

## THE LEAN METHODOLOGY APPLIED TO HEALTHCARE INSTITUTIONS: A SYSTEMATIC LITERATURE REVIEW

Ana Carla Ribeiro Almeida<sup>1</sup>  
Alainy Gabriella Antunes Sousa<sup>2</sup>  
Isadora Vieira Alves<sup>3</sup>  
Murilo Marques Costa<sup>4</sup>

Since health systems have due complexity, both in processes and in management, lean healthcare, derived from the lean philosophy, improves processes in their entirety, with a view to a gradual rise in quality that generate benefits in the care provided. The objective of the study was to verify, through original studies, the applicability of the lean healthcare methodology as a way of improving processes in health institutions, identifying post- implementation changes. Through a qualitative and descriptive systematic literature review conducted using the PRISMA methodology, with research carried out in the CAPES, and in the PubMed and Scielo databases. The initial search had 77 studies, after applying the inclusion criteria being national (Portuguese), international (English) studies and studies that contain the word lean in the title, 27 of the studies did not meet these criteria, then was applied those of exclusion that were studies not found in full, duplicate studies, studies that do not have lean healthcare as a focus and non-original studies, where 42 studies met these criteria, reaching a total of 8 selected studies. Even so, the search strategy was carried out in the references of the selected studies based on the inclusion and exclusion criteria, where it was possible to select five studies in which the final database was constituted in 13 studies, without time limitation so there was no elimination of studies that they believe to be important for the development of the research. The studies converge in their objectives in understanding and improving operational processes using the implementation of lean methodology in health systems. The main conclusions in these studies were significant changes in the sectors covered, of which 12 were studies focused on the patient, with lead time reduction and improvement in its flow. In addition, it obtained a reduction in queues and a focus on care and management processes, increasing the satisfaction of the team, being possible to note that lean affects employees mainly in a positive way. From the 13 studies analyzed, it was verified the authors' search to bring improvements and changes through the lean method within the scope of health with a focus on patients, employees and process flow. In this way, it was possible to verify that, with the lean healthcare implementation, there was a significant influence. In addition to verifying that there are limitations in the studies that are of a single case, limitation of resources used for their implementation, and for being a relatively new philosophy. The studies also suggest a deepening of research in its expansion of data and in other areas such as administration and involving continuous improvement projects in favor of lean production, in addition to having more expressive samples.

**Keywords:** Health; Improvements; Lean Healthcare; Patients.

---

<sup>1</sup> Discente do curso de Administração da Faculdade Evangélica de Ceres - FECER, E-mail: anacarlaribeiroa@outlook.com

<sup>2</sup> Discente do curso de Administração da Faculdade Evangélica de Ceres - FECER, E-mail: alainyantunes@hotmail.com

<sup>3</sup> Discente do curso de Administração da Faculdade Evangélica de Ceres - FECER, E-mail: isaalvees86@gmail.com

<sup>4</sup> Docente da Faculdade Evangélica de Ceres - FECER, Mestrando em Gestão, Educação e Tecnologias pela Universidade Estadual de Goiás, Instituição, E-mail: murilo\_mcosta@hotmail.com