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The Necessity of incorporating Health Economics into Nursing Education

Ladan Fatah Moghadam[1], Maryam Rostami Qadi [1], Payam Abbasi [1], Sepideh Nasrollah [2]*

[1] Ph.D. Students, Faculty of Midwifery and Nursing, Tehran Medical Sciences, Islamic Azad University, Tehran, Iran.
[2] Assistant Professor, Department of Medical Surgical Nursing, Faculty of Midwifery and Nursing, Tehran Medical Sciences, Islamic Azad University, Tehran, Iran. ***(Corresponding Author)***

Abstract

Background and Aim: The integration of health economics into nursing education is essential, considering the increasing complexity of healthcare delivery and the need for cost-effective practices. This study examines the necessity and implications of incorporating health economics into undergraduate nursing curricula in Iran

Materials and methods: In this descriptive review, we conducted an electronic search in PubMed, Scopus and Google Scholar databases using Persian and English keywords, such as "Education," "Health Economics," and "Nursing". Studies related to health professionals and nurses in particular, published between 2000 and 2024 were included in this review. From 600 initial studies identified, 15 were selected after being screened for duplicates and methodological quality. Data were analyzed qualitatively, focusing on nursing economics, the role of health economics in care quality and cost effectiveness, and also the necessity of health economics education in Iran's nursing curricula.

Results: The findings revealed a major need for the inclusion of health economics in nursing curricula in Iran. The reviewed studies showed that nurses with health economics training could better understand and manage the financial aspects of healthcare, leading to improved patient outcomes and cost effectiveness. Hospitals with higher nurse-to-patient ratio and economically trained nurses reported better financial performance and higher patient satisfaction.

Conclusion: Incorporating health economics into nursing education is crucial for improving healthcare quality and cost effectiveness. Policymakers and educational institutions should revise nursing curricula in favor of including this subject, which equips nurses with the skills needed to make informed financial decisions that enhance healthcare delivery and resource management.

Keywords: Health Economics, Education, Nursing, Transcultural, Curriculum.

Corresponding author: Sepideh Nasrollah ORCID ID: 0000-0001-7084-926X Email: S.nasrollah@iautmu.ac.ir, **Received**: August 2023, **Accepted**: November 2023, **ePublish**: Autum 2023. **Citation:** Fatah Moghadam L, Rostami Qadi M, Abbasi P, Nasrollah S, The Necessity of incorporating Health Economics into Nursing Education, Knowledge of Nursing Journal. 2023;1(3):223-237.

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Introduction

Today, healthcare organizations provide a wide range of products and services in a complex environment with the constant focus on quality improvement and outcome evaluation [1]. Thus, efforts to improve quality and patient safety in a complex environment with limited resources require a better understanding of concepts such as health economics by healthcare professionals. Understanding this concept, as a research topic, is in line with our goal in analyzing cost-effectiveness, resource management and efficiency of health systems in the treatment of diseases [2].

In short, economic status affects health and health affects economic prosperity [1]. Therefore, issues related to socio-economic status and population health are among the main concerns and challenges of governments and policymakers. Poverty along with inequality in accessing healthcare services are problematic for governments and policymakers globally, especially in low- and middle-income countries. Access to health care affects almost all health indexes, including maternal/child mortality rates, prevalence of preventable infectious and non-communicable diseases, employability, gender equality, labor productivity, mortality rates, etc. [3].

Health economics is a relatively new discipline. It emerged as a distinct field after the publication of a manuscript by Nobel Prize-winning economist Kenneth Arrow in 1963 [4]. Health economics is a branch of economics that largely contributes to the country's economy. In fact, it is one of the main components of health care and treatment costs. Health economics applies economic theories, models and techniques to analyze the decisions of individuals, healthcare providers and government in regard to healthcare [5].

According to Collazo and colleagues, health economics integrates economic, social, clinical and epidemiological theories to study the mechanisms and factors that determine the production, distribution, consumption and financing of healthcare services. Also, factors such as health and its economic value, supply and demand of medical care, market balance, planning, regulation and monitoring of healthcare interventions, comprehensive evaluation of health system, economic evaluation of specific health technologies and microeconomic evaluation are considered as indicators of political development. Nurses have a major ability to positively influence health outcomes [6, 7].

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Nursing professionals and leaders require skills in economics and finance to better support their patients. High healthcare costs and expensive hospital stays can deter patients from undergoing necessary examinations or procedures, often because they are unaware of alternative payment options that could reduce their healthcare costs. Additionally, hospitals have experienced an increase in unaccounted supplies [6].

Understanding health economics helps nurses grasp the complex and often hidden ways that healthcare organization, financing and delivery are influenced by economic factors. The cost of healthcare and its economic impact are crucial considerations, as they affect both healthcare organizations and nurses working in them. With the growing focus that is being placed on providing effective and equitable primary care amid limited resources, economic theories are aimed at facilitating primary care development and guiding health decision-making [8].

It is very important for nurses to be aware of the rational justification of hospital costs, proper use of resources, waste management, provision of high-quality services and active participation in them. Despite considerable emphasis that has been placed on the importance of cost control and hospital productivity, unfortunately, many nurses do not know how their work affects health care costs, how they can contribute to health care revenues, and how to have positive attitude toward their participation in cost management and control [7].

For this reason, many studies recommend that hospital managers should increase nursing managers' awareness of health economic and measures by providing educational programs and continuous training on this subject. When nurses have sufficient knowledge on finances and economics, they can relate to their patients and help them to make better decision. This, in turn, allows patients to view them more sympathetically, because they see them as people who will do their best to reduce their healthcare costs [9].

This study was conducted to examine the necessity of incorporating health economics in Iran’s nursing curriculum. Given the complexity and resource limitation in today's healthcare environments, nurses must have a deep understanding of health economics to effectively participate in the delivery of quality services and cost management. This study also intends to examine the role of nursing health economy, the importance of health economics training for nurses, and

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the reasons for its absence in current nursing curricula.

Methods

In this descriptive review, a search was conducted in PubMed, Scopus and Google Scholar databases to find studies related to health economics and nursing published between 2000 and 2024, both in English and Persian. This study also to intend to answer three key questions, including the role of nursing in health economy, the necessity of health economics training for nurses, and the reasons for lack of health economics in Iran's nursing curricula. Studies conducted in Iran and abroad focusing on healthcare professionals, especially nurses, and related studies with the full text were included in this review (inclusion criteria). Out of 600 potential articles, 24 were screened and 15 articles were selected for full-text analysis based on eligibility and methodological assessment. Data found in these studies were summarized qualitatively in a summary table. The necessity of health economics education for nurses, nursing economics and its impact on healthcare quality, and the reasons for its absence in Iran's nursing curricula were also explored in this review study.

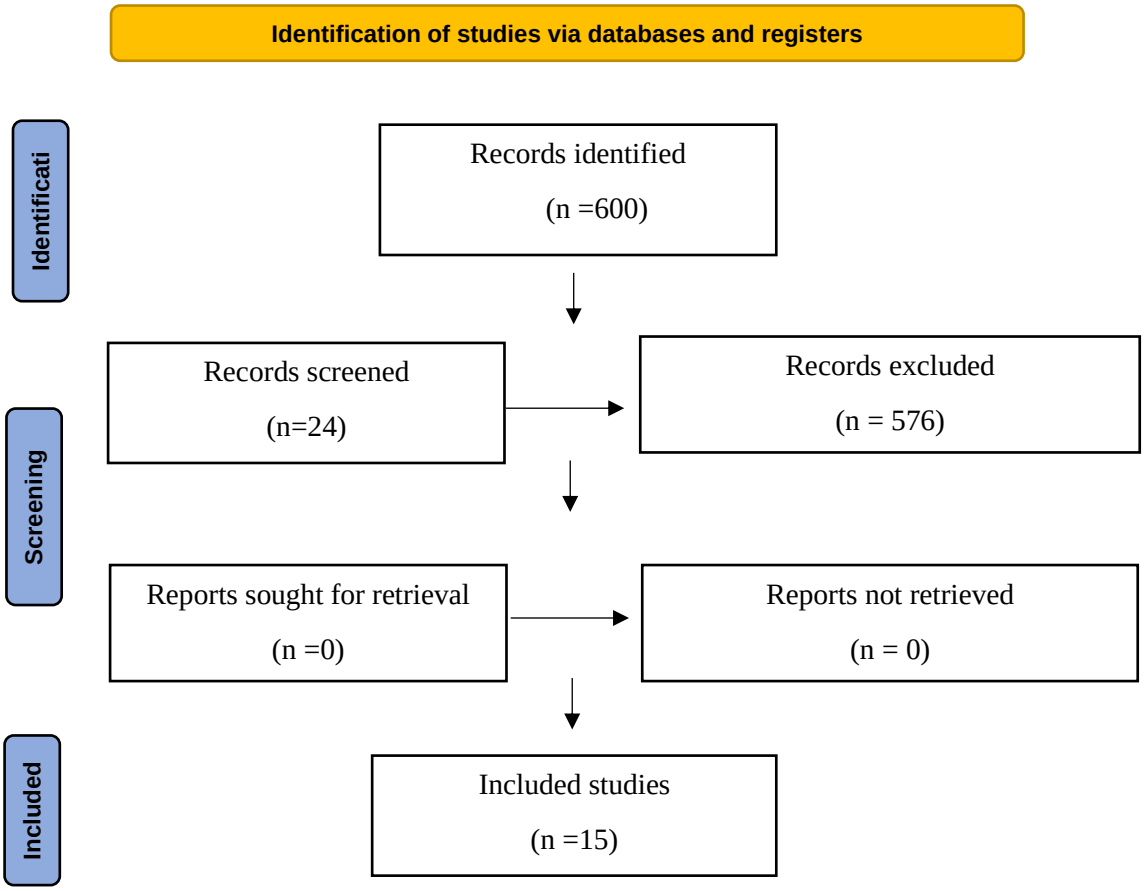
Results

From a total of 24 articles, 15 were included in this qualitative analysis. Key findings from the descriptive analysis include:

- Publication Timeline: 63% of the articles were published between 2005 and 2016.
- Geographic Focus: 66% of the studies were conducted in the United States.
- Research Design: 34% of the studies utilized a quantitative research design.

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Table 1. Screened articles (Based on Publication Year)

Researcher	Title	Results	Study area
Sovie et al. (2001) [10]	Hospital restructuring and its effect on nursing care indicators	The study highlights the importance of considering patient care quality indicators, such as number of falls and hospital infections when making changes to the human resources structure (for instance, reducing the number of nurses).	Health economics, cost and nursing
Litaker et al. (2003) [11]	Physician-nurse teams in chronic disease management: impact on costs, clinical effectiveness, and patient perception of care	This study highlights the value of a complementary team approach in improving outcomes caused by chronic disease management.	Cost and nursing
Jones (2005) [12]	Re-examination of nurse turnover costs	The article introduces a method to adjust nurse turnover costs, using the consumer price index to help the nurse managers estimate current turnover costs and potential savings from retention investments. It also highlights the financial value of higher nurse staffing, which improves care quality and benefits society economically.	Nursing and costs
Newbold (2005) [13]	Health economics and nursing management	Concepts of health economics and nursing management in reducing costs	Health economics and health care cost management and quality
Mannion et al. (2005) [14]	Evaluating health economics studies in alternative futures for health economics: Implications for nursing management	Nurses, nursing managers and researchers need to question the assumptions of dominant economic models and examine a range of economic frameworks when planning services and evaluating their performance.	Health economics and nursing
Welton et al. (2006) [15]	Hospital nursing, billing and reimbursement	The results show that the direct costs of nursing care are not aligned with the current billing practices in teaching hospital.	Nursing and costs
Cowan et al. (2006) [16]	The effect of multidisciplinary collaboration between hospital manager/physician and professional nurses, and its impact on hospital costs	Multidisciplinary care management by physicians and nurses to reduce length of hospital stay (LOS) and increase hospital profits without affecting readmissions or mortality.	Health care and nursing

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Needleman et al. (2006) [17]	Nursing staff in hospitals: Is there a business case for quality?	The evaluation highlights crucial areas for improving operating room nursing care, requiring the nurse manager to plan and implement a safe and humane approach.	Quality of care and nursing
Chiang (2009) [18]	Estimating nursing costs	Reflects patient care costs	Nursing and costs
Aiken et al. (2009) [19]	Nursing economics	The article examines how national policies and management decisions impact nursing and patient outcomes, particularly highlighting how investing in nursing, including staffing level, can lead to savings in patient care and improved outcomes.	Economics of nursing and costs
Dall et al. (2009) [20]	The economic value of professional nursing	As nurse staffing level increases, patient risk and length of hospital stay decreases, resulting in medical cost savings, improved national productivity, and reduced mortality.	Economics and quality of care
Browall et al. (2017) [21]	Evaluation of patient outcomes and cost-effectiveness of follow-up by nurses for women with breast cancer - Have the relevant and sensitive evaluation measures been used?	Nurse follow-up can improve continuity of care and provide more time for providing psychosocial support and addressing patients' informational needs.	Nurses and healthcare improvement
Brownie (2018) [22]	The economic impact of nursing	The "Nursing Now" campaign emphasizes on the crucial role of nursing in global health and local economies. It offers an opportunity to showcase nursing's contributions at global, national, and local levels, demonstrating its fundamental impact on health systems and the economic well-being of countries.	Nursing economics; economics and costs
Platt et al. (2019) [8]	Current status of health economics education in nursing programs in the United States	The education should be an essential and important component of the regular undergraduate nursing curriculum.	The necessity of health economics education in nursing curriculum
Platt et al. (2021) [23]	Developing health economics competencies for MSc nursing programs	Incorporating economic principles into national nursing education standards, as professional competencies will enhance the nurses' ability to make essential changes in delivering affordable, high-value health care nationwide.	The necessity of incorporating health economics in nursing education

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Discussion

This study offers a comprehensive exploration of nursing concepts within the framework of health economics and the importance of integrating health economics into nursing education. The key themes highlighted in the reviewed articles are as follows:

A) Nursing Economics:Nurses play a crucial role in patient care and face ethical and practical challenges, especially in regard to resource allocation. Traditionally, healthcare decisions were not considered to be a factor in cost effectiveness due to ethical concerns, but modern nurses recognize the need to manage resources effectively to enhance care value and outcomes. Despite this awareness, many nurses lack the tools and knowledge to handle economic challenges. Economics, which deals with the allocation of resources, can provide nurses with valuable insights, helping them balance their care-focused roles with efficient resource management. Research shows that involving nurses in decision-making can improve patient outcomes and reduce costs. For instance, increasing nurse staffing and education level has been linked to lower readmission rates and mortality. Evidence indicates that unrestricted nursing is associated with better health outcomes and fewer hospitalizations. Nurse-led preventive care also leads to positive economic impacts, such as higher patient satisfaction and fewer emergency visits. A 2010 Gallup survey found strong public support for greater nurse involvement in decision-making, but it also highlighted barriers, such as lower perceptions of nurses in decision-making compared to other healthcare professionals. This underscores the need for ongoing education in health economics to better equip nurses with proper skills for making informed and cost-effective decisions [24].

The interpersonal aspect of nursing, which involves caring for people and building therapeutic relationships, is what initially attracts many nurses to the profession. While economics may seem distant from the everyday working life of nurses, both economics and nursing profession share common interests [23].

Economics deals with how we produce, distribute and use services, while finance is about managing and acquiring funds. Financial literacy is important for everyday life, yet many nurses are not familiar with these concepts as they often are not covered in their training or daily work [24].

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In 2010, the Gallup Institute surveyed 1,504 people in the United States to understand how public views the role of nurses in decision-making within their workplaces [8]. The survey showed that a strong majority, over 72%, believed that nurses should have more involvement in all areas of healthcare. The biggest concern for people today is the cost and affordability of healthcare. The survey also looked into whether the current work environment supports nurses in making cost-effective decisions and also whether the right incentives are in place or not. Many respondents pointed out that the healthcare system has significant barriers that prevent nurses from fully stepping into leadership roles. One major barrier is that nurses are often seen as less influential bodies in decision-making compared to physicians, healthcare managers and insurance companies [25].

For example, increasing the ratio and educational level of nursing staff in inpatient wards in Europe has been shown to have positive effects on 30-day readmission of patients and mortality rates [19, 26]. In the USA, states that employ nurses and support their activities without restrictions report lower rates of hospitalization and improved community health outcomes compared to states that do not hire nurses or place unnecessary restrictions on nurses' practice [6]. Each of these examples illustrates the impacts of nurses on the economics of secondary-level health care, and supports the idea that the impact of nursing is broader than that of health care alone. Other examples show the influence of nurses in the primary health care system, whereby nurses in professional roles provide both curative and preventive healthcare services [27].

There are ongoing studies demonstrating that nurse-led preventive health services led to favorable economic outcomes in terms of health results and clinical cost-effectiveness. These studies also report financial benefits, such as higher patient satisfaction, improved lifestyle, increased daily activity, fewer unplanned medical visits, decreased hospital admissions and readmissions, and enhanced patient self-efficacy [28-29]. Such studies provide evidence in favor of nurses' role in improving clinical practice and quality of health care.

The report of International Organization for Migration (IOM): *The Future of Nursing: Leading Change, Advancing Health* (2011), calls for reforms in nursing, particularly by giving nurses more decision-making power and enhancing their education. It also

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recommends universities to incorporate health economics into nursing curricula. This report notes that nursing managers often do not have sufficient knowledge on economic performance and health quality management due to insufficient training in health economics, limited participation in economic decision-making, and insufficient in-service trainings [21].

B) The role of health economics in the quality of care and nursing: Understanding the economics of health helps nurse to understand the often complex, contradictory, and invisible yet pervasive ways that shape the organizations' economics, financing and delivery of health care [14]. In addition, many policy-related decisions at the institutional and national levels relate to economic incentives and how money flows through the system. Therefore, to serve patients and help shape a world in which a holistic vision of nursing profession can become a reality, nurses need a firm grasp of economic terms and ideas so that they can apply them in the clinical setting [23].

In this regard, studies showed that individual investments benefit the organizations in which professional nurses work. The community also benefits from the unique contributions that these professionals make in the form of knowledge, skills, decision-making, safety and care [30].

In the same way, this knowledge makes organizations more productive, increases the organization's financial performance, and has a direct impact on the quality of care and satisfaction of service users. For this reason, hospital investment in nursing in terms of costs, income and productivity requires a deeper knowledge [24] of health economy, which includes care management [19], staffs' health promotion, increased efficiency of employees' performance, recruitment of new professional employees, the consequences of rotating shifts and retention of nurses [12]. However, the value of patient care, which is defined as the relationship between quality and cost, is one of the elements that are mainly or in some cases only used to define these aspects. In any case, it is necessary to recognize the changing role of nursing and seek a balance between quality, quantity and cost when deciding how to distribute available financial resources to achieve a higher care quality and user satisfaction [10].

C) The role of health economics in health care costs: In relation to this issue, various studies show the challenges caused by high nursing costs in health care and treatment [15, 18], which constitute at least a quarter of

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a hospital's budget. In this regard, studies have shown that the net increase in hospital costs is related to the increase in professional nursing hours, staffing level [17], retention of nursing workforce, and investment in expertise to care for patients. All these factors should become a management priority, considering their impact on the care quality and patient satisfaction from a social and a hospital perspective, considering that investing in quality by combining these elements directly affects costs [16].

The overall impact of nursing care-related management decisions on patient outcomes and healthcare costs is well documented. Studies examining the relationship between nurses staffing level and patient outcomes show that higher nurse-to-patient ratios are usually associated with better patient outcomes, which in turn translates into cost management [30]. Different aspects of nursing care or nursing characteristics have been investigated (nurse workload, nurse education, etc.) and similar conclusions have been reached indicating that it is possible to significantly improve patient outcomes by changing various parameters of nursing, such as reducing nurses' workload or hiring nurses with a bachelor's degree [31]. Dall et al. (2009) found that hiring an extra registered nurse can bring in benefits of at least $60,000 a year, though this number might be an underestimated because it does not fully capture the broader benefits that it brings to society. This study underscores the importance of understanding how much influence each nurse has on costs and whether nurses have the right incentives [20].

Learning about health economics could help nurses make better and more informed decisions. Many nursing managers gain economic knowledge through experience rather than formal training, and might benefit from additional cost-saving education. By understanding economic theories, such as scarcity, utility and cost, nurses and healthcare managers can make smarter decisions and better manage their resources [32].

D) The need to provide health economics courses to health professionals and nurses: Theoretical background research on health economics in nursing education is scarce. We found only three related articles in this study, all dating back to the late 1980s to early 1990s. The main point in these articles was to introduce more economic content in undergraduate nursing curricula [29, 30]. The main idea of Greenfield's article was to make health economics compulsory in the

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undergraduate nursing curriculum as an ideal goal [31]. Greenfield first describes the economic content typically found in undergraduate nursing curricula, acknowledging its limited scope, and then offers some input on what sort of economic contents should be added to the nursing program [34].

The study of economic evaluation encompasses various topics such as cost minimization techniques, cost-benefit analysis, and cost-effectiveness. However, these topics, while important, do not fully encompass the principles of health economics and fail to impart the real economic way of thinking to students [34]. Some studies have assessed the status of health economics education in academic programs for healthcare professionals. According to Persad et al. (2008), only 66.1% of medical and nursing schools include health economics in their programs [35]. Yet, Patel et al. (2009) found that a high percentage of educational contents, such as health economics, does not guarantee high-quality education after reviewing medical graduate survey records for 2003–2007. The satisfaction level with such training among medical residents was notably low, with less than 50% of graduates rating their training in medical economics as adequate [36]. Since the enactment of Affordable Care Act in 2010, there has been a growing concern about the insufficient training of health economics and the business aspects of healthcare to medical assistants. A report examined the reasons behind the continued lack of "cost awareness in patient care." Despite this, healthcare costs have been on the rise for years, and there is widespread recognition of the need for cost containment practices in healthcare [37].

Cook's recommendations on how and which changes should be implemented include calls for upgrading nursing and medical education programs with appropriate content. Another report provides detailed instructions on exactly how medical programs should be strengthened [37]. Patel and colleagues suggested a standard core curriculum in health policy to be adopted by all medical and nursing schools in the United States. They suggested a special structure of such curricula, which includes nursing and medical economics to be introduced as one of the components of "value and equality" [38].

E) Reasons for the absence of health economics education in nursing curricula: The absence of health economics in nursing curricula is a major issue for organizations

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that set educational standards for nursing. This problem is not surprising, given that many nursing programs face similar challenges. Patel et al. (2011) highlighted reasons for this gap [38], which are strikingly similar to those identified by Smith (1988) over two decades ago. They point out that a lack of qualified teachers and an already packed curriculum make it difficult to include health economics to nursing curriculum without removing some existing contents [33].

Patel et al. (2011) agreed that it's rare to find health economists and similar experts on medical/nursing faculties. However, they dispute the idea that medical programs are too packed with clinical content to include non-clinical topics. They argue that this belief is more of a myth than a reality [38].

Patel et al. (2009) found that students at a medical school with a strong focus on health policy were nearly four times more likely to feel well-trained in medical economics compared to students at a school with less emphasis on health policy. Additionally, these students did not report lower quality in their clinical training, suggesting that including non-clinical content does not negatively affect clinical education [36].

The present study faced several limitations, including restricted access to full-text articles, potential biases in existing literature, limited database searches, and subjective qualitative synthesis. Recommendations include incorporating health economics topics into nursing education, promoting ongoing education in health economics for nurses, and conducting further research on the impact of health economics on care quality and costs.

Conclusion

In conclusion, integrating health economics into nursing education and practice is essential for improving healthcare outcomes and managing resources efficiently. Addressing the current gaps in education and training can empower nurses to play a more significant role in decision-making and cost management, ultimately benefiting patients and healthcare organizations.

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Conflict of Interest

There is no conflict of interest in this study.

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