Challenges of Measuring Healthcare System Resilience

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Introduction

The term ‘healthcare system resilience’ becomes topical in strategies and policy planning documents around the world, particularly in the scope of the COVID-19 pandemic. United Nations General Assembly has defined resilience as ‘the ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.’ The aim of this conceptual paper was to highlight the contextual framework and principal indicators of the healthcare system resistance.

Materials and methods

To achieve the aim of this research, the literature review was performed, using PubMed, Web of Science, and Scopus databases. The theoretical scope of the paper was based on the contextual framework and measuring of the healthcare system resistance.

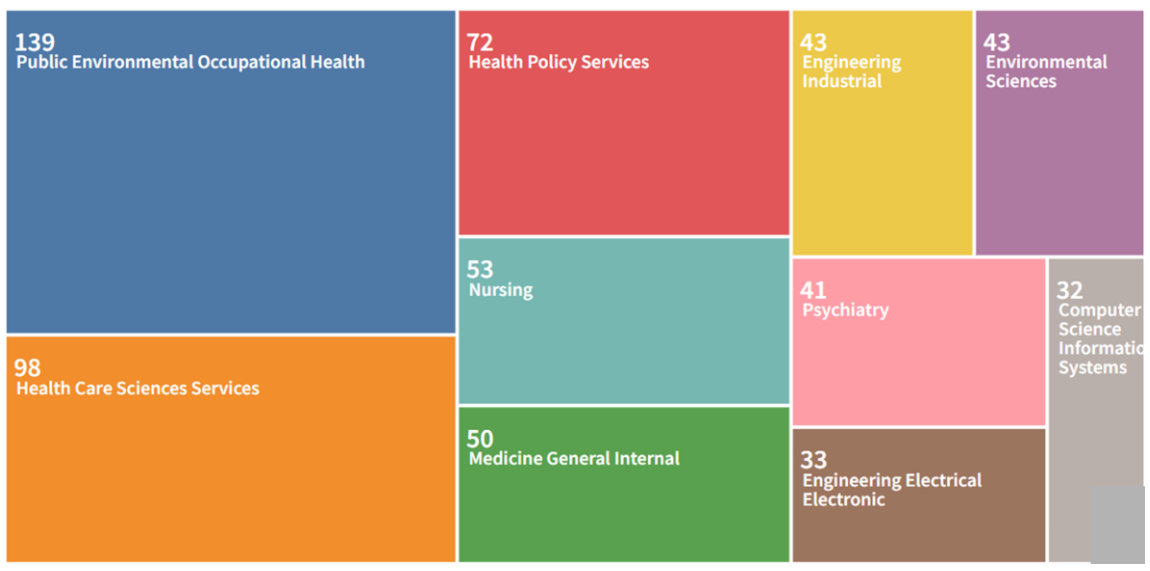

Fig 1. Results of initial search for keywords («healthcare» AND «system» AND «resilience» AND «indicators»)

Figure 1 demonstrates bibliometric data of the results of initial research for keywords «healthcare» AND «system» AND «resilience» AND «indicators». This data provided information on medical fields in which the term «resilience» is mostly used. Research had a period limit – from 2020 to 2022, in order to investigate the researchers’ findings during the period of the COVID-19 pandemic, assuming that crises are more revealing of systems resilience and research tendencies.

Results

The concept of resilience was introduced to the health systems literature from the ecological sciences through an increased understanding of healthcare systems as complex adaptive systems. In this context, the idea of resilience can act as a useful tool to understand healthcare system dynamics. The ecological idea that strategies to enhance resilience can be based on absorptive, adaptive or transformative domains depending on the impact and intensity of the crisis has been particularly impactful in the health system resilience discourse. Researchers emphasised that a view of healthcare systems resilience should be grounded in the understanding that each healthcare system is unique, and influenced by context and circumstances. The meaning of resilience should then emerge from and be shaped by the context in which it is applied. The conceptualisation of resilience should therefore not be prescriptive, but have breadth and flexibility, recognise complexity, consider shocks and cumulative stresses, attempt to deal with disruptions, and anticipate future failures.

Despite extensive theoretical work on the domains which constitute health system resilience, researchers found that most of the empirical literature only addressed particular aspects related to absorptive and adaptive capacities, with legitimacy of institutions and transformative resilience seldom addressed. The review showed that the way in which resilience was applied in the empirical literature did not match its theoretical foundations.

The descriptions of health system resilience primarily focus on major shocks. Leadership and governance were recognized as the most important building block for creating health system resilience. Adjustments to long-term changes and the element of learning should be considered for a better understating of health system resilience.

Previous research suggested to collect the characteristics of health system resilience within each of the World Health Organization’ six healthcare system building blocks: leadership and governance, information, health workforce, financing, health technologies and service delivery. For instance, in the category “Leadership and governance” which was recognized as the most important building block for creating health system resilience, the following characteristics were identified: operationalization, engagement, ethics, system capacity, institutional design. However, the proposed indicators for each of the characteristics arise considerations of their measurability, for instance, “system capacity” intends “predict disturbances, respond to diverse challenges and adjust the system if needed”.

Research viewed resilience also as an outcome that can be measured through performance outcomes. However, there is little congruence on the theory and the existing frameworks have not been widely used. Later, researchers emphasized that indicator development is not a straightforward matter, due to the difficulty in operationalizing different resilience concepts, the desire to avoid context specificity, and a lack of empirical investigations to test theoretical frameworks.

Conclusions

In the recent period, research efforts to clearly define the parameters of resilience and to determine measurable principal indicators remain at the level of theoretical discussions and several project proposals. The results of this research identified the lack of scientific information on practical measuring of the defined indicators, and this obstacle provides suggestions for further research.

Simultaneously, the perception of the nature of the healthcare system in the context of systems theory, viewing it as a complex, dynamic part of the socio-economic system, operated in circumstances of high uncertainty, could strengthen future research. Measuring the resilience of a changing system is a significant methodological challenge, and presumedly the shift of approach from fragmentation to a holistic ecosystem scope could be considered.

The core literature sources

Biddle, L., Wahedi, K., & Bozorgmehr, K. (2020). Health system resilience: a literature review of empirical research. Health policy and planning, 35(8), 1084–1109.

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