Importance of Futures Studies in Health: A Narrative Review

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Abstract :

In the face of constant change, uncertainty, and complexity that define health systems, future studies emerge as a promising approach. These studies, characterized by their systematic, methodical, and organized process, play a pivotal role in identifying, examining, and creating desired futures. They serve as a crucial tool for policymakers, enabling the formulation of proportionate responses to a complex web of interactions and forces that shape the future. Amidst rising costs and various threats across environmental, social, cultural, economic, and political dimensions, the health sector stands to benefit significantly from the insights provided by future studies. The review advocates for a shift in the managerial perspective towards the adoption of Future Thinking as a strategic priority in the health sector. This approach can yield numerous benefits, including the continuous discovery of world-changing trends, transitioning from a passive to a proactive stance, achieving readiness for the future, fostering creative thinking, enhancing productivity, improving ideation and innovation capabilities, creating key resources for the future, and identifying emerging market products. The imperative of employing these methods to enhance human life is more evident than ever. This narrative review underscores the importance of future studies in the health sector, highlighting their potential to shape a better future.

Keywords : Futures Studies, Futures, Health, Health Care

Context

Future studies represent a systematic, methodical, and organized process (1, 2). Various definitions exist for these studies, all converging on common themes such as:

- The scientific nature of future studies,
- The role of these studies in improving and shaping futures,
- The importance of identifying and examining futures,
- Exploring future scenarios (a key objective of future studies),
- The art of creating futures (describe the process of envisioning, strategizing, and working towards desired futures) (3).

It is widely acknowledged that the most prudent approach to the future is preparation (4). Thus, the discovery and recognition of alternative futures can play a pivotal role in formulating innovative policy options and facilitating the realization of the most desirable futures amidst uncertainty (5, 6). Given the constant state of change, uncertainty, and complexity that characterizes health systems, future studies emerge as a promising approach in this domain (7). Health , being a crucial aspect of our lives, faces various threats across environmental, social, cultural, economic, and political dimensions (8). The significance of health is underscored by its dual role as a valuable asset and a determinant of productivity and social desirability (9).

Meanwhile, the health sector has been grappling with steeply rising costs. Reports from the World Bank and the World Health Organization indicate that health sector costs have escalated globally from 8.62% to approximately 11% of GDP (equivalent to $9 trillion) (10, 11). Studies in the health sector reveal that future studies serve as a crucial tool and source of evidence for policymakers across all functions of the health system. Future studies in healthcare strive to identify a complex web of interactions and forces that shape the future, thereby enabling the formulation of proportionate responses (6).

Contemporary policy literature has evolved from rudimentary concepts such as prediction, Future Thinking, and forecast, to more advanced notions such as Futures Studies and Foresight, which are tasked with shaping or building the futures (12). The imperative of employing these methods to enhance human life is more evident than ever (13). In this context, a shift in the managerial perspective and the adoption of Future Thinking in the health sector should be viewed as a strategic priority. Health sector organizations stand to gain numerous benefits by incorporating the future into their strategic planning. These benefits include continuous discovery of world-changing trends, transitioning from passivity to a proactive stance, achieving readiness for the future, fostering creative thinking, enhancing productivity, improving ideation and innovation capabilities, creating key resources for the future, and identifying emerging market products (14). This study presents a narrative review highlighting the importance of future studies in the field of health.

Materials and Methods

Narrative reviews, deeply rooted in a distinct research tradition, serve as a method of knowledge consolidation. Often labeled as non-systematic, they are perceived as lower in the evidence

hierarchy compared to other review types. However, their immense value to medical educators and researchers is undeniable. Unlike a systematic review that focuses on a specific question within a defined context and uses a set method to merge findings from similar studies, a narrative review provides a comprehensive summary of a wide array of studies, complete with interpretation and critique. There are several types of narrative reviews, including state-of-the-art, critical, and integrative reviews, among others (15). The review process lacks established standards or protocols. While reviewers will acquire knowledge about the issue at hand, they may not gain a complete understanding of the current scientific status related to the issue (16). The process of conducting a narrative literature review can be broken down into four steps (15-17):

1. *Conduct a Search:* Unlike systematic reviews, narrative reviews usually lack a specific research question or defined search strategy. However, including a search narrative, which outlines the decision-making process in developing a literature search strategy, can increase transparency in literature searching. This could potentially enhance the peer review process of literature searches and encourage more interaction and discussion among stakeholders, experts, and users of research. Although a clear search strategy is not strictly required for narrative reviews, it can enhance the review's comprehensibility and reproducibility. In this study, we conducted an unrestricted search using relevant keywords across multiple databases, including PubMed, Scopus, and Web of Science, without adhering to a specific strategy. We also performed a free search with the same keywords on Google.
2. *Identify Keywords:* In our study, we used a range of keywords, including futures studies, futures research, futurism, futurology, health, healthcare, health system, medical care, etc., to find resources relevant to our study's objectives.
3. *Review Abstracts and Articles:* After the search is completed and all duplicates are removed, the abstracts of the remaining articles should be reviewed to ensure they address your review question. For narrative reviews, it is not necessary to include every article on a subject. In our research, we did not import the search results into any reference manager. Instead, we reviewed them directly on the web pages. Our process initially involved checking the titles. If a title seemed relevant to our study's objectives, we proceeded to screen its abstract in a new tab. If the abstract was relevant, we then screened the full text. Any material that aligned with our study's purpose after this thorough examination was incorporated into our final study.
4. *Record Results, Summarize, and Synthesize:* The findings from the articles you have discovered should be summarized and synthesized, and incorporated into your writing as needed. Once the final studies were identified, we extracted the pertinent data from each. Given that the information related to our study's objectives was primarily textual—comprising statements, letters, and words—we employed content analysis for its examination. Consequently, we merged any content that shared similar meanings or concepts.

Onwuegbuzie and Frels (pp 24-25, 2016) have classified narrative reviews into four primary categories (18):
1. *General Literature Review:* This type of review offers a summary of the essential elements of a topic. It often serves as the introduction to a thesis or dissertation and is guided by the research objective or hypothesis.
2. *Theoretical Literature Review:* This review explores the role of theories in shaping or influencing research.

3. *Methodological Literature Review:* This review focuses on the research methods and design, underlining their advantages and disadvantages, and proposes directions for future research.
4. *Historical Literature Review:* This review traces the development of a topic over time, with the aim of historically contextualizing research and pinpointing potential avenues for future research.
Given these classifications, it can be concluded that our work aligns with the category of a General Literature Review.

Main Text

Main Objectives in Futures Studies and How to Choose Methods:

Futures studies are typically conducted with two main objectives. The first objective is to answer the question: "What will the future look like?" The Second objective is using the insights gained from the studies to prepare and plan for the future (19).

Choosing the right methods is of great importance in achieving these goals. Various factors influence the choice of methods in futures studies, including:

- The objectives and types of desired and expected outputs
- The availability of resources (financial, human resources, scientific information)
- Coordination, complementation, and adaptation to other methods and programs
- Applicability
- Level of application (strategic, operational, etc.)
- Normative and exploratory approach

Therefore, choosing the right method is necessary to enhance the quality of these studies. The choice of disproportionate methods can lead to undesirable results and a significant waste of resources (20).

Futures Studies in Health in Different Countries:

Futures studies in health typically focus on the future of healthcare, which is closely linked to social futures and intertwined with social issues (14, 15). The importance of future research in health was recognized by the World Health Assembly in 1990 (21). Subsequently, the Futures Cone was depicted (21, 22), and Voros further developed it nearly a decade later to carry out more operational and comprehensive matching plans, gaining widespread popularity (23). A book titled "Guide to Future Health" was published, addressing the following topics:

- Design and management of future research projects
- Identifying future health needs
- Focusing on desirable future scenarios and "realistic decisions" (21, 24)

Questions have been raised about exploring alternative futures: Will we be healthy in the future? What will be the role of health in policy making and planning for the future? (21, 25). The international community considers it necessary to conduct these studies to address the profound social (the rise of social media), political (constant Shifts in the geopolitical landscape: changes in Leadership, Policy, and International Relations), and economic (significant changes in the

global economy due to technological innovation and globalization) changes occurring in many parts of the world (21). These changes can significantly influence the future of healthcare and are therefore important considerations in futures studies. Futures studies and foresight should become one of the main tasks of global organizations (38), as these research efforts are a powerful tool for policy-making, especially in the field of health. They help countries respond to challenges such as globalization and competition in various fields (39). In accordance with this, many countries such as Japan, Germany, Turkey, South Africa, Belgium, and the Netherlands use futures studies to advance their goals in health (26). The use of these studies with a normative approach is also increasing in some countries such as the United Kingdom, Australia, Canada, Finland, France, Japan, and New Zealand (27, 28). Countries that call for fundamental changes in health should make futures studies the main focus of their planning and policy making (40). Finally, different countries can reach consensus and create a common vision by conducting future studies in areas that have challenges and differences. This common goal aligns with the development and well-being of humans (29).

Necessity and Importance of Futures Studies in Health:

The future development of health systems is influenced by various factors such as globalization, technological advances, new global risks and opportunities, and new requirements of customers and stakeholders (30). Given the prominent role of uncertainty and complexity in the health domain, it is essential to incorporate futures studies into the health system. The subsequent sections will delve into the importance of futures studies in key areas of health.

Health Insurance:

Health insurance systems, defined as organized legal and regulatory mechanisms used to protect people's health and provide quality and effective services (31), are a crucial element of health reform. They enhance fair access to health care for people. In each country, different entities should be considered to improve the insurance system, and concerted efforts should be made towards its enhancement. The development and expansion of health insurance systems can be influenced by numerous factors, including economic growth, the state of the country's banking and monetary system, improvements in the administrative system, participation of various stakeholders, integration of various types of insurance, and the use of new and up-to-date technologies (32).

Insurance systems play a pivotal role in health care provision. For instance, in the United States, more than 80 percent of health care costs are covered by public or private insurers, and in other developed countries, Medicare coverage has reached 97 percent (33). In recent years, societies have witnessed emerging phenomena that will continue to impact the distant future. These include increasing life expectancy, a rising burden of non-communicable diseases, urban migration, escalating public expectations, expansion of the private sector, changes in service delivery practices, and advancements in medical technologies such as Metaverse and digital health, along with the introduction of new and expensive medical technologies (34). These

developments present new challenges to the health systems of countries, complicating the achievement of a preferred future (35). Current laws and policies in the health insurance system have been inefficient in addressing these challenges, failing to create an effective and tailored insurance system responsive to present conditions and ambiguities. The future of this system is significantly influenced by the interactions of domestic and global factors (36). Given these issues, the future of this service system is fraught with ambiguity, complexity, and changes. A forward-looking approach is needed to improve the quality of service delivery in health (35). Establishing a positive vision of the future and adopting appropriate policies and strategies increase the likelihood of a favorable future (36). Despite the importance of futures studies, these types of studies remain unfamiliar to health stakeholders. However, having a forward-looking view is a key factor in the success of any organization. All units influencing the health sector, including insurance, should incorporate this perspective into their long-term and medium-term planning (14).

Road Accidents:

Road accidents significantly contribute to the rise in disability rates and impose a substantial financial and psychological burden not only on the individuals involved and their families, but also on the community and the Health System (37). These accidents are a global health threat (38, 39), with a staggering 91% of fatalities occurring in low- and middle-income countries (38, 39). The high demands these accidents place on healthcare provider systems are noteworthy (40). A multitude of factors are implicated in the surge of these incidents and will continue to shape the future (41). These include high-speed driving, drunk driving, the absence of proper and up-to-date driving equipment and facilities, inadequate training to handle accidents, non-compliance with vehicle design and construction standards, lack of continuous vehicle monitoring, and a disparity between people's financial resources and the quality of cars they can afford (39). These factors and their ensuing consequences are projected to persist, creating a climate of uncertainty and turmoil in managing these events. Therefore, foresight becomes crucial in this high-risk and costly field, aiming to mitigate both direct and indirect costs.

E-Health Services:

As technologies rapidly evolve, they seamlessly integrate into people's daily lives (42). This evolution places mounting pressure on healthcare delivery systems to excel, prompting crucial questions:

- What impact does digitization and the Internet of Things have on healthcare?
- Does it drive unemployment or spur increased demand for healthcare services?
- What future achievements are anticipated from these innovations in healthcare? (42, 43).

Overall, advancements in Information Technology are revolutionizing healthcare, steering it towards personalized medicine, out-of-hospital healthcare delivery, and patient empowerment (44). Healthcare and medical sciences stand at the forefront of this transformative journey,

tackling challenges posed by the aging population and the escalating incidence of chronic disorders (14). Notably, technological innovations like telemedicine, telehealth, electronic health records, Medical Decision Support Systems, and electronic prescribing have ushered in cost reductions, error minimization, and service enhancement (45). Telemedicine, especially, has gained traction for its potential to overhaul healthcare organizations, boosting service efficiency, access, outcomes, and patient satisfaction (47, 48, 49). Moreover, these technologies have fortified disease management for ailments such as diabetes, hypertension, and chronic obstructive pulmonary disease (47, 50). While mobile health apps contribute to enhancing healthcare quality, coverage, and access to information, concerns persist regarding privacy, legality, and ethics (52, 53, 54). Looking ahead, the future of healthcare delivery will diverge significantly from present practices, with futuristic science shaping the landscape to preempt future risks and harness opportunities (1, 55). Digital health offers substantial benefits to stakeholders, albeit with accompanying challenges (56). Various studies underscore the transformative impact of digital health technology on healthcare delivery, underscoring the imperative for meticulous consideration and management to forestall unforeseen consequences (57). Hence, ensuring both the quantity and quality of these technologies is imperative for future generations (42).

Non-communicable Diseases (NCDs):

NCDs, according to estimates by the World Health Organization, are the leading cause of death and disability, with nearly three-quarters of deaths attributed to them occurring in developing countries (58). In Europe, NCDs account for nearly 86% of mortality cases and 77% of the disease burden (59). Cancers, for instance, place significant financial strain on society, patients, and their families, with individuals in the United States diagnosed with cancer being 2.7 times more likely to declare bankruptcy due to the exorbitant costs of cancer drugs (60, 61). The escalating prices of cancer drugs have become a pressing concern, with cancers ranking third in terms of economic cost (62, 63). Addressing NCDs requires extensive reorganization and re-engineering efforts, given their threat to the sustainability of healthcare systems. This restructuring involves considering pivotal skills, staff training, appropriate payment and reward systems, and empowering patients, all while focusing on reducing uncertainties and adhering to the principles of Health Technology Evaluation in these diseases (42). However, the majority of studies conducted in NCDs policymaking have adopted a policy analysis approach, often overlooking future implications, which significantly impacts policy failures. Understanding and preparing for the future are imperative for health policymakers, professionals, and researchers involved in policy formulation, patient treatment, or the development of new products in laboratories (64). Various factors, such as demographic transmission, epidemiological transmission, increasing environmental pollution, growing marginalization, escalating private sector participation in healthcare delivery, transitioning towards a knowledge-based community, developing information technology, and increasing the utilization of advanced technologies in the health system, will influence healthcare supply and demand in the future. Consequently, strategies for coping, controlling, and treating NCDs diseases necessitate an understanding of the

future to design and implement policies and strategies aligned with alternative futures (65, 66). Thus, the utilization of futures studies in health, encompassing policy formulation and health development plans, appears necessary and promising in shaping future policies and fostering better decision-making amidst uncertainty (23, 40,67).

Emerging Infectious Diseases:

In recent decades, emerging infectious diseases have significantly impacted global health (68). These diseases, whether novel or previously known, are spreading rapidly in new geographical areas (26, 69, 70). Typically arising from environmental changes, these infections rely on two key factors for transmission: the presence of a vulnerable population and the agent's ability to transition from human to human (69). Major contributors to the emergence of these diseases include the facilitation of international travel, changes in people's eating habits and lifestyles, migration, marginalization, and environmental changes (71, 72). The challenges associated with their impact on humans include pandemics, epidemics, and threats to human health and global stability (69). The current century has witnessed numerous epidemics transcending national borders, becoming regional and international concerns (70). Consequently, it is evident that the emergence of new infections is inevitable. However, proactive measures and forward-looking approaches, particularly in prevention, vaccination, and travel security, are recommended to mitigate their social, public health, environmental, biological, and economic impacts, which significantly affect the quality of life of patients and their families (69, 73).

Conclusion:

Futures studies in health play a pivotal role in shaping policies, strategies, and decision-making processes to address emerging challenges and uncertainties in healthcare systems worldwide. These studies serve two primary objectives: envisioning potential futures and preparing for them effectively. The importance of futures studies in health is underscored by their ability to anticipate and adapt to various factors influencing healthcare, such as globalization, technological advancements, demographic shifts, and emerging health threats.

From examining the future of health insurance to addressing non-communicable diseases, road accidents, e-health services, and emerging infectious diseases, futures studies offer valuable insights into potential scenarios and trends. By incorporating foresight methodologies into policymaking and planning processes, stakeholders can better navigate complexities and uncertainties in the healthcare landscape, ultimately contributing to improved health outcomes and system resilience. Future studies in health should focus on innovative methodologies, comparative global analyses, and longitudinal assessments of health insurance systems, road safety, e-health services, non-communicable diseases, and emerging infectious diseases to inform evidence-based policies and strategies for improved healthcare outcomes.

The study's scope was limited to a narrative review methodology, potentially impacting the depth and breadth of the analysis. Reliance on published literature may introduce publication bias,

overlooking negative or null results. Variability in data quality across studies may affect the robustness and validity of the findings.

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