

Covid-19 And Health Infrastructure In India: A Critical Study

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Abstract

This Research Has Aim To Provide A Brief Discussion On Covid-19 & Its Impact On The Health Infrastructure And Steps Taken By India To Develop Its Health Infrastructure. This Has Been Described In Five Section And Those Are Introduction, Methodology, Results, Discussion And The Conclusion. The Introduction Had Provided The Importance Of Health Infrastructure For A Country Especially Country Like India Which Spends Little As Compared To Other Nations Globally. The Data Has Been Gathered Using The Secondary Data Collection Method Which Is Supported By Both Qualitative And Quantitative Method. The Result Section Had Discussed About The Findings That Has Been Got Through This Research. The Results Has Part Has Discussed About The Relief Package Announced By The Government, Budget Plan Of The Government, Parliamentary Committee Recommendation On A Particular Project And Many More. Discussion Part Has Reviewed About All The Useful Findings Of This Research Which Had Been Concluded With Conclusion Part. At The End, The Conclusion Includes The Future Recommendation By Which The Health Infrastructure Can Be Improved.

Keywords- Covid, Government, Health

Introduction

Covid-19 Pandemic Has Been Starting The Year 2020 And It Has Affected Globally Along With India. India Is An Emerging Economy And Has Shown A Tremendous Potential For Growth Across The Sector. In Terms Of Health Infrastructure The Taking Of Western Nations Are Far Better As Compared To That Of India But During The Pandemic The Health Infrastructure Of India Had Outperformed. The Performance Has Also Been Reported In The Sanitization Process And Vaccination Process. Public Health Spending Is Far Less As Compared To The Western Nations. According To The Press Information Bureau, In The Financial Year 2021 The Public Health Spending Was Around 1.6% Of Gdp. It Has Been Raised To 2.2% In The Financial Year 2022 And Later On To 2.1% In The Financial Year 2023 [1]. If It Were Compared With The Countries Around The World It Would Show A Different Picture. The Usa Spends Around 17.8% On The Health Infrastructure And It Is The Only Country To Do So. Germany Takes The Second Place And It Spends Around 12.8% Of Its Gdp Towards Health [1]. Countries Like China And Turkey Spend More Towards The Health Sector As Compared To India. The Covid Pandemic However Had Tested The Entire Health Infrastructure Globally And It Has Been Seen The Way Us Health Infrastructure Had Faced Many Challenges And Among Those Challenges Sari Inability To Curb The Spread Of Virus.

The National Health Mission Of India Is The Prime Government Body Which Is Responsible For Providing Financial Assistance To The States Of India. There Have Been Around 30,813 Primary Health Centres Across The Country And 5649 Community Health Centres In The Country [2]. When It Comes To Covid-19 The Indian Government Had Taken Some Of The Steps Which Had Devastated The Economic Condition Of The Country And Those Steps Included Strict Lockdown. During The Pandemic The Indian Government Had Taken Various Steps To Improve The Economic Conditions Of The Country Which Includes Training Of The Nurses, Spending On The Research And Development Of Covid-19 Vaccines, Developing Safety Masks, Proportion Of Sanitizers And Production Of Vaccines On A Large Scale. Serum Institute Of India Is The Largest Pharmacy Company Of Asia Which Had The Highest Capacity Of Covid Vaccine. Covid Shield By The Serum Institute Of India Was Developed By The Company In Collaboration With Astrazeneca Vaccines Of Oxford Uk. Covaxin Was The Vaccine Which Was Developed And Produced By An Indian Medical Research Team And It Was Seen As The Biggest Achievement Of The Indian Medical Researcher. The Reason Behind This Success Is The Kind Of Support That Was Provided By The Government To The Medical Team And Globally There Were Few Countries Which Had Capability To Develop The Vaccines In A Limited Interval Of Time [3].

However, India Is A Country Which Has Mostly The Middle Income People And Hence A Vast Majority Of Indian Citizens Are Dependent On The Public Health Infrastructure. The Private Health Infrastructure Is Good In India But Due To Low Gdp Per Capita The People Of India Find It Difficult To Get There. India Has A Huge Population And For That It Requires Huge Investments To Develop Medical Health Infrastructure. Since, Most Of The Health Infrastructure Is Dependent On Public Health, Government Spending Is Needed To Rise If India Is Going To Improve Its Medical Sector As Well And This Is Going To Be Discussed In This Research. The Pandemic Put A Lot Stress On India's Health Infrastructure Which Was Already Inadequate And This In Turn Highlighted The Need For The Development Of The Entire Structure. The Covid-19 Pandemic Made Things Worse For The Country And Also Made It Necessary For Proper Funding For Its Development. Hence, The Purpose Of The Study Is To Critically Explore The Health Infrastructure Of India In Light Of The Covid-19 Pandemic And The Steps That Need To Be Taken In The Future For Its Development.

Methodology

The Research Methodology Of Any Research Can Be Defined As The Specific Procedures That Is Performed To Identify, Select, Process And Analyze The Information About A Topic Is Known As A Research Methodology. In Other Words It Can Be Said That The Methodology Section Is Used To Evaluate A Research And Observe Whether The Research Is Going In The Right Direction Or Not. A Research Methodology Can Be Taken In Various Aspects And Those Aspects Include Research Philosophy, Research Design, Research Approach, Data Collection And Data Analysis [4]. The Research Approach That Has Been Taken In The Research Will Be Mixed Involving Both Qualitative And Quantitative Approach. The Research Philosophy That Has Been Taken In This Research Is Interpretivism.

Research Design Of A Research Can Be Explained As The Methodologies And Tools, Techniques That Are Going To Be Used In Identifying The Research Problem And Its Analysis. Research Designs Are Of Various Kinds And Those Are Like Cross-Sectional, Case Study. The Research Design That Is Going To Be Used In This Research Is Case Study. The Reason Behind Choosing The Case Study Is Because The Research Topic Has Specified The

Name Of The Country And Along With The Name Of The Country The Health Sector Has Been The Prime Force In This Discussion.

The Data Collection Is The Most Important Segment Of Any Research And In This Research The Data Will Be Collected On The Basis Of A Secondary Data Collection Method. A Secondary Data Collection Method Is The Type Of Data Collection Method Where Data Is Collected With The Help Of Journal Articles, Newspaper Articles, And Authenticated Websites, Surveys Published By The Government And Other Important Bodies, And Books. The Research Paper And Theory Which Are Published By Other Researchers Can Also Be Taken Here As The Secondary Data [5]. The Data Will Be Taken From Authentic Websites Which Are Publicly Available And Analyzing The Medical Infrastructure Of India Would Require Much Government Data On Medical Infrastructure. This Is The Reason Why The Data That Will Be Suitable For The Research Will Be Secondary Data. This Data With The Proper Analysis Will Be Able To Answer The Research Question In An Adequate Manner.

Results

Measures To Develop Infrastructure During Covid

For Mitigating The Effects Of Covid-19 On The Health Infrastructure Of India Several Steps Have Been Taken By The Indian Government. The Government Had Taken A Pre-Emptive, Proactive, And Whole-Of-Society Approach To Deal With The Impact Of Covid. Medical Infrastructure Includes The Development Of Laboratories, Hospital Infrastructure, Research & Development On Diagnosis And Many More [7]. The Government Of India Had Taken All Of These Aspects Into Consideration And Had Spent The Allocated Budget On Improving The Testing Laboratory, And Development Of Hospital Infrastructure With The Inclusion Of Digital Technology And The Latest Testing Kits. The Covid Testing Kits Have Been Changed Over Time Which Included The Rapid Antigen Testing To Rt Pcr Test.

The Government Of India Had Provided All These Testing Kits To All The Hospitals Both Public And Private So That Proper Diagnosis Could Be Possible. In The Meantime, The Most Vulnerable Duty During The Time Of The Pandemic Was The Health Workers, Doctors And All The Frontline Workers. Meanwhile, In The Emergency Condition The Government Earmarked Over 1 Lakh Beds For In 601 Hospitals Across The Country With 1,671 Beds Were For Tertiary Care Only. The Covid Trends Had Shown That Only 20% Of The Covid Patient Needs The Icu Facility And Hence It Can Be Said That The Government Was Pretty Much Prepared For The Upcoming Situation [7]. The Ppe Kit Which Is Termed Personal Protective Gear Was First Imported By The Government Of India Considering The Health Safety Of Frontline Workers. Later On With The Support Of The Government India Started Production Of This Protective Gear Which Includes Goggles, Face-Shield, Mask, Gloves, Head Cover And Shoes.

The Production Was So High That India Started Exporting The Ppe Kit To Foreign Nations And Also Providing Assistance To Poor Nations. The Patients Who Were Diagnosed As Covid Positive Such Patients Were Quarantined By The Medical Authorities And Serious Patients Were Admitted To Hospitals. For Treating Serious Patients Ventilators And Oxygen Cylinders Were The Necessary Requirements And The Government Had Spent Capital So That None Of The Patients Died Because Of The Scarcity Of Ventilators And Oxygen. The

Government Had Worked In The Development Of Oxygen Concentrators, Oxygen Cylinders, And Other Oxygen-Related Infrastructure And Similarly With The Ventilators.

Budget Provisions

The Annual Budget Of India Towards Health Is One Of The Lowest In The World As Compared To The Size Of The Indian Population. The Budget Allocated By The Central Government Towards Health Ranges From 2% To 3% Of The Nominal Gdp Of India. More About The Budget Of The Union Government Of India Has Been Provided Below With The Help Of A Graph. In The Financial Year 2019-2020 The Total Budget Allocated By The Government Of India For The Medical Sector Was Inr 64,609 Crore [8]. The Budget Is Less As Compared To The Other Nations As India Has Been Struggling With The Problems Like A Shortage Of Doctors In The Country, And A Shortage Of Hospitals And The Shortage Is Vulnerability In Rural Areas Of India. A Vast Majority Of Government Hospitals Are Present In Urban India And Rural India Has Been Struggling With Health Issues. As Of The Year 2020, The Total Of Rural India Has 256 Thousand Hospital Beds And This Is The Reason Why Rural India Is Facing A Shortage Of Hospitals, Majorly The Population Of India Comes From Rural India.

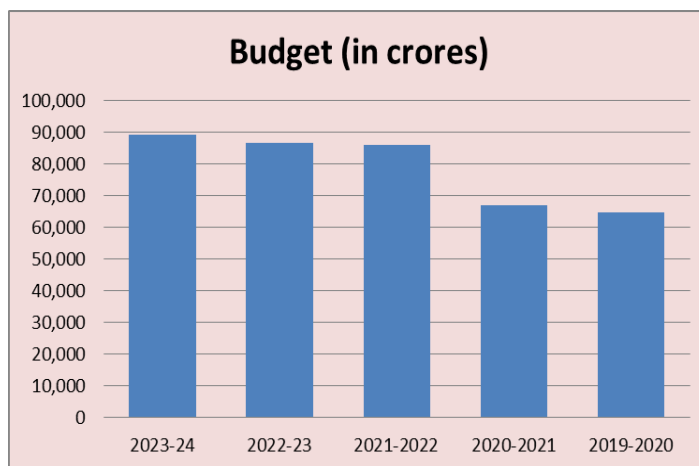


Figure 1: Budget Allocation By The Government Of India Towards Health In Past Five Years

In The Next Financial Year 2020-2021, The Budget Allocated By The Government Of India Was Around Inr 67,112 Crore. This Budget Comes With The Financial Packages But The Increase Of The Budget Was Quite Low And It Needed To Increase Further. Covid-19 Had Affected Different States Of India In A Different Manner And The Worst Impact Of The Covid Felt By Those Indian States Which Have Poor Infrastructure. The Central Government Of India Supported All The States And Ut In Increasing The Demand For Hospitals, Medical Assistance, Ventilators And Diagnosis. In The Financial Year 2021-2022, The Budget Allocated By The Government Of India For The Health Sector Was Around Inr 85,915 Crore Which Was A Huge Jump In Terms Of Numbers [8]. With This Surge In The Budget, The Government Spent A Lot In The Distribution Of And Manufacturing Of The Covid-19 Vaccines Throughout India And Also Provided Assistance To Other Nations Through Vaccine Maitre. The Budget Surge In The Financial Year 2021-2022 Was Not Significant And The Total Spending Of The Government Was Inr 86,606 Crore [8]. Mitigating The Threats Of Covid-19 Through Sufficient Amounts Of Manufacturing Of Vaccines And Their Distribution Was The Focus Of The Government.

The Government Had Now Aimed To Develop The Medical Health Infrastructure To A World-Class Level By Including The Latest Technologies Like Artificial Intelligence, Data Analytics And Others. In The Financial Year 2023-2024, The Total Budget That Had Been Allocated By The Government Was Around Inr 89,155 Crore. Through Careful Studying Of The Government's Spending Towards Health, It Could Be Found That The Spending Of The Government Is Not Enough To Meet The Requirement Of The Indian Public And For Meeting That The Government Needs To Invest A Large Segment Towards The Development Of The Health Infrastructure Of India.

Financial Packages

For Fighting The Covid-19 Many Countries In The World Had Announced Relief Packages For Fighting The Covid-19 And Swift Progress Of The Health Infrastructure. Likewise, The Government Of India Also Announced The Financial Package And It Aimed At Three Aspects; Economic Relief From The Pandemic, Strengthening Public Health And Increasing The Growth And Employment Opportunity. A Total Of 6, 28,993 Crore Inr Was Announced Covering All Three Aspects And The Budget That Has Been Allocated By Developed Health Infrastructure Was Around 23,220 Crore Inr [9]. The Government Has Planned To Increase The Number Of Beds For Children As Well As For The Public. The Government Has Also Focused On Setting Up A Short Hr Team And This Team Is Going To Help To Train The Medical Interns, Medical Residents And Final-Year Medical Graduates. The Shortage Of Health Workers Was Also One Of The Problems That Had Emerged During The Pandemic. This Is The Reason Why The Government Has Announced Training These Final-Year Doctors, And Nursing Staff Through Online Mode.

India's Population Is One Of The Largest Populations Hence The Requirements Are Huge And Hence Its Proper Distribution Becomes A Challenge For The Government. The Distribution Of Beds Especially The Icu Beds To The District, As Well As Sub-District Level, Becomes Crucial And Hence Through This Package, The Government Wants To Keep Its Special Attention On The Distribution Of Each Item To The Lowest Possible Level [9]. The Relief Package Also Includes A Proper Supply Of Equipment, And Medicines, Strengthening The Ambulance Facilities, Enhancing The Testing Facilities And Increasing The Testing Facilities. The Budget Also Facilitated The Quarantine Facilities For Those Patients Who Have Been Diagnosed As Covid Positive With Mild Symptoms. The Budget Was Not Appropriate But It Had Helped The Country To Fight The Covid-19 In A Better Way Through The Building Infrastructure.

Oxygen Requirement

During The Pandemic, Many Covid Positive Patients Lose Their Lives Due To A Shortage Of Oxygen And This Is The Reason Why The Government Emphasized Importing Oxygen Cylinders And Oxygen Concentrators From Other Nations Like Uk, Us And France Had Eagerly Supplied. The Uk Supplied 450 Oxygen Concentrators Which Basically Extract Oxygen From The Atmosphere And Fill The Oxygen Cylinders. During The Covid, There Was A Time When The Covid Cases Were Skyrocketing And It Was Increasing At An Alarming Rate. India Reported 348,691 Covid Cases In Just 24 Hours Of Time And Nearly 2,767 Deaths In Just 24 Hours [10]. At This Particular Time, The Medical Infrastructure Of The Country Was In A Panic-Like Situation And The Major Reason Behind Those Deaths Was The Immediate Shortage Of Ventilators And Oxygen. The European Commission Also Helped India In Coping With The Shortage Of Oxygen In The Country By Supplying Oxygen. The Situation Of Indians Was Overwhelming At That Period But With The Help Of Partners And Friendly Countries India Had Somehow Been Able To Mitigate That Situation And Managed To Meet The Demand For Oxygen As Well.

Recommendation Of The Parliamentary Standing Committee On Health And Family Welfare

The Parliamentary Standing Committee On The Discussion On The Shortage Of Oxygen And The Status Of Covid-19 In The Country Highlighted The Government's Failure To Manage The Health Infrastructure. The Reports Of The Indian Medical Association, Ficci, And Several Other Associations Who Were Working Closely With The Government During Were Studied By The Committee [11]. Based On These Reports The Government Had However Made It Clear That There Was A Chance Of A Second Wave Of The Covid Which Can Devastate The Health Condition Of India More Intensely. The Parliamentary Standing Committee Based On The Reports Published By Various Governments As Well As Non Government Institutions Had Drawn Concerns:

- India Needs To Be Prepared For The Possible Waves Of Covid Especially The Deadly Effects Of The Second Wave Of Covid-19 [11].
- Lockdown Restrictions Should Be Strict Especially During The Festivals And The Government Needs To Change Its Attitude To Letting The Virus Spread Freely. This Is Devastating And It Will Increase The Mortality Rate In The Country.
- There Should Not Be A Plethora Of Guidelines Issued By Various Governments Of India As It Creates Confusion Among The Citizens. There Should Be A Single Guideline That Is Needed To Be Followed Nationally [11].
- The Containment Plan Of The Government Has Been Failing And Reason Being Lack Of Ventilators And Hospital Beds. Government Should Work With The State Government To Increase The Bed Capacity And Import More Ventilators.
- There Are Some Miscreants Who Are Taking The Undue Advantage Of Shortage Of Oxygen And Selling The Oxygen At Arbitrary Prices. Government Needs To Punish Those Miscreants And Ensure That The Country Should Not Be Witnessing The Oxygen Shortage [11].
- The Testing Speed And Testing Quantity Also Needed To Be Increased As Testing Is The Only Way To Know Whether A Patient Has Covid Or Not.
- The Vaccine Production And Its Development Are Needed To Be Ramped Up So That In Future A Large Population Of India Could Get The Safety Cover Against Covid.

Covid-19 And National Digital Health Mission

On 15th Of August 2020, The Prime Minister Of India Announced About The National Health Mission And It Was Created To Reduce The Burden On The Indian Medical Health Infrastructure. During Covid-19 The Health Officials And Hospices Were Under Huge Stress And Millions Of Testing Was Required. National Digital Health Mission Programme Was A Holistic Programme Of The Government Of India Which Basically Works To Integrate The Hospitals, Pharmacies, Insurance Companies And Prepare A Health Infrastructure. Under This Mission By The Government A Person Will Get A Unique Id That Can Be Created With The Help Of Aadhar Card, Mobile Number For Generating The Unique Id.

The National Health Mission Will Include The Health Id, Dig Doctor, Telemedicine, Epharmacy, Health Registry And Personal Health Records Which Are Going To Be Stored Digitally. The Data Of A Particular Patient Will Be Collected In Online Mode Of All The Visits Of The Doctor And The Type Of Medicine Which The Patient Is Being Taken [12]. This Data Is Going To Help In The Future If An Outbreak Like Covid Repeats. During Covid 19, Imposition Of Lockdown Had Made It Difficult For The Person Living In The Rural Areas. After Having A Health Card, The Government With The Help Of Past Medical Records Can Provide Assistance To The Patient To Any Part Of The Country.

Discussion

Covid-19 Had Affected The Health Infrastructure Of Most Of The Nations Globally Including India. The Covid-19 Virus Started From China And Its Initial Cases Were Reported In Europe. The Outbreak Had Devastated The Health Infrastructure Of India And There Were Times When India Reported Highest No. Of Covid Cases And Death Toll As Well. The Role That The Indian Government Played Was Crucial For India's Fight Against The Covid-19. The Government Of India Had Taken A Series Of Measures In Developing The Building Of Safe And Adequate Health Infrastructure. It Includes Improving The Laboratory Facilities, Improving The Diagnosis Facilities, Development Of The Hospital's Infrastructure, And Many More. The Diagnosis Facility Includes The Rat Testing Equipment, Rt-Pcr Testing Equipment, Safety Gears For The Ppe Kit, And Ventilator Manufacturing And Oxygen Supply In The Country.

The Government Spending Towards The Health Infrastructure As The Country Has Already Been Struggling From Shortage Of Doctors, Medical Professionals, Shortage Of Hospitals And Shortage Of Health Budget By The Government. The Research And Development Segment Is Low In The Country As Compared To Many Developed Nations Of Europe. The Spending Of The Government Towards Health In The Financial Year 2020-2021 Was Around Inr 67,112 Crore Which Was A Significantly Low Amount If It Is Compared With Globally. Government Spent A Large Segment Of This Money In Training Nurses And Final Year Doctors. Lots Of Countries In The World Had Announced The Relief Packages And Unlike Other Nations India Also Announced Its Relief Packages And It Was Announced By The Finance Minister Of India. The Budget That Had Been Allocated For Boosting The Health Infrastructure Was Inr 23,220 Crore.

A Large Amount Of This Package Budget Was Used For Increasing The Capacity Of Beds And Production Of Vaccines And Its Proper Distribution. Meeting The Requirement Of Oxygen Was Once The Primary Focus Of The Government As The Death Toll Due To Covid Was Once Skyrocketing. Countries Like Usa, Uk, Eu And Uae Came For At That Time And Had Helped The Country To Meet The Oxygen Demand Of The Country. A Serious Debate Also Happened In The Indian Parliament And Parliament Standing Committee Had Expressed Their Concerns Based On The Efforts Taken By The Government. It Had Also Provided Some Recommendations Like The Government To Be Prepared For The Second Wave Of Covid; It Should Restrict People From Gathering Especially During Festive Time, Increase The Testing Facility And Boost The Vaccination Drive In The Country. The Prime Minister Of India Has Launched The National Digital Health Mission Which Aims To Provide Digital Assistance To The Doctors Regarding A Particular Patient Through Examining The Past Record Of The Person.

Conclusion

This Research Has Aimed To Provide A Brief Discussion About The Covid-19 And The Health Infrastructure Of India. This Whole Discussion Has Been Covered In Five Distinct Parts Which Includes Introductory Part Methodology Part, Results Part, Discussion Part And The Concluding Part. The Introduction Part Had Provided A Brief Introduction On The Research Topic And It Had Also Discussed The Aims And Objectives Of The Research. This Research Was Based On The Research Health Infrastructure Of India At The Time Of Covid And Steps Taken By The Government In Development Of The Infrastructure. The Economic Growth Of India Is Phenomenal Even After The Covid Pandemic, So The Government Had

The Opportunity To Make This Infrastructure To World Class Level Taking With The Lessons From Covid. Given Below Are Some Of The Recommendations Which Are Going To Help To Develop The Health Infrastructure Of The Country.

- Public Health Services Of The Country Need To Be Decentralized And It Should Be Controlled At Various Rather Than Central Authorities [13].
- More Investment Is Needed Towards The Health Infrastructure Development Especially Towards The Research And Development Segment Of The Country [14].
- Public Spending Needs To Be Increased And It Should Spend More Than 3% Of Its Gdp.
- More And More Medical Educational Institutions Are Required As A Vast Majority Of Students Move To Other Nations For Pursuing The Mbbs And Nursing Courses [15].
- The Technology Like Artificial Intelligence, Augmented Reality, Virtual Reality And Data Analytics Can Be Included Towards The Health Sector [16].

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