



Digital health in the light of contemporary philosophy

Saúde digital à luz da filosofia contemporânea

Salud digital a la luz de la filosofía contemporánea

Carolina Young Yanes¹

Janaína da Silva Flôr¹

Patrícia Amidianski¹

Rafaela Lira Mendes Costa¹

Evangelia Kotzias Atherino dos Santos¹

Mara Ambrosina de Oliveira Vargas¹

Soraia Dornelles Schoeller¹

1. Universidade Federal de Santa Catarina.

Florianópolis, SC, Brasil.

ABSTRACT

Objective: to discuss issues related to the concept of digital health, and how the area of health has been associated with technological evolution and new paradigms for care, in the light of some contemporary philosophical thinkers. **Method:** this is a theoretical-philosophical essay. **Results:** Michel Foucault highlighted the role of power structures in digital health, warning of the potential for surveillance and social control. On the other hand, Pierre Lévy and Mário Bunge emphasize the importance of technology in nursing, highlighting its benefits and challenges in the search for appropriate and ethical solutions. **Final considerations and implications for practice:** digital health emerges as a land of conflicts and possibilities, in which technological advances bring both transformative potential and risks to privacy, autonomy, and quality of care. The philosophical approach is essential to question technological development in health, especially in nursing, in an ethical, profound, and conscious way.

Keywords: Nursing; Philosophy; Health; Information Technology; Telemedicine.

RESUMO

Objetivo: discutir as questões relacionadas ao conceito de saúde digital, e de que modo a área da saúde tem se associado à evolução tecnológica e aos novos paradigmas para o cuidado, à luz de alguns pensadores da Filosofia contemporânea. **Método:** trata-se de um ensaio teórico-filosófico. **Resultados:** Michel Foucault destacou o papel das estruturas de poder na saúde digital, alertando para o potencial de vigilância e do controle social. Por outro lado, Pierre Lévy e Mário Bunge enfatizaram a importância da tecnologia na Enfermagem, ressaltando seus benefícios e desafios na busca por soluções adequadas e éticas. **Considerações finais e implicações para a prática:** a saúde digital emerge como um terreno de conflitos e possibilidades, em que os avanços tecnológicos trazem consigo tanto as potencialidades transformadoras, quanto os riscos à privacidade, à autonomia e à qualidade do cuidado. A abordagem filosófica é essencial para questionar o desenvolvimento tecnológico em saúde, especialmente na Enfermagem, de maneira ética, profunda e consciente.

Palavras-chave: Enfermagem; Filosofia; Saúde; Tecnologias da Informação; Telemedicina.

RESUMEN

Objetivo: discutir temas relacionados con el concepto de salud digital, y cómo el área de la salud se ha asociado con la evolución tecnológica y nuevos paradigmas para el cuidado, a la luz de algunos pensadores de la Filosofía contemporánea. **Método:** se trata de un ensayo teórico-filosófico. **Resultados:** Michel Foucault destacó el papel de las estructuras de poder en la salud digital, advirtiéndole sobre el potencial de vigilancia y del control social. Por otro lado, Pierre Lévy y Mário Bunge destacaron la importancia de la tecnología en Enfermería, destacando sus beneficios y desafíos en la búsqueda de soluciones apropiadas y éticas. **Consideraciones finales e implicaciones para la práctica:** la salud digital emerge como una tierra de conflictos y posibilidades, en la que los avances tecnológicos traen consigo tanto las potencialidades transformadoras como riesgos para la privacidad, la autonomía y la calidad de la atención. El enfoque filosófico es fundamental para cuestionar el desarrollo tecnológico en salud, especialmente en Enfermería, de manera ética, profunda y consciente.

Palabras clave: Enfermería; Filosofía; Salud; Tecnologías de la Información; Telemedicina.

Corresponding author:

Carolina Young Yanes.

E-mail: ccarolinay@gmail.com

Submitted on 01/04/2024.

Accepted on 07/07/2024.

DOI: <https://doi.org/10.1590/2177-9465-EAN-2023-0163en>

INTRODUCTION

The concept of digital health comprises an emerging and broad field, which involves the application of various resources available through Information and Communication Technologies (ICTs) in the context of health. It covers a wide range of areas, including nursing, enabling the practice of care and using electronic records, applications, artificial intelligence, Big Data analysis, and other technological resources.¹

Intending to promote health equally and regardless of geographical barriers, the term digital health unifies what used to be known as e-Health, Telemedicine, Telehealth, Mobile Health, or any other term applied to health ICTs. It is worth noting that technological advances in the health area have skyrocketed with the advent of the COVID-19 pandemic, at which point it became extremely important to provide the population and health professionals with accurate and timely information, as a strategy for resolving short-, medium- and long-term demands.²

As these tools are increasingly used in everyday work, digital technologies mainly involve the responsibility of health professionals in a virtual environment, from ethical issues to issues involving fair access to technologies, as well as various factors intrinsic to the profession.³

From this perspective, it is worth noting that the Federal Nursing Council (*Conselho Federal de Enfermagem* - COFEN) in Brazil has authorized and standardized nursing teleconsultation,⁴ as well as telenursing,⁵ as a strategy to combat the COVID-19 pandemic, including the use of ICTs in the profession's competencies. More recently, the Ministry of Health in Brazil has instituted the "UHS Digital Program", which aims to promote digital transformation within the Unified Health System (UHS), expanding the population's access to health services.^{6,7} Thus, the principle of equity, so well established by the UHS and also guaranteed by the Brazilian Constitution of 1988,⁸ leads to some critical reflections and questions.

In the field of Philosophy of Science, discussions on digital health have prompted reflections on the reliability, validity, and limits of the knowledge generated, given the wide availability of information on diseases and treatments on the web, as well as the growing use of artificial intelligence for clinical decision-making. Furthermore, it should be emphasized that this technological advance has a direct impact on the relationship with the body, with the area of health, and with the very concept of care.

In view of the above, this theoretical-philosophical essay aims to discuss issues related to the concept of digital health, and how the area of health has been associated with technological evolution and new paradigms for care, in the light of some contemporary philosophical thinkers.

METHOD

This is a theoretical-philosophical essay. This type of study is characterized by its interpretative and reflective nature, which aims to understand reality and phenomena qualitatively, without classifying the results according to traditional science. In addition,

this type of investigation provides an interaction between the subjectivity and objectivity of the content explored, based on the authors' theoretical and practical perceptions and experiences.^{9,10}

When considering the various formats of essays, whether for literary, scientific, or philosophical purposes, this study also proposes to address philosophical issues due to their reflective and conceptual nature, which allows for an in-depth analysis of ideas and an argumentative and coherent construction of a given topic.⁹

The following questions were used to develop this theoretical-philosophical essay: Have the benefits of technological advances and digital health reached the population? What are the ethical strengths and weaknesses of digital health? Can digital health alienate people from the political and collective field of health, reducing it merely to a pattern of individual consultations?

These questions, together with the readings of some contemporary philosophical thinkers, especially Michel Foucault, Pierre Lévy, Mário Bunge, and Alberto Cupani, guided the development of this theoretical-philosophical essay, delimiting its scope, as follows.

RESULTS

Michel Foucault,¹¹ a 20th-century French philosopher, stood out for his critical analysis of the structures of power and control present in social institutions. His work covers a wide range of topics, including politics, sexuality, and psychiatry. Although this approach promotes significant advances in terms of diagnosis and treatment, it also brings with it challenges and issues that deserve critical attention. Foucault in his works invites everyone to question the systems and relations of power that permeate the subject of digital health. He warned of the existence of disciplinary devices and mechanisms of social control that operate through technologies. For example, the excessive collection of health data can lead to generalized surveillance, in which individuals are constantly monitored and their actions controlled in the name of health.^{11,12}

Digital health can also bring significant advances, but only if everyone is alert and engaged in questioning and transforming structures. Furthermore, Foucault characterized biopower as the training of bodies, extorting their strength, so that the body becomes more useful the more it is docilized. In this way, it will be possible to subjugate it to the contingent of technologies and operations on which social functioning depends. And he calls biopolitics the other complementary pole of biopower. Biopolitics encompasses a broader perspective, involving the governance of life and the health of populations.^{12,13}

In relation to biopower, Foucault also included the term anatomy-politics. This concept was introduced in his work *Surveillance and Punishment* to describe a specific form of exercising power that focuses on disciplining bodies and regulating physical spaces. According to Foucault, anatomy-politics refers to the organization and control of individual and collective bodies in terms of their observation, classification, and normalization.^{14,15}

This form of power operates through institutions such as prisons, hospitals, schools, and other disciplinary institutions, which establish specific rules, regulations, and techniques to shape and discipline bodies. It seeks to control and regulate the behavior and appearance of individuals, creating norms and categories of normality and abnormality. It establishes standards of conduct, ideal bodies, and models of behavior that individuals are encouraged to follow. Through constant surveillance and detailed observation, disciplinary institutions seek to shape and train bodies to conform to these established norms.^{13,14}

Pierre Lévy^{16,17} has argued that virtualization, i.e. the movement from the actual to the virtual, expands the variability of new media in terms of time and space. The consideration of the virtual as a creative matrix emerged in the example presented by the philosopher below, where he compares the virtual to the current characteristics of teleworking:

When a person, a community, an act, or information is virtualized, they become “non-present”, and deterritorialized. A kind of disengagement separates them from ordinary physical or geographical space and from the temporality of the clock and calendar. Indeed, they are not totally independent of the space-time of reference, since they must always be inserted into physical supports and updated here or elsewhere, now or later. However, virtualization has made them go off on a tangent.^{16:21}

In the context of digital health, the practice of nursing, like that of other professions, is increasingly aligned with the use

of technology. In 2020, in the face of the pandemic and the numerous barriers imposed by COVID-19, COFEN approved remote nursing consultations in Brazil, in its Resolutions No. 634/2020 and No. 696/20224-5, which standardized the practice of Nursing teleconsultation and Telenursing. This practice has proved to be resolute for the different areas in the country and its implementation requires adjustments from both the nurse and the patient, which include infrastructure and connectivity.

However, it should be pointed out that, in the context of professional practice, technology is not limited, according to Bunge,¹⁸ to the use of scientific knowledge, but implies the search for specific knowledge. In other words, Cupani^{19,20} pointed out that there is no technology when man limits himself to applying know-how, nor when he denies the search for improvement since such behavior represents that of a mere contemporary technician, not a technologist.

From Bunge’s perspective,¹⁸ technology has significant value, because if technique embodies rational action aimed at guaranteeing its own success, technology can be seen as the realization of fully rational action, where practical human problems have an adequate solution based on science and technology. But this doesn’t mean that this philosopher believes that technology is or has always been beneficial, since technological progress has caused countless problems, such as inventions that are seen as positive, but which have negative consequences in certain circumstances.

In addition, when considering the results of this essay, Figure 1 highlights some of the challenges faced by Nursing Science, which will be discussed later.

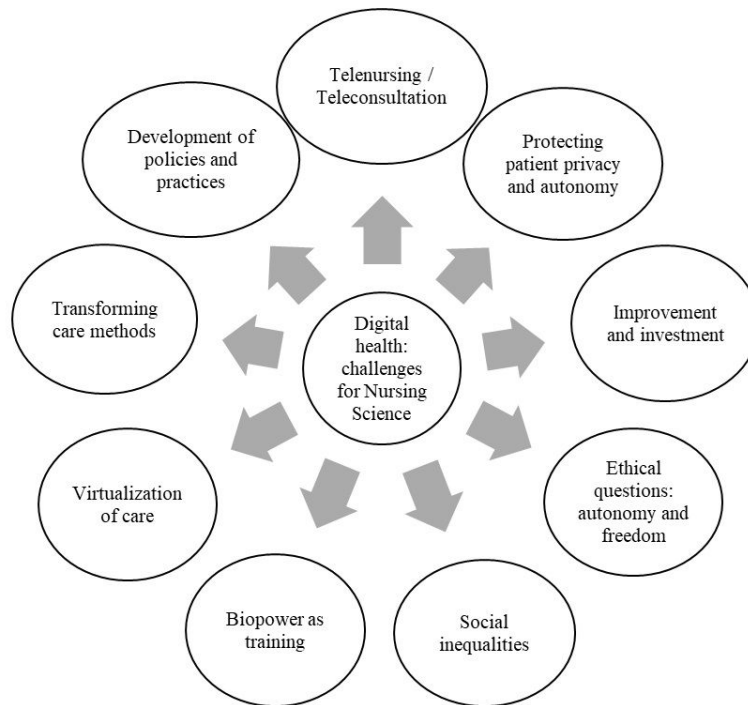


Figure 1. Challenges for Nursing Science amid the evolution of digital health.

DISCUSSION

Philosophical and sociological discussions can provide tools to raise awareness of the fact that some political decisions and innovations are linked to well-established theoretical knowledge (such as discipline, biopower, and biopolitics, for example), and that discussion and knowledge are possibilities for understanding, analysis, resistance and even liberation from this type of social domination (if so considered). However, the criticism of digital health raises questions about the potential of this phenomenon, which has emerged as an innovation and an opportunity for the sciences to evolve, with a focus on caring for human beings. Furthermore, digital health promotes the progress of health care in a comprehensive way for the population, even if it still needs improvement and investment.

Technology is a notorious part of the contemporary world and has distinct implications for people's lives. In the field of nursing, it is believed that digital health has become an increasingly widespread tool, due to technological advances that have transformed care methods and the relationship between health professionals and patients.

Within Michel Foucault's philosophical paradigm, the repercussions of digital health on nursing can once again be analyzed through the lens of disciplinary power and biopower, because in this context, nurses face the challenge of balancing the use of digital technologies to improve healthcare with the protection of patients' privacy and autonomy in all spheres of care.

At all points in the healthcare network, nurses are responsible for educating patients and their families about the use of technologies, as well as providing the necessary explanations so that different social groups can access and effectively use digital health tools. At the same time, Nursing participates, along with professionals from other areas, in the development of policies and practices that guarantee an ethical and patient-centered approach to the use of digital health. Through various practices, nurses play a significant role in facilitating telemedicine and telemonitoring, engaging in virtual consultations, remote monitoring of patients, and the provision of guidance through digital platforms. In addition, their active participation in the management of electronic health records ensures data integrity and security, as well as the effective coordination of care.

From this point of analysis, can digital health reinforce existing inequalities in access to health services? Do all patients have access to the use of health technologies? It can be seen that those who don't have access to digital devices or who have limited technology skills are excluded from the benefits it offers. This highlights a form of social division in which access to health and well-being is determined by the ability to adapt to the demands of the digital age.²¹

In the case of Brazil, for example, the use of digital technologies developed by the Ministry of Health has been recognized for the ease and resolvability of various demands, since these technologies constitute a secure bank of information that enables access to patient records, favoring care. However, the advancement of digital health will depend on the reality of each country, since

difficulties in accessing the Internet, accompanied by a lack of investment in continuing education, can compromise the productivity of health services and, consequently, impact upon the quality of client care.²² As a measure to improve the general flow of patient care in the health system, it is necessary to adopt digital solutions, represented by online platforms. These tools have clear potential benefits, such as helping patients keep track of their appointments and/or tests, reducing no-show rates, reducing staff time spent scheduling appointments and keeping health records accessible and shared, enabling care providers to obtain information about patients, such as laboratory test results and imaging reports.²³

Other interesting aspects to consider, further corroborated by Foucault's work¹¹⁻¹²⁻¹³⁻¹⁴, are related to the excessive intervention promoted by digital health and the decrease in the individual's participation in planning their care, as there is an emphasis on data collection and the use of algorithms for diagnosis and treatment so that the complexity of the human experience is reduced to mere biometric measurement. In this context, the subjectivity and diversity of individuals can be simplified and reduced to standardized categories, which puts the autonomy and uniqueness of each person at risk.

In theory, digital health technologies should be strategic sources of empowerment for patients, with a view to strengthening autonomy. Individuals who use apps, for example, position themselves in favor of preserving their health when they access important information and take responsibility for monitoring their clinical conditions. On the other hand, apps provide information that can influence patients' decision-making power when it comes to choosing their health care. Thus, it is through the interaction of users with apps that new knowledge-power relations are established, which discipline individual bodies and behaviors.²⁴

It is understood that digital health modifies both the practices and the relationships that are built during the care provided and is not seen as a substitute for face-to-face care. In primary care services, for example, face-to-face contact is essential if digital interventions are to be implemented.²⁵

Concerning teleconsultation, it should be noted that its implementation requires planning, and it is essential to draw up clinical indicators aimed at patient safety, assess cost-effectiveness, build legal and juridical bases, and analyze the budgetary impact. However, although teleconsultation has potential in the field of digital health, it should be emphasized that it can be useful in certain situations, but it will always be different from a face-to-face consultation, especially in cases where access to digital technology is limited, or when the user has difficulty operating the existing technological resource,²⁶ which hinders the establishment of a solid and effective relationship between the professional and the person being cared for.

From Pierre Lévy's perspective,¹⁶ the virtual is opposed to the actual in that it tends to be actualized, without actually coming to fruition. This thinker also said that the difference between the virtual and the possible is that the latter is already constituted and is only in a latent state, ready to be transformed into the real,

thus lacking the creativity of the virtual. One criticism leveled at Lévy, when he established the theory of “non-presence” concerning the virtual environment, is that this philosopher is led to limited positions, as in the case of the question “Where does the telephone conversation take place?”, since it is obvious that it takes place on the lines, although everything is transparent to the user; or when he considers “virtual” communities to be non-present, since in reality, everyone is present, despite being distributed in multiple social spaces.¹⁷

From this, it can be understood that the contemporary state apparatus takes action to regulate life, and medicine is an important factor in this. In addition, there are conceptions that life is the object of the political field, which is also focused on controlling bodies individually and collectively. This became clear from the 18th century onwards, with the transformation of power mechanisms, operating on the right and power in the death of the population.¹⁴

If digital health refers to the use of digital technologies, such as apps and remote monitoring systems, especially aimed at promoting health, well-being, and health care, it has the potential to collect and analyze large amounts of data about people’s bodies and lives, offering new possibilities for monitoring and intervening in health. Considering that some populations are permanently exposed to avoidable risks, are excluded from the political world and constantly have their rights curtailed, is it possible to infer that digital health supports another logic of biopower, or is the logic the same? The *modus operandi* works differently, but conceptually, the same perspective of biopower and biopolitics remains. In other words, digital health can be seen as an expression of biopower, as it involves collecting and controlling information about people’s bodies and health.¹⁴⁻¹⁹

Thus, the data generated by digital health technologies can be used to profile, classify, and normalize individuals based on health criteria. This can lead to the creation of categories of normality and abnormality, with implications for individual autonomy and privacy.^{19,20} But can digital health offer spaces of empowerment for individuals, allowing them to monitor and manage their own health more autonomously, providing access to health information, self-assessment tools, support, and online care?

Concerning the ethical challenges involved in nursing’s participation in digital health, one of them refers to the centrality of the patient in the care process, giving them the management of their self-care.²⁷ Other ethical challenges correspond to the collection, storage, and use of health data, which require careful reflection on the privacy, security, and informed consent of individuals. In addition, it is necessary to avoid creating asymmetries in access to digital health technologies, so that they are not restricted to certain privileged groups.

For Foucault,¹¹⁻¹³ it is necessary to question the ways in which digital health is being implemented and ensure that it is aligned with ethical values and respect for individual privacy. Promoting a critical dialogue between health professionals, technology developers, and society is fundamental in order to seek solutions that minimize the risks and maximize the benefits of digital health.

Furthermore, the Foucauldian approach argues that digital health is not a neutral phenomenon, but one permeated by power relations. This makes it imperative to take a critical and reflective look to understand the extent to which digital technologies shape the health experience of individuals and what their implications are for human autonomy and freedom.

FINAL CONSIDERATIONS AND IMPLICATIONS FOR PRACTICE

This theoretical-philosophical essay has made it possible to discuss issues related to the concept of digital health and how the field of health has been associated with technological evolution and new paradigms for care, in the light of some contemporary philosophical thinkers. From this perspective, the field of digital health is a complex and multifaceted area in which the intersection between technology, health, and philosophy is evident. In addition, the expansion of ICTs in the health area and their inclusion in nursing practice has brought with it a series of ethical, political, and conceptual challenges that deserve critical, comprehensive, and in-depth analysis.

It is important to consider whether or not digital health reinforces the responsibility of the user, who will have to learn to manipulate the technologies for their care to be effective. Michel Foucault’s perspective highlights the presence of power relations underlying digital health. Massive data collection, constant surveillance and the possibility of standardizing individuals raise questions about privacy, autonomy, and freedom. Foucault invites everyone to resist these power structures by questioning the implementation of digital health and promoting a critical dialogue between health professionals, technologists, and society in general. Foucault’s analysis of biopower and biopolitics allows us to understand how digital health technologies fit into strategies for controlling and governing the lives and health of populations. From this perspective, digital health can both reinforce standardization and provide spaces for individual empowerment.

In contrast, the views of Alberto Cupani, Mario Bunge, and Pierre Lévy open up space for a more pragmatic and utilitarian understanding of digital health. The incorporation of technologies into nursing practice and distance learning can bring clear advantages, but also considerable challenges, especially in relation to the quality of care, the adaptation of professionals and patients, and the maintenance of a meaningful interpersonal relationship.

Digital health therefore emerges as a terrain of conflicts and possibilities, where technological advances bring with them both transformative potential and risks to privacy, autonomy, and the quality of care. A philosophical approach is fundamental to shedding light on these aspects and invites us to question, reflect on, and shape the course of this technological development and its implications for practice, ethically and consciously. The search for a balance between the benefits and challenges of digital health is crucial to ensure an evolution that respects the fundamental principles of health, equality, and human dignity. This reflection

is limited by the scope of contemporary philosophers to analyze the issue. However, it clearly delimits the contribution of those who set out to use it.

FINANCIAL SUPPORT

This work was published with the support of the Santa Catarina State Research and Innovation Support Foundation (FAPESC) - No. 2023TR000939.

AUTHOR'S CONTRIBUTIONS

Conception of reflection drawing. Carolina Young Yanes. Janaína da Silva Flôr. Patrícia Amidianski. Rafaela Lira Mendes Costa. Evangelia Kotzias Atherino dos Santos.

Data collection and theoretical framework for reflection. Carolina Young Yanes. Janaína da Silva Flôr. Patrícia Amidianski. Rafaela Lira Mendes Costa. Evangelia Kotzias Atherino dos Santos.

Analysis and interpretation of the theoretical framework. Carolina Young Yanes. Janaína da Silva Flôr. Patrícia Amidianski. Rafaela Lira Mendes Costa. Evangelia Kotzias Atherino dos Santos.

Writing and critical revision of the manuscript. Carolina Young Yanes. Janaína da Silva Flôr. Patrícia Amidianski. Rafaela Lira Mendes Costa. Evangelia Kotzias Atherino dos Santos. Mara Ambrosina de Oliveira Vargas. Soraia Dornelles Schoeller.

Approval of the final version of the article. Carolina Young Yanes. Janaína da Silva Flôr. Patrícia Amidianski. Rafaela Lira Mendes Costa. Evangelia Kotzias Atherino dos Santos. Mara Ambrosina de Oliveira Vargas. Soraia Dornelles Schoeller.

Responsibility for all aspects of the content and integrity of the published article. Carolina Young Yanes. Janaína da Silva Flôr. Patrícia Amidianski. Rafaela Lira Mendes Costa. Evangelia Kotzias Atherino dos Santos. Mara Ambrosina de Oliveira Vargas. Soraia Dornelles Schoeller.

ASSOCIATED EDITOR

Cristina Lavareda Baixinho 

SCIENTIFIC EDITOR

Marcelle Miranda da Silva 

REFERENCES

1. Ministério da Saúde (BR). Estratégia de saúde digital para o Brasil 2020-2028 [Internet]. Brasília: Ministério da Saúde; 2020 [citado 2023 jun 2]. Disponível em: https://bvsmis.saude.gov.br/bvsmis/publicacoes/estrategia_saude_digital_Brasil.pdf
2. Topol EJ. High-performance medicine: the convergence of human and artificial intelligence. *Nat Med*. 2019;25(1):44-56. <http://doi.org/10.1038/s41591-018-0300-7>. PMID:30617339.
3. Organización Mundial de la Salud. Estrategia mundial sobre salud digital 2020-2025 [Internet]. Ginebra: OMS; 2021 [citado 2023 jun 5]. Disponível em: <https://apps.who.int/iris/handle/10665/344251>
4. Resolução nº 634, de 26 de março de 2020 (BR). Autoriza e normatiza a teleconsulta de enfermagem como forma de combate à pandemia provocada pelo novo coronavírus (Sars-Cov-2). Diário Oficial da União [periódico na internet], Brasília (DF), 26 mar 2020 [citado 2023 ago 25]. Disponível em: http://www.cofen.gov.br/resolucao-cofen-no-0634-2020_78344.html
5. Resolução COFEN nº 717, de 27 de março de 2023 (BR). Altera o parágrafo único do art. 2º da Resolução Cofen nº 696/2022, a qual trata da atuação da Enfermagem na Saúde Digital, normatizando a Telenfermagem. Diário Oficial da União [periódico na internet], Brasília (DF), 30 mar 2023 [citado 2023 ago 25]. Disponível em: http://www.cofen.gov.br/resolucao-cofen-no-696-2022_99117.html
6. Portaria GM/MS Nº 3.232, de 1º de março de 2024 (BR). Altera a Portaria de Consolidação GM/MS nº 5, de 28 de setembro de 2017, para instituir o Programa SUS Digital. Diário Oficial da União [periódico na internet], Brasília (DF), 4 mar 2024 [citado 2024 mar 5]. Disponível em: <https://www.in.gov.br/en/web/dou/-/portaria-gm/ms-n-3.232-de-1-de-marco-de-2024-546278935>
7. Portaria GM/MS nº 3.233, de 1º de março de 2024 (BR). Regulamenta a etapa 1: planejamento, referente ao Programa SUS Digital. Diário Oficial da União [periódico na internet], Brasília (DF), 4 mar 2024 [citado 2024 mar 5]. Disponível em: <https://www.in.gov.br/en/web/dou/-/portaria-gm/ms-n-3.233-de-1-de-marco-de-2024-546282453>
8. Constituição da República Federativa do Brasil de 1988 (BR). Diário Oficial da União [periódico na internet], Brasília (DF), 5 out 1988 [citado 2024 mar 5]. Disponível em: https://www.planalto.gov.br/ccivil_03/constitucao/constitucao.htm
9. Meneghetti FK. O que é um ensaio-teórico? *Rev Adm Contemp*. 2011;15(2):320-32. <http://doi.org/10.1590/S1415-65552011000200010>.
10. Campos LL, Melo AK. Noção de família(s) no campo da saúde brasileira: ensaio teórico-reflexivo. *Esc Anna Nery*. 2022;26:e20210197. <http://doi.org/10.1590/2177-9465-ean-2021-0197>.
11. Aquino JG. A difusão do pensamento de Michel Foucault na educação brasileira: um itinerário bibliográfico. *Rev Bras Educ*. 2013;18(53):301-24. <http://doi.org/10.1590/S1413-24782013000200004>.
12. Aquino JG. Foucault e a pesquisa educacional brasileira, depois de duas décadas e meia. *Educ Real*. 2017;43(1):45-71. <http://doi.org/10.1590/2175-623661605>.
13. Olivato A. Em defesa da sociedade, curso no Collège de France (1975-1976), de Michel Foucault. *Plural*. 2001;8:161-6. <http://doi.org/10.11606/issn.2176-8099.pcs0.2001.75756>.
14. Furtado RN, Camilo JAO. O conceito de biopoder no pensamento de Michel Foucault. *Rev Subj*. 2017;16(3):34-44. <http://doi.org/10.5020/23590777.16.3.34-44>.
15. Foucault M. Vigiare e punir: nascimento da prisão. Petrópolis: Vozes. 1975.
16. Lévy P. O que é virtual? Rio de Janeiro: Editora 34; 1996.
17. Pimenta FJP. O conceito de virtualização de Pierre Lévy e sua aplicação em hipermidia. *Lumina [Internet]*. 2001; [citado 2024 mar 5];4(1):85-96. Disponível em: <https://www.ufjf.br/facom/files/2013/03/R6-Francisco.pdf>
18. Bunge M. Philosophy of science and technology: parte II: life science, social science and technology. Dordrecht: Reidel; 1985.
19. Cupani A. Filosofia da tecnologia: um convite. 3ª ed. Florianópolis: Editora da UFSC; 2016.
20. Cupani AA. tecnologia como problema filosófico: três enfoques. *Sci Stud*. 2004;2(4):493-518. <http://doi.org/10.1590/S1678-31662004000400003>.
21. Rodrigues MA, Hercules ABS, Gnatta JR, Coelho JC, Mota ANB, Pierin AMG, et al. Teleconsulta como prática avançada de enfermagem na pandemia de Covid-19 à luz de Roy e Chick-Meleis. *Rev Esc Enferm*. 2022;56(spe):e20210438. <http://doi.org/10.1590/1980-220X-REEUSP-2021-0438pt>
22. Almeida EWS, Godoy S, Silva IR, Dias OV, Marchi-Alves LM, Ventura CAA et al. Saúde digital e enfermagem: ferramenta de comunicação na Estratégia Saúde da Família. *Acta Paul Enferm*. 2022;35:eAPE02086. <http://doi.org/10.37689/acta-ape/2022AO020866>.
23. Tanbeer SK, Sykes ER. MyHealthPortal: a web-based e-Healthcare web portal for out-of-hospital patient care. *Digit Health*. 2021;7:2055207621989194. <http://doi.org/10.1177/2055207621989194>. PMID:33717498.

24. Modolo L, Carvalho S, Dias T. Questões da saúde digital para o SUS: a "saúde móvel" e a automação algorítmica do saber-poder da medicina. *Saude Soc.* 2023;32(3):e220245pt. <http://doi.org/10.1590/s0104-12902023220245en>.
25. Lindberg J, Bhatt R, Ferm A. Older people and rural eHealth: perceptions of caring relations and their effects on engagement in digital primary health care. *Scand J Caring Sci.* 2021;35(4):1322-31. <http://doi.org/10.1111/scs.12953>. PMID:33448031.
26. Oliveira AB, Tokarski CCR, Japiassu FKAG, Silva JCQ. Desafios do avanço da Telemedicina e seus aspectos éticos: revisão integrativa. *Com Ciências Saúde [Internet]*. 2020; [citado 2024 mar 5];31(1):55-63. Disponível em: <https://revistaccs.escs.edu.br/index.php/comunicacaoemcienciasdasaude/article/view/566>
27. Lapão LV. A Enfermagem do Futuro: combinando Saúde Digital e a Liderança do Enfermeiro. *Rev Latino-Am. Enfermagem.* 2020;28:e3338. <http://doi.org/10.1590/1518-8345.0000.3338>.