Section A-Research paper
ISSN 2063-5346

Problems of Non-Covid Patients and Health Care Services during Pandemic Period: A Micro level Study with reference to Chennai City, Tamilnadu

Dr. B. Mahammad Rafee[1] Dr. Amzad Basha Kolar[2] Prof. Vijayalaxmi Ramesh[3] Dr.S. Jaber Asan[4] R. Sadique Ahamed[5] Ahamed Jakith[6]

[1,5,6]Assistant Professor, Department of Economics (shift-II), The New College (Autonomous) affiliated to University of Madras, Chennai.
[2]Assistant Professor, Department of Botany, The New College (Autonomous) affiliated to University of Madras, Chennai.
[3]Assistant Professor, Department of Management (MBA), MS Ramaiah College of Arts, Science and Commerce, Bengaluru.
[4]Assistant Professor, PG & Research Department of Economics, The New College (Autonomous) affiliated to University of Madras, Chennai.
Corresponding Author Email: mdrafee@thenewcollege.edu.in

ABSTRACT

Background: COVID-19 has disrupted India's economy. The Ministry of Statistics reported 3.1% increase in India's GDP fourth quarter of 2020. It has announced that in the first quarter (April–June) Financial Year 2020-21 GDP numbers on September 1, 2020, showing a 24% decline from the previous year. Unemployment surged from 6.7% on 15 March to 26% on 19 April before returning to pre-lockdown levels by mid-June. During the lockdown, 140 million individuals lost jobs and many others had their pay cut. Over 45% of households reported a reduction in income from the year before. Following the coronavirus epidemic, the Indian economy was estimated to lose over 32,000 crore (US$4.0 billion) per day for the first 21 days of complete lockdown. Under lockdown, only 25% of India's $2.8 trillion economy worked. **Aim and Objectives**: this study aims at examining the Problems of Non-Covid Patients and Health Care Services during Pandemic Period at the Chennai city of Tamilnadu. **Materials and Methods:** over 400+ samples were collected from 1 August 2022 to 31 January 2023 at the Government Hospitals OPD (Outpatient Department) using the structured questionnaire by simple random sampling method. Percentage analysis, comparison of means and chi-square test is used to test the hypothesis to know whether there is relationship exist or not among the chosen variables in the study using SPSS V21.**Results:** As per the response captured using the questionnaire in the study, 53.41percent respondents felt that testing facilities for their diseases were not available during the pandemic. The health infrastructure is diverted to meet the immediate needs of covid patients. Another 30.97percent respondents were saying that doctors were not available to treat them, and another 9.02percent respondents said that non- availability of beds for them and another 2.92percent said non-availability of ICU Facility during their requirement and another 3.65percent respondents said that there was a shortage of Medicines. lack of income was one of the problems during the pandemic in availing health care services followed by non-availability of transportation. 50percent of the respondents say they were not having enough income to visit hospital and avail Medicare. 47percent of the respondents confirm that there was non-availability of transportation and another 2.68percent said lockdown was deterrent in availing health care. extended health infrastructure was provided by the government to non-covid patients 60.24 percent and 16.58 percent said that no such facilities made, and 22.92 percent respondents said that maybe have the Government has provided. 60 percent of the diseases for which non-covid patients visit hospital require 100 percent surgery. Availing of online consultation services to availability of doctors to non-covid patients found to have negative relationship almost 65% not willing to consult online. Transporation and economic issues too were there and Health infra at the hospital too found to be negatively related 32% of the patients say to consult online also they never find the sufficient infrastructure. **Conclusion and Suggestions:** There is a big difference in how problems accessing health care, availability of medical equipment, extended health infrastructure facilities, health care services given (treating diseases), and insurance awareness affects women and men differently. There is a connection between the illnesses of non-covid patients and the difficulties in

obtaining medical care during a pandemic, specifically the difficulties in obtaining medical care during a pandemic regarding finances and transportation for non-covid patients.

Keywords: Non-covid Patients, World Health Organisation (WHO), OPD (Outpatient Department), Health Insurance Schemes, AI (Artificial Intelligence)

I. INTRODUCTION

The globe has been turned upside down by the coronavirus's proliferation, which has affected economies globally and made the situation intolerable. Thus, those who aren't COVID-19 patients are footing the bulk of the bill for this battle. The majority of hospitals have stopped providing Outpatient Department (OPD) and non-emergency services for more than five months in order to divert all funding into the fight against COVID-19 and emergency medical care. As said, many non-coronavirus patients, both communicable and non-communicable, have been demonstrated to die when access to outpatient and hospital care is restricted. According to media sources, patients with non-COVID-19 disorders who have scheduled surgical procedures and follow-up appointments are dealing with an unprecedented epidemic, the severity of which is heightened for patients who require hospitalisation for treatment. Even a slight increase in hospital admissions would dramatically increase the pressure on the system in a nation where there are 5.5 government beds for every 10,000 citizens. There have been reports of cancer patients being forced to reside outside the All India Institute of Medical Sciences (AIIMS) Delhi following a sudden lockdown. According to data from the World Health Organisation (WHO), more than 2,000 cancer patients pass away in India every day. According to another study, cardiovascular disease caused more than 7,000 deaths per day in India in **2016**. As regular check-ups, doctor consultation and access to drugs are being limited, both due to the lack of availability of healthcare staff and the transport difficulties caused by the national lock-up, deaths are on the rise every day and remain largely unrecognized. India is home to the world's largest number of Tuberculosis (TB) deaths, with more than 1,200 people dying every day. There appears to be no stopping the spread of COVID in India because there is no proof of a mass-use vaccination and the number of cases reported everyday is increasing at an alarming rate. Although it is still significantly lower than the average increase in cases, the rate of recovery is nevertheless increasing. Given the existing competent healthcare system, community transmission, particularly in rural regions, can only make matters worse. It is unlikely that India's healthcare system would be able to handle this historic disaster. Public spending on healthcare during the past ten years has been limited, amounting to just 1% of GDP, far lower than that of comparable emerging nations. The estimate from the Organisation for Economic Co-operation and Development (OECD) for 2018 was 8.8%. One doctor and one nurse are available for every 1,404 persons in India, which has a low ratio of health professionals. Compared to the WHO ratio of one doctor and three nurses per 1,000 people, this is far lower.

Additionally, when entire hospitals are converted into COVID care facilities or when private practitioners and nursing homes are temporarily closed, there is a perceptible delay in the treatment of non-COVID patients. Patients need ongoing care and frequent doctor visits if they have a chronic ailment like asthma, diabetes, hypertension, heart disease, etc. The postponement of appointments or any other delay in receiving care could further impair their health and raise their chance of passing away.

1.1 Taking advantage of technology to fulfil health needs.

There has never been a more pressing need than now to use digital technologies to provide remote healthcare services via smart devices and Artificial Intelligence (AI) -powered applications. The traditional healthcare delivery system is unable to provide pre-pandemic services to the general population. Patients with comorbidities may find that remote patient monitoring via telemedicine and devices that monitor data via sensors, such as blood glucose monitors, Electrocardiogram (ECG) monitors, heart rate monitors, pulse oximeters, etc., can save their lives. Today's market in India is flooded with innovative AI-enhanced technologies that enable remote patient monitoring at home. A wearable patch for remote patient monitoring has been developed by the Bangalore-based medical equipment company "ten3 T" that captures vital signals such the ECG, pulse, oxygen saturation, and temperature. The AI-based algorithms scan the data for indications of impending decline and provide notifications to the carers. Utilising a smartphone Easily take sugar measurements and store a history of all prior readings to analyse the pattern in your sugar levels with the Beat Q smartphone-compatible glucometer with automated alert device. By taking over some diagnostic work, AI-enhanced technology can reduce the amount of physical labour required from overworked employees. By way of illustration, patients with suspected cases of pneumonia, TB, etc. can use application-based AI imaging software to check for chest X-rays and identify their illness. Additionally, to keep their patients safe while receiving treatment in their respective palaces, hospitals in India have started using machine learning techniques and algorithms from Google and Microsoft to identify diabetic retinopathy.

1.1.2 Financial pressure on non-COVID patients

Due to the additional costs of administrative fees and other sanitation activities, the cost to non-COVID patients was not restricted to their health, and healthcare costs have skyrocketed in recent years. Personal Protective Equipment (PPE) and other standard operating procedures are paid for by non-COVID patients, but expenses for treatments overall have climbed by 10–25 percent in private institutions. Healthcare expenditures are significantly reduced by fewer hospital visits, hospital

stays, re-admissions, and home treatments. Under the current conditions, tele-health and tele-medicine may prove to be the most expedient and affordable method of resolving the COVID-19 dilemma as well as narrowing the rural-urban health gap.

1.1.3 Government needs to step up technical progress in healthcare.

As the government races against time to close these gaps in the country's healthcare system, the healthcare industry needs to see the glass as half full. Indian health businesses now have a variety of prospects thanks to COVID. Wearables and Android apps with AI-enhanced data generating capabilities can help with real-time diagnostics as well as the development of vaccinations and medications by utilising the vast amounts of data collected from millions of users. It is not a "thing of the future" to adopt AI-enhanced healthcare technologies. Instead, it can take care of our pandemic-hit world's acute health needs. Not all of the problems affecting the healthcare business would be resolved by technology. However, stressing its expanded use should be essential, taking future instances of comparable scenarios into account. Utilising technology-based healthcare innovations is crucial for turning them from experimental treatments into commonplace ones. Only if technology was accessible to and used in health care institutions outside of private hospitals would there be significant quality benefits. The government must fully harness technology's power to make AI-enhanced products accessible for general use throughout the current crisis. Efficiency in 'Healthcare for All' will continue to be best achieved through investments in hospitals and human resources. However, the scope of such a pandemic requires more than just expanding employees and creating more hospitals; it also necessitates using technology to augment the infrastructure and be a major game changer.

1.2 Statement of the Problem

The non-covid-19 patients are the ones who are most neglected in terms of receiving medical care, which leads to suffering and numerous deaths from a shortage of medication, while the medical services were diverted to treat the covid-19 patients. The current study would look into the effects of hospitals, governments, and other stakeholders failing to provide the fundamental health care that, in violation of the Constitution, guarantees everyone's right to the best possible level of physical and mental health. Every person has the right to the protection of life and personal freedom under Article 21 of the Constitution. The Supreme Court ruled that the state policy directives are the source of the Article 21-guaranteed right to live with dignity, which necessitates health security. Additionally, it was determined that the government has a constitutional obligation to provide health facilities and that the right to health is an essential

component of the right to life. The goal of the current research study is to illustrate the difficulties faced by non-covid patients in accessing medical care in Chennai, Tamil Nadu, during the covid-19 pandemic. The research problem is defined in the first section of the study, and a thorough review of the literature is covered in the second section. The third section of the study provides examples of the goals, constraints, and scope and design of the study as well as the identified research gap. Data analysis is covered in the fourth section, results and discussion are covered in the fifth section, and conclusions and recommendations are covered in the sixth section.

III. SURVEY OF LITERATURE

A 2020 study by Higor Leite et al. examined the COVID-19 outbreak's effects on healthcare. The authors describe how "flattening the infection curve" could protect healthcare, postpone rising demand, and realign supply chain operations. Their analysis covers supply chains, quality improvement in healthcare operations, and demand and capacity management. One issue mentioned is the post-pandemic sustainability of lean, "just in time" practises, inventory trade-offs, and inventory management due to a lack of organisational reaction during unplanned events, for instance. [1] Additionally, Hummy Song et al (2020) found that hospitals all around the world transferred resources from routine inpatient critical care and outpatient clinics to match the increase in demand during the initial Covid-19 pandemic epidemic. Hospitals might apply rapid testing more widely, and post-acute care facilities could create quarantine sections for patients to receive care while waiting for results, to reduce delays in discharge caused by testing limits. [2] The COVID-19 pandemic's effects on patients with systemic lupus erythematosus were also examined by Manish Rathi et al. in their study from 2020, which was titled Observations from an Indian Inception Cohort. The recent COVID-19 epidemic has had a significant negative impact on our SLE (systemic lupus erythematosus) patients. Patients reported problems with the pharmaceutical supply, missed doses, ran into financial difficulties, and spent more money on their health throughout the outbreak. [3] As a result, Mathiharan K (2020) contended that the patient's right to life was not being violated since a government hospital failed to provide prompt medical care. The Court upheld the government's duty to finance healthcare. In compliance with Article 21, collective applications for compelled access to medical care have been submitted. [4] Amy L. McGuire et al.'s (2020) study, Ethical Challenges Arising in the COVID-19 Pandemic: An Overview from the Association of Bioethics Programme Directors (ABPD), also looked into this topic. Although every effort has been made to provide fair and equal standards, the study found that many of the current rules are indifferent to the requirements of disabled and underprivileged individuals. Even the most well-intentioned policies fall short of identifying daily triage and allocation decisions, exposing a common discrepancy between institutional policy and the actual day-to-day job of healthcare practitioners. Bioethicists have

typically concentrated on some of the most important moral decisions that have a direct impact on patient lives. [5] Despite this, according to Peiffer-Smadja N et al (2020), many health systems will have to deal with an increase in the number of COVID-19 patients and make plans for the repercussions, such as the requirement for additional beds, qualified HCWs, and ventilators. [6] Pragati B Hebbar et al. (2020) stated that there were "challenges and potential" for preventive healthcare in India. According to the study, Covid-19 has impacted India's healthcare systems, prompting worries over what would happen to individuals who cannot receive care. It covers actions healthcare systems can take to address problems that are related to and unrelated to COVID. Utilising technology for consultations, improving healthcare facility readiness, delivering medications to patients' homes, and facilitating transit during lockdowns are a few examples of this. [7] In light of this, Raffaele Galiero et al. (2020) assert that the expanding usage of digital technology has increased the importance of telemedicine. For the purpose of revising national and international recommendations, it should be assessed. Telemedicine was the most secure method for patients to communicate with doctors during the COVID-19 epidemic due to the illness's severe social isolation and lack of effective treatments. There have been several created evidence-based telemedicine scenarios. Diabetes treatment via telemedicine is authorised and governed. The document, on the other hand, lists the performers and users. However, it must be made simpler and faster to adopt such technology and digital programmes. Additionally, the cost-benefit ratio ought to be as small as possible. It would be promising to extend the usage of telemedicine technologies to patients and general practitioners. [8] On the other hand, Pandemic and mental health of front-line healthcare workers: a review and implications in the Indian environment during COVID-19 was the subject of research by Snehil Gupta and Swapnajeet Sahoo (2020). According to the study, mental health problems are common among HCWs (Health Care Workers); some of the most prevalent symptoms are burnout, anxiety, depression, diseases linked to stress, and so on. Factors from the biological, psychological, and socioenvironmental spectrum all contribute. Lack of effective communication, tangible support from higher authority, misinformation, a lack of PPEs (Personal Protective Equipment), stigma, and job-related stress are some of the major contributing factors to the emergence of mental health issues among HCWs. [9] In slum areas in Bangladesh, Kenya, Nigeria, and Pakistan, Syed A. K. Shifat Ahmed et al. (2020) investigated the impact of stakeholder discussions before to COVID and COVID-19 lockdown on access to healthcare for non-COVID-19 health conditions. According to the research, slums are a COVID-19 problem. For the welfare of the local and wider community, slum epidemic control is essential, and we can observe how governments safeguard society's most vulnerable citizens. Strengthening their healthcare system will assist them in achieving their health-related SDGs as well as reducing the effects of COVID-19 and future pandemics. [10] So Sylaja P. N. et al. (2020) investigated stroke treatment and SARS-CoV-2/COVID-19 in India. Stroke care has become more difficult due to the COVID-19 outbreak. To

offer the greatest services, it is necessary to reorganise a number of stroke care sectors. The prevalence of stroke must be raised, and suitable triage, acute treatment, rehabilitation, teleservices, and virtual check-in processes must be implemented in both developed and developing nations. Morbidity and mortality will go down, and stroke treatment will be maintained. [11] Veronique Verhoeven et al. (2020) investigated how the COVID-19 pandemic affected the fundamental operations of primary care. There was a qualitative interview study of Flemish general practitioners. The modern era has a significant impact on fundamental primary care skills, the study showed. GPs are concerned about the continuation of routine care and the anti-covid measures despite the considerable increase in patients seeking medical attention and the requirement to separate covid and non-covid flows. In the medium and long term, these could endanger both the population's health and the delivery of primary healthcare.[12] Vijay Kumar Jain (2020) observed tuberculosis in India during COVID-19. All facets of tuberculosis treatment were impacted by lockdown, social isolation, isolation from others, and public health advice. The study claims that a number of tuberculosis prevention, monitoring, and treatment activities have been impeded by the COVID-19 outbreak. Lockdown and public health standards have necessitated reevaluating patient assistance procedures, including a greater reliance on remote consultations. [13] Rajesh Ranjan (2022) investigated the COVID-19 Third Wave and the effects of omicron in India. Omicron is shown to be significantly more transmissible than its ancestors, and as a result, practically every impacted nation is seeing new infection peaks. We examine the global data of countries impacted by Omicron, including South Africa, the United Kingdom, the United States, France, and Italy, in order to objectively evaluate the intensity and severity of recent waves. These figures are then used to calculate the impact of Omicron in India, which has been battling with a severe third wave of COVID-19 from December 28, 2021. It is abundantly obvious that in India, infections of the Omicron variety prevail due to the dramatic rise in daily infections that is consistent with global trends. The early infection growth rate of this wave is more than four times that of the second wave, according to the logarithmic regression. Despite the fact that the effective reproduction number (Rt) differs greatly across the country, another distinctive aspect of this wave is the almost synchronous commencement of outbreaks across the country. But over the last 10 days, the test positivity rate (TPR) has sharply increased in a number of states. The peak in India is anticipated to occur in late January 2022 with a caseload bigger than that of the second wave, according to early forecasts using the Susceptible-Infected-Removed (SIR) model. Despite the fact that this study's examination of global Omicron patterns shows a decline in hospitalisations and case fatality rates compared to Delta, an unanticipated buildup of active infections might potentially render the already overcrowded healthcare system inoperable for the ensuing weeks. [14] Farah Iram et al. decrypted the Third Wave Covid Variation in 2022 in India. The severe acute respiratory

syndrome coronavirus (SARS-CoV-2) Omicron (B.1.1.529) variant has become more widespread than the alpha, beta, gamma, and delta coronaviruses. The World Health Organisation (WHO) has designated the Omicron variation as a variant of concern due to its significantly changed makeup. This variety, which includes more than 50 mutations, is very different phylogenetically from other variants. The Omicron variety multiplies swiftly, with a two-day average doubling time. However, it hasn't been as bad as the Delta. Although past infection and vaccination do not offer protection against Omicron infection, they do appear to provide some protection against hospitalisation and serious disease. Significant unexpected repercussions of Omicron are foreseen, including lockdowns, limitations, travel bans, financial losses, infections of healthcare personnel, and an excess of medical facilities. However, as with prior generations, it is projected that Omicron will have only limited direct consequences. However, there could be large unintended effects on social, physical, and mental health. All people are urged to follow the COVID-19 behaviours. Since these aspects will be helpful for future research into a new SARS-CoV-2 variant, we concentrated on the appearance, severity, genomes, effectiveness of vaccinations, and treatment and management strategy against the Omicron variation in this review. [15] Goodluck Nchasi et al. conducted research on the challenges faced by African healthcare workers during the third wave of the pandemic in 2022. Africa had the third wave of the coronavirus epidemic in 2019, which saw an 18% increase in incidence over the majority of the continent. By January 2022, the estimated 10.4 million cumulative illnesses and more than 233,000 fatalities in the area would increase the burden on the ailing healthcare system, which is already overworked and underfunded. Additionally, as the pandemic expands, there is a higher risk of infection and mortality, jeopardising the African continent's supply of healthcare professionals. Over 10,000 healthcare workers in 40 different nations have contracted the virus as of this writing. Only 27% of African healthcare personnel are adequately protected against the disease due to low immunisation rates. Despite the pandemic's sluggish onset and delayed spread throughout Africa, Concerns regarding the challenges faced by healthcare professionals on that continent are growing. These challenges include job insecurity, demanding working conditions, and restricted access to personal protection equipment and other critical supplies like ventilators. African healthcare professionals are also more susceptible to social embarrassment, exhaustion, insomnia, sadness, and worry about the safety of their families as a result of the pandemic. During the COVID-19 pandemic, African HCWs encountered numerous difficulties on the social, economic, and health system levels. Health care workers (HCWs) require psychology-based treatments more than ever to reclaim their mental health due to their susceptibility to insomnia and anxiety. To ascertain how the growing pandemic load and associated viral variants might

impact HCWs' mental health, carers' wellbeing, and ultimately patient care, more research is necessary. To improve the resources available for the health and safety of HCWs, reforms in governmental support and health policy are required. The healthcare system in Africa and future pandemic preparedness may suffer if this situation is not addressed. [16] Sandip Mandal et al.'s investigation of the potential for a third COVID-19 wave in India was completed in 2022. In the backdrop of India's current COVID-19 resurrection (second wave since mid-February 2021, following the subsiding of the first wave in September 2020), there has been growing discussion of a potential third wave of infection that would place a strain on the healthcare system. This investigation used simple mathematical models of the transmission dynamics of SARS-CoV-2 to analyse the conditions that could result in a severe third wave. A deterministic, compartmental model of SARS-CoV-2 transmission was used to examine four putative third wave mechanisms: the appearance of a novel viral variation that can prevent immunity to previously prevalent strains, and the decline in already present immunity, The removal of present lockdowns, the introduction of a new viral variety that is more contagious than the strains now in circulation, and other factors together create new chances for transmission. Unless they induce those who have already been exposed to the virus to totally lose their immunity, immune-mediated processes (waning immunity or viral evolution for immunological escape) that operate independently are unlikely to result in a catastrophic third wave. Similar to this, a new, more transmissible variety would need to exceed a high threshold ($R0 > 4.5$) in order to start a third wave on its own. A third wave, however, might potentially be explained by a novel variant that is more contagious and has the ability to overcome past immunity, and (ii) lockdowns that are lifted after being incredibly effective at stopping gearbox. In either case, it doesn't seem plausible that the third wave will be as awful as the second wave. Rapid vaccination programme expansion might be essential for lessening the severity of the present and next disease waves. The showed that any such rebound is unlikely to be as substantial as the second wave and highlighted numerous ways in which a sizeable third wave might occur. Expanding vaccine coverage is still essential to be ready for any eventuality, despite the fact that model predictions are subject to a number of uncertainties. Planning for any potential following wave will be aided by using the projected numbers based on the current modelling exercise. [17] Considering the previous literature review carried out, no study is found to study the problems on non-covid patients during the pandemic. This is a sincere effort to find the problems of the non-covid patients at the Chennai city of Tamilnadu.

3. Scope of the Study

When it comes to receiving medical care, non-Covid patients are the most neglected, which leads to suffering and numerous deaths due to drug shortages. Instead, medical services and resources are

diverted to patients who have Covid. Hence, the expenditure of the government on providing health services is only 1 percent of the GDP. So, to assess the gravity of the situation the study is going to take up Chennai City of Tamilnadu.

3.1. Objectives of the Study

The Present study aims at addressing the following objectives, they are as follows.

1. To identify the problems of Non-Covid Patients in accessing Health Care services,
2. To find the level of extended Health Infrastructure by the Government during pandemic period,
3. To assess the health care services rendered by government hospitals,
4. To examine the awareness of Schemes of Governments in availing health services,
5. To offer Policy suggestions to Government of Tamilnadu.

3.2. Limitations

The study is restricted to select different regions of Chennai city only and the results and outcome of the study will be confined only. The study based on random sampling and the result and analysis give a partial exposure of the non-Covid patient issues in accessing then health care.

3.3. Design of the Study

The data collection tool is both quantitative based on structured questionnaire and qualitative data based on focus group discussions and semi structured interviews. The area of study restricted to select the four Government and under various zones of Chennai city, Tamilnadu. The present study based on primary source of data collection. Moreover, the Simple Random sampling technique will be used to collect 400+ samples of outpatients (OPD) spread over the three regions in Chennai city viz., North, South and Central Regions in accessing health care during the pandemic Period. The primary data will be collected through structured questionnaire. The study carried out through Field Survey (interaction with those who affected especially the non-Covid patients who faced difficulties in accessing health care) and to deeply analyse the latest available published and unpublished sources, discussions with knowledgeable persons in the health care industry, stakeholders, etc**.,** The following statistical tools are applied for the data analysis, Percentage Analysis, Comparison of Independent means, and Chi- square Test and Regression Modelling.

IV. DATA ANALYSIS

A Well-structured questionnaire was instrumented to collect data 410 people were volunteered for the survey from Outpatient Ward from the Government Hospitals in Chennai.

Table 4.1

S.No	Items (Sample Size:410)	Particulars	Number	Percentage	Analysis of Findings of the study
1	**Gender**	Male	310	75.4	75% of the respondents are male and another 24% are female.
		Female	100	24.6	
2	**Marital Status**	Un Married	05	1.2	Majority of the respondents are married up to 98%.
		Married	405	98.8	
3	**Age**	18-25 years	5	1.2	48% of the respondents are under the age group of 36-45 years and another 30% are in the age group of 46-60 years.
		26- 35 years	19	4.6	
		36-45 years	199	48.5	
		46-60 years	123	30.0	
		60 years and above	64	15.6	
4	**Religion**	Hindu	200	48.8	Majority of the respondents are Hindu community followed by Muslims and Christians.
		Muslim	176	42.9	
		Christian	34	8.2	
5	**Educational Level**	Illiterate	87	21.2	36% of the respondents are having secondary level of education and another 31% are graduates. 21.2 % of the respondents are illiterates.
		Secondary level	148	36.1	
		Undergraduate	10	2.4	
		Graduate	130	31.7	
		Postgraduate	33	8.0	
		Postgraduate and above	2	0.4	
6	**Employment Status**	Govt. Employee	97	23.7	40% of the respondents are having self-employment. 23% are from Government employees.
		Private Employee	51	12.4	
		Self-employment/ Business	163	39.8	
		Others	99	24.1	
7	**Source of Income**	Income from Agriculture	29	7.1	57% are having source of income from business.
		Income from Employment	147	35.9	
		Income from Business	234	57	
8	**Level of Income**	25000 to 50000	175	42.7	42% of them having income from 25000 to 50000 and another 42% from 50000 to 100000 rupees.
		50000 to 100000	172	42.0	

		100000 and above	33	8.0	
		No Income	30	7.3	
9	**Distance from Hospital**	Within 10 KM	206	50.2	More than 50% of the respondents are residing under 10 Km radius of the hospital.
		10-20 KM	173	42.3	
		20-50 KM	31	7.5	
10	**Residing at**	Urban	398	97.1	97% of the respondents are urban dwellers only.
		Semi-Urban	12	2.9	

Source: Computed

4.1. Patient's Feedback – on availability of facilities at hospitals

As per the data, 5.13% only say doctors were available, 1% of the patients say the paramedical staff are available during the pandemic. Less than one percent of the patients say medicines were available. Less than one percent of the patients say Diagnosis and testing were available during the pandemic.

Table No 4.1.1.

	Availability of Medical Equipment's at the Hospital						
Gender	Digital X-ray, USG, CT Scan & MRI, EEG, Ventilator (life Support)	Digital X-ray, CT Scan & MRI	Digital X-ray, Ventilator (life Support)	Digital X-ray, USG, CT Scan & MRI, Ventilator (life Support) others	Ventilator (life Support)	digital Xray	Total
male	222	43	0	2	2	40	309
female	91	1	3	0	1	4	100
Total	313	44	3	2	3	44	409

Source: Computed

As per the above table, on availability of services 71% of the male and 91% of female respondents said that, Digital X-ray, USG, CT Scan & MRI, EEG, Ventilator (life Support) is available at the hospital. Another 14% of males and 1% of females confirmed that, Digital X-ray, CT scan & MRI facility is available,3% of females only say Digital X-ray, Ventilator (life Support) is available. 0.64% said Digital X-ray, USG, CT scan & MRI, Ventilator (life Support) other facilities too is available. Another 0.64% of the male and 1% of female said ventilator (life support mechanism is available. 13% of males and 4% of females said digital Xray is available at hospital.

Table No 4.1.2.

Gender	Availability of life supporting equipment's (Extended Infrastructure)						Total
	Hospital Stretchers	Defibrillators	Anesthesia Machines	Patient Moniters	EKG/ECG	Surgical Tables and Electrosurgical Units	
male	222(71.84%)	38(12.29%)	5(1.61%)	3(0.97%)	2(0.64%)	39(12.62%)	309
female	91(91%)	0	3(3%)	1(1%)	3(3%)	2(2%)	100
Total	313(76.5%	38((12.29%)	8(2.58%)	4(0.97%)	5(1.22%)	41(10.02%)	409

Source: Computed

The data above shows that 71% of males and 91% of females said that Hospital stretchers are available and 12.29% of the males said Defibrillators are available 1.61% of males and 3 % of females confirmed that Anesthesia Machines are available. 0.97% of males and 1% of females said that patients monitors are available and 0.64% of males and 3% of females said EKG/ECG facility is there and 12.62% of males and 2% of females said that Surgical Tables and Electrosurgical Units are available.

Table No 4.1.3.

Gender	Diseases for which you need to visit hospital				Total
	lifestyle diseases	chronic infectious diseases	other diseases	kidney problem	
male	240(77.66%)	67(21.68%)	2(0.64%)	5(1.61%)	309
female	95(95%)	0	2(2%)	0	100
Total	335(81.90%)	67(16.38%)	2(0.48%)	5(1.22%)	409

Source: Computed

As per the above table it is found that, 77.6% of the males and 95% of the females said that they visit hospital for lifestyle diseases and 21% of the males said that they visit hospital due to chronic infectious diseases and another 1.61% of the male said that they visit hospital due to kidney problem.

Table No 4.1.4.

Gender	Frequency of Visiting Hospital			Total
	once in a week	twice in a week	once is15 days	
male	168(54.36%)	136(44.01%)	5(1.61%)	309
female	9(9%)	91(91%)	0	100
Total	177(43.27%)	227(55.50%)	5(1.22%)	409

Source: Computed

The above table viewed that, frequency of visiting hospital by male in once a week is 54% and female by 9%. Twice a week by male 44% and 91% by female and 1.61% of the males once in 15 days.

Table No 4.1.5.

Gender	Difficulty in consulting during the pandemic		Total
	yes	no	
Male	309(100%)	0	309
Female	99(99%)	1(1%)	100
Total	408(99%)	1(1%)	409

Source: Computed

As per the above table, difficulty in consulting during the pandemic is assessed cent percent of the males and 99% of the females had faced difficulty in consulting doctors.

Table No 4.1.6.

Gender	Availing the consultation services online		Total
	Yes	No	
Male	21(6.79%)	288(93.20%)	309
Female	5(5%)	95(95%)	100
Total	26(6.35%)	383(93.64%)	409

Sources: Computed

As per the table the availing consultation service online during the pandemic by male was 6.7% and 5% females. 93% of males and 95% of females said they could not be able to avail consultation online.

Table No 4.1.7.

Gender	Does the online consultation was efficient		Total
	Yes	No	
Male	18(5.82%)	291(94.17%)	309
Female	6(6%)	94(94%)	100
Total	24((5.86%)	385(94.13%)	409

Source: Computed

The above table shows that the online consultation was not efficient for 94% of males and 94% of females. 5.8% of males and 6% females said online consultation was efficient.

4.2. Problems in availing Health Care

Using cross tabs, we have can examine the glimpse of the problems in availing health care services during pandemic by Non-covid Patients, Transportation and financial issues and the extended health care facilities during the pandemic.

Table 4.2.1

Gender	Problems in availing Health care services					Total
	non-availability of doctors	inadequate testing facilities	non availability of beds	non availability of ICU facility	shortage of medicines	
Male	65(21.03%)	190(61.48%)	35(11.32%)	8((2.58%)	11(3.55%)	309
Female	62(62%)	29(29%)	2(2%)	4(4%)	4(4%)	101
	127(30.97%)	219(53.41%)	37(9.02%)	12(2.92%)	15(3.65%)	410

Source: Computed

As per the above table 53.41% respondents felt that testing facilities for their diseases were not available during the pandemic. The health infrastructure is diverted to meet the immediate needs of covid patients. Another 30.97% respondents were saying that doctors were not available to treat them, and another 9.02% respondents said that non- availability of beds for them and another 2.92% said non- availability of ICU Facility during their requirement and another 3.65% respondents said that there was a shortage of Medicines.

Table 4.2.2

	Transportation and financial problems			Total
	lack of income	non availability of transportation	lockdown	
Male	141(45.63%)	160(51.77%)	8(2.58%)	309
Female	65(65%)	33(33%)	3(3%)	101
	206(50.24%)	193(47.07%)	11(2.68%)	410

Source: Computed

As per the above table lack of income was one of the problems during the pandemic in availing health care services followed by non-availability of transportation. 50% of the respondents say they were not having enough income to visit hospital and avail Medicare. 47% of the respondents confirm that there was non-availability of transportation and another 2.68% said lockdown was deterrent in availing health care.

Table 4.2.3.

Gender	Extended infrastructure			Total
	Yes	No	maybe	
Male	178(57.60%)	66(21.35%)	65(21.03%)	309
Female	69(69%)	2(2%)	30(30%)	101
	247(60.24%)	68(16.58%)	94(22.92%)	410

Source: Computed

As per the above table extended health infrastructure was provided by the government to non-covid patients 60.24 percent and 16.58 percent said that no such facilities made, and 22.92 percent respondents said that maybe have the Government has provided extended health infrastructure to non-covid patients.

4.3. Comparison of Means- ANOVA

H_0 - There is no Significant difference between the Gender to the Problems in availing health care services during the pandemic.

H_1 - There is a Significant difference between the Gender to the Problems in availing health care services during the pandemic.

4.3.1 Gender to Problems in availing Health Care Services during the Pandemic

Gender	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
non-availability of doctors	127	1.49	.502	.045	1.40	1.58
inadequate testing facilities	219	1.13	.340	.023	1.09	1.18
non availability of beds	37	1.05	.229	.038	.98	1.13
non avaliability of ICU facility	12	1.33	.492	.142	1.02	1.65
shortage of medicines	14	1.21	.426	.114	.97	1.46
Total	409	1.24	.430	.021	1.20	1.29

ANOVA

Gender	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	11.742	4	2.936	18.587	.000
Within Groups	63.808	404	.158		
Total	75.550	408			

Source: Computed

As per the table, the test statistic is the F- value of 18.58. Since the test statistic is much larger than the critical value, we reject the null hypothesis of **Problems in availing Health Care Services** and conclude that there is a (statistically) significant difference among the **Gender to Problems in availing Health Care Services**. The p-value for 18.58 is 0.00, so the test statistic is significant at that level.

H_0 - There is no Significant difference between the Gender to the **Availability of Medical Equipment**

H_1 - There is a Significant difference between the Gender to the **Availability of Medical Equipment**

4.3.2. Gender to Availability of Medical Equipment

Gender	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Digital X-ray, USG, CT Scan & MRI, EEG, Ventilator (life Support)	313	1.29	.455	.026	1.24	1.34
Digital X-ray, CT Scan & MRI	44	1.02	.151	.023	.98	1.07
Digital X-ray, Ventilator (life Support)	3	2.00	0.000	0.000	2.00	2.00
Digital X-ray, USG, CT Scan & MRI, Ventilator (life Support) others	2	1.00	0.000	0.000	1.00	1.00
Ventilator (life Support)	3	1.33	.577	.333	-.10	2.77
digital xray	44	1.09	.291	.044	1.00	1.18
Total	409	1.24	.430	.021	1.20	1.29

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.727	5	1.145	6.611	.000
Within Groups	69.823	403	.173		
Total	75.550	408			

Source: Computed

As per the table, the test statistic is the F- value of 6.61. Since the test statistic is much larger than the critical value, we reject the null hypothesis of equal to availability of **medical equipment** and conclude that there is a (statistically) significant difference among the **Gender to Availability of Medical Equipment**. The p-value for 6.61 is 0.00, so the test statistic is significant at that level.

H_0 - There is no Significant difference between the Gender to Extended Health Infrastructure facilities

H_1 - There is a Significant difference between the Gender to Extended Health Infrastructure facilities

4.3.3. Gender to Extended Health Infrastructure facilities

Gender	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Hospital Stretchers	313	1.29	.455	.026	1.24	1.34
Defibrillators	38	1.00	0.000	0.000	1.00	1.00
Anesthesia Machines	8	1.38	.518	.183	.94	1.81

Patient Monitors	4	1.25	.500	.250	.45	2.05
EKG/ECG	5	1.60	.548	.245	.92	2.28
Surgical Tables and Electrosurgical Units	41	1.05	.218	.034	.98	1.12
Total	409	1.24	.430	.021	1.20	1.29

ANOVA					
Gender	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.280	5	1.056	6.056	.000
Within Groups	70.271	403	.174		
Total	75.550	408			

Source: Computed

In the above table, the test statistic is the F- value of 6.05. Since the test statistic is much larger than the critical value, we reject the null hypothesis of equal to **Extended Health Infrastructure facilities** and conclude that there is a (statistically) significant difference among the **Gender to Extended Health Infrastructure facilities**. The p-value for 6.05 is 0.00, so the test statistic is significant at that level.

H_0 - There is no Significant difference between the **Gender to Health care services rendered (Treatment to diseases)**

H_1 - There is a Significant difference between the **Gender to Health care services rendered (Treatment to diseases)**

4.3.4. Gender to Health care services rendered (Treatment to diseases)

Gender	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
lifestyle diseases	335	1.28	.451	.025	1.24	1.33
chronic infectious diseases	67	1.00	0.000	0.000	1.00	1.00
ENT	2	1.00	0.000	0.000	1.00	1.00
kidney problem	5	2.00	0.000	0.000	2.00	2.00
Total	409	1.24	.430	.021	1.20	1.29

ANOVA					
Gender	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.490	3	2.497	14.858	.000

Within Groups	68.060	405	.168		
Total	75.550	408			

Source: Computed

In the above table, the test statistic is the F- value of 14.85. Since the test statistic is much larger than the critical value, we reject the null hypothesis of equal to **Health care services rendered (Treatment to diseases)** and conclude that there is a (statistically) significant difference among the **Gender to Health care services rendered (Treatment to diseases)**. The p-value for 14.85 is 0.00, so the test statistic is significant at that level.

H_0 - There is no Significant difference between the **Gender to Awareness about Health Insurance Schemes by Government**

H_1 - There is a Significant difference between the **Gender to Awareness about Health Insurance Schemes by Government**

4.3.5. Gender to Awareness about Health Insurance Schemes by Government

Gender	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
arogya sanjeevini	310	1.23	.421	.024	1.18	1.28
ayushman bharat yojana	71	1.01	.119	.014	.99	1.04
cheif minister comprehensive insurance scheme	28	2.00	0.000	0.000	2.00	2.00
Total	409	1.24	.430	.021	1.20	1.29

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	19.825	2	9.913	72.223	.000
Within Groups	55.725	406	.137		
Total	75.550	408			

Source: Computed

In the above table, the test statistic is the F- value of 72.22. Since the test statistic is much larger than the critical value, we reject the null hypothesis of equal to **Awareness about Health Insurance Schemes by Government** and conclude that there is a (statistically) significant difference among the **Gender to Awareness about Health Insurance Schemes by Government.** The p-value for 72.22 is 0.00, so the test statistic is significant at that level.

4.4. Regression Equations:

I. Surgery related to (1) =C+ diseases for which non covid patients visit hospital (0.6)+β1 (0.37)

Regression					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.607[a]	.368	.367	.369	1.563

Source: Computed

II. Availing Online Consultation services during the pandemic to (1) =C+ Doctors were not available to attend (-0.65)+ transportation and economic problems(-0.05)+ Problems in availing health care at hospital(-0.32)

	Regression				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
2	.773[a]	.598	.595	.155	1.985

Source: Computed

V. RESULTS AND DISCUSSION

Availability of Medical Infrastructure: On availability of services at hospitals 71% of the male and 91% of female respondents said that Digital X-ray, USG, CT scan & MRI, EEG, Ventilator (life Support) is available at the hospital. Another 14% of males and 1% of females confirmed that, Digital X-ray, CT scan & MRI facility is available,3% of females only say Digital X-ray, Ventilator (life Support) is available. 0.64% said Digital X-ray, USG, CT scan & MRI, Ventilator (life Support) other facilities too is available. Another 0.64% of the male and 1% of female said ventilator (life support mechanism is available. 13% of males and 4% of females said digital Xray is available at hospital.

Extended Services:71% of males and 91% of females said that Hospital stretchers are available and 12.29% of the males said Defibrillators are available 1.61% of males and 3 % of females confirmed that Anaesthesia Machines are available. 0.97% of males and 1% of females said that patients' monitors are available and 0.64% of males and 3% of females said EKG/ECG facility is there and 12.62% of males and 2% of females said that Surgical Tables and Electrosurgical Units are available.

Frequency of visit to Hospital: frequency of visiting hospital by male in once a week is 54% and female by 9%. Twice a week by male 44% and 91% by female and 1.61% of the males once in 15 days.

Ailment for which the patients usually visit hospital: 77.6% of the males and 95% of the females said that they visit hospital for lifestyle diseases and 21% of the males said that they visit hospital due

to chronic infectious diseases and another 1.61% of the male said that they visit hospital due to kidney problem. On the other hand, 99% of the males and females have faced difficulty in consulting doctors and availing consultation service online during the pandemic by male was 6.7% and 5% females. 93% of males and 95% of females said they could not be able to avail consultation online. availing consultation service online during the pandemic by male was 6.7% and 5% females. 93% of males and 95% of females said they could not be able to avail consultation online.

ANOVA Results: There is a significant difference exist between the Gender to Problems in availing Health Care Services, Gender to Availability of Medical Equipment, Gender to Extended Health Infrastructure facilities, Gender to Health care services rendered (Treatment to diseases), Gender to Awareness about Insurance facilities.

Regression Analysis: 60 percent of the diseases for which non-covid patients visit hospital require 100 percent surgery. Availing of online consultation services to availability of doctors to non-covid patients found to have negative relationship almost 65% not willing to consult online. Transporation and economic issues too were there and Health infra at the hospital too found to be negatively related 32% of the patients say to consult online also they never find the sufficient infrastructure.

VI. CONCLUSION AND SUGGESTIONS

People who were not Covid patients were similarly impacted by financial and transportation problems when trying to access medical care. Millions of people lost their jobs during the first and second lockdowns, and they were also unable to afford their own basic medical needs (medicines) and access to public transit. Most of them typically travel by public transportation, therefore when they don't, they must pay extra for alternative forms of transportation. the illnesses of non-covid patients, the difficulties they have in seeing doctors during pandemics, and the extended health infrastructure for non-covid patients have been examined. The non-covid patients' illnesses and to accompany the necessary surgery during the pandemic, the condition that requires hospitalization and surgery on non-covid patients, sickness for which one must visit a hospital for medical personnel to treat non-covid patients, the condition where non-covid patients' dread of dying or lack of access to proper medical care has a negative impact on their mental health.

Much was written in the newspapers about the lack of medical manpower in the time of covid-19 pandemic as per the recent government reports India's doctor patient ratio currently stands at 1:834 which is better than the World Health Organizations norms of one doctor per 1000 people. But, as per the survey during the pandemic the availability of doctors was a one of the major issues. Still there is a long way to go for the Masses in the country to avail best of Medicare as compared to the developed countries.

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