

Perceptions of anticoagulated patients about self-care in the light of Dorothea Orem's Theory



Percepções de pacientes anticoagulados sobre o autocuidado à luz da Teoria de Dorothea Orem

Percepciones de pacientes anticoagulados sobre el autocuidado a la luz de la Teoría de Dorothea Orem

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ABSTRACT

Objective: To analyze the perceptions of anticoagulated patients about self-care in the light of Dorothea Orem's Theory.

Method: Qualitative study conducted at an outpatient clinic specialized in oral anticoagulation in Recife, PE, Brazil, between January and February 2024, with 20 patients on continuous use of oral anticoagulants, with a mean age of 60.5 years ($SD \pm 12.12$). Data were collected through five group sessions using a semi-structured script, with the support of IRAMUTEQ® software, and interpreted in the light of Orem's Theory.

Results: Classes emerged and were categorized into thematic axes represented by the self-care requisites proposed by Orem. Difficulties in medication adherence, lifestyle changes, and physical limitations were allocated to the Universal Requisites; financial concerns regarding medication acquisition, feelings of insecurity, and anxiety about continuous therapy were linked to the Developmental Requisite; insufficient knowledge about the anticoagulant was associated with the Health Deviation Requisite.

Final considerations: There are challenges related to the new health condition of these patients, which hinder self-care and, consequently, contribute to complications. Strategies for health education actions supported by educational technologies are necessary, targeting the needs of this population, as well as improvements in the training of health professionals who care for anticoagulated patients.

Descriptors: Self-care; Anticoagulants; Nursing care; Nursing; Health Education.

RESUMO

Objetivo: Analisar as percepções de pacientes anticoagulados sobre o autocuidado à luz da Teoria de Dorothea Orem.

Método: Estudo qualitativo realizado em um ambulatório de anticoagulação oral em Recife/PE, Brasil, entre janeiro e fevereiro de 2024, com 20 pacientes em uso de anticoagulantes orais, com média de idade de 60,5 anos ($DP \pm 12,12$). Os dados foram coletados através de cinco sessões grupais com roteiro semiestruturado. A análise do conteúdo destas seções ocorreu com auxílio do software IRAMUTEQ®, interpretada à luz da Teoria de Orem.

Resultados: Emergiram classes que foram categorizadas em eixos temáticos representados pelos requisitos do autocuidado propostos por Orem. Dificuldades na adesão medicamentosa, mudanças no estilo de vida e limitações físicas foram alocadas nos Requisitos Universais; Preocupações financeiras para aquisição do medicamento, sentimento de insegurança e ansiedade sobre a terapia contínua foram ligados ao Requisito de Desenvolvimento; Conhecimento insuficiente sobre o anticoagulante foi atrelado ao Requisito de Desvio de Saúde.

Considerações finais: Existem desafios relacionados à nova condição de saúde desses pacientes, o que dificulta o autocuidado e, consequentemente, contribui para complicações. São necessárias estratégias de ações educativas em saúde, apoiadas por tecnologias educacionais, voltadas às necessidades desse público, bem como o aprimoramento da formação dos profissionais de saúde, que prestam assistência ao paciente anticoagulado.

Descritores: Autocuidado; Anticoagulantes; Cuidados de enfermagem; Enfermagem; Educação em Saúde.

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RESUMEN

Objetivo: Analizar las percepciones de pacientes anticoagulados sobre el autocuidado a la luz de la Teoría de Dorothea Orem.

Método: Estudio cualitativo realizado en un ambulatorio especializado en anticoagulación oral en Recife, Pernambuco, entre enero y febrero de 2024, con 20 pacientes en uso continuo de anticoagulantes orales, con una edad media de 60,5 años ($DE \pm 12,12$). Los datos fueron recolectados a través de cinco sesiones grupales con guion semiestructurado, procesados con el software IRAMUTEQ® e interpretados a la luz de la Teoría de Orem.

Resultados: Surgieron clases que fueron categorizadas en ejes temáticos representados por los requisitos del autocuidado propuestos por Orem. Las dificultades en la adherencia medicamentosa, los cambios en el estilo de vida y las limitaciones físicas fueron asignadas a los Requisitos Universales; las preocupaciones financieras para la adquisición del medicamento, el sentimiento de inseguridad y la ansiedad sobre la terapia continua se vincularon al Requisito de Desarrollo; el conocimiento insuficiente sobre el anticoagulante se asoció al Requisito de Desviación de la Salud.

Consideraciones finales: Existen desafíos relacionados con la nueva condición de salud de estos pacientes, lo que dificulta el autocuidado y, en consecuencia, contribuye a complicaciones. Son necesarias estrategias de acciones educativas en salud, apoyadas por tecnologías educativas, dirigidas a las necesidades de este público y el fortalecimiento de la formación de los profesionales de la salud, especialmente de los enfermeros, que brindan atención al paciente.

Descriptores: Autocuidado; Anticoagulantes; Cuidados de enfermería; Enfermería; Educación para la salud.

■ INTRODUCTION

Oral anticoagulants (OACs) are used to prevent thromboembolic events by prolonging blood coagulation time. Among the types of OACs, coumarins (vitamin K antagonists) stand out. These medications are indicated for venous and arterial thromboembolism, atrial fibrillation, hereditary thrombophilia, cardiac valve prostheses, and acute coronary syndromes. Their use requires rigorous monitoring to avoid complications such as bleeding and therapeutic failures related to drug and food interactions⁽¹⁾.

Anticoagulant therapy requires frequent monitoring through blood tests to assess coagulation. The safety and effectiveness of the medication depend on the quality of anticoagulation control, monitored through tests such as Prothrombin Time (PT), expressed by the International Normalized Ratio (INR), since poor control is associated with increased morbidity, mortality, and healthcare costs⁽²⁾.

A cohort study conducted with patients with prosthetic heart valves showed inadequate anticoagulation control, and abnormalities in coagulation tests increased the combined risk of stroke, thromboembolism, and prosthetic valve thrombosis by 31%. Additionally, major bleeding and death were identified as the main secondary outcomes, directly related to deficit in self-care⁽³⁾.

Patient adherence to anticoagulant treatment is fundamental, as the omission of a dose can result in a significant reduction in INR values in the following days. This decrease increases the risk of thromboembolic events, especially when the INR reaches the recommended

lower limit. In this context, promoting self-care is an essential approach to empower patients to take an active role in managing their health. Educational strategies are fundamental to improve treatment adherence, preventing complications associated with medication use, and promoting health more broadly⁽⁴⁾. Since its formalization in 1971, Dorothea Orem's Self-Care Theory has remained relevant in contemporary and future practice, being recognized as one of the most universal and enduring, serving as an essential reference for teaching, research, and clinical practice, especially in the context of chronic diseases⁽⁵⁾. When applied in this scenario, it highlights the importance of the individual's ability to perform actions aimed at maintaining their own health, as treatment adherence requires patients to understand the need for medication, recognize warning signs and perform appropriate INR monitoring⁽⁴⁾.

When patients present self-care deficits, whether due to lack of knowledge, cognitive difficulties or physical limitations, the role of the nursing and healthcare team becomes essential, to provide educational support and structure strategies that promote autonomy in the management of anticoagulant therapy⁽⁴⁾.

According to Orem, the promotion of self-care involves not only instructions on medication, but also empowering the patient to make appropriate decisions and prevent complications. Educational strategies for patient empowerment, such as personalized guidance, accessible teaching materials, and the use of technologies for medication reminders, are fundamental to reducing the risk of thrombosis or bleeding resulting from inappropriate anticoagulant use⁽⁶⁾.

Thus, by applying Orem's Theory, nursing and healthcare professionals can identify self-care deficits and implement effective interventions to ensure that the patient develops the necessary skills for safe and effective treatment⁽⁶⁾.

Therefore, understanding the self-care perceptions of patients on continuous oral anticoagulant therapy is fundamental to understanding the challenges, difficulties, and beliefs that influence treatment adherence and, consequently, therapeutic efficacy. Understanding how these patients perceive and perform self-care allows healthcare professionals to develop more effective and individualized strategies, as well as highlighting emotional and social factors that may affect treatment, such as anxiety, fear of adverse effects, and financial difficulties in accessing medication.

Therefore, the research question of this study is: "What are the perceptions of patients in continuous oral anticoagulant therapy about self-care?" and the objective is to analyze the perceptions of anticoagulated patients about self-care in light of Dorothea Orem's Theory.

■ METHOD

This is a qualitative, descriptive, and exploratory study conducted according to the criteria of the Consolidated Criteria for Reporting Qualitative Research (COREQ), in an oral anticoagulation outpatient clinic of a public hospital that is a reference in cardiology in the North and Northeast regions of Brazil, located in the city of Recife, in the Brazilian state of Pernambuco⁽⁷⁾.

The choice of the study location is justified by the main researcher's role as a cardiology nurse, with a master's degree, and doctoral student in nursing and with experience in the oral anticoagulation outpatient clinic acquired during her residency in cardiology nursing and academic master's degree. The demand for patients in this service is growing, due to the increase in cases of cardiovascular diseases in the population. Appointments are scheduled monthly through the State Bed Regulation Center.

Data collection was conducted in the months of January and February 2024, in a private room, with physical space to set participants in circle, aiming to facilitate interaction among participants and researchers. During the field immersion, the researcher presented the project, reporting the objectives, stages, and data

collection procedures to all professionals working at the oral anticoagulation outpatient clinic: physicians, medical residents, nurses, nursing technicians, and nursing residents, as well as becoming familiar with the setting and experiencing the outpatient routine.

The study population consisted of patients on continuous use of OACs, selected by convenience. Patients on continuous use of oral anticoagulants, monitored by the oral anticoagulation outpatient clinic, of both genders, aged 18 years or older, were included. Patients with communication barriers were excluded. The exclusion of these cases occurred due to logistical limitations, such as the absence of an interpreter or a trained professional on the research team to perform the appropriate mediation. This decision aimed to avoid misinterpretations and preserve the quality of the data obtained.

The researcher personally introduced herself to the participants and explained the reasons for developing the research and her interest in the topic. They were informed beforehand about the objectives, risks, and benefits. Information regarding refusals or withdrawals was provided clearly and transparently, as were the procedures to which participants would be subjected during the study, through the Informed Consent Form (ICF) and the authorization form for the use of images and statements in the focus group, which were provided in printed form.

Data collection was conducted using the focus group technique, which allows for in-depth exploration of participants' perceptions, feelings, knowledge, and experiences on a specific topic through group interaction mediated by a facilitator. This approach favors the emergence of shared and contrasting meanings, contributing to a broader and more contextualized understanding of the phenomenon under investigation⁽⁸⁻⁹⁾.

The main author, acting as moderator, conducted the in-person group meetings, accompanied by two previously trained assistant nurses. During data collection, there were no third parties present, which ensured confidentiality and focus on the participants' statements. To achieve the study objectives, five independent focus groups were conducted, each composed, on average, of four to five participants, selected according to previously established criteria. It is important to highlight that the members of each group were different, ensuring the independence of the discussions.

During the participant recruitment process, 30 individuals were initially invited to participate in the research. Of these, 10 refused to participate, citing the following reasons: lack of time, lack of interest in the research, and discomfort with audio recording of the interviews. In addition, five participants withdrew after the start of the focus group due to changes in availability, personal issues, and difficulties returning to their residence while waiting for the transportation (TFD). These data were considered in the analysis of the final sample, composed of 20 participants.

During the discussions, there was intense exchange of experiences among participants, encouraged by the attentive facilitation of the main researcher and her data collection assistants. The sessions, with an average duration of 90 minutes, were audio-recorded and fully transcribed. Data collection was discontinued once data saturation was reached, taking into account the repetition and predictability of the statements and identifying the absence of new ideas, signaling that the group had exhausted the topic⁽¹⁰⁻¹¹⁾.

To determine saturation, two researchers conducted a joint initial analysis of the statements, identifying the emerging core meanings. Data collection was concluded upon reaching convergence between the two researchers, verifying the redundancy of discourses and the absence of new significant elements.

Before the focus groups, the researcher conducted the data collection stage related to sociodemographic,

economic, and clinical data, applying a characterization form to 20 participants individually and in person, in a private room, following a script composed of five sessions.

The first session consisted of sociodemographic data containing information on age, gender, marital status, education, occupation, family income, and clinical data such as personal history, previous cardiac surgery, duration of oral anticoagulant treatment, type of anticoagulant used, current International Normalized Ratio (INR) value, and complications presented, aiming to characterize the study population, with the data analyzed descriptively.

Subsequently, participants were referred to group meetings. For sessions 2, 3, and 4, the interview was organized in light of Dorothea Orem's Self-Care Theory, which addresses: universal requirements, involving basic daily actions performed to maintain health at all stages of life; developmental requirements, understood as specific needs that arise at certain stages of the life cycle; and health deviation requirements, related to demands arising from illnesses or injuries, requiring adaptations to changes in health status⁽¹²⁻¹³⁾.

The fifth session was conducted with the purpose of supporting the development of a more appropriate health educational technology for promoting self-care in a future study, of interest to the main researcher, to be made available for use by the target audience (Chart 1).

Chart 1– Focus group sessions. Recife, PE, Brazil, 2024

Category (Orem's Theory)	Questions
Universal Requirements	What daily care do you consider essential for the safe and effective use of anticoagulant medication, including diet, schedules, and possible changes in routine?
Developmental Requirements	How has it been for you to live with oral anticoagulation treatment on a daily basis, including the challenges faced, the strategies you have found to cope with the treatment, and resuming your usual activities?

Chart 1– Cont.

Category (Orem's Theory)	Questions
Health Deviations Requirements	Health Deviations Requirements: What do you know about the use of oral anticoagulants, including the name of the medication you use, the reasons for using it, the necessary precautions, the control examination, the warning signs of complications, and what you would still like to learn about the treatment?
Health Educational Technology	What do you understand by educational technology, what is its purpose, which types do you know, and if you could choose, what kind of technology would you like to be developed to help you better understand oral anticoagulants?

Source: Research data, 2024.

Although the script of questions, instructions, and the interview guide were not submitted to a pilot test, the study focused directly on the participants' perceptions, which allowed their experiences to be understood in a more authentic manner. During the interviews and group meetings, the researchers used a field diary to record details or situations that could contribute to the depth and quality of the analyses. To ensure participants' anonymity, they were identified by the letter "P," for "Patient," followed by a sequential number 01, 02 (P01, P02, P20).

The interviews were literally and manually transcribed by the researcher, preserving the original language and the expressions used by the participants, organized into textual corpora and exported to the Iramuteq® software – *Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*, which provides support for textual analysis, is free to access, and is anchored in the R software and Python language to perform various statistical text analyses. Analyses were conducted using Descending Hierarchical Classification (DHC), operationalized through the "Reinert Method"⁽¹⁴⁾. DHC groups text segments (TSs) based on vocabulary similarity and the frequency of occurrence of reduced forms, generating classes represented in dendrograms⁽¹⁴⁾.

In the present study, the transcriptions were not submitted to participant review for comments and/or corrections, nor for feedback on the results. This decision was made due to logistical challenges in reaching

participants, which made it unfeasible to formally return the interviews. However, methodological rigor was ensured through double-checking of the transcripts and validation of the material by the research team. The emerging categories were collectively discussed among the researchers, which contributed to the reliability of the findings and the credibility of the interpretations.

Based on the procedures adopted, the content analysis, of an interpretative nature, was conducted in light of Orem's Self-Care Theory, considering the self-care requirements: universal, developmental, and health deviation. Thus, the participants' statements were interpreted according to how they expressed practices, perceptions, or difficulties associated with each type of requirement, allowing us to understand how self-care manifests itself in the biological, emotional, and social dimensions of the experience with the continuous use of oral anticoagulants.

The classes generated by the Descending Hierarchical Classification (DHC) were subjected to careful and exhaustive reading in order to identify predominant themes and keywords. Subsequently, the textual corpus was segmented into Elementary Context Units (ECUs), and the statements were categorized according to the contexts in which they were inserted⁽¹⁴⁾. The definition of thematic categories was carried out jointly and consensually by two researchers, considering objective criteria such as the frequency of terms with statistical significance ($p\text{-value} < 0.05$),

similarity among discourses, and coherence with the emerging content (Figure 1).

The coding tree was not presented in the analysis of the results; however, it was possible to identify relevant categories and themes from the collected data, maintaining the interpretative richness of qualitative research.

The investigation started after approval from the Research Ethics Committee (REC), according to CAAE No. 75807223.4.0000.5208 and Opinion No. 6.599.106, in compliance with Resolutions No. 466/12 and No. 510/16 of the National Health Council (*Conselho Nacional de Saúde* - CNS).

■ RESULTS

The 20 anticoagulated patients showed an equal distribution between genders, with 10 men (50%) and 10 women (50%). The mean age was 60.5 years (SD $\pm$ 12.12). Regarding education level, most participants had an average of 7.85 years of schooling. Family income was BRL 1,724.00. Concerning marital status, the majority (65%) did not have a partner. About 55% of the participants lived in the Metropolitan Region of Recife/PE.

Regarding occupation, 50% were retired. Most had visual impairment (80%), spent money on transportation (55%) to travel to the outpatient clinic, and on purchasing anticoagulant medication (85%). Regarding personal history, all participants had a diagnosis of atrial fibrillation (100%), were sedentary (65%), and hypertensive (55%).

The predominant type of oral anticoagulant used was Marevan (warfarin) (75%), with an average duration of use of 3.3 years, and most presented altered INR results (65%). The majority (65%) of participants reported medication-related complications of the hemorrhagic type (100%), though these did not require hospitalization (70%). Most had already undergone cardiac surgery (65%), predominantly biological mitral valve replacement (61.5%).

From the reports, the corpus of the analysis, after being processed by IRAMUTEQ®, recognized 20 texts. These were submitted to analysis to obtain the DHC, being divided into 492 text segments, relating 1,850 words that occurred 16,555 times. The DHC retained

389 text segments, corresponding to 79.07% utilization, generating five different classes.

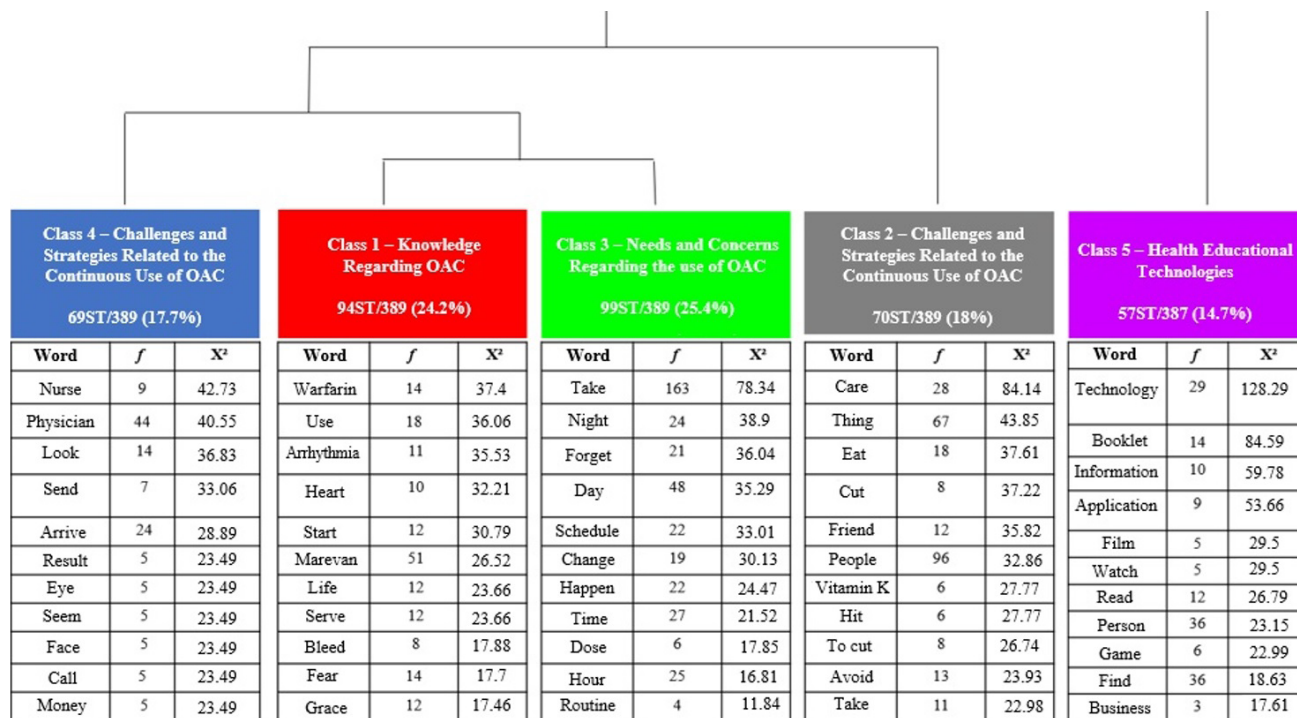
Class 4 obtained 69 text segments (TSs), corresponding to 17.7% of the TSs in the corpus; class 1 consisted of 94 TSs, corresponding to 24.2% of the TSs in the corpus; class 3 was formed by 99 TSs, corresponding to 25.4% of the TSs in the corpus; class 2 consisted of 70 TSs, corresponding to 18% of the TSs in the corpus; and, finally, class 5 was structured by 57 TSs, corresponding to 14.7% of the TSs in the corpus.

Each class was named according to the words that illustrated the most significant relationships of each thematic category. According to the analysis of the statements in light of Orem's Theory, it was possible to categorize the universal requirements, developmental requirements, and health deviations into thematic axes, according to the classes generated by the DHC, respectively.

Each thematic axis was represented by its respective class, as follows: thematic axis 1 - Universal Requirements was represented by Class 3, entitled "Needs and concerns regarding the use of OAC"; thematic axis 2 - Developmental Requirements was represented by classes 4 and 2, entitled "Challenges and strategies related to the continuous use of OAC", due to similar reports from participants; thematic axis 3 - Health Deviation Requirements was represented by class 1[,] entitled "Knowledge Regarding OAC".

Class 5, entitled "Health Educational Technologies", corresponds to the responses to the question asked regarding the type of technology suggested by the target audience, to be developed later by the main researcher.

In the dendrogram, the lines connecting the classes indicate lexical and thematic proximity, showing that although each class has its own specificities, there is interaction among the axes. Knowledge about anticoagulants (Class 1), for example, relates to needs and concerns regarding OAC (Class 3) and the challenges faced and strategies for continuous medication use (Classes 2 and 4), while educational technologies in health (Class 5) permeate the other axes as support. This interrelation reinforces the understanding, in light of Orem's Self-Care Theory, that self-care results from the integration of multiple factors, rather than isolated dimensions (Figure 1).

Figure 1– Distribution of classes according to vocabulary. Recife, PE, Brazil, 2024

Source: IRAMUTEQ Software, 2024.

Legend: Five classes resulting from text segments (rectangles class 1, 2, 3, 4 and 5); in each class % of representation in the corpus; Word (most representative); f = word frequency; X² = chi-square, association of the word with the class.

Thematic Axis 1 - Universal Requirements

Class 3- "Needs and concerns regarding the use of OAC"

The statements report the participants' involvement with the safe use of medication, through strategies such as reminders and strict adherence to schedules and doses. They also reveal the difficulties faced in daily life, such as physical limitations after cardiac surgery, frustration due to the loss of autonomy in household tasks, and challenges related to diet, which requires strict control to ensure treatment effectiveness.

These experiences reflect the Universal Self-Care Requirements described by Orem, as they involve basic actions for maintaining life and well-being, which were perceived as challenging by the participants, as shown in the statements below:

*I set my cell phone to ring at 6 PM., giving a signal.
If I forget one day, if I take it at the wrong time or in*

the wrong dose than what the doctor prescribed, it changes. (P07)

It must always be taken at the right time and the correct dose prescribed by the doctor. I take the medication every day at 6 PM. (P13)

I had heart surgery 6 months ago, I want to sweep the house and I can't [...] hanging clothes, I can't [...] I get sad because of all this [...] and depending on others to do our chores is very bad I get tired of everything! (P09)

The bad part is the diet. Sometimes I have to control my food intake so I don't eat something that will make the medicine stop working [...] this is a challenge for me. (P01)

I set the alarm on my phone for this: 8 PM in the evening to take it. If you forget one day, or take it at the wrong time or in the wrong dose prescribed by the doctor, it changes the blood. (P12)

Thematic Axis 2 - Developmental Requirements

Classes 2 and 4 - "Challenges and strategies related to the continuous use of OAC"

The statements reveal concerns about the cost of anticoagulants and the difficulty of accessing the medication, especially when there is a failure in public supply, which can lead to treatment interruption.

They also express the weight of the responsibility of using the medication for life and the fear of the consequences of misuse. On the other hand, they highlight the importance of professional support, especially from physicians and nurses working in the outpatient clinic, as well as attending appointments as a source of guidance, safety to treatment adherence, and support to strengthen self-care.

These aspects relate to Orem's Developmental Requirements, as they reflect the needs across the life cycle that impact the individual's ability to maintain self-care, and highlight the challenges that the anticoagulated patient faces throughout life with a chronic condition, as shown in the following statements:

The oral anticoagulant medication is something people buy. It's pricey, but thank God, where I live they provide it. (P03)

When Marevan is out of stock at the health unit, I have to find the money to buy it, right? I go around asking my children for money. I'm ashamed to ask them. I've even stopped taking Marevan because I didn't have the money. My retirement money is very little, right darling. (P11)

When they told me I needed to take Marevan for the rest of my life, it became something I would have a responsibility for, an illness, a treatment I had to accept in order to live a little longer [...] since then I've been taking it and I'm even afraid to stop, to go a day without taking it.. (P05)

The clinic is a support for me! [...] The support I find to continue with the treatment is the support from the nurses [...] the guidance they give here at the clinic. (P04)

I can't miss my appointments at the clinic with the doctor. If he scheduled me for a certain day, I'm here, you understand? I do everything I can to not miss it, because you know that, it's something unknown, we always have to come talk to the doctor. (P08)

Thematic axis 3 - Health Deviation Requirements

Class 1 - "Knowledge Regarding OAC"

The statements show that, although the participants recognized the importance of anticoagulants in preventing complications such as stroke, thrombosis, and cardiac problems, many users had limited knowledge about the correct use of the medication, its risks, and interactions, especially with foods containing vitamin K.

There is insecurity, unanswered doubts, and lack of adequate guidance from the healthcare team, which generates fear, confusion, and anxiety regarding treatment, directly affecting medication adherence.

These aspects fit into Orem's Health Deviation Requirements, as the knowledge deficit constitutes a risk factor for complications and poor therapeutic adherence, as demonstrated by the following statements:

Since 2021, I've needed to use this medication so I don't have a stroke, thrombosis, and so my heart beats more calmly. (P16)

The valve in my heart was clogged from rheumatic fever. [...] I had to have surgery to put in another one, that's why I take Marevan [...] (P20)

If you don't take the right medication, you can get bleeding gums and bleeding in your urine. (P15)

I would wake up suffocating, with so much blood from my nose. But I hadn't gone to the doctor. I didn't know what to do. (P18)

I know that when the blood is very thin, it can cause hemorrhaging, bleeding from the gums, nose, or even urine, as has happened to me. (P17)

What I know is what they say during the appointment: "Look, ma'am, you have to take 5 mg of Marevan, okay?" But real explanations, they don't give! (P14)

I don't know the benefits of Marevan, how it works or what it's for [...] the doctor didn't tell me and, if he did, I don't remember anymore [...] what I know is that it controls my arrhythmia [...] (P18)

The blood got too thin! [...] they stopped Marevan for almost 8 days so my blood could return to normal. That was the day they started explaining the risks, because before that, I didn't know anything. (P10)

I think I take Marevan because of this mitral valve surgery, and I found out I have arrhythmia. I suspected it, but I wasn't sure. I want you to tell me what this medicine is for! Nobody explains anything, and I'm afraid to take it and end up bleeding everywhere! (P02)

[...] can say that I was controlling my INR well, but from one month to the next it got out of control, I don't know why! [...] I get distressed, a bit worried! (P05)

When you take the medicine and eat green things, it thickens the blood, and I thought it thinned it. I have this doubt and I asked at the clinic, and some doctors have already told me that it thickens it. I wanted to know about green food, how does it thicken the blood? (P19)

Class 5 - "Health Educational Technologies"

In this class, the participants' statements reveal a positive expectation regarding the importance of health educational technologies to promote information and reduce doubts about therapy. Regarding educational materials, they recognized that visual resources and illustrations facilitate understanding among anticoagulated patients, especially for those with limited reading skills, and valued them as an accessible and effective means of learning. Most patients chose the educational booklet as a tool to fill information gaps about the use of OAC, as shown in the following statements:

I know that through technology we will stop having so many doubts related to Marevan. I believe that with this technology we will have a lot of information. We need information! I think the booklet is perfect. (P06)

For me, the function of technology is to explain, and the best technology is the one we see. It's easier with illustrations, because most people don't like to read or read little. I think the best option is a booklet, because it has more illustrations. (P14)

Thus, the findings of this study highlighted challenges in the self-care of anticoagulated patients, aligned with the three thematic axes proposed by Dorothea Orem's Theory. The participants' perceptions of difficulties, fears, responsibilities, and the need for support

from professionals directly reflect the self-care requirements, the limitations due to the chronic condition and permanent anticoagulant therapy that can generate deficits, as well as the importance of the nursing and healthcare team in promoting safety and continuity of treatment.

■ DISCUSSION

Regarding the perceptions of anticoagulated patients about self-care, in light of the requirements proposed by Orem's Theory, the Universal Requirements highlighted the needs and concerns associated with continuous drug therapy, the anxiety regarding INR control, medication dependence, poorly understood dietary restrictions, and physical limitations that interfere with daily activities. These aspects reflect negative feelings and difficulties in adapting to the new clinical condition.

In the Developmental Requirements, both challenges and strategies related to the continuous use of oral anticoagulants (OACs) were highlighted, including financial difficulties in acquiring the medication, the need for permanent adherence to therapy throughout life, and the support offered by the outpatient clinic and healthcare professionals.

In the Health Deviations Requirements, a knowledge deficit regarding oral anticoagulants was observed, as well as the lack of clear guidance on therapy monitoring and warning signs – such as bleeding –, as well as the need for more detailed information regarding the safe use of the medication.

When analyzing Class 5, referring to the promotion of information about therapy, it was observed that, when questioned, users indicated the educational booklet as the most appropriate technology to fill information gaps and promote patient empowerment. These findings reinforce the urgency of educational interventions aligned with the needs of this public and anchored in Dorothea Orem's Self-Care Theory, to promote safe self-care strategies, reduce complications, and improve the quality of life of this population.

It is important to highlight the predominance of older adults using oral anticoagulants, without partners and with lower level of education. Family support is emphasized as a fundamental ally for continuous treatment, since the involvement of family members helps the anticoagulated patient to cope with the illness and adapt to the new clinical condition⁽¹³⁻¹⁵⁾.

Similarly, atrial fibrillation (AF) was found to be more prevalent among participants and is associated with cardiovascular complications, making it necessary to develop strategies to prevent thromboembolic events and promote integrated patient care. Addressing this disease requires a comprehensive and integrated perspective, considering its complexity and the inherent challenges to treatment adherence⁽¹⁶⁾.

A study conducted in the United Kingdom, Europe, found that both stroke patients and informal caregivers lack the knowledge and support needed to administer medication after discharge. According to the authors, understanding patients' preferences and difficulties regarding therapy is fundamentally important for improving medication adherence and quality of life. In addition, the prescriber should inform the user about the risks, such as stroke and bleeding⁽¹⁷⁾.

Within the scope of quality of life for anticoagulated users, it is necessary to understand the repercussions and experiences lived by patients during treatment, such as emotional, social, and economic burdens, as well as dissatisfaction with necessary routine changes due to illness and medication therapy⁽¹⁸⁾.

Corroborating these findings, a multicenter study conducted in Spain found that vitamin K antagonists (VKAs) negatively influence patients' daily lives, causing less satisfaction, limitations in daily life, annoyances, and the psychological impact resulting from the continuous use of the medication⁽¹⁸⁾.

In fact, from the analysis of participants' statements, it is evident that the adaptations necessary due to the continuous use of the medication can directly influence the way of coping with illness and may interfere with the quality of life of this population, since they can stimulate changes capable of supporting adherence to the therapeutic plan. According to Gonçalves and collaborators⁽¹⁵⁾, the necessary knowledge about OACs directly influences adherence to drug treatment and self-care.

The participants also showed concerns regarding dietary restrictions related to medication. According to dietary recommendations for cardiac patients using warfarin, a study showed that regular monitoring of the user is necessary, including INR testing and nutritional assessment, as fundamental strategies for therapeutic success, in addition to maintaining a stable and regular intake of vitamin K through diet⁽¹⁹⁾.

In this same context, when assessing patients' knowledge about oral anticoagulation, a deficit was observed regarding knowledge about coagulation control tests and about the procedures for discontinuing anticoagulant use, which reinforces the need for careful monitoring and guidance to the patient during treatment⁽²⁰⁻²¹⁾.

Additionally, other authors reported that only 42.2% of patients on permanent oral anticoagulant use had adequate knowledge about the treatment, and significantly associated knowledge with INR results⁽²²⁾. These findings are consistent with international studies that report that the development of educational programs has proven to be an effective action to improve knowledge about oral anticoagulation in these patients⁽¹⁾.

The promotion of educational interventions is essential to highlight the importance of providing and acquiring resources for access to information⁽²³⁾. Educational practice fosters patient protagonism in their own treatment and provides autonomy, physical and mental well-being, as well as reducing the risks of adverse events such as bleeding associated with warfarin use, improving self-management behaviors, greater attention to INR values within the target range, and reducing thromboembolic events. In this way, systematized nursing follow-up provides a better understanding of the dimension of care⁽²³⁾.

Nursing interventions in oral anticoagulation therapy include educational issues of self-management and directly observed treatment, with the purpose of promoting medication adherence, reinforcing the role of the nurse as a health educator, considering the bond of trust and communication between patients, caregivers and family members to strengthen self-care⁽¹⁵⁾.

Scientific evidence indicates that treatment in specialized centers requires the use of mobile health, pillboxes, audiovisual resources, booklets and consultations focused on the particularities of anticoagulated patients⁽²⁴⁻²⁵⁾. The results also pointed to a scenario permeated by doubts, highlighting the need to implement various learning strategies for patients on chronic oral anticoagulant therapy, as emphasized in the participants' statements. Therefore, the health-care team providing care to this population must understand these needs, plan, and implement actions aimed at health education, thus strengthening the individual's knowledge⁽²⁵⁾.

Among the educational strategies, the choice of the booklet by the participants stood out as the technological product to be developed, as it is considered a resource that helps in the process of understanding and adhering to treatment. Corroborating this finding, the development of an educational technology based on the needs, experiences, difficulties experienced and involvement of users reduces the challenges and improves the therapeutic impact of these technologies. Therefore, developing a technology focused on the needs and preferences of the target audience can ensure its effectiveness, efficiency and satisfaction⁽²⁶⁾.

It is observed, therefore, that the international data converges with the Brazilian reality, by highlighting the importance of informational materials used to promote health education being in a format understandable to their users, and that factors such as health literacy and their design can influence patient understanding, making it necessary to include more summarized information and visual resources⁽²⁷⁾.

Among the informational materials, the booklet is an educational technology that can be used in various scenarios and challenging situations, facilitating the understanding of information and assisting professionals during educational interventions, representing the continuity of nursing care, especially when supported by the profile and educational needs of the target audience⁽²⁸⁾.

Besides innovation, the study presents social relevance, as the analysis of perceptions of anticoagulated patients about self-care, in light of Dorothea Orem's Theory, contemplates Sustainable Development Goal (SDG) 3, of the United Nations (UN) 2030 Agenda, entitled "Good Health and Well-Being," addressing the social context and needs in order to ensure healthy lives and promote well-being for all, at all ages⁽²⁹⁾.

As a limitation of the study, the infrastructure of the data collection site is noted, given the availability of only one room with limited physical space for conducting interviews and focus groups. Another limitation refers to the location of the room in the patient care reception area, which required researchers to carefully plan the development of the meetings, without external interference. Attention in planning the physical space was

very important for conducting the meetings, ensuring privacy, comfort, access to a neutral environment and acoustic control.

■ FINAL CONSIDERATIONS

This study analyzed the perceptions of patients in continuous oral anticoagulant use about self-care, in light of Dorothea Orem's Theory, making it possible to identify the theory's requirements present in the participants' lives. The statements revealed challenges related to adapting to the new lifestyle imposed by the clinical condition.

In the context of Universal Requirements, difficulties stood out in adhering to schedules and doses of the oral anticoagulant, the necessary adjustments in diet, and the loss of autonomy. Regarding Developmental Requirements, concerns emerged about the public provision of medication, the responsibility of knowing that the treatment will be permanent, and the fear of the consequences resulting from adherence failures. In the Health Deviation Requirements, limited knowledge about the medication was evident.

These challenges can compromise self-care capability, making it essential for nurses to recognize them and act directly on these demands pointed out by the patients, in order to promote health maintenance and quality of life through educational health strategies.

Additionally, the study resulted in the target audience choosing an educational booklet as the most appropriate technology to be developed in order to promote self-care for anticoagulated patients, covering topics related to drug therapy, such as care related to oral anticoagulants, indications, dosage, blood coagulation testing, diet, daily living activities, complications, and lifestyle changes.

It is expected that the results of this study will encourage healthcare professionals, especially nurses, to carry out educational health actions in their work settings and to use teaching resources such as educational technologies, to promote knowledge about oral anticoagulants, to stimulate learning by the anticoagulated patient and their caregivers, minimizing complications and contributing to the promotion of self-care and adherence to anticoagulant therapy.

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Access to the dataset is available upon request from the corresponding author.

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