Factors of Healthcare Infrastructure to withstand COVID-19 Patient Load in India: A TISM approach

Mahima Jain¹, Prachi Bhambani², Nakul Parameswar³, and Sanjay Dhir¹

¹ Indian Institute of Technology Delhi
² Ernst & Young (Technology Consulting)
³ Indian Institute of Technology Hyderabad

April 26, 2023

Abstract

Purpose - Purpose of this paper is to understand the interrelationship among the factors that are critical in the treatment of COVID-19 patients. An attempt to comprehend the essential requirement of the medical facilities to deal with the pandemic load on healthcare sector. Design/Methodology/Approach - Total Interpretive Structural Modelling (TISM) technique has been used to develop the hierarchical interrelationship among various factors of healthcare related to COVID-19 medical facilities. Impact Matrix Cross-Reference Multiplication Applied to a Classification (MICMAC) examines dependent and driving power of the factors. Findings - Total ten factors have been identified through literature review, which are essential for the medical facilities to prepare to deal with the pandemic load. ‘COVID-19 positive cases per day’ and ‘efficiency of covid-19 testing facility’ are factors that drives two dependent factors, ‘COVID-19 bed availability’ and ‘oxygen demand’ while remaining factors as intermediate linkage factors. Research Limitations/Implications - Examination of the interrelationships among factors can support in decision making about capacity building for COVID-19 medical facilities in hospitals. The impact of these resources on the recovery rate of COVID-19 patients can be studied further. The factors identification has been done from the perspective of India and region specific factors can be added or deleted from the TISM model. Originally/Value - An analytic study of the literature review demonstrates the relationship among the factors for healthcare accessibility to every COVID-19 positive patient and TISM examines “why” and “what” factors need more consideration for the development of the healthcare infrastructure for COVID-19 patients.

Hosted file