 % have completed their post-graduation, 42 % are graduates, 3 % have done secondary schooling and 0.6 % have done their primary schooling. With respect to the employment status 174 respondents are employed, 101 respondents are students, 10 respondents have their own business, 33 respondents are not employed, and 1 respondent has retired from work. The highest proportion of respondents are from the state of Maharashtra (54 %), followed by Tamil Nadu (7.5 %) and Delhi (6.3 %).

Table 4.2: Frequencies (n) and percentage (%) distribution of awareness of the respondents regarding home healthcare services (HHC)

QUESTION	**RESPONSE**	**FREQUENCY**	**PERCENT**
Have you heard of HHC services prior to the covid-19 pandemic			
	Yes	222	69.6
	No	97	30.4
Who can receive treatments at home under HHC?			
	Children	4	1.3
	Adults	4	1.3
	Old people	56	17.6
	All of the above	247	77.4

HHC can help reduce caregiver/patients' stress			
	Agree	250	78.4
	Disagree	7	19.1
	Cannot say	61	2.2
Received HHC services before or during the pandemic			
	Yes	82	25.7
	No	231	72.4
	Maybe	4	1.3
If yes, which of the following services did you avail? Tick all that apply		n=110	
	COVID-19 isolation services	31	27.4
	Nursing services at home	12	10.6
	Doorstep delivery of medicines	60	53.1
	Diagnostics at home	54	47.8
	Doctor visits at home	19	16.8
	Others	1	0.9

For assessing the awareness of the respondents towards home healthcare services various questions were asked to all the 319 participants. 70 % of the respondents claimed being aware of home healthcare services prior to the pandemic whereas 30 % were not aware of such services. When asked about who are eligible to receive care at home about 18 % respondents feel the care is limited for elderly people, whereas 75 % respondents feel the care can be availed by all (children, adults, and old people). Also, 250 respondents are opiniated that HHC services can help reduce the caregivers' or patients' stress, 61

respondents are unsure if it will help reduce stress and 7 respondents disagree that HHC can relieve any such stress. (Table 4.2)

The respondents when asked if they have ever received any home care services responded that 26 % (82 respondents) of them have availed services in the past and 73 % (231 respondents) have not availed any such services. About 1.3 % (4 respondents) were unsure if they have availed any home care services. However, 110 respondents have later chosen the services they have availed; this hints that maybe they were not aware that the services they choose fall under the category of home healthcare services. The respondents were asked to choose multiple options in which almost half of them have availed doorstep delivery of medicines, diagnostic services at home and quarter of them have availed COVID-19 isolation services. (Table 4.2)

Table 4.3: Frequencies (n) and percentage (%) distribution of perception of the respondents regarding home healthcare services.

Questions **Opinion towards home healthcare services**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
Provides one on one personalized care	99 (31.0)	159 (49.8)	55 (17.2)	4 (1.3)	2 (0.6)
Comfortable with clinical staff being around at home	67 (21.0)	166 (52)	72 (22.6)	11 (3.4)	3 (0.9)
Known environment/comfort at home helps with patient's prognosis	176 (55.2)	115 (36.1)	22 (6.9)	4 (1.3)	2 (0.6)
Lesser chances of Hospital acquired infections (HAI)	139 (43.6)	142 (44.5)	27 (8.5)	9 (2.8)	2 (0.6)
Will trust external support/treatment at home	78 (24.5)	149 (46.7)	72 (22.6)	16 (5.0)	4 (1.3)

Patient conditions'/needs cannot be met at home due to limitations	61 (19.1)	149 (46.7)	83 (26)	21 (6.6)	5 (1.6)
HHC is expensive compared to hospital costs	70 (21.9)	111 (34.8)	85 (26.6)	34 (10.7)	19 (6.0)
Preferred only for terminally ill or old people	73 (22.9)	136 (42.6)	71 (22.3)	29 (9.1)	10 (3.1)
Invades privacy or independence at home	44 (13.8)	127 (39.8)	93 (29.2)	41 (12.9)	14 (4.4)
Provides protection of patient's identity better than hospital environment	76 (23.8)	129 (40.4)	92 (28.8)	16 (5.0)	6 (1.9)

To assess the perception of respondents towards home healthcare services a five-point Likert scale was administered with the scales ranging from strongly agree, agree, neutral, disagree and strongly disagree. Almost half (50 %) of the respondents are in agreement that home healthcare services provide one on one personalized care to the patients. Similarly, 31 % strongly agree, 17 % are neutral whereas 2 % disagree that the care is personalized.

Similar trend was seen where majority of the respondents (91 %) strongly agree or agree to the fact that known environment and the comfort of the home is vital and helps the patients towards a better prognosis. A quartile of the respondents (almost 87 %) perceive that home care services will lead to lesser chances of infections which can be otherwise contracted by visiting hospitals (Hospital acquired infections). However, almost half of the respondents feel the patients' medical needs cannot be met in the home care setting due to limitations. When asked if HHC services are only preferred for old or terminally ill patients almost 43 % agreed to it, 22 % were neutral and approximately 12 % were on disagreement with it. (Table 4.3)

Regarding the price point of home care services 22 % strongly agree and 35 % agree that home care services can be expensive as compared to hospital costs. However, 27 % were neutral, 11 % disagreed and 6 % strongly disagree thereby perceiving that home care services are inexpensive compared to the hospital costs.

The respondents perceive clinical staff being around at home as comfortable as 52 % and 21 % are in agreement or have strongly indicated the same respectively. Similar trend can be seen in respondents regarding the ability to trust external support or treatments at home as almost a quartile of them are in agreement with it. When asked if home care can lead to invasion or privacy or independence at home 29 % are neutral, almost 17 % disagree and the rest agree or strongly feel that it will lead to invasion of their privacy. Regarding protection of patients' identity better than a hospital setting majority of the respondents have agreed to it while very few are neutral or in disagreement for the same. (Table 4.3)

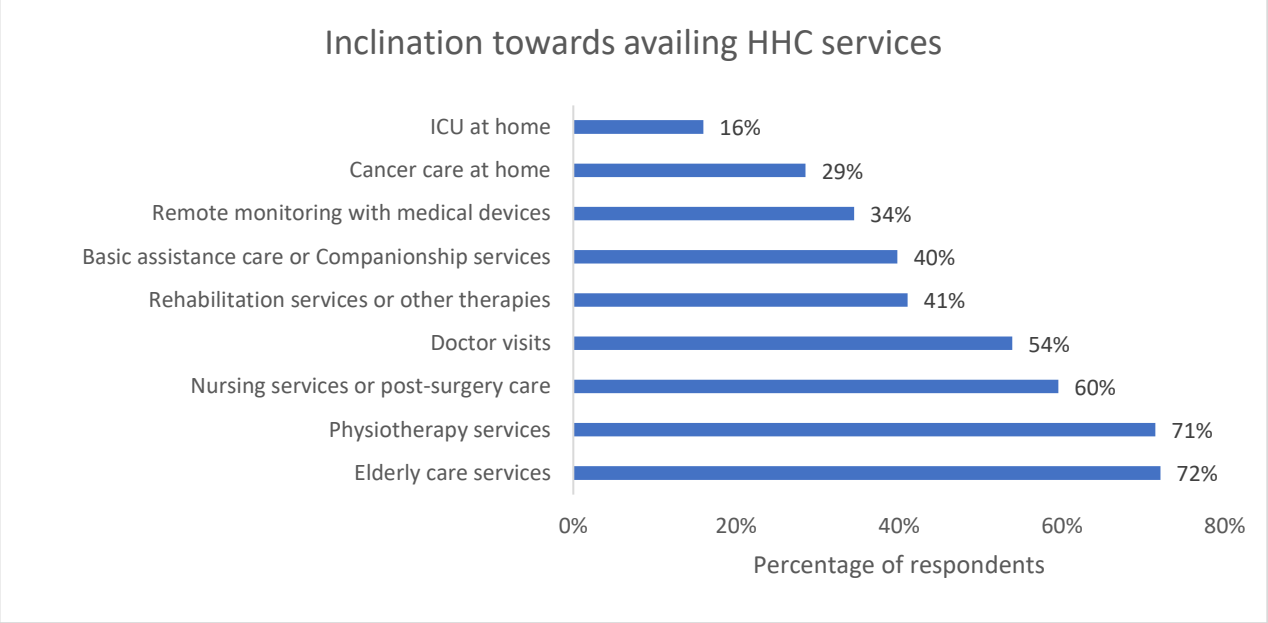

Figure 4.1: Respondent's inclination or perception towards availing various types of home healthcare services.

The respondents were asked to select multiple choices to denote their inclination towards availing home healthcare services. The majority of respondents have inclination towards availing elderly care services at home, physiotherapy services, nursing services or post-operative care and doctor visits at home. Services like ICU at home, cancer care at home, remote monitoring using medical devices and basic assistance and rehabilitation services received lesser inclination as compared to the rest of the services. (Figure 4.1)

As in figure 4.2, from perceived price point of these services the majority of respondents would tentatively shell out less than Rs. 1000 per day for physiotherapy services, nursing care, doctor visits at home, remote monitoring using medical devices, companion/basic assistance services and rehabilitation services. For post-surgery care and elderly care, majority of the respondents will be comfortable with paying less than Rs. 1000 or up to Rs. 3000 per day. For ICU at home and cancer care at home the respondents majorly would be comfortable shelling Rs. 1000 to 5000 per day for availing these services. Additionally, more than half the respondents will be comfortable to pay Rs. 3000 to 5000 per day for ICU at home services.

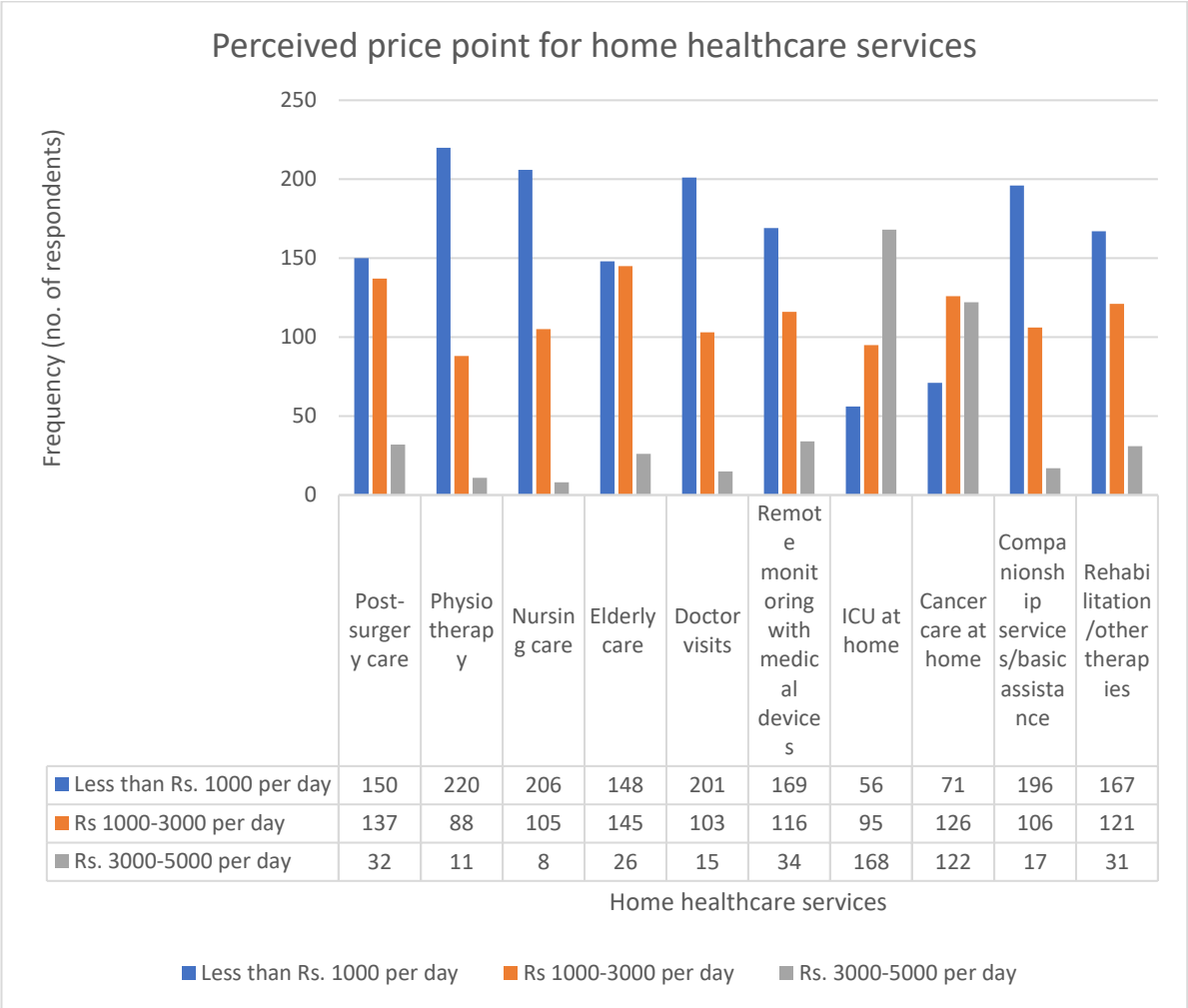

Figure 4.2: Perceived price of the various home healthcare services

According to figure 4.3, the respondents were fairly comfortable in visiting hospital to avail healthcare prior to pandemic. A five-point Likert scale was used to access the comfort level of visiting hospitals. 139 respondents were very comfortable followed by 98 respondents being somewhat comfortable. About 53 respondents were neutral, and 26

respondents were somewhat to almost not being comfortable in visiting hospitals for care even prior to the pandemic. Furthermore, when understanding if the peoples' perception has changed post pandemic about 215 respondents said that they would like to avail home healthcare services going forward and about 99 respondents would still continue availing care at hospitals. (Figure 4.4). Thereby a shift of inclination towards home healthcare was seen in the respondents.

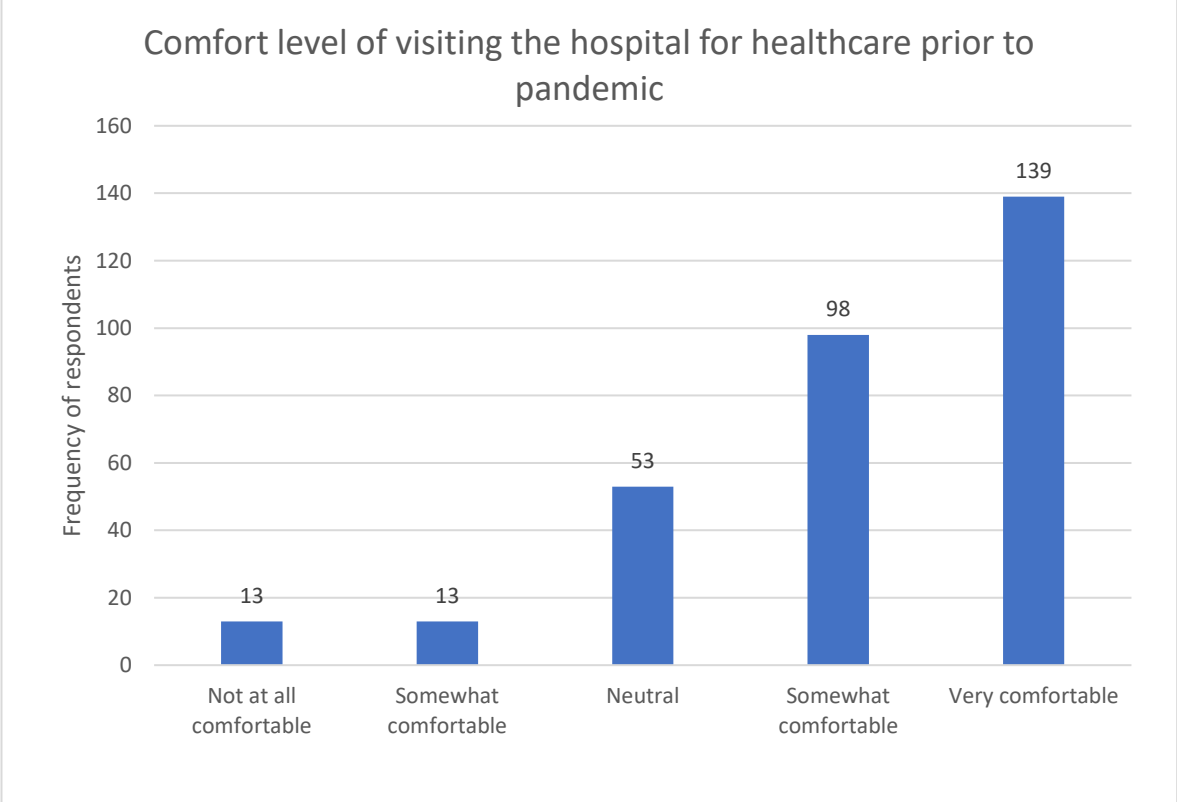

Figure 4.3: Respondents comfort level of availing hospital care prior to the pandemic

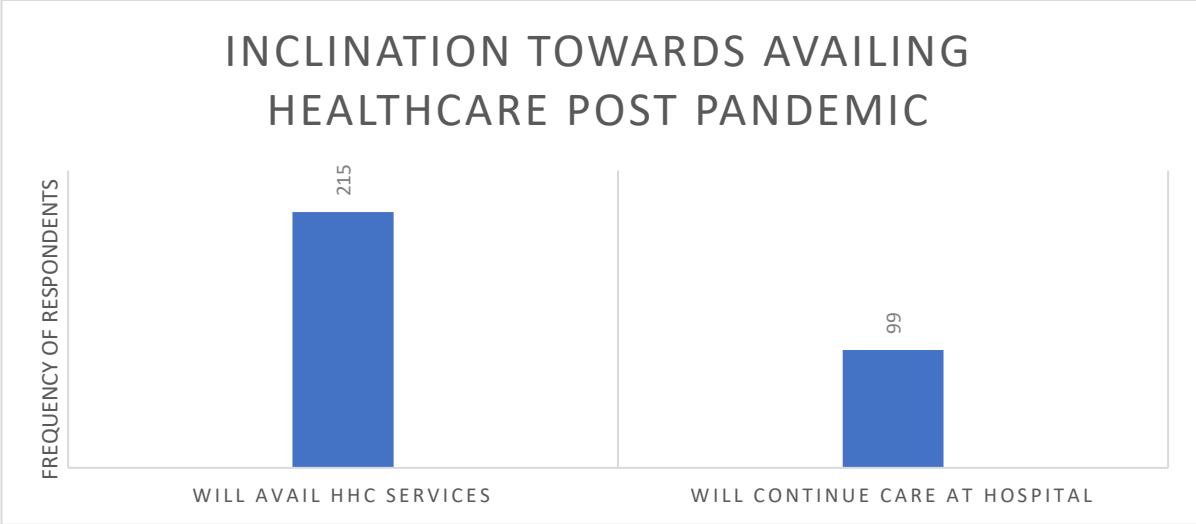

Figure 4.4: Respondents inclination towards availing health care post pandemic

Accounting to the trend above, 94 % of the respondents have agreed that COVID-19 pandemic has created awareness regarding the home healthcare services (Table 4.4). The shift or change of perception towards availing healthcare services at home was seen when the respondents were asked to rate how interested they were in availing home care services prior and post the pandemic on a five-point scale. About 18 to 23 percent responded that they were somewhat to very interested in availing home care prior to the pandemic. This perception saw a shift where about 32 to 38 percent would want to avail home care services going forward attributing it to the perception change to the pandemic. About 30 % and 26 % respondents were neutral pre and post the pandemic with respect to availing home care services. A comparatively major shift was seen in 19 % and 9 % respondents being not very interested to least interested pre pandemic to being just 2 % to 3 % being the same post pandemic. (Figure 4.5).

Table 4.4: Frequency (n) and percentage (%) distribution of perception towards impact of pandemic on home healthcare

QUESTION		**FREQUENCY**	**PERCENT**
Covid-19 pandemic has created awareness about HHC			
	Agree	299	93.7
	Disagree	16	5.0

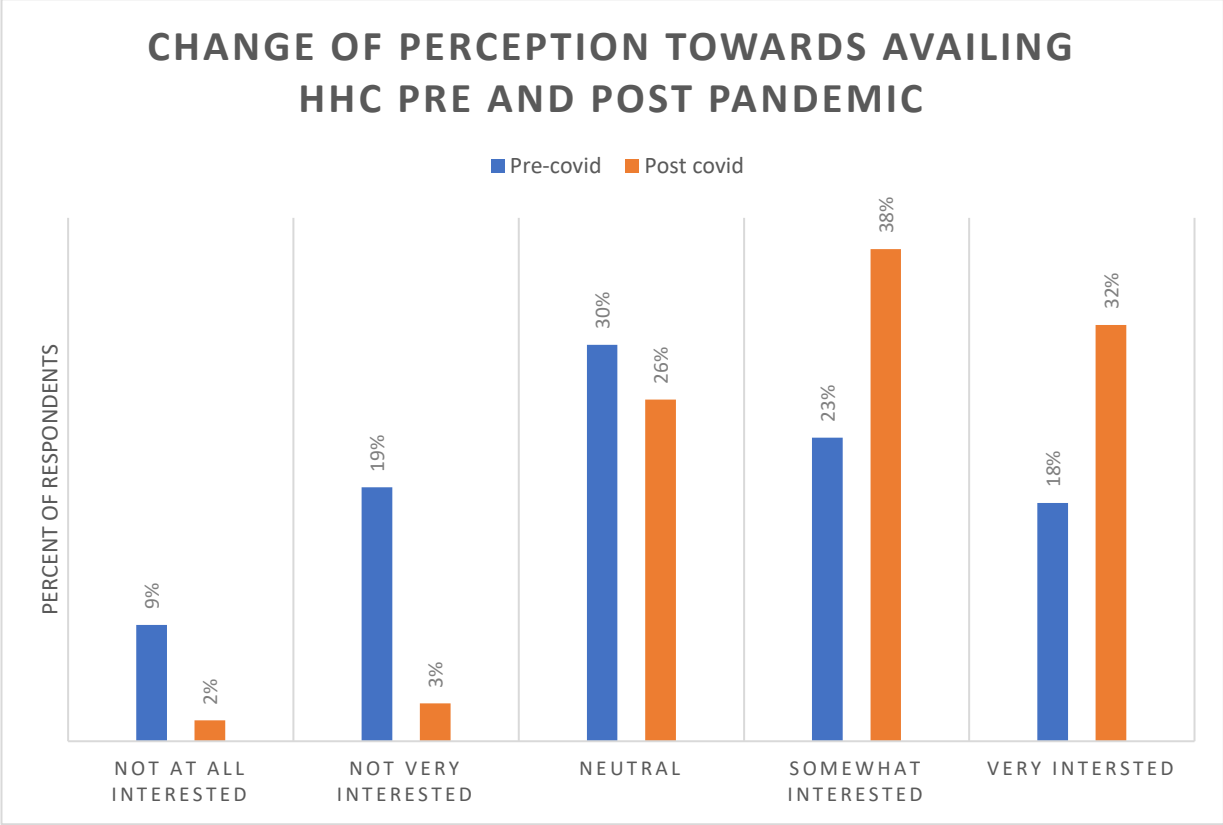

Figure 4.5: Perception change in availing home care services prior and post COVID-19 pandemic

4.2: Discussion:

This study which is aimed at assessing the knowledge and perception of people regarding home healthcare services as well as understanding if COVID-19 pandemic has fuelled their awareness is one of the first studies conducted in India. The participants of the study willingly took part in the study and were mostly aware of the availability of home care services.

Among the participants majority of them were aware of the home health services. This was specifically seen in the participants from urban areas. The ones from rural as well as semi urban area were relatively less aware of the services.

When asked of awareness questions like who should be at the receiver end of the services majority of them were aware that the services can be availed by any age group at home. Despite of being aware of this majority of the cohort perceive that home healthcare services are to be preferred only for terminally ill or old people. This denotes a gap in their awareness and perception of use of the services.

The respondents were initially asked in the survey if they have availed any home care services at home in which just 26 percent (82 respondents) of them responded with a yes.

However, later when asked to select which services have, they availed from a list it was found that 110 respondents has responded. This hints that the users have availed the home care services however were not aware that it falls under the category of the same. Thereby, awareness of both the products and services lines which fall under home healthcare services needs to be disseminated to the population in order to fill this gap. This not only ensures growth in awareness but also pushes the cohort to avail the services.

The participants overall perceived home care services positively as majority of them agreed that home care provides one on one care, helps with better prognosis due to known environment, and leads to lesser hospital acquired infections. They also have an understanding that not all the patients' medical needs can be met in a home setting. Also, majority of them perceive that home care can lead to invasion of privacy or independence.

Regarding inclination towards availing home care the participants majorly would avail elderly care services at home, physiotherapy services, nursing services or post-operative care and doctor visits at home. Comparatively lesser inclination was seen with services like ICU at home, cancer care at home, remote monitoring using medical devices and basic assistance and rehabilitation services.

The shift of inclination towards hospital care was seen where the participants responded that they were fairly comfortable with hospital visits prior to pandemic. Despite of this they would majorly want to avail home care services going forward and attributed it to the pandemic situation.

Almost 70 percent of the study participants were aware of home healthcare services prior to pandemic. Also, 94 percent of the participants feel that COVID-19 has certainly fuelled the awareness of home healthcare services. This can be due to the stay at home been imposed due to the pandemic, which pushed everyone to provide or receive services at the doorstep. Also, a similar shift trend was seen where they were not very keen or interested in availing home care prior to pandemic, whereas they would be interested to avail moving forward mainly due to the pandemic at hand.

The study has few limitations as convenience sampling is used which limits the study from being generalised for the larger population. The participants were mostly from urban area where a better pattern of awareness can be ideally seen. Also, the study was conducted online and was provided only in English.

CHAPTER 5: CONCLUSION:

An attempt is made to understand the people's awareness and perception regarding home healthcare services. With the home care market being new in India and COVID-19 pandemic acting as an innovation catalyst there has been a definite growth for this domain. However, the awareness of the market is not disseminated equally amongst the population. The perception of population towards the services might be positive however, when related with the fee for service it sees a downward trend. Thereby more awareness or rather marketing of the healthcare services and products must be done to positively push the customer education norms in India.

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Annexures:

Study tool: e-questionnaire deployed using Google Forms.

Q. What is your age?

……

Q. What is your gender?

a) Male
b) Female
c) Do not prefer to mention

Q. Which State/UT do you belong to?

Drop down of all states and union territories of India

Q. Area of residence?

a) Urban
b) Rural
c) Semi-urban

Q. Education level?

a) No formal education
b) Primary Education
c) Secondary Education
d) Graduation
e) Postgraduate

Q. Employment status?

a) Employed
b) Business
c) Unemployed
d) Student
e) Retired

Q. Have you heard about home healthcare services before the COVID-19 pandemic?

a) Yes
b) No

Q. Have you ever received home healthcare services before for yourself or your loved ones?

a) Yes
b) No

Q. If YES, which of the following service did you avail? Please select multiple options if needed.

a) C-19 isolation services
b) Nursing services at home
c) Door-step delivery of medicines
d) Diagnostics services at home
e) Doctor visits at home

Q. How easy or comfortable were you in visiting hospitals before the pandemic on a scale of 5? (1 being least and 5 being highest)

Q. For the following questions please select your opinion about home healthcare services on the given scale. (If using mobile slide sideways to see all five choices-Strongly agree-Agree-Neutral-Disagree-Strongly disagree).

a) One-on-one personalized care provided
b) I will be comfortable with clinical staff like nurses being around for half or full day services
c) Known environment and comfort of home helps the patient to heal faster
d) Lesser chances of hospital acquired infections
e) I will be able to trust external support/treatment at home
f) Patients' conditions/needs cannot be met due to home limitations.
g) Home care is expensive compared to hospital costs
h) Preferable only for terminally ill patients or old people
i) Invades privacy or independence at home
j) It provides protection of the patient's identity better than the hospital environment.

Q. Who according to you can receive treatments at home?

a) Children
b) Adults
c) Old people
d) All of the above

Q. Which of the following services would you like to take at home? Please select multiple options if needed.

a) Physiotherapy services
b) Nursing or post-surgery care
c) Cancer care at home
d) Elderly care services
e) Doctor visits
f) ICU at home
g) Remote monitoring with medical devices
h) Basic assistance care or Companionship services
i) Rehabilitation services or other therapies

Q. What price on an average would you pay for the following? (less than Rs. 1000 per day- Rs 1000 to 3000 per day- Rs 3000 to 5000 per day)

a) Post-surgery care
b) Physiotherapy services
c) Nursing services
d) Elderly care services
e) Doctor visits
f) Remote monitoring with medical devices
g) ICU at home
h) Cancer care at home
i) Companionship services or basic assistance care
j) Rehabilitation services or other therapies

Q. Do you think home services can help reduce the stress of family members or caregivers of the patients?

a) Agree
b) Disagree
c) Cannot say

Q. Has COVID-19 pandemic created awareness about home healthcare?

a) Agree
b) Disagree

Q. In future will you personally choose to book a home healthcare service or get treatment at the hospital?

a) Will continue care at hospital.
b) Will avail home healthcare services.

Q. How open were you to take home healthcare services BEFORE the COVID-19 pandemic on a scale of 5 (1 being least and 5 being highest)?

Q. How interested will you be in taking home healthcare services going forward on a scale of 5 (1 being least and 5 being highest)?