The burden of limited resources in Latin America on healthcare quality and management

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Most South American countries, largely classified as low- and middle-income countries (LMICs), face significant challenges in delivering quality public/philanthropic healthcare. Patients admitted to public/philanthropic healthcare facilities in LMICs often lack access not only to optimal therapies but also hospital optimal quality process. These challenges are deeply rooted in long-standing economic constraints and deficiencies in public resource management. Chronic underinvestment in healthcare and education limits the development of a robust healthcare workforce and infrastructure. Furthermore, outdated curricula, and misalignment between healthcare workers' competencies and the needs of the population, contribute to poorly prepared professionals.[1] These deficiencies are directly linked to low technical capacity and insufficient knowledge among healthcare workers, which exacerbates the poor adherence to clinical guidelines.[2]

A critical shortage of healthcare workers, particularly trained personnel, is a major hurdle to improve clinical outcomes. Data from the Organization for Economic Co-operation and Development (OECD)[3] highlight that Latin American countries have some of the lowest rates of new nurse graduates per 100,000 population, with Colombia (8.1/100,000) and Mexico (17.1/100,000) ranking at the bottom, while Chile performs slightly better (28.4/100,000). In contrast, countries like Australia, Switzerland, Romania, and South Korea graduate more than 100 new nurses per 100,000 population annually.[3] Furthermore, nurse-to-physician ratios are among the lowest in the region, with Colombia (0.7), Argentina (0.7), Brazil (0.7), Mexico (1.2), and Chile (1.3) trailing significantly behind countries like Finland (5.2), Japan (4.7), the USA (4.3), and Switzerland (4.1).[3] It's important to highlight that nurses generally form the largest proportion of the workforce, providing continuous patient care, administering medications, and coordinating between different departments. Consequently, an increasing number of nursing technician courses have been introduced in an attempt to address the low nurse-to-physician ratio; however, these often suffer from poor-quality professional training. Physician-to-population ratios are similarly low, with Peru (1.7), Colombia (2.5), and Mexico (2.5) among the least staffed.[3] These discrepancies are stark compared to HICs such as Greece (6.3), Portugal (5.6), and Austria (5.4).[3] Although Brazil has shown an increase in its physician-to-population ratio over the past decade (from 1.97 to 2.81), its continental dimensions highlight significant disparities. Additionally, quality once again is an issue considering that there isn't a national medical proficiency exam yet. While state capitals in the southeast and south boast ratios of 7.38–10.16 per 1000, areas in the countryside report lower ratios ranging between 0.76 and 2.6, with most cities below 1.55.[4] This shortage leads to burnout among existing healthcare teams, which is particularly elevated in LMICs.[5] Lastly, specialized medical fields are remarkably deficient in rural areas, compromising the quality of medical care provided to these populations.

In healthcare facilities, fundamental yet critical principles, such as adherence to hand hygiene protocols, can significantly reduce hospital-acquired infections—key drivers of financial waste and substantial losses in patients' quality-adjusted life years. However, basic hand hygiene often suffers due to healthcare staff shortages and high workloads. Compliance to had hygiene protocols remain low, averaging 47% in Brazilian hospitals, while the burden of hospital-acquired infections in LMICs is estimated to be twice as high as in HICs.[6]

Another major challenge for LMICs is retaining skilled healthcare workers, who frequently migrate to HICs for better compensation, training, and working conditions. This persistent "brain drain" exacerbates personnel shortages, weakening LMIC healthcare systems. Retention strategies must prioritize competitive salaries, professional development, and incentives to enhance job satisfaction and commitment.

Limited financial resources in LMICs restrict access to optimal diagnostic and therapeutic options,

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Disclaimer: A translated version of this comment is available in Spanish and Portuguese in the Supplementary Material.

Country	Health investment (% of GDP)	Health investment per capita (USD)	Year of health investment
Mexico	5, 5	$1.181,00	2022
Peru	6, 3	$759,00	2022
Colombia	8, 1	$1.640,00	2022
Chile	9	$2.699,00	2022
OECD average	9, 2	$4.986,00	2022
Australia	9, 6	$6.372,00	2022
Brazil	9, 8	$1.573,00	2022
Finland	10	$5.599,00	2022
Argentina	10	$2.170,00	2022
Canada	11, 2	$6.319,00	2022
Germany	12, 7	$8.011,00	2022
USA	16, 6	$12.555,00	2022

OECD: Organisation for Economic Co-operation and Development.

Table 1: **Data from different countries regarding GDP and health investments.**

exacerbating human resource challenges. The demand for enhanced preventive, therapeutic, and diagnostic resources against scarce funding pressures hospital management to increase patient throughput, reduce complications, and minimize readmissions. Limited investment in health and education leaves few professionals equipped to manage this high-complexity scenario. Even with value-based healthcare principles and prioritization of health economics, expecting comparable performance in low-investment regions is unrealistic. Michael Porter's principles[7] are more relevant than ever, highlighting the importance of understanding value in healthcare, from survival rates to time-to-return to daily activities, and ultimately, healthcare sustainability. It is important to understand that the consequences of inadequate management of diseases extend far beyond the confines of healthcare facilities, significantly contributing to both absenteeism and presenteeism, thereby diminishing workforce productivity.[8] Porter's principles should extend beyond healthcare institutions and be integrated into philanthropic and government resource administration and decision-making.

Discussions about consequences of lack of investment often focus on the percentage of Gross Domestic Product (GDP) invested in health or education to justify observed health outcomes. It is essential to consider not only the GDP percentage but also the absolute per capita investment, which varies significantly with GDP. Table 1 illustrates each country's GDP and per capita health investment. Brazil, despite investing 9–10% of its GDP in health, allocates insufficient funds per person due to its large population and relatively low GDP. The triple relationship between GDP, health investment percentage, and per capita amount is stark when comparing HICs to Latin American countries. For instance, 10% of Finland's GDP translates to over $5500 and Australia 9.6% to $6372 per capita annually, while 9.8% in Brazil only amounts to $1573. Lastly, when considering the allocation of 9% of the GDP towards Brazilian healthcare, 59.15% of that expenditure is directed to private institutions.[9] Consequently, less than 4.5% is effectively allocated to the public healthcare system. These figures may reinforce the perception that there are two distinct Latin Americas, and only one portion of the population has access not only to better diagnostic and therapeutic resources but also an adequate healthcare workforce. For example, in Brazil, 25% of the population utilizes the private healthcare system.[10] Therefore, increasing the health investment percentage alone is insufficient; effective public resource management and overall economic growth are also critical.

The future of healthcare in LMICs, especially in Latin America, relies on balancing economic growth, targeted investments, and clinical outcomes. Prioritizing health resources, fostering public-private partnerships, and leveraging research funding can enhance patient outcomes. Innovation, collaboration, and sustainable strategies are vital for addressing disparities and strengthening healthcare systems.

Contributors

JPT: conceptualisation, data curation, writing – original draft; FT and AC: visualisation, writing – review & editing; JLLR: data curation, visualisation, writing – review & editing.

Declaration of interests

AC declares honoraria from União Quimica (unrelated to this comment); JPT declares honoraria from União Química, Pfizer, Merck/MSD, Dr Reddys and consulting fees from União Quimica (unrelated to this comment). Other authors declare no conflict of interest regarding this comment.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.lana.2025.101014.

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