

THE CHATGPT IN THE HEALTH EDUCATION OF PEOPLE WITH INTESTINAL OSTOMIES: POTENTIALITIES AND CONTROVERSIES

O CHATGPT NA EDUCAÇÃO EM SAÚDE DE PESSOAS COM ESTOMIAS INTESTINAIS: POTENCIALIDADES E CONTROVÉRSIAS

EL CHATGPT EN LA EDUCACIÓN EN SALUD DE PERSONAS CON ESTOMAS INTESTINALES: POTENCIALIDADES Y CONTROVERSIAS



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ABSTRACT: The objective was to explore a sequential way of using ChatGPT in health education for people with an intestinal stoma, using a fictitious case based on Marjory Gordon. This is an experience report in 6 stages, the clinical case (ETRB user) was prepared by the group of authors. Artificial Intelligence (AI), after being trained, was notably able to define affected Gordon patterns, and health education needs, classify products to be used and ways of re-approaching even patterns judged as more subjective, and finally, recommend goals. Even considering bioethical dilemmas, it is problematized that ChatGPT is useful, imitating human reasoning, however, through a “dead direct language”, thus, professional experience is the key to using ChatGPT. Living Work in action cannot be captured by AI, and, if there is no professional reflexivity, there is no way for dialogization and implementation of practice/education as “living perceptions”.

KEYWORDS: Machine learning. Teaching. Enterostomal therapy. Artificial intelligence. Technology.

RESUMO: *Objetivou-se explorar uma forma sequencial de utilização do ChatGPT na educação em saúde para pessoas com estomia intestinal, valendo-se de um caso fictício fundamentado em Marjory Gordon. Trata-se de relato de experiência em 6 etapas, o caso clínico (usuário ETRB) foi elaborado pelo grupo de autores. A Inteligência Artificial (IA), após ser treinada, notadamente foi capaz de definir padrões de Gordon afetados, necessidades de educação em saúde, classificar produtos a serem usados e formas de reabordagem até em padrões julgados como mais subjetivos, por fim, recomendou metas. Mesmo ponderando dilemas bioéticos problematiza-se que o ChatGPT é útil, imitando o raciocínio humano, contudo, por meio de uma “linguagem direta morta”, assim, a experiência profissional é a chave para utilizar o ChatGPT. O Trabalho Vivo em ato não pode ser capturado pela IA, e, caso não haja reflexividade profissional, não há como ocorrer a dialogização e implementação da prática/educação como “percepções vivas”.*

PALAVRAS-CHAVE: *Aprendizado de máquina. Ensino. Estomaterapia. Inteligência artificial. Tecnologia.*

RESUMEN: *El objetivo fue explorar una forma secuencial de utilizar ChatGPT en la educación para la salud de personas con estoma intestinal, utilizando un caso ficticio basado en Marjory Gordon. Este es un relato de experiencia en 6 etapas, el caso clínico (usuario de ETRB) fue elaborado por el grupo de autores. La Inteligencia Artificial (IA), después de haber sido entrenada, fue capaz de definir los patrones de Gordon afectados, las necesidades de educación sanitaria, clasificar los productos a utilizar y las formas de reaproximarse incluso a los patrones considerados más subjetivos y, finalmente, los objetivos recomendados. Incluso considerando los dilemas bioéticos, se problematiza que ChatGPT es útil, imitando el razonamiento humano, sin embargo, a través de un “lenguaje directo muerto”, por lo que la experiencia profesional es la clave para utilizar ChatGPT. La IA no puede capturar el trabajo vivo en acción y, si no hay reflexividad profesional, no hay forma de que se produzca el diálogo y la implementación de la práctica/educación como “percepciones vivas”.*

PALABRAS CLAVE: *Aprendizaje automático. Enseñanza. Estomaterapia. Inteligencia artificial. Tecnología.*

Introduction

It is urgent that educators develop in-depth knowledge and understanding of Artificial Intelligence (AI) to gain confidence in its usability. There are basic ways for this paradigm shift to occur; for example, Google and Microsoft are already studying and implementing these languages, as there is still no specific direction for the use of these models (FONTENOT, 2023). ChatGPT, developed by OpenIA and launched on November 30, 2022, is one of these technologies.

In the health field, a World Health Organization working group published a report on AI's ethical use, creating guidelines on ethics and governance. Data protection laws already defend that people have the right not to want to be subject to decisions resulting from automated processes. The European Union and the United States of America already have laws for the privacy and security of health data (WHO, 2021). This elaboration included eighteen months of debates between experts in ethics, digital technology, law, and health researchers (RODRIGUES, 2022).

It is known that ChatGPT is a facilitator for approaching topics or “initiating” a conversation about health education about the problems of a smoker. Its potential for real-time responses would help Nursing professionals in different situations, however, they need to be critical and analyze if the direction of reactions is not reliable (MENESES, 2023).

Optimistic views point to AI tools being personal assistants being used in video games or as virtual companions. From this perspective, they would be “tutors” in homework tasks, being “personalized” to offer different experiences – learning another language, helping to resolve conflicts, correcting texts, assisting customers to solve problems with their purchased products, managing work schedules, and dealing with complex concepts, organization, and management of study time (O'CONNOR, 2023).

Thus, it is known that care for people with a stoma goes beyond specialized care, the Health Care Network is important since it materializes the response to general needs, mostly resolved in Primary Care up to urgent and emergency complications, qualification for surgical procedures, consultations with a psychologist, among others (BRASIL, 2021).

It is confirmed that people with intestinal stoma try to plug the stoma, hide it from themselves and the world, isolate themselves due to fear of leaks from the collection bag and develop anxiety due to the loss of control over what is eliminated by the body, in addition to ways of behaving socially crossed by stigma (PEREIRA; SILVA, 2022).

In this sense, the “Health Care Guide for People with Ostomies” explains that care is uniformly associated with social assistance, education, work, leisure, and cultural activities (BRASIL, 2021). In health education for people with a stoma, classic works stand out on non-conformity with the condition, being a commonly reported situation, reporting the stoma as something insurmountable and embarrassing due to the elimination of gases, leaks, and odor from effluents (SONOBE; BARICHELLO; ZAGO, 2002).

To intervene, health workers identify and classify the characteristics of the problems faced to outline educational interventions. Gordon (2015) strongly states that essential nursing diagnoses in health education are not yet fully implemented internationally, given that diagnoses require users’ knowledge and the understanding we offer them about their problems. The theorist recognizes that there are still no ways to change users’ health behaviors at the pleasure of professionals but rather to raise awareness. This would only be overcome by understanding users’ daily problems or facilitators.

In this way, reviewing information from conversations with this Language Model is a strategy that permeates reflections to improve teaching and the adaptation of strategies and materials (CHOI *et al.*, 2023). Therefore, the article uses a fictitious case based on Marjory Gordon to explore a sequential way of using ChatGPT in health education for people with an intestinal stoma.

This purpose intends to test ChatGPT as a tool for decision-making in health education. The text of the experience was divided into: (1) Conceptual definitions of education and Gordon’s Theory; (2) Methodological path; (3) Description of the experience; (4) Problematization: the challenge of establishing a reflective use of ChatGPT in health education; (5) Final considerations.

We clarify that this report comes from the efforts of three research groups that have been developing projects to analyze the tool’s imitation of clinical reasoning since the beginning of 2023. Are involved specialists (master’s, doctoral, and Ph.D. students) in the areas of Intensive Care Center, Stomatherapy, and Oncology in the state of Pará and the state of São Paulo, Brazil, who in this work combined their experiences to strengthen the fictitious clinical case that the report carries, in addition to testing whether ChatGPT analyzes training patterns, which required checking the seven components of the article.

Conceptual definitions on the education of people with stomas and Gordon's Theory

In health education for people with colostomy or ileostomy, physical and hygiene care are fundamental, but they are not everything since everything from demarcation to pre-operative teaching and subsequent integration with rehabilitation makes a difference for the person who requires surgical treatment. Likewise, this learning also permeates family health education with information about the existence of the Ostomy Patients Program that provides equipment free of charge in the Unified Health System (SUS) (SONOBE; BARICHELLO; ZAGO, 2002).

However, recognizing the existing specificities, the classic work by Sonobe *et al.* (2001) based on the Maguerez Arc for respiratory stoma, transposing it to elimination stoma: (1) Observing reality using interpersonal communication with the user in a calm environment, favoring the expression of feelings and perception about the collection bag, listing your expectations, concerns and anxiety in the preoperative period and discussing this process; (2) Key point, listing with the user which points are crucial to be worked on, explaining the importance of clarifying them; (3) Theorization, based on the topics, offering support regarding the preparation for surgical treatment with ostomization, regarding drains, and demonstration of equipment that can be used and the use of light technologies and dialogue about groups of ostomized patients faced with doubts and tensions of the user; (4) Solution hypotheses, in which users list ways to solve problems and perceive their difficulties, hypothesizing solutions suitable for their microspace; (5) Application to reality is the objective image of the Method, when the user will begin to carry out actions, mastering the resolution of some problems and mobilizing themselves for decisions, a purely interventional phase.

Nursing care uses the nursing process in its work, which is comprised of the following steps: data collection or nursing history, diagnosis, planning, implementation, and evaluation/reevaluation. Therefore, the first step is to collect complete, substantial, and accurate information that serves as a reliable basis for any planning (GORDON, 2015). As a basis for the process, Marjory Gordon's theory is related to functional health patterns, supporting diagnoses of needs or problems: I. Health management pattern; II. Metabolic pattern; III. Elimination Pattern; IV. Exercise pattern; V. Rest pattern; SAW. Perceptual pattern; VII. Self-concept pattern; VIII. Relationship pattern; IX. Reproductive pattern; X. Stress tolerance pattern; XI. Belief pattern (GORDON, 1985).

In one of her latest works, the theorist draws attention to the Self-Care Deficit combined with the Knowledge Deficit. Therefore, after defining deficits, the nurse educator asks Why the user has this problem? What are the typical problems of this audience? Are there risk conditions? What does this user need immediately? Are the interventions applicable to this specific population? What line of work should be developed in the face of this problem? It is said that Health Systems are changing, structured in Networks in which hospitals, outpatient clinics, and the community intercommunicate, directly impacting surgery, for example. This leads to the conclusion that studying on the spot in the community and listening to their demands is urgent (GORDON, 2015).

Home care is a reality for many users of the Care Network, therefore, another diagnosis that Gordon highlights is the Deficit in the support system, whether affective and instrumental. She already predicted the new configuration of clinical practice in the final stretch of the 20th century, the increasing computerization and the need to develop new approaches to incorporate the new “generation of computers” (GORDON, 2015).

In this era of increasing technological incorporation, it is necessary to reaffirm living work, which, according to Merhy (1997), transcends the mechanical understanding of human work when directed to health. For him, man is living work in action par excellence, and his appropriation of technological resources tends towards an appropriation in the sense of reinforcing his living acts and not being captured by the logic that transforms living work into dead work. It is the appropriation of these indispensable tools – in this report, we will deal with AIs – that, together with living work, process meanings of transformation, however, when actions are crystallized and living work is reduced due to techniques and tools, autonomies are impoverished.

Regardless, a Canadian author reports in an editorial that ChatGPT set up a clinical case for simulation using the SMART (Specific, Measurable, Attainable, Realistic, and Time-bound) assumptions (HARDER, 2023). These assumptions were used in health education goals: Specific – delimiting specific objectives for a given reality, clear to who will read it, containing the process, time and who will do it; Measurable – “You can’t manage what you can’t measure”, a clear measure of action helps assess progress; Attainable – “Is the objective time achievable? It can be best achieved through which process?”; Relevant – Not clearly explaining the relevance of the goal/process can cause frustration or abandonment of the path, the prioritization of the latter is guaranteed by a certain absorption of the objectives and reasons for the plan; Time-bound – the time to achieve the goal (MACLEOD, 2012).

Methodological path

An experience report, descriptive-exploratory study on using an AI available online – ChatGPT. The exploratory nature is due to the execution of research on a little-explored topic or even the first attempt at analysis and the launch of hypotheses for subsequent studies. They are versatile research that takes different forms to test new ideas and predict their consequences (SWEDBERG, 2020).

The steps to achieve this were: (1) calibrating the tool with prompts involving intestinal ostomies and health education with verification of responses by experts; (2) calibrating the tool with questions about the Gordon Functional Health Patterns framework and which of these would be possibly affected in the context; (3) construction of a clinical case by experts in oncology and stomatherapy, simultaneously using ChatGPT insights about functional patterns; (4) from the fictitious clinical case, identify the patient's health education needs; (5) using the same case, investigate the health education actions and goals suggested by ChatGPT according to the SMART criteria. Finally, step 6 was to problematize what was suggested to educate the fictitious case, named in advance as user "ETRB".

Stage 3 was a shared construction of a clinical case, the first author, a Ph.D. student in health sciences with a master's degree in public health care policies, requested suggestions from three co-authors, nurses: a master's student specializing in intensive care Center (CTI); a Ph.D. student in health sciences, master in Public Health and specialist in CTI; and a Ph.D. in health sciences, specialist in teaching technical education, stomotherapist with more than 10 years of clinical practice. All with academic and technical production. The case references included the Brazilian Consensus on Care for Adult People with Elimination Ostomies (SOBEST, 2020) and the Theoretical-methodological bases for nursing data collection (SOUZA *et al.*, 2016)

Notably, the fictitious clinical case intentionally included Health Problems operationally defined as potential problems, problems to be prevented, susceptibility, or high-risk states capable of providing the focus for nursing educational actions (GORDON, 1980).

The prompts were executed to identify nursing problems and need in Step 4: "Identify nursing problems according to Gordon in the clinical case" and "Identify health education needs in the clinical case". When asked how professionals from the interprofessional team would measure the progress of the "ETRB" user, output patterns will be requested, respecting: Identity, Context, Action, Tonality, Objective, References, and Format in the answers (LANÇA, 2023).

The SMART Goals concept used in Stage 5 is characterized by being broad in scope, general, intangible, qualitative, more abstract when predicting the result, more difficult to validate, and portending a long journey to come true. They differ from narrower scope objectives, which are specific, quantitative, sequenced, easy to validate, and achievable in the short term (MACLEOD, 2012).

To ensure reliability regarding the collection and analysis of conversations, you can find a link (<https://chat.openai.com/share/29e4fd69-1cb7-4249-b7e6-b82c6d17b5a3>). Firstly, there was a detailed exposition of the experience in a descriptive narrative form, and then the findings were problematized using the references of Gordon (1980, 1985, 2015), Han (2017a, 2017b), Merhy (1997), Sonobe *et al.* (2001) and Sonobe, Barichello and Zago (2002).

Experience description

The first author's proximity to the tool began in March 2023, with the aim of clarifying the themes of: Mixed Studies, elderly people living with the Human Immunodeficiency Virus, colorectal cancer, and Basic Human Needs. However, it is stated that the conversation that underlies this report took place in a separate tab, therefore, the entire conversation history can be found at the link: <https://chat.openai.com/share/29e4fd69-1cb7-4249-b7e6-b82c6d17b5a3>. In relation to the initial command prompts, the answers about what a stoma is and about the prevention of colorectal cancer were considered adequate.

Regarding the health education needs for people with an intestinal ostomy and urostomy, who are cancer patients, the tool answered:

Education should cover a variety of topics, from daily ostomy care to psychosocial aspects. Here are some key areas: **Ostomy care:** Patients will need to learn how to properly care for both ostomies, which includes cleaning the area around the stoma, changing stool and urine collection bags, and identifying signs of infection or other complications. Each ostomy may require different care, so education must be specific to each type. **Ostomy bag management:** Intestinal ostomy and urostomy bags have different maintenance and changing requirements. For example, a urostomy bag may need to be emptied more frequently than an intestinal ostomy bag. Patients should be educated on how to handle each bag, when and how to empty and replace them, and how to prevent leaks and odors. **Diet and nutrition:** A patient's diet may need adjustment after ostomy surgery to avoid problems such as ostomy obstruction or diarrhea. A nutritionist can provide specific guidance based on the patient's individual needs. **Hydration:** With the loss of urine and feces, dehydration can be a concern. Patients should be educated about the importance of maintaining adequate hydration. **Physical activity:** Patients will need guidance on how to resume physical activity without

causing damage to the ostomy or discomfort. This may include recommendations about appropriate clothing and stoma protection during activities. **Emotional and psychosocial support:** Patients may face significant emotional challenges following ostomy surgery. This may include counseling to deal with changes in body image, the anxiety and stress associated with ostomy management, and the impact of illness and treatment on quality of life. **Support networks:** Connecting with other patients who have gone through similar experiences can be a valuable source of support and guidance. **Signs of complications:** Patients should be educated on how to recognize signs of complications, such as infections, obstructions, changes in the color or appearance of the stoma, or problems with the ostomy bag, and when to seek medical help (our translation).

Even though these are initial commands, the tool already knew how to differentiate the health education needs of a person with an ileostomy and colostomy, differentiating the approaches according to four topics of interest:

Here are the main differences in health education needs between the two:

1. **Consistency of Stool:** Ileostomy: Patients need to be aware that the stool will be more liquid, which can lead to more frequent emptying of the pouch and a greater risk of dehydration. Colostomy: Stool consistency may vary depending on the location of the colostomy. Patients may need guidance on how to adjust their diet to modify stool consistency if necessary.
2. **Risk of Dehydration:** Ileostomy: Due to the liquid nature of stool, patients with an ileostomy have a higher risk of dehydration. They should receive specific guidance about the importance of maintaining hydration and signs of dehydration. Colostomy: The risk of dehydration is generally lower, but it is still important to maintain adequate hydration.
3. **Diet Management:** Ileostomy: Patients may need to avoid foods that are particularly irritating or cause blockage, such as foods with skins or seeds. They may also need supplements to compensate for poor absorption of certain nutrients. Colostomy: Dietary restrictions are generally less stringent, but patients should still be counseled about foods that may cause gas or odor.
4. **Stoma Care:** Ileostomy: Proper care is crucial to prevent irritation, as liquid stools can be more irritating to the skin. Colostomy: Stoma care is still vital, but the skin around the stoma may be less exposed to irritants depending on the consistency of the stool (our translation).

ChatGPT satisfactorily answered what functional health patterns are. For health education, the tool distinguished the benefits of Gordon Patterns for both users and professionals. For the former, he highlighted comprehensive and personalized care, better understanding of their health and greater participation in care. For professionals, it highlighted more efficient data collection due to the systematic theoretical structure, better care planning identifying users at risk and improved communication. Subsequently, the question was: Which Marjory Gordon patterns would possibly be affected in a person with an elimination stoma? It is noteworthy that the tool did not explain how the rest pattern was affected (Table 1).

Table 1 – Gordon patterns possibly altered according to ChatGPT

Gordon Patterns (1985)	ChatGPT's answer
<p><i>Health perception – Health management pattern</i> a) Perception of general health status; b) Colds last year; absences from work/school; c) Health practices and effect; d) Ease of adherence to medical/nursing suggestions; e) Perceived cause of the current illness; f) Actions taken when the disease is noticed; results; g) Personal requests regarding health management</p>	<p>The individual may need to learn new skills to manage their health, such as caring for their stoma and monitoring any signs of complications. There may also be changes in the perception of one's own health.</p>
<p><i>Nutritional – Metabolic pattern</i> a) Typical daily food intake; supplements; b) Typical daily fluid intake; c) Weight change; d) Appetite; e) Perceived diet restrictions; f) Associated discomfort: food, eating; g) Perceived healing ability; h) Perceived problems; i) Perceived dental problems; j) Skin color, turgor, lesions</p>	<p>Depending on the type of ostomy and the part of the intestine that has been removed or diverted, digestion and absorption of food may be affected. The individual may need to modify the diet to accommodate these changes.</p>
<p><i>Elimination Pattern</i> a) Description of the intestinal elimination pattern: frequency, character, discomfort, control; b) Description of the urinary elimination pattern: frequency, character, discomfort, control; c) Perspiration/odor</p>	<p>This is directly affected by the ostomy. The individual must adapt to a new method of eliminating feces or urine and must learn to manage the ostomy bag.</p>
<p><i>Activity – Exercise pattern</i> a) Perceived energy level; b) Type and regularity of the exercise pattern; c) Free time / recreational activities; d) Level of self-care (see code); eating, bathing, using the bathroom, mobility in bed, dressing, grooming, general mobility, cooking, taking care of the house, shopping; e) Gait, posture, coordination</p>	<p>The individual may need to adjust their physical activities to accommodate the ostomy, and there may be limitations in physical activity immediately after surgery.</p>
<p><i>Sleep – Rest pattern</i> a) Perceived readiness for the day's activities; b) Sleep problems: onset, early awakening, interrupted, reversal</p>	
<p><i>Cognitive – Perceptual pattern</i> a) Hearing; b) Vision; glasses; c) Memory; attention; d) Learning style; difficulties; e) Perceived discomfort or pain; f) Insight, judgment, decision making; g) Level of awareness, orientation; h) Spoken language</p>	<p>The individual must learn new information and skills to care for the stoma, which can be cognitively challenging.</p>
<p><i>Self-perception – Self-concept pattern</i> a) Self-description and evaluation; b) Changes in body/physical capacity and assessment of self-competence; c) Frequency of anger, fear, anxiety, depression; what helps? d) Nervousness / relaxed (assessment)</p>	<p>The presence of a stoma can affect body image and self-esteem. Adapting to this change and managing emotional reactions may be necessary.</p>
<p><i>Functions – Relationship pattern</i> a) Living alone / family, family structure; b) Family problems (nuclear/extensive); c) Pattern of resolving family problems; d) Needs for family dependence, management; e) Family reaction to the disease; f) Children's education/relationship patterns (problems); g) Membership of social groups; frequency of loneliness; h) Work/school relations; i) Perception of neighborhood (isolated/integrated feelings); j) Assertive / passive (classification)</p>	<p>Physical changes and the need for ongoing care can affect an individual's social and family relationships, as well as the ability to perform certain roles.</p>
<p><i>Sexuality – Reproductive pattern</i> a) Changes/problems perceived in sexual relations; b) Use of contraceptives; problems; c) Beginning and pattern of menstruation (female); d) For pregnant women (female)</p>	<p>Depending on the ostomy's location and the underlying disease's nature, sexual function may be affected. Additionally, altered self-image can affect intimacy.</p>
<p><i>Coping - Stress Tolerance Pattern</i> a) Tension/stress management; use of drugs, alcohol, etc.; b) Significant other during stress; availability? c) Life changes in the last 1-2 years; d) Problem-solving strategies; Effect?</p>	<p>Adjusting to an ostomy and managing a chronic illness can be significant sources of stress.</p>
<p><i>Value – belief pattern</i></p>	<p>The experience of having an ostomy can lead to a reevaluation of values and</p>

e) Achievement of the objective; Goals in life; b) Perceived importance of religion; c) Desired religious practices (during hospital stay)	beliefs and can affect how an individual makes decisions about their health care and lifestyle.
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Source: Collection from authors on ChatGPT

To understand the reason for excluding the Rest Pattern (Sleep), we asked “Did you not highlight the Sleep Pattern, in which case Sleep would not be so affected?”, and we got the answer from the AI that suggested emptying the bag before going to sleep, reaffirming why he excluded the Pattern:

In many cases, the sleep and rest pattern of a person with a stoma may not be directly affected. However, there are situations in which this functional pattern can be influenced. For example, the person may need to get up at night to empty the ostomy bag, especially in the first few weeks after surgery when the elimination pattern may still stabilize. This can disrupt sleep and lead to fatigue. Pain, discomfort, or worry about your ostomy bag leaking can also affect your sleep quality. Stress and anxiety related to an individual’s health condition and changes in their body can also have a negative impact on sleep. **Therefore, although the sleep/rest pattern may not be directly affected by the presence of a stoma in all cases, it is important to consider possible impacts and work with the patient to minimize them** if necessary. This may involve helping to establish a routine for emptying the ostomy bag before bed, pain management, and support to manage stress and anxiety (our highlight) (our translation).

Subsequently, the case was corrected by four authors in 3 rounds of corrections and a final round of adjustments. The fictitious user’s initials were ETRB, and several Gordon patterns were intentionally changed before testing the tool’s responses (Table 2).

Table 2 – Fictional clinical case of ETRB

<p>Anamnesis</p> <ul style="list-style-type: none">• Main complaint: appropriately manage and treat the complication in the peristomal region: ETRB presents with severe contact dermatitis that extends beyond the area covered by the adhesive base of the collection equipment (EQ). She reports burning and pain in the peristomal region, which is definitive stage III colorectal cancer, and reports that there are days when she doesn't feel like leaving the room. Due to reporting doubts about managing the colostomy, in addition to those addressed in the perioperative visit, he requested a visit from the Family Health Strategy.• History of the current problem: ETRB is a 68-year-old cancer patient diagnosed 9 months ago with adenocarcinoma in the rectum with an indication for amputation of the rectum, who underwent surgical resection and complemented it with 12 chemotherapy sessions. The symptoms that preceded surgical treatment included periods of intense constipation due to mechanical obstruction, rectal tenesmus, and hematochezia. During the hospital stay, it took a while for the ostomy to work with the bag attached.• Social history: ETRB is a 68-year-old cancer patient diagnosed 9 months ago with adenocarcinoma in the rectum with an indication for amputation of the rectum, who underwent surgical resection and complemented it with 12 chemotherapy sessions. The symptoms that preceded surgical treatment included periods of intense constipation due to mechanical obstruction, rectal tenesmus, and hematochezia. During the hospital stay, it took a while for the ostomy to work with the bag attached.• Personal and family history: Former joiner, currently retired, denies pre-existing illnesses, former social alcoholic for 9 months, which was when treatment began. Parents deceased, with the mother passing away due to breast cancer 15 years ago.• Medications in use and products in use for the ostomy: Hydrocolloid paste; Lorazepam 0.5 mg Oral at night.
<p>Patterns investigated based on Gordon</p> <ul style="list-style-type: none">• Health management pattern: Believes that once the “stoma is there” nothing more can be done for your health and denies concomitant diseases stating that “your problem” is this.• Metabolic pattern: 3 meals a day and 2 snacks, one in the morning and one in the afternoon, meals with “little salad” and prioritizing proteins from white meat (chicken) in addition to carbohydrates, drinking approximately 1 liter of water per day in addition glass of juice with meals, reports discomfort when “eating as before” which leads to full plates, which he is still trying to do, otherwise he fears feeling weakened.• Elimination Pattern: reports that the effluents come out with a fragmented and somewhat pasty appearance, presence of flatulence with an odor at different times.• Exercise pattern: he used to walk every weekend and go for walks while solving his problems, he walked every two days near his house for about 40 minutes, he currently no longer has this availability or desire, reporting weakness in his lower limbs, regarding the level of self-care, he reports that he delegates the activity of cooking to his son, taking care of the house and shopping, ETRB goes to the bathroom alone, reports three baths a day, but fear and disgust when handling the bag that he sometimes “prefers not to take off”, with the pain resulting from the water in the peristomal lesions, his denial worsened, making hygiene mandatory as mentioned. He has good mobility inside the house; however, he always reports fear of the bag coming off at the slightest effort, he feels that soon he will no longer walk alone.• Rest pattern: readiness for day-to-day activities has not been the same for at least 1 year, preferring to stay in the room watching TV after having the intestinal stoma. She reports a sleep cycle of 5 to 6 hours a night, however, due to fear of the bag coming off when she sleeps, she has had interrupted sleep cycles, waking up about 3 times a night and watching her.• Perceptual pattern: wears reading glasses, in terms of memory, he can remember topics related to the past and cancer treatment, in terms of learning style, he delegates care for the stoma and collecting equipment to his son and sister who is always at home, not developing resources for learning, judgment or decision making.• Pattern of self-concept: in self-description, he presents derogatory language referring to himself as “finished” due to advanced age and the presence of a colostomy, reports severe changes in body dynamics, self-competence in activities and fear of bending down or standing up suddenly, has had episodes of hopelessness and nervousness about “being hard work” and peristomal injuries.

- **Relationship pattern:** his social cycle is limited to his son and sister, he currently has friends in the neighborhood, he has acquaintances in the neighborhood, he was part of a prayer group at his church, and he reports that he is unaware of any type of Association for Ostomy Patients.
- **Reproductive pattern:** reports fear of having sexual intercourse in his condition due to the condition of the bag, which “makes it impossible”, and reports last sexual intercourse before antineoplastic treatment about 9 months ago.
- **Stress tolerance pattern:** your stress distraction mechanisms mentioned are watching television, doing crosswords, and going to your backyard where you have a hose, you feel that you have not been talking to many people about your problems and you do not know how to identify problem-solving strategies. problems developed by him.
- **Belief pattern:** He states that his main objective is to get rid of the stoma, but for now he wants to treat the peristomal lesions that have developed, he prays every night, however, he states that his Life Goals have been affected.

On physical examination (cephalopodal)

• Vital signs: T= 96.8°F; Blood pressure=110/90 mmHg; Heart rate=74ppm; Breathing= 19 rpm. Lucid, oriented in time and space, communicates without help and verbalizes anxiety. Has skin pallor; and decreased turgor. Skull without abnormalities uses a partial dental prosthesis. The face of pain and weakened appearance. Chest: normal chest expansion, lung auscultation with vesicular sounds present at the apex and base bilaterally, without adventitious sounds. Gastrointestinal system: the presence of colostomy with peristomal lesions with a hyperemic, edematous, and moist appearance, with areas of erosion of the epidermis beyond the limit of the adhesive base of the EC. Globose abdomen, painful on palpation near the stoma in the lower left quadrant, stoma protrusion of 3 cm, and bowel sounds present. Fragmented physiological intestinal eliminations that vary between pasty and hardened, at least 5 times a day. Genitourinary: spontaneous urination, oliguria with intense yellow urine. MII: warm extremities, preserved peripheral tissue perfusion, full peripheral pulses. Decreased strength in lower limbs. Locker signal: +/++++, with almost immediate disappearance.

Source: Own authorship

In Table 3, even more subjective patterns that call for health education were correctly verified as having changed by ChatGPT, which recommended that the team talk about emotional challenges, social isolation, changes in belief patterns, and self-image. Recommendations were given with appropriate nomenclature.

Table 3 – Analysis performed by Artificial Intelligence and guided by the authors

Prompt: Identify the nursing problems according to Gordon in the clinical case

- Health Perception and Management Pattern:**
Deficiency in self-care related to the presence of the colostomy and lack of information about management.
Hopelessness related to the cancer diagnosis and the presence of a colostomy.
- Nutritional/Metabolic Pattern:**
Risk of dehydration related to insufficient fluid intake.
Change in nutrition: more than the body needs to be related to excessive intake and perception of weakness.
- Elimination Pattern:**
Ileostomy-related diarrhea and possible malabsorption.
Change in comfort associated with pain in the stoma region.
- Activity/Exercise Pattern:**
Deficiency in physical mobility related to perceived weakness and fear of the bag coming loose.
Risk of impaired skin integrity related to contact dermatitis in the peristomal area.
- Sleep/Rest Pattern:**
Disrupted sleep pattern related to concern about the ostomy bag and associated fears.
- Pattern of Perception/Cognition:**

Fear related to the presence of colostomy and possible associated complications.

g) Pattern of Self-Perception/Self-Concept:

Body image disturbance related to the presence of colostomy.

Low self-esteem related to physical changes and cancer diagnosis.

h) Role/Relationship Pattern:

Social isolation related to ostomy shame and changes in body image.

Change in family role related to increased dependence.

i) Sexuality/Reproduction Pattern:

Disturbance in sexual satisfaction related to fear and discomfort with the presence of the ostomy bag.

j) Adaptation/Stress Tolerance Pattern:

Ineffectiveness in coping related to cancer diagnosis and lifestyle changes after surgery.

k) Pattern of Values/Beliefs:

Conflict in belief system related to illness and physical changes, affecting participation in church and spiritual activities.

Prompt: Do you recommend any other products?

ETRB is already using hydrocolloid paste. The selection of stoma care products is extensive and must be adapted to the patient's individual needs. However, considering the peristomal dermatitis described, here are some suggested products and approaches that could be considered after clinical evaluation by a specialist:

- a) Protective Skin Barriers: These can be used to protect the skin around the stoma against irritants such as liquid stools. They come in many forms, including rollers, sprays, and wipes.
- b) Protective Films: Like protective barriers, these are liquid films that can be applied to the skin to protect it from irritation.
- c) Healing Creams or Ointments: For already damaged areas of skin, specific creams or ointments may be recommended to help speed up the healing process. However, it is important to ensure that any product applied does not interfere with the bag's grip.
- d) Stoma Powder: If there are moist or macerated areas, stoma powder may be helpful. It helps dry out moist areas and can promote healing.
- e) Hydrocolloid Ostomy Products: If the patient is having problems with hydrocolloid paste, they may benefit from other hydrocolloid products such as plates or sealants.
- f) Stoma Belt Support: For patients who are concerned about the bag shifting or experience discomfort, support belts can help keep the bag in place.
- g) Reevaluation of the Pouch System: Depending on the nature of the skin irritation, it may be helpful to reevaluate whether the current type of pouch is most appropriate. One-piece versus two-piece systems have different advantages and disadvantages.
- h) Odor Control Products: Given reports of odorous flatulence, odor control products can be added to the bag to improve patient comfort and confidence.

Prompt: What is a priority for the team to address in this case?

- a) Management and Care of the Ostomy and Peristomal Region: The most immediate and painful problem that ETRB is facing is severe contact dermatitis around the ostomy. The team needs to address this immediately, offering treatments to alleviate discomfort and promote healing.
- b) The team must also educate the patient on the correct way to care for the stoma and the proper use of collection equipment to avoid future complications. It may be necessary to review and modify the products used in the ostomy, opting for products more suitable for sensitive or irritated skin.
- c) Psychological and Emotional Support: ETRB is facing significant emotional challenges related to her diagnosis and the impact of the ostomy on her daily life and self-image. It would be appropriate to refer ETRB for psychological support or therapy to help you deal with feelings of shame, low self-esteem, and changing body image. Support groups for cancer patients and/or ostomies can also be useful.
- d) Nutrition and Hydration Education: Due to the nature of their elimination and the risk of dehydration, ETRB needs to be educated about the importance of maintaining good hydration and the dietary adjustments necessary to manage stool consistency and reduce discomfort.
- e) Social Reintegration and Family Support: ETRB's social isolation and withdrawal from activities he previously enjoyed are concerning. Working with him to gradually reintegrate him into his normal activities, possibly with the support of a social worker or occupational therapist, would be beneficial. The family plays a crucial role in caring for and supporting the ETRB. Educating and involving the family in ostomy care and management can help alleviate some of the stress and worry that ETRB is feeling.
- f) Reassessment of Medications and Pain Management: Pain and discomfort in the stoma region needs to be adequately managed. An assessment of the effectiveness of the current medication regimen and possible adjustments may be necessary.

- g) Promoting Mobility and Physical Activity: Encouraging ETRB to gradually resume physical activity, starting with short walks, can help improve their physical strength, emotional state, and overall quality of life.
- h) Sleep and Rest Assessment: Sleep disruption can have negative impacts on physical and emotional health. Staff should work with ETRB to identify and address the causes of their sleep disruptions.

Prompt: Identify health education needs in the clinical case.

- a) Ostomy Care and Management of Peristomal Dermatitis: ETRB needs guidance on how to properly care for your stoma and the skin around it to avoid complications. This includes cleaning techniques, selecting and applying ostomy products, and watching for signs of complications. Education about the prevention and treatment of peristomal dermatitis is essential, as this is a current problem.
- b) Nutrition and Hydration: ETRB may benefit from education about the most appropriate diet for someone with a colostomy, including the importance of good hydration and the types of foods that can help regulate stool consistency.
- c) Self-Care and Physical Activity: Education about the importance of mobility and physical activity, as well as techniques for safely resuming physical activity, can help ETRB rebuild its strength and confidence. ETRB also needs education about daily activities, such as bathing, and how these activities can be adapted to accommodate your colostomy.
- d) Psychological Support: ETRB faces significant challenges in terms of self-image, self-esteem and social isolation. Education about available psychological resources, such as therapy or support groups, may be helpful.
- e) Medication and Pain Management: ETRB can benefit from education about the proper use of medications, potential side effects, and the importance of reporting any discomfort or new symptoms to healthcare professionals.
- f) Social Reintegration and Family Support: Address concerns and fears about reentering social activities and provide strategies or recommendations for the gradual resumption of social and religious activities.
- g) Stress Management and Coping Strategies: Education about stress management techniques, such as meditation, deep breathing, or light exercise, can be beneficial.
- h) Family and Caregiver Education: ETRB's family and caregivers, particularly your son and sister, may also benefit from education on how to support ETRB in their daily care, ostomy management, and emotional needs.

Source: Own authorship

Still, based on the answers above, the tool defined nursing problems, according to Gordon, as deficits, changes, disorders, disability, hopelessness, and personal conflicts approaching the nursing training framework. However, the affected patterns need to come from clinical practice, for example, the reevaluation of the system was a recommendation that only the clinical expertise of a stoma therapist would allow to be carried out.

Regarding the medication in use, he offered clues for health education talking about proper use (not taking doses without consulting a doctor); Sedative effects (avoiding activities that require alertness such as driving or operating machines); Interactions with alcohol (together with Lorazepam, it enhances the sedative effects); Potential for Dependence (benzodiazepines, including Lorazepam, are addictive and when experiencing withdrawal symptoms, a doctor should be consulted); Side Effects (may include drowsiness, dizziness, weakness and changes in appetite) and Discontinuation (the dose must be reduced gradually under medical supervision, as stopping suddenly causes withdrawal).

ChatGPT defined SMART criteria that were nominally calibrated, demonstrating clarity in the definition and explaining each generically, then we uploaded: “Could we, at each point of the SMART criteria, define health education goals for ETRB needs?” The answer follows in Table 4.

Table 4 – SMART criteria for health education as output patterns in ChatGPT

SMART criteria	Health education goals suggested in the light of problems and needs
Specific	ETRB will be able to identify and describe three key steps for proper ostomy care and management of peristomal dermatitis by the end of next month.
Measurable	At the end of two months, ETRB will correctly demonstrate the management and care of your stoma at least 90% of the time, as assessed by a nurse specializing in stoma therapy.
Attainable	ETRB will attend a weekly counseling session or support group over the next three months to address your emotional and psychological challenges.
Relevant	To improve your nutrition and hydration, ETRB will define, with the help of a nutritionist, a personalized diet plan for people with a colostomy. He will also receive information about the importance of adequate hydration.
Time-bound	Within six weeks, ETRB will increase your daily fluid intake to 2 liters per day and integrate at least two new sources of fiber into your diet to help regulate stool consistency.
<p>Prompt: What type of figures, landscapes or scenarios should educational material for ETRB have? When creating educational materials for a patient like ETRB, it is essential to consider images that promote feelings of hope and comfort and are relatable to their reality. Images must be positive, inspiring, and relevant [...]:</p> <ol style="list-style-type: none"> Tranquil Home Environment: This can be reminiscent of your own environment and encourage feelings of comfort and security. People in Support Groups: This may encourage ETRB to seek out similar groups, making you realize you are not alone in your journey. Walking Outdoors: This can be a reminder of the importance of physical activity and the possibility of resuming your walks. Garden or Yard: This image can evoke feelings of serenity and remind you of moments of relaxation. Images of Caring and Affection: This can reinforce the idea that ETRB is cared for and supported. Religious or Spiritual Activities: Given that ETRB was active in his church, an image related to religious or spiritual practices, such as people praying, singing, or simply sitting in a peaceful church setting, can be comforting and connect him to that part of his life. 	

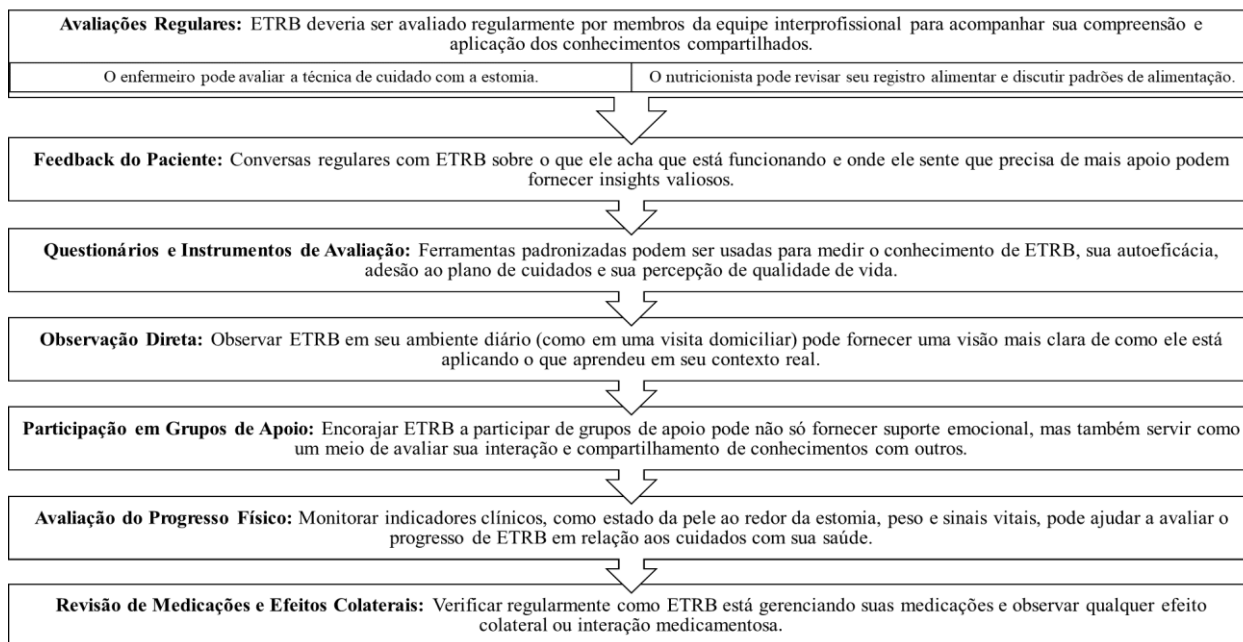
Source: collected by the authors on ChatGPT

Attention is drawn to setting dates in the SMART goals adapted to the case and the “sensitive” suggestion of figures to compose educational material. The model has been pre-trained and tuned to a particular creative writing or problem-solving task. Its Transformer architecture encodes and decodes processing sequential data (which is basically text), consisting of layers of self-attention – which does that the software considers the degree of urgency of different prompts, aiming to assemble the response (ISMAIL; GHORASHI; JAVAN, 2023). It is worth noting that he responded beyond what we asked, highlighting “Other SMART goals that could be considered”:

Mobility and Activity: In eight weeks, ETRB will resume walking, starting with at least 10 minutes per day and gradually increasing the duration by 5 minutes each week until reaching 40 minutes. **Psychological Support:** Over the next four weeks, ETRB will have at least two sessions with a psychologist or counselor to address self-image and self-esteem issues. **Social Reintegration:** Within three months, ETRB will attempt to resume at least one of your previous social or religious activities, whether visiting your church or participating in a community event (our translation).

At this point, we can already partially corroborate the author, who reinforces that AI helps nurses in identifying health risks in the community after anamnesis, giving insights into healthy lifestyles, being able to provide mental health guidance in the case of anxiety and depression, and increasing health education (GUNAWAN, 2023). The tool responded well to the Identity, Context, Action, Tonality, Objective, References, and Format output patterns, not adding anything new to what was explained. However, to measure the progress of ETRB, we used what we systematized in Figure 1.

Figure 1 – Recommendations for measuring ETRB progress⁸



Source: Prepared by the authors based on ChatGPT data

⁸ See Annex A.

Problematization: the challenge of establishing the use of ChatGPT in health education.

It was clear that ChatGPT offers correct answers and provides satisfactory explanations to support them. Compared to other AI programs, it offers promising results, being more accurate and, for example, corroborating the cardiopulmonary resuscitation guidelines in the Advanced Cardiovascular Life Support test, justifying its answers, but the tool responds using general references (FIJAČKO *et al.*, 2023).

It is suggested that teams often do not have experts on a given topic and do not have contributions from specialists or renowned professionals in the area – in this case stomatherapy. With ChatGPT, this would be possible by imitation (ALVERO, 2023). From now on, it is necessary to think about AI decentralization policies because until now it is the world powers that hold the generating center for these technologies (United States of America, China, and the United Kingdom), with a focus on reducing conditions of vulnerability and harm in the population (RODRIGUES, 2022). Obviously, there are other bioethical challenges such as the fact that ChatGPT collects and stores a large amount of patient records. Another impasse is its massive use only in specialties such as genetics and hematology (ACTIS, 2021), relegating other areas such as Community Health.

Therefore, chatbots would assist humans in scientific tasks, however, it is important to train them to avoid incorrect information (KOO, 2023). Furthermore, with the advent of AI, the integrity of researchers finds itself confronted with the facilities offered by Great Language Models. Nature (2023) launched an editorial against the action of crediting the tool as a co-author or even using it to carry out an (incomplete) literature review. There is still disbelief in the ways in which great language models can completely replace human labor, however, language models are already part of everyday life from a perspective of helping our skills (ALVERO, 2023).

A similar study, conducted by several North American research centers, indicated correct answers to questions that dealt with myths and beliefs about cancer: whether illness always implies death; whether sweeteners/sugar cause cancer; whether there is a risk of contagion to other people; whether the biopsy procedure helps spread cancer cells; and heredity issues (JOHNSON *et al.*, 2023). The report shows that in Stage 1, ChatGPT answered the basic questions correctly, and focused on the fact that people with an ileostomy need more targeted interventions due to the more liquefied aspect of fecal effluents that cause more persistent damage to the peristomal skin.

Professionals cannot avoid providing support close to the user, as human contact certainly influences social rehabilitation and understanding of the universe in which colostomized/ileostomized patients live (SONOBE; BARICHELLO; ZAGO, 2002). So-called interactive and experimental learning should regulate the use of ChatGPT so as not to encourage complete trust in the machine (CHOI *et al.*, 2023). “Use for use’s sake” in the short and medium term replaces critical sense, leading to biased or misleading information. Because they are not yet self-aware, robots are not responsible for bad decisions or wrong clinical responses. It is logical to say that professionals will still make clinical decisions for a long time, eventually relying on AI (SCERRI; MORIN, 2023).

Regarding the pedagogical and didactic aspects of a Pedagogy of seeing, Han (2017a) addresses how in-betweens are important for thinking about education and avoiding hyperactivity that transforms thoughts into calculations rather than reflections. Here, we ask ourselves: how does the use of AI affect this process? In this meander, continuous and longitudinal support is what interests the person with a stoma in pre-operative teaching; for example, Sonobe, Barichello and Zago (2002) talk about monitoring the user's evolution to then plan their assistance and education, aiming the biopsychosocial difficulties of this walk, something not probed by a machine.

Bauman (2013) states that purely instrumental rationality affects the ability to learn in vivo, as Han states. Elaborating a parallel between AI and Bauman's metaphor of “ballistic missiles” – intelligent instruments that, when launched on their path, change their route, always updating and correcting information in mid-flight –, we assert that they disregard the notion of the end that is given to task (they lose the perception of the whole, completeness). These are limited to the selected target, which was said in this report, of the data that trained it. These tools that you learn along the way have excellent technical capabilities but are not capable of building lasting relationships.

In addition, ChatGPT responds to topics directly when requested or not, thus, we evoke Han (2017b) and his Transparency Society to address the purely transparent language that the philosopher denounces as formal, mechanical, and operational, and that eliminates ambivalence. Going further, he classifies it as a language that permeates a dead relationship without vivacity; for the theorist, it is information and not elaboration.

Therefore, emancipatory and critical strategies centered on the student, such as the Arch Model for customized patients by Sonobe *et al.* (2001), find some precedents in Jara (1987), who sees knowledge as coming from practice and “living perception” and, when ordered,

allows the formulation of concepts and solutions. The creativity involved in problem-solving is the core of the application of dialectical teaching methods, stimulating an internal dynamic and a movement of re-elaboration to construct new and better circumstances for the subjects. At this point, we launch our perspective: this process is done person-to-person and not machine-to-person.

Therefore, ETRB presents problems such as: severe peristomal dermatitis, low water intake and altered patterns of self-perception and coping. Regarding this, ChatGPT would certainly facilitate the emergence of Key Points and detail them for professionals who have already carried out Reality Observation, in the Hypotheses it can predict facilitators and hinderers. However, in the sphere of Application to Reality, what involves decision-making is not capable of engineering creative solutions, in addition to its ability to judge, which cannot be used without supervision as the tool is not self-aware.

The careful recommendation of the products stands out; however, clinical expertise is essential to recommend the inputs. The presence of allergies and sensitivity that adhesives, collection equipment, and adjuvant products may cause should be checked; alcohol residues should not remain close to the skin, and sealants should be used whenever possible to avoid peristomal trauma (SOBEST, 2020). Consequently, it is noteworthy that the Arc Method of Sonobe *et al.* (2001) is characterized as a gradual and interpersonal process that is not achieved by ChatGPT.

The positive mass of information from AIs could put an end to any and all theories – or in our assertion “all theorizing”. The excess of positivity in contemporary society does not allow reflections but rather a sequence of actions (HAN, 2017a, 2017b). When we migrate to the concepts of the Living Work framework, we realize that the care involved in health education cannot be seen as an action-reaction assembly line, and the ways of producing health do not need to be domesticated. It is urgent to open fissures in the relationships between user and professional so that the guiding axis of education is considered and considers commitments from person to person (MERHY, 1997), a self-responsibility for others that no machine will have.

Knowing this impossibility, it is corroborated that regarding the fictitious case, ETRB needs longitudinal guidelines to achieve goals. Next, the team’s live work cannot be captured by established forces, the autonomy of health work is broad, and Merhy’s (1997) “toolbox” must favor collaborative, reflective practices and adapt to the game of service needs.

Problematizing pedagogy sees the nurse as an educator, actively detecting problems. In this report, we opted for Gordon's issues, which were quickly analyzed by the Language Model, however, as Sonobe *et al.* (2001), it is the nurse who will seek creative solutions, and the pressing issue is not the right knowledge or behaviors in principle, as some aspects to be emphasized are more critical for some patients than for others, but rather the gradual development of self-care and decisions.

Another author claims that time savings are a suggested gain that would theoretically result in more accurate personalized service (ODOM-FORREN, 2023). However, it is in the flexibility of activities that the direction of meaningful learning is achieved, only the ritualistic practice of guidelines, still mediated at some point by a machine, would eclipse singularities of a more rhythmic and dialectical process, running the risk – always present – of becoming a normative moment of dead work. Apparently, the adequacy of health education and the life of the person with a stoma, even with the advent of AI, requires joint interprofessional and reflective action (SONOBE *et al.*, 2001; SONOBE; BARICHELLO; ZAGO, 2002).

Limitations include the type of study – an exploratory report – which, even using systematic steps, may not allow other studies to fully employ the techniques used due to the profile of the clinical case, specificities of Gordon's theory, subjectivity of the patterns affected and prompts that have not been validated.

Final considerations

ChatGPT's sequential exploration method revealed promising results, starting from initial training on what ostomies are about, Functional Patterns by theorist Marjory Gordon, and SMART criteria – eventually reaching the point of recommending time intervals. Thus, through imitation of human reasoning, the tool could recommend aspects of health education for a fictitious user with a colostomy. However, it was noticed that their responses lack complementation from professional experts who ensure personalized use of products and that, in health education, they acquiesce to a critical pedagogy that considers AI but does not delegate everything to it.

Interactive learning with ChatGPT is an innovation in interprofessional routines, however, robots are not self-aware, and the delegation of functions is unfeasible and violates ethical components. The correct responses of the tool are highlighted, coated with a direct

character, endorsing the dead language and Dead Work, as it is a programmatic language committed to the purpose and not to a process.

Planning health education for users with stoma unites the team's lively perceptions with the person's pre-existing practical knowledge, instances of Live Work not captured and not reached by ChatGPT. Consistency and judgment in this new era that permeates health relations prevent the establishment of a non-critical mass movement, above all, realizing the urgency in probing the most subjective patterns of users. The relevance of an expanded consultation and situational diagnosis of the user with an ostomy and the establishment of mobilizations that consider interpersonal relationships between health workers and people with an ostomy is highlighted so that, even with such technological innovations, human contact and sharing do not become obsolete.

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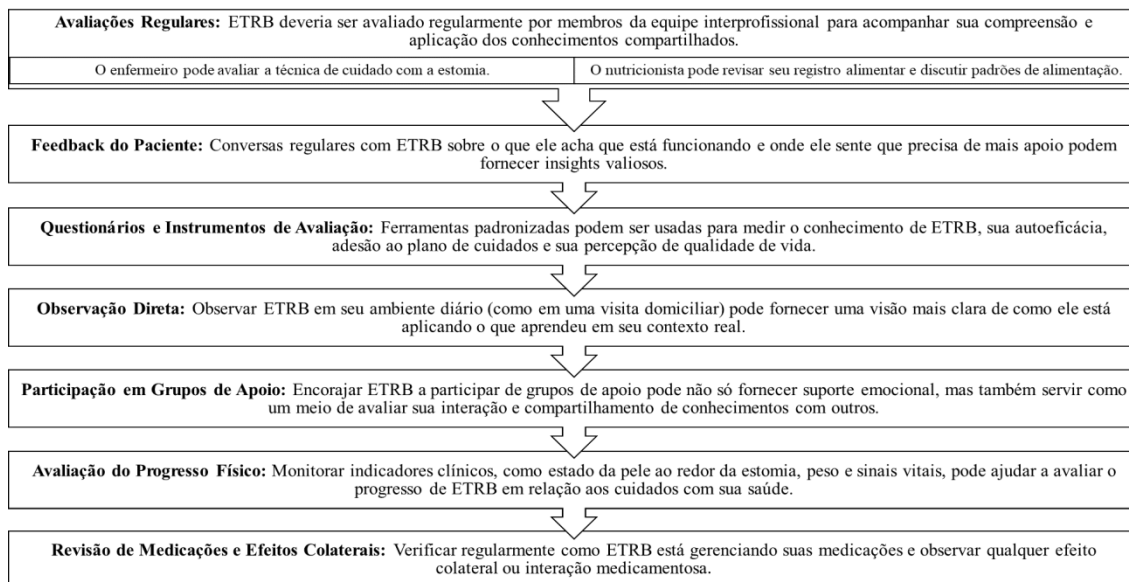
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Annex A

Figure 1 – Recommendations for measuring ETRB progress



In English:

Regular assessments: ETRB should be regularly assessed by members of the interprofessional team to monitor their understanding and application of shared knowledge.

The nurse can evaluate the stoma care technique.

The nutritionist can review your food record and discuss eating patterns.

Patient Feedback: Regular conversations with ETRB about what they think is working and where they feel they need more support can provide valuable insights.

Questionnaires and Assessment Instruments: Standardized tools can be used to measure ETRB knowledge, self-efficacy, adherence to the care plan, and perceived quality of life.

Direct Observation: Observing ETRB in his daily environment (such as a home visit) can provide a clearer picture of how he is applying what he has learned in his real-world context.

Participation in Support Groups: Encouraging ETRB to participate in support groups can not only provide emotional support, but also serve as a means of evaluating your interaction and sharing of knowledge with others.

Assessment of Physical Progress: Monitoring clinical indicators, such as the condition of the skin around the stoma, weight, and vital signs, can help assess ETRB's progress in caring for your health.

Review of Medications and Side Effects: Regularly check how ETRB is managing your medications and note any side effects or drug interactions.