Expanded clinic and medical training: students' knowledge of a Brazilian Northeast medicine course

A clínica ampliada e a formação médica: conhecimento de estudantes de um curso de Medicina do Nordeste brasileiro

La clínica ampliada y la formación médica: el conocimiento de los estudiantes de un curso de medicina del nordeste brasileño

Maria das Graças Monte Melo Taveira, Divanise Suruagy Correia, Maria Stella Jakeline Alves Farias, Jorge Artur Peçanha de Miranda Coelho, Carlos Dornels Freire de Souza

1Universidade Federal de Alagoas, Faculdade de Medicina – Maceió (AL), Brazil.
2Universidade Federal de Alagoas – Maceió (AL), Brazil.
3Universidade Federal de Alagoas, Complexo de Ciências Médicas e Enfermagem – Arapiraca (AL), Brazil.

ABSTRACT

Introduction: The Amplified Clinic (CA) seeks to integrate and build bonds between professionals and users of the health system, expanding the intervention resources on the health-disease process. Objective: This study aimed to analyze the knowledge about AC among students of a medical school boarding school in northeastern Brazil. Methods: This is a qualitative study conducted in 2017, involving 25 medical students from the Federal University of Alagoas. The data were collected through a questionnaire on Amplified Clinic and analyzed by the IRAMUTEQ program. Results: Five classes were observed: “Application of AC,” “Knowledge about AC,” “Space for using AC at boarding school,” “Experience in AC” and “Training challenges for AC.” The students know the AC and that the medical training they experience is based on the perspective of expanded care, especially in primary care. At the other levels of care, CA is little worked on. Conclusions: It is concluded that, although advances are noticed in the formative course of the course in question, there is still a need for a better articulation regarding the CA application in all levels of care.

Keywords: Family health strategy; Students; Internship and residency; Medicine.
RESUMO

Introdução: A Clínica Ampliada busca a integração e a construção de vínculos entre profissionais e usuários do sistema de saúde, expandindo os recursos de intervenção sobre o processo saúde-doença. Objetivo: Este estudo objetivou analisar o conhecimento sobre Clínica Ampliada entre estudantes do internato de um curso de Medicina no Nordeste brasileiro. Métodos: Trata-se de um estudo qualitativo realizado em 2017, que envolveu 25 acadêmicos de Medicina da Universidade Federal de Alagoas. Os dados foram coletados por meio de um questionário sobre o tema estudado e analisados pelo programa Interface de R para les Analyses Multidimensionnelles de Textes et de Questionnaires (IRAMUTEQ). Resultados: Foram observadas cinco classes de conhecimento sobre Clínica Ampliada: “aplicação”; “conhecimento”; “espaço de uso no internato”; “vivência” e “desafios da formação”. Os estudantes conhecem-na, e a formação médica por eles vivenciada apoiou-se na perspectiva do cuidado ampliado, principalmente na atenção básica. Nos demais níveis de atenção ela é pouco trabalhada. Conclusões: Conclui-se que, embora avanços sejam notados no percurso formativo do curso em questão, ainda persiste a necessidade de melhor articulação no que se refere à aplicação da Clínica Ampliada em todos os níveis de atenção. Palavras-chave: Estratégia saúde da família; Estudantes; Internato e residência; Medicina.

INTRODUCTION

One of the most challenging aspects of health care concerns the workforce. This is due to the fact that the traditional medical practice has a tendency to be responsible only for the disease and not for the sick subjects themselves. Thus, focusing work on the disease still appears as the main impediment to the consolidation of health as a social right, which must be guaranteed with clinical excellence.2

The process of overcoming this dilemma, which must assume a pragmatic character, begins with the Expanded Clinic (EC). The EC, therefore, generated a rupture with the biomedical paradigm, that is, centered on pathophysiological processes, moving to a new conception in which the health-disease process is much more a social product than a biological phenomenon. When considering the subject in its multiple interactions (biological, social, cultural, economic, historical, and political), the EC allows a better understanding of the illness process, both individually and collectively. In simple analogy, the EC presents itself as a lens that expands and allows understanding the texture and polysemy of the health-disease process. In this sense, expanding the clinic is to perceive the subject in its multiple contexts.

Within the scope of the work process, the EC makes professionals recognize the existence of limits in their professions, especially with regard to the knowledge and technologies used. This recognition is a driving force that promotes a displacement of the professional in search of knowledge in other sectors, which results in the production of new knowledge and work strategies. Thus, the EC is a mechanism that induces changes in processes and practices that result in the development of new skills, attitudes, and behaviors through the illness process.
In the Brazilian context, the EC has occupied a prominent place in numerous national policies, especially the National Humanization Policy (Política Nacional de Humanização – PNH), the National Primary Care Policy and the National Mental Health Policy. What they all have in common is the recognition of the illness process as unique and the need to face the fragmentation of knowledge in the health care process.¹,³,⁵,⁶

In this sense, changes are needed with regard to the training of health professionals, especially medical training. Brazilian medical education, although having experienced an important process of transformation of its practices, is still structured in a biomedical model to explain the health-disease process,¹,³ which reduces patients to a nosological approach. In this sense, the challenge is based on the need for a new training model, supported by a critical-reflexive process and with a focus on EC, especially with the use of active teaching methodologies.¹,²,⁵ Furthermore, there are few scientific publications that address the subject.

Seeking this new approach, in 2007, the Medicine course at Universidade Federal de Alagoas reformulated its curriculum considering the Curriculum Guidelines for Medical Education (Diretrizes Curriculares para o ensino médico – DCN) and the context of the Brazilian health system, with the expansion of the internship to two years and the offer of two practice scenarios in Primary Care (PC), inserting students in the units of the Family Health Strategy (FHS) in the capital and in cities in the interior of the state.¹⁴⁷ In this context, the discussion about EC at all levels and periods of the course was included in the curriculum.

In this new curricular structure, the academics of the 12th period of the course attend an internship in cities in the interior of the state, called Internato Estágio Rural (ER). In it, interns participate and experience, for two months, activities in the FHS team; they are accompanied by a teaching doctor, supervisor of the institution, and a doctor of the service, who acts as a preceptor.⁵

Considering the presented context, this study aimed to analyze the knowledge about EC among students of the Medicine internship at Universidade Federal de Alagoas, aiming to contribute to the debate about strategies that can bring improvements to medical education.

METHODS

Study design, location, and period

This is an exploratory, cross-sectional, and qualitative study carried out at Universidade Federal de Alagoas, from June to November 2017.

Study population

The study population consisted of 25 academics enrolled in the 12th period of the Medicine course at Universidade Federal de Alagoas who were in the ER in 2017. All students were invited, and none of them refused to participate in the research.

Data collection

The research was carried out in three stages and took place at the end of the ER. For the first part, students were approached and invited to participate in the study. Agreement was recorded by signing an
Informed Consent. In the second stage, data collection was carried out using a questionnaire with four open questions on the topic “EC in the Internship”:
1. What do you know about EC?
2. In your opinion, in which areas of the internship can EC activities be included?
3. What is your experience as an EC student during your internship?
4. What challenges do you highlight in EC-based training?

The questionnaire was submitted to a previous evaluation (pre-test), in order to guarantee the quality of the answers.

The proposed questions were presented to the students in a single session, in a previously defined location for data collection. The questionnaires were self-completed by the students in the presence of the researcher. Finally, in the third step, the results were transcribed to digital media for subsequent statistical treatment.

Data analysis

Data were transcribed in a suitable format for analysis using the Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires (IRAMUTEQ) software, following the configuration standards for textual data analysis. The software relies on calculations performed on the co-occurrence of words in text segments, seeking to group them into classes according to their similarity and dissimilarity. The generated classes represent the meaning environment of the words or elements referring to the object studied.8,9

For a better understanding of the results, it is clarified that the corpus corresponds to the analyzed text database, and the initial context unit (ICU) comprises the natural division of the corpus, that is, it is the unit based on which the program performs the initial fragmentation of the corpus. The text segment (TS) or elementary context unit (ECU) corresponds to the smallest meaningful text fragment, with greater semantic weight depending on the text size and punctuation. Text segments are the environments of words and are automatically determined by the software.

The regrouping of text segments (RTS) or context unit (CU) consists of compiling these segments of the same text until the number of different segments of the analyzed content is greater than the limit \( \lambda \), which is the association index to evaluate the relationship between categorical or nominal variables.10 The semantic value of words was evaluated according to \( \chi^2 \) (≥3.84). The higher its value, the greater the semantic weight of the words in relation to the class to which it belongs; thus, names were assigned to work as their descriptors.

IRAMUTEQ also performs quantitative analysis of textual data through the method of descending hierarchical classification (DHC), based on the algorithm proposed for the Alceste software by Reiner,11 and lexical analysis, providing contexts and classes of speech characterized by their vocabularies.8-11 DHC corresponds to a type of cluster analysis, a multivariate technique with the purpose of aggregating words and text segments based on their characteristics. This analysis aimed to obtain TS classes that have similar vocabulary to each other and different vocabulary from the segments of the other classes. Based on these analyses, the software organizes data analysis into a dendrogram that illustrates the relationships between the classes.8,10
Similarity analysis was also used, based on spelling, which makes it possible to identify the co-occurrence between words, bringing an indication of the existing connectivity between them.\textsuperscript{8,9} The result of this analysis was represented by a graphic that depicts the connection between the words of the textual body and, based on it, it is possible to visualize the construction structure of the studied text.\textsuperscript{8-11} Finally, an interpretative analysis of the results was carried out.

**Ethical aspects**

This work was approved by the Ethics and Research Committee of the Federal University of Alagoas, under the Ethical Approval (CAAE) no. 8952116.0.0000.5013. Confidentiality and anonymity of the researched population were guaranteed.

**RESULTS**

A corpus of 98 texts and a total of 105 text segments were observed, with 72.38\% (n=76) of the corpus being used. Five classes were listed according to DHC:

Class 1: Application of EC;
Class 2: Knowledge on EC;
Class 3: Space for EC use in the internship;
Class 4: Experience of EC;
Class 5: Training challenges for EC (Figure 1).

**Descending Hierarchical Classification**

<table>
<thead>
<tr>
<th>Class 5 (15.8%)</th>
<th>Class 4 (19.7%)</th>
<th>Class 3 (25.0%)</th>
<th>Class 2 (25.0%)</th>
<th>Class 1 (14.5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Training challenges for EC</strong></td>
<td><strong>C experience</strong></td>
<td><strong>EC use space in the internship</strong></td>
<td><strong>EC knowledge</strong></td>
<td></td>
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<tr>
<td>x$^2$</td>
<td>x$^2$</td>
<td>x$^2$</td>
<td>x$^2$</td>
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<tr>
<td>46.54 Words</td>
<td>17.9 Words</td>
<td>20.85 Words</td>
<td>17.48 Words</td>
<td></td>
</tr>
<tr>
<td>22.52 to look</td>
<td>17.17 process</td>
<td>11.17 fhs</td>
<td>16.06 system</td>
<td></td>
</tr>
<tr>
<td>22.52 to look</td>
<td>13.01 disease</td>
<td>8.86 period</td>
<td>15.16 user</td>
<td></td>
</tr>
<tr>
<td>12.68 enviroment</td>
<td>12.27 problem</td>
<td>8.63 follow-up</td>
<td>14.42 expanded clinic</td>
<td></td>
</tr>
<tr>
<td>6.66 believe</td>
<td>6.66 believe</td>
<td>5.63 exist</td>
<td>12.67 area</td>
<td></td>
</tr>
<tr>
<td>5.48 insert</td>
<td>4.71 health</td>
<td>5.39 physical</td>
<td>12.67 strategy</td>
<td></td>
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<tr>
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<td>4.34 search</td>
<td>3.97 community</td>
<td>11.92 objective</td>
<td></td>
</tr>
<tr>
<td>4.34 action</td>
<td></td>
<td>9.37 community</td>
<td>10.32 how</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1.** Analysis categories according to descending hierarchical classification. Universidade Federal de Alagoas, 2019.
There was a relationship between Classes 1 and 2, which address the knowledge and application of EC, and Classes 3 and 4, which deal with the spaces for using the clinic in the internship and its experience. Class 5 portrays the spaces in which EC cannot be used and, although it is the most independent, it still maintains a correlation with Classes 3 and 4. Class 1 covered 14.5% of the corpus; Class 2 corresponded to 25.0% of the corpus; Class 3, 25.0%; Class 4, 19.7%; and Class 5, 15.8% of the corpus (Figure 1).

Class 1, characterized by words that refer to the use of EC, was the result of question 3 (“What is your experience as a student of EC during your internship?”), with \( \chi^2 = 24.05 \). The following textual segments illustrate this class:

I hope to maintain a good relationship with patients and, with unit colleagues, to expand and put into practice all the knowledge acquired over these five years and be able to help as much as possible; I know it will be a very productive internship, in which I’ll grow and learn a lot both as a human being and as a professional.

I hope to be able to experience the expanded clinic during this internship and try to intervene with the service in favor of the patient. [...] I hope to get to know it and develop the most activities that allow patients to be really heard.

Class 2 refers to knowledge about EC, resulting from the impact of question 1 (“What do you know about EC?”). In this class, there was a concentration of words with statistical significance (\( \chi^2 = 25.47 \)) that go back to the principles of EC and its application in the Unified Health System (Sistema Único de Saúde – SUS) and in the FHS. The texts below portray this semantic class:

the expanded clinic is a tool used to integrate actions and themes in the health universe, contemplating strategies for dialogue between health professionals and system users, always with the aim of strengthening ties and facilitating the flow of information and attitudes.

the expanded clinic is a new health care strategy that brings as an essential part of its philosophy the integration between health workers, users, family, community; the patient is not placed only passively, but as a key piece for the management of their health to be effective.

Class 3 is characterized by significant words that refer to the spaces of EC use in the internship, a result of question 2 (“In your opinion, in which spaces of the internship can EC activities be inserted?”), with \( \chi^2 = 7.86 \). The segments below exemplify this category:

during the internship at the FHS, in the 10th period, we had the opportunity to accompany the patient from the moment he arrived at the Family Health Unit (Unidade de Saúde da Família – USF) during the follow-up and investigation of the patient after referral to the emergency department and subsequent follow-up.

because the internship of the 11th period lists, in addition to the internship at the USF, the clinical medicine and surgery internships, so there is the possibility of covering care at several levels.

the insertion can be done gradually with the student following the practical routine each period, directing the activities to what is done in the day to day of each specialty.
Class 4 refers to the students’ experience of EC, as a result of question 3 (“What is your experience as a student of EC during your internship?”), with $\chi^2=10.94$. The segments presented below are examples of this class:

*the expanded clinic can be inserted in the spaces of activities of the ER, mainly, as it allows assistance to families and sees them beyond the physical, but also psychosocial scope.*

*the proposal applies to any scenario, I believe that through actions that bring the patient and the health team closer, through theoretical activities, lectures and practices regarding diseases, doubts in general in the different stages.*

*I believe that where the concept is most applied was in the clinical stage in primary care, in the 10th period, where direct actions for the population are evidenced that aim to approach, educate and, thus, prevent health problems and provide quality of life.*

Finally, Class 5 was the product of question 4 (“What challenges do you highlight in the training based on EC?”), portrayed in the statements below:

*due to the compartmentalization of care, for example, the surgical clinic, which observes the patient only in the disease before and the cure after the bond, exists, but it is much more fragile, not allowing a look at the patient as a whole.*

*I believe that the expanded clinic should not be restricted to primary care, even in a hospital environment, the individualized management of patients and team integration for the common good is extremely important.*

In the similarity analysis, the center of the diagram was formed by the word “patient”, representing the recipient of the extended clinic. The “extended clinic”, in turn, was mainly related to the term “believing”. A second relationship was observed between the terms “patient” and “health”, expressing the importance of the clinic to connect the health system to the final recipients of the work process. On the other hand, words such as “specialty”, “surgical”, and “exams” were located far from the central nucleus (Figure 2).

**DISCUSSION**

Qualitative methodology requires an analysis skill that involves several aspects, requiring both creativity and in-depth knowledge of what is being studied.\(^5\,7\) When using a program such as IRAMUTEQ, the researcher’s interpretations of the object studied start from the categorization performed by him, but not limited to it.\(^8\,10\)

Classes 1 and 2 corresponded to the use of EC and its concept. Cunha\(^1\) states that EC is the change that occurs in the vision of individual and collective care so that all aspects of the subject are understood and worked on by professionals. Although text segments such as “to maintain a good relationship with patients and colleagues at the health unit”, in addition to a desire to “expand and put into practice all the assimilated knowledge”, “to be able to help as much as possible” and “how to be human and as a professional” represent advances, they are still far from what EC actually means in the context of health care.
These expressions demonstrate an approximation between students and the concept of EC, especially when it is understood as a tool that serves to integrate actions and themes in the health universe, contemplating strategies for dialogue between professionals and users. The result of this process refers to the very strengthening of ties between services and the community. This whole context shows that students, although they propose to act beyond the biological scope, reaching the social and psychological in a comprehensive approach, are still far from the materialization of EC as thoughts, attitudes, and health practices.

In general, the activities developed in the medical internship seek to train students for their professional life in the most practical way possible. Text segments such as “experiencing the expanded clinic at this moment”, “so that you are able to develop the maximum number of activities that allow patients to be really heard” demonstrate a tendency to apply EC concepts during the internship. This is because one of the main objectives of this approach is the production of health through the integration of curative,
preventive, rehabilitation, and palliative care means, respecting the autonomy of the user, the family, and the community.\textsuperscript{12,13}

In addition to the DCN, when students develop their practices based on the principles of EC, one of the guidelines proposed by the PNH is also met, whose core is the promotion of autonomy to SUS users, integrating the team of health workers in the search for care according to the individuality of each case and increasing the bond between user and team.\textsuperscript{1,3,6} Humanization values those involved in the health production process (users, workers and managers), since such actions are based on in the principles of autonomy, protagonism of subjects, co-responsibility, bonds, cooperation networks, and collective management.\textsuperscript{3,6}

It is in this context that the spaces for use in the boarding school and the experiences of students (Classes 3 and 4) stand out. It should be noted that EC can be developed in any care space that seeks innovative interventions, as it maintains a close relationship with the process of health practices between various areas,\textsuperscript{13,14} from primary health care (in the context of the process of work at the FHS),\textsuperscript{12,15,16} through mental health (in the context of Psychosocial Care Centers)\textsuperscript{17} and reaching care in hospital units.\textsuperscript{18} In this study, this assertion was verified in the numerous statements of students, in expressions such as “there is the possibility of covering the service at several levels”.

The most recent investigations on medical training show that a new social role has been assigned to this professional, which translates into subjects that promote changes in the place where they are inserted, be it a basic health unit or a hospital center,\textsuperscript{12,19} demanding changes of the training course itself.\textsuperscript{19} This is one of the great challenges of medical schools today, since it implies the passage from the field of certainties and regularities to the field of the unexpected, characteristic of everyday life. This clash generates a rupture between structured and unstructured knowledge, forcing specialists to rethink their practices when facing any situation.\textsuperscript{20}

In this context of changes, the importance of the FHS is highlighted as the most characteristic scenario of everyday life.\textsuperscript{21-24} Although the insertion of students in this field occurs in the first period of medical training, it is during the internship that they become part of the assisted community. In this investigation, when words related to the internship connect EC to the FHS, it is suggested that the formative path adopted by the course, characterized by the bond and immersion of the student with the users and the community, has been successful, although it needs to be deepened in the theory of knowledge.

Despite all the advances noted in recent years, it is necessary to emphasize that the curricular changes that have taken place seeking to value primary care have not yet been able to win over young doctors to establish themselves in this component of the health network.\textsuperscript{24} Currently, the importance of overvaluation of specialization and work in secondary and tertiary care levels, the result of many years of hospital-centered training, is highlighted.\textsuperscript{5,21-24} Despite the latest strategies used by the Brazilian government to reverse this situation, changes are still timid.\textsuperscript{24} We believe that training focused on primary health care and based on EC concepts and principles can result in a re-signification of the medical work process.

There are still many challenges to be overcome for a solid insertion of EC in medical education. The first one refers to the mismatch of medical training in different practice scenarios. As verified in expressions such as “the compartmentalization of care” and “not allowing to look at patients as a whole”, the specialization process is still very persistent, which demonstrates a mismatch between the practice of medicine in primary care and in other areas.\textsuperscript{5,24}

If, on the one hand, this situation suggests the existence of weaknesses in the spaces of reflection during the internship, which can inhibit the possibility of transforming the practice, on the other hand,
the recognition of these asymmetries in the training path is the first step toward the adoption of strategies for changing the curriculum structure itself, which needs to be continually rethought from the EC perspective.

The second challenge is derived from the first. Once the need to implement curricular changes is recognized, how can they be carried out in scenarios of practices that were created and function in the logic of the fragmentation of being, such as the other levels of care? What may initially seem like a difficult question to answer can be resolved in restructuring the curriculum itself, with the inclusion of the theme in all the training cycles. It should be noted that this study only addressed primary health care.

Even with so many challenges, important overcoming mechanisms emerged in order to make EC the center of the health work process. One of them was the PNH, which emphasizes, regardless of the level of care, valuing the different subjects involved in care (users, professionals, and family), encouraging the autonomy of these individuals and co-responsibility for health practices. In this sense, the PNH bet on the expansion of the clinic as an indispensable tool to renew health practices. In it, respect for the uniqueness of subjects, that is, the unique nature of their lives, must be the element based on which articulation is sought to promote comprehensive care.

In hospitals, units which this study revealed to be distant from the EC, the insertion of the PNH has positive impacts on the reformulation of the clinic, since it is capable of inducing a cultural and epistemological reform of the work process, still very focused in clinical protocols and in disease. Over the years, a body of scientific evidence has shown the importance of self-care, co-responsibility, qualified listening, an interdisciplinary and interprofessional team, and respect for the subjectivity of users in the health recovery process. For this reason, we believe that this evidence is widely debated during medical education.

CONCLUSIONS

Results show that medical students at Universidade Federal de Alagoas tend to recognize the meaning, use, and value of EC in the context of primary health care for the proper exercise of medical practice. Although it is an advance, the context presented is still superficial, which demonstrates the need to implement changes in medical training.

In addition, it is necessary not only to continue with the curricular changes already underway, but also to encourage the development of new teaching strategies that imply changes in medical practice. Actions that provide opportunities for the construction of spaces for reflection and mutual collaboration, within the scope of the course and services, can enhance the training of physicians capable of acting based on the principles of the extended clinic.

CONFLICT OF INTERESTS

Nothing to declare.

AUTHORS’ CONTRIBUTIONS

MGMMT: Project administration, Formal analysis, Conceptualization, Data curation, Writing – original draft, Writing – review & editing, Investigation, Methodology, Software, Supervision,
Validation, Visualization. DSC: Project administration, Formal analysis, Conceptualization, Data curation, Writing – original draft, Writing – review & editing, Investigation, Methodology, Supervision, Validation, Visualization. MSJAF: Conceptualization, Data curation, Writing – original draft, Writing – review & editing, Investigation, JAPMC: Conceptualization, Data curation, Writing – original draft, Writing – review & editing, Investigation. CDFS: Conceptualization, Data curation, Writing – original draft, Writing – review & editing, Investigation.

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