

Information technology for the care of the self in gestational diabetes mellitus: theoretical reflection in light of Paul-Michel Foucault

Heloiza Talita Adriano da Silva¹ 
Vinícius Rodrigues de Oliveira¹ 
Joab Gomes da Silva Sousa¹ 
Bruna Ruselly Dantas Silveira¹ 
Rejane Maria Paiva de Menezes¹ 

¹Universidade Federal do Rio Grande do Norte (UFRN), Natal, Rio Grande do Norte, Brazil.

Corresponding author:

Heloiza Talita Adriano da Silva
E-mail: htalitaadriano@gmail.com

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ABSTRACT

Objectives: to reflect on the use of information technology for the care of the self, applied to pregnant women with insulin-dependent gestational diabetes mellitus in light of Paul-Michel Foucault's framework. **Methods:** theoretical-reflective essay, based on Paul-Michel Foucault's essay "The Hermeneutics of the Subject," which fostered discussion along with other works. **Results:** the study was structured around two main themes. Axis I addresses the care of the self in the "Hermeneutics of the Subject" and how individuals can control their actions, souls, and thoughts. Axis II develops a reflection on the use of information technology as a tool for practicing the care of the self through records and information, which enables the transformation of the subject and promotes behavioral change, as suggested by Foucault. **Conclusion:** considering the experiences and individual characteristics of pregnant women makes it possible for them to self-manage their health needs and achieve a state of well-being, with a focus on promoting healthy attitudes. The use of information technology enables the monitoring of actions, daily care, and control of complications inherent to this period, for the health of both mother and child.

Descriptors: Diabetes, Gestational; Information Technology; Women's Health.

INTRODUCTION

Chronic noncommunicable diseases (CNCD), also known as noncommunicable diseases (NCD), are considered a serious public health problem due to their high prevalence and morbidity and mortality rates worldwide. In general, these diseases progress slowly and sometimes insidiously. They include cardiovascular diseases, such as hypertension, respiratory diseases, neoplasms, and diabetes⁽¹⁾.

Diabetes mellitus (DM) is one of the main high-impact health problems affecting the population today. Its determinants are linked to unhealthy lifestyle habits, such as physical inactivity, alcoholism, and smoking, as well as economic and cultural issues and associated genetic factors^(2,3).

In Brazil, there were 1,832,649 deaths in 2021, of which 844,923 were due to complications caused by some type of NCD^(4,5), including DM, whose prevalence is on the rise. It is estimated that 24 million people will have DM (aged 20-79) by 2050 in Brazil, placing it among the ten countries with the highest number of adults in this age group with diabetes in the world, negatively impacting quality of life and increasing the risk of death due to inadequate health care^(6,7).

Diabetes mellitus is defined as a metabolic disorder that can occasionally cause hyperglycemic spikes. The disease is classified into type 1 and type 2. Type 1 has an early onset and occasionally occurs in children and adolescents. Type 2 is silent, manifesting milder symptoms, and has a subtype classified as gestational diabetes mellitus (GDM), which manifests during pregnancy⁽⁸⁾.

According to the pathophysiology of GDM, there is a compensatory increase in insulin production and resistance caused by changes in the placenta, resulting in the production of hyperglycemic hormones and placental enzymes that degrade

insulin, which can progress to β -cell dysfunction⁽²⁾.

To identify the disease early in pregnant women, fasting blood glucose is included among the routine tests recommended for pre-natal care. It should be requested at the first consultation, and a result between 92 and 125 mg/dL indicates a diagnosis of GDM, regardless of the stage of pregnancy⁽²⁾.

Although it is possible to screen for GDM during routine pre-natal visits, this does not always occur. Delayed diagnosis exposes pregnant women and their fetuses to high blood glucose levels and an increased risk of obstetric and neonatal complications^(9,10).

In order to minimize this risk, treatment and monitoring of pregnant women should be planned as early as possible and on an individual basis, to control blood glucose and reduce the negative impact on maternal and fetal health. In general, the prescription of self-administered subcutaneous insulin is the most common approach for the treatment of insulin-dependent GDM — either Protamine Hagedorn (NPH), which is slow-acting, and/or regular, which is fast-acting^(11,12). In addition, guidance on changing unhealthy eating habits and behaviors is necessary to complement drug treatment, intending to glycemic control^(13,14).

In the context of targeted care for GDM, strategies that promote adherence to the proposed care plan are necessary, including the use of information and communication technologies (ICT)^(2,4). There is a range of ICT options, but the most commonly used to support women with DMG are: telehealth, telemedicine, and the use of smartphones connected to the internet. They help with self-management of care and strengthen self-care in health by providing easily accessible resources for recording blood glucose levels, which produce alerts about changes in values, informing the associated risks and recommendations for treatment^(15,16).

It is important to adopt a holistic approach to health care for pregnant women with GDM, dismantling fragmented healthcare practices and broadening the reflections that permeate the entire health-disease process. Given the complexity of health care for this at-risk population, and based on the perspective that pregnant women with GDM can participate in the management of the entire care process planned for them⁽¹⁵⁾, it is relevant to reflect on the framework of the care of the self, based on the philosophical principles of Paul-Michel Foucault⁽¹⁷⁾, with regard to the approach of “The Hermeneutics of the Subject”, which comprises the last course he taught in 1982. This generated a literary work that contextualizes the care of the self by developing the concept of *Epimeleia heautoû*, which corresponds to a dialogue with the subject, the ability to look inward, at others, and the world, and to recognize the situations experienced to then take care of oneself and govern oneself^(17,18).

Given the above, this theoretical study aimed to reflect on the use of information technology for the care of the self, applied to pregnant women with insulin-dependent GDM, in light of the framework proposed by Paul-Michel Foucault.

METHODS

This is a reflective theoretical study based on the essay “The

Hermeneutics of the Subject” by Paul-Michel Foucault^(17,19), linked to other works (scientific articles, manuals, guidelines) addressing DM and GDM^(4,6,12), ICT and its potential as a facilitating factor in the teaching-learning process and in bringing users closer to the service via records and individual and collective characteristics of the health-disease process⁽¹⁵⁾. These texts address concepts related to the care of the self and self-management of health conditions, which contributed to a reflection from the perspective of “The Hermeneutics of the Subject”^(19,20).

Foucault’s work is structured around lectures given and transcribed in a book⁽¹⁹⁾, in which the philosopher discusses biographical, ideological, and political aspects, linking them to current events.

To further the methodological approach based on the aforementioned work, the study was organized into two main axes for reflection. Axis I deals with identifying the philosopher, his biography, and the main ideas that underpinned his works. Axis II addresses the use of information technology in the care of the self of pregnant women with insulin-dependent GDM.

RESULTS AND DISCUSSION

Characteristics of the philosopher and his main productions

Paul-Michel Foucault was born on October 15, 1926, in Poitiers, France, into an upper-middle-class family of renowned physicians. In Paris, he studied philosophy (graduating in 1948) and psychology (graduating in 1949). He began his intellectual career through phenomenology and soon followed the French epistemological tradition. He defended his thesis at the Sorbonne University in 1961 and was appointed professor of philosophy at the University of Tunisia in 1966.

During his lifetime, Foucault worked as a philosopher, social theorist, literary critic, and professor at the renowned *Collège de France* from 1970 until 1984, when he died from complications related to Acquired Immunodeficiency Syndrome (AIDS), becoming the first public figure to die from the disease in France⁽¹⁸⁾.

The theories developed by Foucault mainly address the relationship between power and knowledge, which is presented in his thoughts as a critical history of modernity^(19,20). His works have influenced several thinkers, activist groups, and sociologists⁽¹⁹⁾.

The philosopher also wrote other works, such as *Mental Illness and Psychology*; *The Birth of the Clinic*; *The Order of Things*; *Discipline and Punish*; *The History of Sexuality*; *The Hermeneutics of the Subject*^(19,20).

During a course taught at the *Collège de France* (1981–1982), Foucault contextualized the care of the self based on his work entitled “The Hermeneutics of the Subject,” published on November 30, 1969, which presents the care of the self (*Epimeleia heautoû*) as the act of caring for oneself and being concerned with oneself^(17,19).

The discourses presented in Foucault’s works were inspired by those of other thinkers, such as Descartes, Plato, Epicurus, Epictetus, Seneca, Marcus Aurelius, Plutarch, Musonius Rufus, Philodemus of Gadara, and Philo of Alexandria⁽¹⁹⁾.

Another important aspect presented by Foucault is the relationship between subject and truth, whose concrete application is presented in

general terms on page seven of the work: “You must attend to yourself, you must not forget yourself, you must take care of yourself”⁽¹⁹⁾.

In this sense, it is noted that *Epimeleia heautoû* is linked to an attitude, to the exercise of politics, to the way of looking at things, of belonging to the world, to actions and relationships, to the way of looking at oneself; a way in which one assumes, modifies, purifies, and transforms oneself^(19,20).

Still on the subject of the care of the self, it allows individuals to have control over their bodies, souls, thoughts, ways of being, and behaviors. These attitudes promote the achievement of a state of well-being and wisdom^(20,21).

Use of information technology in the care of the self for pregnant women with insulin-dependent gestational diabetes mellitus

There are currently several apps designed for individuals with DM that can also be used by pregnant women with GDM. These are important tools that enable recording and management, and assist in the care of the self, encouraging autonomy. Among the apps with over 500,000 downloads are MySugr®, Diabetes: Management & Blood Sugar Tracker App®, Diabete – Diário Glucose®, Blood Glucose Tracker®, and Blood Sugar Diary®^(22,23).

The use of ICT, based on its functionalities, can promote the transformation of the subject in the sense suggested by Foucault^(20,21), leading them to the care of the self and promoting changes in behavior.

Information and communication technologies can be implemented to enable individuals to practice of the care of the self in the context of *Epimeleia Heautoû*, helping them reflect on themselves and understand their own shortcomings through experiences, life lessons, and the care planning for managing their health condition⁽²¹⁾.

From the perspective of the care of the self throughout human existence, there is a principle of movement based on attitude, forms of reflection, and practices as an important phenomenon in the history of subjectivity itself, bringing care as a concrete action, but directly linked to the particularities of the countless forms of care of the self⁽²¹⁾. In the second edition of the same work, Foucault adds the reflection of occupying oneself through actions, behaviors, relationships, and attitudes⁽¹⁹⁾.

Also, regarding the care of the self and feeling free, *ethos* (ethics) leads individuals to reflect on their daily activities through practices and behaviors. The opportunity to transform oneself makes the principle of the care of the self essential for self-knowledge and changing the way one sees oneself in the world⁽²¹⁾.

Despite users' preference for face-to-face consultations, the use of ICT is an important strategy for improving services, optimizing the flow of information to users, facilitating decision-making, and providing continuing education for health professionals and users of health services^(20,22).

This process of acquiring knowledge and applying it in practice empowers individuals and enables professionals who provide care to better monitor their actions and daily records^(4,23). In Foucault's work⁽¹⁷⁾, “occupying oneself” involves the actions and interrelationships that the subject maintains in the use of instruments, be-

tween the subject and another subject, behaviors, attitudes, and the relationship with oneself. Thus, the use of ICT promotes health education by constructing knowledge, which leads to changes in attitude and behavior, a practice that optimizes the care of the self⁽²²⁾.

Foucault also presents some expressions that refer to acts of knowledge related to the possibilities of attention, gaze, and perceptions when dealing with oneself: being attentive to oneself, turning one's gaze inward, and examining oneself^(17,19). The use of ICT based on the recording and implementation of actions can integrate diverse knowledge, encouraging health promotion, protection, and recovery⁽²³⁾.

Recording the information to be provided not only helps with the care of the self but also encourages care for others, promotes greater awareness of the risks involved, and fosters the identification of individual and collective characteristics, as well as respect for individual choices and values^(4,14,22,24). From this perspective, the use of ICT allows users to take notes and record guidance provided during consultations, and access them freely through mobile applications. This information enables the organization and operationalization of healthcare practices^(4,22,25).

The care of the self is also based on practical activities, such as body care, physical exercise, and meditation^(4,25). According to Foucault, the transformation of the subject occurs in two directions. The first occurs through the understanding of truth, which will be illuminated by eros (love). The second, based on the work carried out by the subject on themselves (askesis), makes the subject solely responsible for their behavior and thoughts⁽¹⁷⁾. This approach encourages critical participation by pregnant women with GDM and promotes adherence to the action plan developed jointly with the professional.

This therapeutic adherence can reduce the onset of complications during pregnancy, childbirth, and the postpartum period, in addition to strengthening the mother-baby bond. To perform the care of the self, individuals must recognize the practices that make them feel good and identify those that are harmful to them, in order to minimize the deleterious effects on their health⁽¹⁵⁻²¹⁾.

The internet is among the most widely used ICT. It enables the use of mobile applications to answer questions beyond consultations, record daily health information, control blood sugar levels, participate in teleconsultations, and use telemedicine⁽²²⁾. Information and communication technologies, enabled by mobile applications, contribute positively to improving health care and increasing treatment adherence, with a positive impact on quality of life⁽²⁴⁾.

Relating philosophical concepts to healthcare practices is highly relevant for promoting critical reflection on the clinical practices of healthcare professionals. Further philosophical reflection on other phenomena in healthcare is recommended.

CONCLUSION

Philosophical reflection on the use of ICT for the care of the self in pregnant women diagnosed with insulin-dependent GDM in light of Foucault's philosophical framework reinforced the importance of changing attitudes to facilitate the achievement of a state of well-being, considering individual experiences and characteristics, with

possibilities to support them in the appropriation of knowledge and self-management of their health needs.

Among these technologies, the use of mobile applications stands out for promoting self-awareness and health knowledge among pregnant women with insulin-dependent GDM, placing them in a position of greater control over their health condition. It also allows for better monitoring of their actions, enables daily records of their health status to be kept and viewed by professionals, thus reducing possible complications for both mother and child.

REFERENCES

1. World Health Organization (WHO). Noncommunicable diseases progress monitor 2020 [Internet]. Geneva: World Health Organization; 2020 [cited 2023 Nov 20]. Available from: <https://www.who.int/publications/i/item/ncd-progress-monitor-2020>
2. Sociedade Brasileira de Diabetes. Diretrizes da Sociedade Brasileira de Diabetes 2019-2020 [Internet]. São Paulo: Clannad; 2019 [cited 2023 Aug 20]. Available from: <https://portaldeboaspraticas.iff.fiocruz.br/wp-content/uploads/2021/08/Diretrizes-Sociedade-Brasileira-de-Diabetes-2019-20201.pdf>
3. Pamungkas RA, Chamroonsawasdi K. Self-management based coaching program to improve diabetes mellitus self-management practice and metabolic markers among uncontrolled type 2 diabetes mellitus in Indonesia: a quasi-experimental study. *Diabetes Metab Syndr*. 2020;14(1):53-61. <https://doi.org/10.1016/j.dsx.2019.12.002>
4. Mendes EV. O cuidado das condições crônicas na atenção primária à saúde: o imperativo da consolidação da estratégia da saúde da família [Internet]. Brasília: Organização Pan-Americana da Saúde; 2012 [cited 2023 Aug 20]. Available from: <https://iris.paho.org/handle/10665.2/49107>
5. Ministério da Saúde (BR). Mortalidade [Internet]. Brasília: Ministério da Saúde; 2021 [cited 2023 Aug 20]. Available from: <http://tabnet.datasus.gov.br/cgi/defthtm.exe?sim/cnv/obt10uf.def>
6. Ministério da Saúde (BR), Secretaria de Atenção à Saúde. Estratégias para o cuidado da pessoa com doença crônica [Internet]. Brasília: Ministério da Saúde; 2014 [cited 2023 Aug 20]. Available from: https://www.gov.br/conitec/pt-br/midias/pdf/caderno_atencao_basica35.pdf
7. International Diabetes Federation (IDF). Brazil. Diabetes country report 2000–2050 [Internet]. International Diabetes Federation; 2025 [cited 2023 Aug 20]. Available from: <https://diabetesatlas.org/data-by-location/country/brazil/>
8. Cole JB, Florez JC. Genetics of diabetes mellitus and diabetes complications. *Nat Rev Nephrol*. 2020 Jul;16(7):377-90. <https://doi.org/10.1038/s41581-020-0278-5>
9. Moraes HAB, Mengue SS, Molina MCB, Cade NV. Fatores associados ao controle glicêmico em amostra de indivíduos com diabetes mellitus do Estudo Longitudinal de Saúde do Adulto, Brasil, 2008 a 2010. *Epidemiol Serv Saude*. 2020 June 15;29(3):e2018500. <https://doi.org/10.5123/S1679-4974-2020000300017>
10. Ministério da Saúde (BR), Secretaria de Atenção à Saúde. Atenção ao

pré-natal de baixo risco [Internet]. Brasília: Ministério da Saúde; 2012 [cited 2023 Aug 10]. Available from: https://bvsms.saude.gov.br/bvs/publicacoes/cadernos_atencao_basica_32_prenatal.pdf

11. Muzy J, Campos MR, Emmerick I, Silva RS, Schramm JMA. Prevalência de diabetes mellitus e suas complicações e caracterização das lacunas na atenção à saúde a partir da triangulação de pesquisas. *Cad Saúde Pública*. 2021 May 28;37(5):e00076120. <https://doi.org/10.1590/0102-311X00076120>
12. Secretaria de Estado da Saúde Pública do Rio Grande do Norte, Coordenadoria de Promoção a Saúde. Protocolo de assistência materno infantil do Estado do Rio Grande do Norte [Internet]. Natal: EDUFRRN; 2014 [cited 2023 Aug 12]. Available from: <http://adcon.rn.gov.br/ACERVO/sesap/DOC/DOC00000000080196.pdf>
13. Varnfield M, Redd C, Stoney RM, Higgins L, Scolari N, Warwick R, et al. M♥Ther, an m-Health System to Support Women with Gestational Diabetes Mellitus: Feasibility and Acceptability Study. *Diabetes Technol Ther*. 2021 May;23(5):358-66. <https://doi.org/10.1089/dia.2020.0509>
14. Ministério da Saúde (BR), Secretaria de Atenção à Saúde. Estratégias para o cuidado da pessoa com doença crônica: diabetes mellitus [Internet]. Brasília: Ministério da Saúde; 2013 [cited 2023 Aug 10]. Available from: https://www.gov.br/conitec/pt-br/midias/pdf/caderno_atencao_basica36.pdf
15. Birati Y, Yefet E, Perlitz Y, Shehadeh N, Spitzer S. Cultural and digital health literacy appropriateness of app- and web-based systems designed for pregnant women with gestational diabetes mellitus: scoping review. *J Med Internet Res*. 2022 Oct;24(10):e37844. <https://doi.org/10.2196/37844>
16. Yazbek AC. 10 lições sobre Foucault. Petrópolis: Vozes; 2015.
17. Foucault MA. *Hermenêutica do sujeito*. 3ª ed. São Paulo: WMF; 2010.
18. Frazão D. Biografia de Michel Foucault [Internet]. 2023 [cited 2023 Aug 12]. Available from: https://www.ebiografia.com/michel_foucault/
19. Foucault MA. *Hermenêutica do sujeito*. São Paulo: WMF Martins Fontes; 2006.
20. Sousa CMM, Ribeiro MSS. Heidegger e Foucault: reflexões para compreensão de autocuidado e cuidado de si. *Rev Filos Mod Contemp*. 2022 Aug;10(2):119-42. <https://doi.org/10.26512/rfmc.v10i2.48532>
21. Foucault M. *História da sexualidade: o cuidado de si*. São Paulo: Graal; 2014.
22. Oliveira LB, Vilhena BJ, Freitas RN, Bastos ZRC, Teixeira E, Menezes EG, et al. Aplicativos Móveis no Cuidado em Saúde: Uma Revisão Integrativa. *Revista Enfermagem Atual In Derme* [Internet]. 2020 Sept 22 [cited 2024 Sept 5];93(31):e-020047. Available from: <https://revistaenfermagematual.com.br/index.php/revista/article/view/760>
23. Oliveira PB. Benchmarking de aplicativos móveis voltados à saúde de pessoas com diabetes mellitus [monograph on the Internet]. [Macaé]: Universidade Federal do Rio de Janeiro; 2021 Oct 20 [cited 2024 Sept 5]. Available from: <http://hdl.handle.net/11422/16493>
24. Marcelo CAS, Coutinho MAP, Lara CR, Paraizo CMS, Fava SMCL. Aplicativos móveis sobre diabetes mellitus - Revisão Narrativa. *J Health Inform* [Internet]. 2020 June 3 [cited 2024 Sept 5];12(2):64-7. Available from: <https://jhi.sbis.org.br/index.php/jhi-sbis/article/view/726>
25. Santos VEP, Radünz V. O cuidar de si na visão de acadêmicas de enfermagem. *Rev. enferm. UERJ*. [Internet]. 2011 Jan/Mar [cited 2023 Aug 14];19(1):46-51. Available from: <https://search.bvsalud.org/gim/resource/pt/lil-591014>

Authors' contributions - CRediT

HTAS: conceptualization; methodology; resources; visualization; writing – original draft and writing – review and editing.

VRO: conceptualization; methodology; resources; visualization; writing – original draft and writing – review and editing.

JGSS: conceptualization; methodology; resources; visualization; writing – original draft and writing – review and editing.

BRDS: conceptualization; methodology; resources; visualization; writing – original draft and writing – review and editing.

RMPM: conceptualization; methodology; resources; visualization; writing – original draft and writing – review and editing.

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Conflict of interests

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