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Didactic prescription: creation and application of a pictogram in consultations with older adult patients

Receituário didático: criação e aplicação de um pictograma nas consultas de pacientes idosos

Prescripción didáctica: creación y aplicación de un pictograma en las consultas con pacientes de edad avanzada

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Abstract

Problem: Population aging in Brazil is a growing phenomenon and faces challenges related to therapeutic adherence, especially in the context of Primary Health Care. According to data, 75.3% of older adults rely exclusively on the Brazilian Unified Health System, which makes it crucial to develop strategies and/or mechanisms to improve the communication between healthcare professionals and this age group. Our objective in this study was to develop a pictogram adapted to the needs of older adults, aiming at facilitating the understanding of medical prescriptions and, consequently, therapeutic adherence. **Methods:** Action research was adopted, based on experiences related to weekly visits to a Health Center in the city of Mossoró, state of Rio Grande do Norte (Brazil). The research involved seven steps, from the definition of the topic to the final presentation of the educational material, considering the analysis of educational practices using visual resources such as pictograms. **Results:** The pictogram, with its clear images and simplified language, proved to be effective in improving the understanding of medical prescriptions by older adult patients, representing an important tool for improving the autonomy of these individuals. **Conclusions:** The creation of visual educational materials, such as the developed pictogram, is a promising solution for improving therapeutic adherence. In addition, its use can optimize communication during consultations, resulting in more effective and problem-solving care.

Keywords: Therapeutic adherence; Pictogram; Primary Health Care; Health education.

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Resumo

Problema: O envelhecimento populacional no Brasil é um fenômeno crescente e enfrenta desafios relacionados à adesão terapêutica, especialmente no contexto da Atenção Primária à Saúde. Dados indicam que 75,3% dos idosos dependem exclusivamente do Sistema Único de Saúde, o que torna crucial o desenvolvimento de estratégias e/ou mecanismos que melhorem a comunicação entre os profissionais de saúde e esse grupo etário. Este estudo teve como objetivo o desenvolvimento de um pictograma adaptado às necessidades da população idosa, visando facilitar a compreensão do receituário médico e, consequentemente, a adesão terapêutica. **Método:** Adotou-se a pesquisa-ação, tendo como referência experiências relacionadas a visitas semanais em uma Unidade Básica de Saúde da cidade de Mossoró, Rio Grande do Norte. A pesquisa envolveu sete etapas, que partiram da definição do tema até a apresentação final do material educativo, levando em consideração a análise de práticas educativas a partir da utilização de recursos visuais, como pictogramas. **Resultados:** O pictograma, com imagens nítidas e linguagem simplificada, mostrou-se eficaz na melhora da compreensão das prescrições médicas pelos pacientes idosos, representando um importante instrumento para o aprimoramento da autonomia desses indivíduos. **Conclusão:** A criação de materiais educativos visuais, como o pictograma desenvolvido, é uma solução promissora na melhoria da adesão terapêutica. Além disso, sua utilização pode otimizar a comunicação nas consultas, resultando em um atendimento mais eficaz e resolutivo.

Palavras-chave: Adesão terapêutica; Pictograma; Atenção Primária à Saúde; Educação em Saúde.

Resumen

Problema: El envejecimiento de la población en Brasil es un fenómeno creciente y enfrenta desafíos relacionados con la adherencia terapéutica, especialmente en el contexto de la Atención Primaria de Salud. Los datos muestran que el 75,3% de los ancianos depende exclusivamente del Sistema Único de Salud, lo que hace crucial el desarrollo de estrategias y/o mecanismos para mejorar la comunicación entre los profesionales de la salud y este grupo de edad. El objetivo de este estudio fue desarrollar un pictograma adaptado a las necesidades de la población anciana, con el fin de facilitar la comprensión de las prescripciones médicas y, consecuentemente, la adherencia terapéutica. **Método:** Se adoptó la investigación-acción, con referencia a experiencias relacionadas con visitas semanales a una Unidad Básica de Salud en la ciudad de Mossoró, Rio Grande do Norte. La investigación comprendió siete etapas, comenzando con la definición del tema y terminando con la presentación final del material educativo, teniendo en cuenta el análisis de las prácticas educativas utilizando recursos visuales como los pictogramas. **Resultados:** El pictograma, con sus imágenes claras y su lenguaje simplificado, demostró ser eficaz para mejorar la comprensión de las prescripciones médicas por parte de los pacientes ancianos, representando una importante herramienta para mejorar la autonomía de estas personas. **Conclusión:** La creación de materiales educativos visuales, como el pictograma desarrollado, es una solución prometedora para mejorar la adherencia terapéutica. Además, su uso puede optimizar la comunicación durante las consultas, lo que se traduce en una atención más eficaz y resolutiva.

Palabras clave: Adherencia terapéutica; Pictograma; Atención Primaria de Salud; Educación para la Salud.

INTRODUCTION

The process of population aging in Brazil is a consolidated reality, presenting, according to the Brazilian Institute of Geography and Statistics (IBGE), a growth of about 57.4% from 2000 to 2012.[1] In parallel, according to data from the Brazilian Longitudinal Study of Aging (ELSI-Brazil), 75.3% of this group depends exclusively on the Brazilian Unified Health System (SUS) for receiving care, mainly medical care.[2] Given this scenario, it is understood that health care linked to the older adult population is important, highlighting education, among all the instruments of the healthcare system, as an essential tool in the care and promotion of quality of life.[3]

Primary Health Care (PHC) as a gateway to SUS plays a pivotal role in providing integrated and integrative care to the population. However, the care model cannot be limited to the provision of medicines, and should involve the education and guidance of patients, especially for guaranteeing therapeutic adherence and treatment effectiveness of the older adult population.[4] Likewise, the success of pharmacotherapy often depends on the ability to understand the patient and the correct follow-up of the received guidelines. In the case of older adults, this process is even more challenging due to related issues, for instance, low cognition, reading difficulties, social vulnerability, and sensory limitations.[5]

The low therapeutic adherence among older adults is multifactorial, ranging from difficulties in recognizing packaging and reading labels to forgetting schedules and fear of side effects.[6] In addition, the inadequate use of medicines compromises the progress of treatment, leading to worsening of clinical conditions, increased demand for medical appointments, and increased overburden of SUS.[7] Another aggravating factor is the precariousness of SUS, which, combined with the high workload of professionals, reduces the time of consultation and makes it difficult to share complex information to patients.[8]

The correct understanding of therapeutic prescription is undoubtedly an extension of the consultation and a basic tool in the doctor-patient relationship. Nevertheless, its effectiveness requires approaches that, in addition to technical language, adapt to the basic needs of older individuals. Within this context, the importance of incorporating educational technologies is highlighted, such as pictograms, defined as intuitive graphical representations that help in communicating complex information and promote a greater understanding and adherence to medical prescriptions.[9]

In this sense, pictograms, although already used in projects such as those of the International Pharmaceutical Federation, lack a global standardization, especially with regard to the specific languages and symbols of each region. Thus, the adaptation of this tool to the SUS context may represent a significant innovation in the care of the older adult population, improving the understanding and follow-up of medical guidelines.[10]

Therefore, aiming at promoting self-care and improving the quality of consultations in the SUS context, especially for older adults, the following question was raised: how to develop an educational technology that facilitates the understanding of medical prescriptions and, at the same time, promote therapeutic adherence among older adults? From this perspective, our objective was to create a pictogram in the form of a medical prescription, designed for application in consultations aimed at the older adult population.

METHODS

The discipline “Collective Health and Living in Community” is part of the Medicine course of the Universidade do Estado do Rio Grande do Norte (UERN). The course offers students the opportunity of practical experience, through visits to the Health Center (*Unidade Básica de Saúde* – UBS), from October to December 2024. From this perspective, these visits, carried out weekly, enabled a detailed analysis of the structure and especially of the services provided by the aforementioned facility.

In this sense, during the stay in the waiting room, some issues that encouraged reflections were identified. In particular, the massive presence of older adult patients was noticed, highlighting difficulties related to the understanding of medical prescriptions. From these concerns, doubts about the times for administering medicines, as well as the interpretation of the information contained in the prescriptions, were emphasized. Based on this initial observation, the authors were motivated to search for solutions that facilitate the communication between healthcare professionals and the older adults who are seen at the facility.

Simultaneously, educational practices already disseminated in social media were analyzed. These practices use visual resources, such as pictograms, to make health guidelines more understandable and accessible. Inspired by these initiatives, an educational material focused specifically on the needs of the older adult population was developed, aiming at promoting therapeutic adherence.

To achieve this goal, action research[11] was adopted as the main methodology, recognized for its cyclical and collaborative nature. This approach combines systematic research with practical interventions, promoting a continuous interaction between data collection, critical reflection, and the improvement of the developed material.[12] In this sense, the methodological choice of action research allowed the continuous adjustment of the final product, so that the didactic prescription could become more improved and effective.

The development of the pictogram was structured in seven main steps, namely:

1. Definition of the thematic perspective: delimitation of the focus of health education, considering the observed demands, especially the support for therapeutic adherence of the older adult population;
2. Theoretical review and deepening: based on the observations made, a careful analysis of the scientific literature was conducted to substantiate the development of the material. This review included research on good practices in health education and the use of pictograms in similar contexts;
3. Meetings and deliberations: from the analysis of the scientific literature and meetings with a researcher in the field of Public Health, the ideal format to address the topic with the target audience was defined, prioritizing economic viability, simplicity, and the possibility of replication in other healthcare facilities;
4. Preliminary development of the pictogram: based on previous discussions, the format of the pictogram was chosen, from which an initial version of the educational material was developed. The prototype was developed with special attention to the characteristics and needs of the older adult population, using visual elements and a simplified language;
5. Presentation of the material to Family and Community Doctors (FCD): the preliminary version was submitted to the evaluation of two FCD. This step was essential to validate the applicability of the material in practical situations of care;
6. Adjustments to the pictogram based on gathered opinions: contributions obtained from the FCD have been incorporated into the material, resulting in an improved version. The changes made aimed to make the pictogram more didactic, accessible and ludic, aligning it with the real demands of the target audience;
7. Systematization and refinement of the material: in the final step, the pictogram was consolidated in its definitive version. In parallel, the applied methodologies were systematized, seeking to ensure the replication of the process in other contexts and to enable its scientific dissemination.

The final instrument prioritized the use of visual resources and an accessible language, seeking to facilitate the understanding and autonomy of older adults in the management of their therapies. The adopted approach emphasized the cultural and cognitive adequacy of the material, aiming at promoting a positive impact on therapeutic adherence and developing the autonomy of this population concerning their health.

Considering the nature of the experience report, its submission to the Research Ethics Committee was waived. However, all steps were conducted in accordance with applicable ethical principles, ensuring respect for the right of autonomy and the dignity of the users involved.

RESULTS AND DISCUSSION

Through weekly visits to the UBS located in Mossoró, UERN Medical students have the opportunity to experience the daily life of PHC. These activities allowed a detailed analysis of the structure of the

health center, as well as the organizational dynamics of the site, raising concerns about the therapeutic adherence of the population who use the services.

During the weekly visits to the UBS, we identified remarkable characteristics in the profile of the users seen, predominantly composed of children and older adults. Regarding children, their presence in the UBS was justified, primarily, due to immunization schedules, reflecting the continuous relevance of immunization campaigns for preventive health. This type of care is paramount for reducing infant morbidity and mortality.[13]

Conversely, the care for the older adult population, who consists in the most numerous group seen during the visits, focused on routine consultations, especially for monitoring chronic diseases and other health demands related to the aging process. However, we noticed that, often, patients in the aforementioned group faced difficulties in understanding the information passed on by several healthcare professionals, especially regarding medical prescriptions.

According to Lavor et al.,[14] the aforementioned understanding difficulty, even with proper guidelines being carried out during the consultation, compromises the adherence to treatment, considering that without a basic understanding of the therapy, many older adults fail to correctly follow the prescribed recommendations, leading to the maintenance of symptoms and even worsening of their health conditions. The result of this process is the return of patients to the UBS in search of new care, who often seek the service with similar or more severe complaints, perpetuating a vicious cycle and negatively impacting the user and the health system.

In addition, the constant repetition of these medical consultations has a structural problem: overcrowding health centers. This hinders the proper provision of care to other patients and, unfortunately, it overburdens healthcare professionals, who already suffer from a high workload.[15] It is also noteworthy that this scenario is more alarming when associated with the ongoing population aging in Brazil, resulting in intrinsic implications to public health and requiring a reassessment of policies and practices related to health care.[16]

As pointed out by Oliveira et al.,[17] the increase in life expectancy, although it is a positive indicator of development in the country, also implies a higher prevalence of chronic diseases and/or conditions associated with aging. Thus, the proper management of these conditions requires not only a clinical approach, but also the development of health education strategies, which enable older adults to understand and manage their treatments autonomously, being this the main concern for the creation of a more didactic and educational prescription for this population.

Based on this scenario, the use of visual materials — such as pictograms and language simplification in medical recommendations — are indispensable resources to facilitate the understanding by patients.[18] Such tools may include illustrations on drugs management, drug administration schedules, and important precautions, benefiting therapeutic adherence and the correct clinical treatment.[19]

Based on these reflections, we noticed that social media provide fertile ground for the dissemination of ideas aimed at educational initiatives. From this context, we identified an innovative proposal that suggested the use of a prescription with images and tables as a tool to facilitate the understanding and application of medical information, especially by people with specific needs, which is a perspective already observed by Melo and Boianovsky.[20] Inspired by this approach, we developed a prescription adapted to the needs of older adults, seeking to meet the particularities of this population in a functional and accessible way.

The creation of the material was based on principles that guarantee its efficiency and simplicity. Within this principle-related basis, the full use of the space available on a single sheet of paper is highlighted,

allowing all relevant information to be gathered together in a cohesive and organized way. This choice aimed at providing a broad and integrated view of the prescribed therapy, facilitating reading and interpretation by the patient and caregivers.[21] In addition, the colors used in the layout consisted in another key point, which were strategically selected in light tones, not only to improve the visual experience, but also to reduce ink consumption, making the printing process more economical and sustainable, especially for the UBS.

The organization of the prescription was planned to balance the formality necessary to the medical context with a more harmonious and accessible visual presentation. In the document header, we inserted fields for the patient's personal data such as full name, date of birth, and date of appointment. In the footer, there were fields for the identification of the physician, with signature and stamp, ensuring the authenticity of the prescription. This structure sought to facilitate the integration of information, while adapting it to the daily reality of patients.

One of the most innovative elements of the project was the incorporation of images generated by artificial intelligence (AI). From this perspective, the illustrations were created based on keywords inserted in AI, which were selected, namely: "older adults," "breakfast," "dinner," "cartoon illustration," "sleeping," and "snack," allowing a visual creation that portrayed specific moments of the everyday life of an older adult person, allowing to establish an identification with this public. Thus, we selected five images that represented everyday activities: waking up, having breakfast, morning/afternoon snack, dinner, and getting ready to sleep. Thus, these images were strategically placed and organized in the prescription, establishing direct associations between each stage of the day and the administration of what was prescribed.

During the development of the project, we sought to meet both the practical aspects and the emotional and cognitive needs of older adults. From this perspective, we created a material that not only fulfilled its referential and conative function, but also established a closer and humanized bond with the patient.[22] Thus, the proposed prescription combines innovation, accessibility, functionality, and humanization, representing a solution that is adapted and affordable to the demands of a population that requires greater attention and care in the healthcare field.

The challenges for developing the prescription were mainly related to operational aspects. The use of AI was essential for creating the images, although the illustrations initially generated represented only white men, which did not reflect the ethnic diversity of Brazil, a fact also observed by Borges and Faleiros Júnior.[23] To overcome this limitation, the keyword "ethnicities" was used with the aim of diversifying the illustrations.

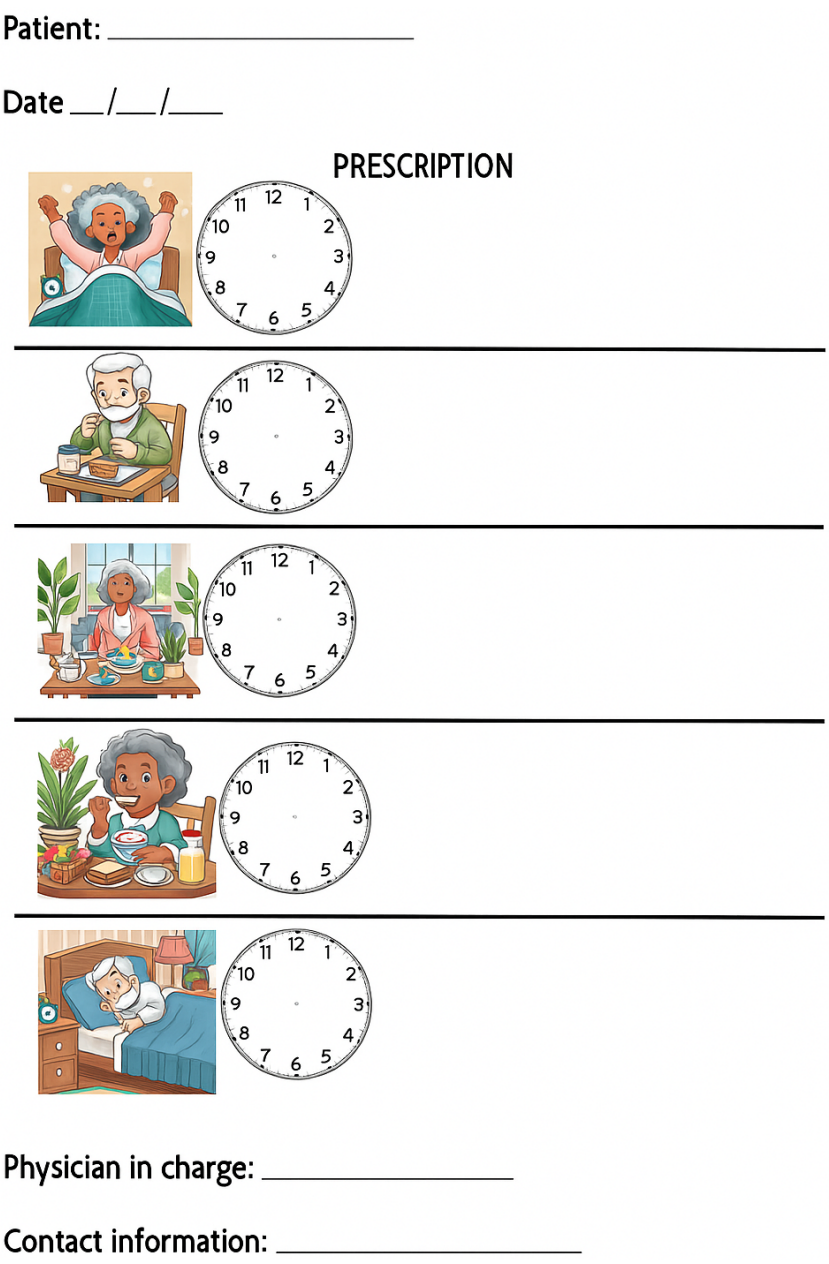
Another obstacle faced was the framing of the information: determining the essential elements to be included on a single page was particularly challenging. This issue was also observed by Lima et al.,[24] when identifying difficulties related to the completion of certain medical documents, such as the children's and older adults' booklets; thus, the pictogram was structured, aiming to tackle this issue. In this context, the contribution of the FCD was paramount, because, based on their professional and academic experience, they guided the selection of information indispensable for its development.

The main challenge in the creation of this material was to balance the specificities of each individual with the need to create a resource that is applicable to most cases, ensuring its widespread use, without compromising its effectiveness, representing an accessible and didactic material that favors therapeutic adherence and contributes to the efficiency of the provided service. In addition, the size of the image depicts what is commonly found in medical prescriptions, facilitating its acceptability and replicability.

The prescription should be completed in a succinct and accessible way, including the graphic representation of the times for administering medicines by drawing the hands on the clocks present in the pictogram. Moreover, in the blank space, it is suggested to cut and stick a part of the medicine

package containing its name. Therefore, even patients with low cognition will be able to correctly identify the medication through visual comparison, facilitating its proper administration and enabling to achieve the key objective of the pictogram.

Finally, among the limitations of the present study, we mention: the restriction of visits to only one UBS, limiting the representativeness of the observed results; the evaluation of the prescription by only two FCD, which limits the diversity of clinical opinions and perspectives that could enrich the analysis of its development and replicability; and the absence of the participation of older adult patients, compromising the practical analysis of its applicability. Hence, the results should be interpreted considering that the reduced sample and limited validation bring simplifications that may not reflect other realities. The final product can be observed in Figure 1.



Source: Prepared by the authors, 2024.
Figure 1. Didactic prescription.

The experience highlighted the challenges and complexity inherent in the development of an educational material aimed at the therapeutic adherence of older adults, especially regarding the particularities of the Brazilian Unified Health System (SUS) and the strategies necessary to mitigate these difficulties. The relevance of this material lies in its ability to work as a dual-purpose tool: it is directed both at healthcare professionals and patients. For the former, the proposal consisted in providing a more efficient and ludic resource in carrying out their functions. For the latter, it was intended to encourage self-care and autonomy, providing, through a single instrument, the resolution of multiple issues. Thus, from the relevance of the proposed instrument, the process allowed us to clarify the need for new studies, such as the validation of the pictogram by the patients themselves, a fundamental step to ensure the effectiveness and applicability of the developed material.

CONFLICT OF INTERESTS

Nothing to declare.

AUTHORS' CONTRIBUTIONS

LFCS: Conceptualization, Data curation, Writing – review & editing, Methodology, Writing – original draft. DFP: Conceptualization, Data curation, Writing – review & editing, Methodology, Supervision. TR: Writing – review & editing, Validation. CN: Writing – review & editing, Validation.

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