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Matrix support in specialized care backed by the care model for chronic conditions: evaluative research

Apoio matricial na atenção especializada respaldado no modelo de atenção às condições crônicas: pesquisa avaliativa

Apoyo matriz en atención especializada apoyado en el modelo de atención a condiciones crónicas: investigación evaluativa

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ABSTRACT

Objective: To analyze the matrix support for health teams in Specialized Outpatient Care, according to the Chronic Conditions Care Model.

Method: Qualitative evaluative research, conducted by the Chronic Conditions Care Model, carried out from February to July 2020. For data collection, interviews were carried out with 21 health professionals, assistance observation and document analysis of the service. Data were analyzed by data triangulation, with the aid of the MAXQDA software, respecting all ethical aspects.

Results: The matrix support provided approximation between Primary and Secondary Care; implemented case management and qualified comprehensive care for people with chronic conditions. Weaknesses in communication and understanding of the theoretical bases of matrix support were obstacles to the proper implementation of matrix strategies.

Final consideration: Matrix support for specialized health teams qualified the professional care given to people with chronic conditions treated at the service.

Keywords: Health evaluation. Chronic disease. Secondary care. Nursing. Primary health care.

RESUMO
Objetivo: Analisar o apoio matricial para equipes de saúde na Atenção Ambulatorial Especializada, segundo o Modelo de Atenção às Condições Crônicas.
Método: Pesquisa avaliativa qualitativa, conduzida pelo Modelo de Atenção às Condições Crônicas, realizada de fevereiro a julho de 2020. Para coleta de dados, foram feitas entrevistas com 21 profissionais de saúde, observação da assistência e análise documental do serviço. Os dados foram analisados pela triangulação de dados, com auxílio do software MAXQDA, respeitando todos os aspectos éticos.
Resultados: O matriciamento proporcionou aproximação entre Atenção Primária e Secundária; implantou a gestão de casos e qualificou a integralidade da assistência às pessoas com condições crônicas. Fragilidades na comunicação e na compreensão das bases teóricas do apoio matricial foram obstáculos para a adequada implementação das estratégias matriciais.
Considerações finais: O apoio matricial para as equipes de saúde especializadas qualificou a atenção profissional dispensada às pessoas com condições crônicas atendidas no serviço.
Palavras-chave: Avaliação em saúde. Doença crônica. Atenção secundária à saúde. Enfermagem. Atenção primária à saúde.

RESUMEN
Objetivo: Analizar la matriz de apoyo a los equipos de salud en Atención Ambulatoria Especializada, según el Modelo de Atención de Condiciones Crónicas.
Método: Investigación cualitativa evaluativa, realizada por el Modelo de Atención de Condiciones Crónicas, realizada de febrero a julio de 2020. Para la recolección de datos, se realizaron entrevistas a 21 profesionales de la salud, observación asistencial y análisis documental del servicio. Los datos fueron analizados por triangulación de datos, con la ayuda del software MAXQDA, respetando todos los aspectos éticos.
Resultados: El soporte matricial proporcionó una aproximación entre la Atención Primaria y Secundaria; implementó gestión de casos y atención integral calificada para personas con condiciones crónicas. Las debilidades en la comunicación y comprensión de las bases teóricas del soporte matricial fueron obstáculos para la adecuada implementación de las estrategias matriciales.
Consideraciones finales: Matriz de apoyo a equipos de salud especializados cualificó la atención profesional prestada a personas con condiciones crónicas atendidas en el servicio.
Palabras clave: Evaluación en salud. Enfermedad crónica. Atención secundaria de salud. Enfermería. Atención primaria de salud.

INTRODUCTION

Matrix support is a device used to promote health care management, characterized by specialized backend operations of technical-pedagogical and assistance support, through the sharing of information that characterizes the dialogical relationship between the health services involved[1-4].

Actions associated to matrix support are characterized by the sharing of care between multidisciplinary teams of general practitioners that integrate Primary Health Care (APS), and multidisciplinary teams of specialists that integrate Specialized Outpatient Care (AAE). At the secondary level of the Unified Health System (SUS), Specialized Outpatient Care (AAE) has

been reorganizing its care to implement matrix support actions with APS, meeting the specificities of the Care Model for Chronic Conditions (MACC)[5].

The MACC was developed in line with the principles of the SUS and is considered a reference by the Ministry of Health (MS) for the development of Health Care Networks (RAS) that provide care to people in chronic situations[5].

According to the MACC, matrix actions between AAE and APS occur when specialist professionals offer assistance and educational support, and mutual knowledge between the teams of these two points of care is essential so that different knowledge is added in joint clinical work[5]. Among the actions, technical-pedagogical consultations, joint assistance and specific assistance actions stand out[4,5].

Thus, strengthening relationships between teams is one of the requirements for the proper implementation of matrix support according to the MACC, which encourages frequent remote contact through phone calls, email and messaging applications, allowing constant dialogue between the points of the care network[5].

The implementation of the Care Model for Chronic Conditions (MACC) enables the provision of integral services through horizontal relations between network points[5], so that the hierarchical model is discontinued, allowing the construction of links that favor multidisciplinary interaction through bond and trust[6].

The actions shared between APS and AAE teams based on matrix support ensure the benefits of co-responsibility for comprehensive and longitudinal care[7]. Thus, strengthening strategies that favor matrix support is considered a facilitating factor that can expand interventions, stimulate actions in the territory and build care focused on horizontalization[2,7].

There are few scientific publications related to evaluative research on matrix support. Most evaluative studies are specifically focused on the mental health care line[8-12]. Other evaluative studies from the APS perspective were conducted and revealed responsibilities in the coordination and ordering of care, integration with other points of health care networks (RAS) and the involvement of support and reference team[10,13-15].

In this context, this study stands out for its originality and relevance in evaluating matrix support through the AAE prism. That said, the following research question emerged: How do health professionals included in the Care Model for Chronic Conditions (MACC) evaluate the implementation of matrix support in Specialized Outpatient Care (AAE)?

Therefore, this article aims to analyze matrix support for health teams in Specialized Outpatient Care, according to the Care Model for Chronic Conditions.

METHOD

Qualitative evaluative research[16] that used the MACC[5] as a conceptual basis. The Consolidated Criteria for Reporting Qualitative Research (COREQ) protocol was used as a support tool regarding the development of qualitative studies.

The study setting was an AAE located in the State of Paraná, reference for specialized care for 17 municipalities, which has implemented the Care Model for Chronic Conditions (MACC) since 2016, through the Health Care Network (RAS) for Pregnant Women and Children, Mental Health, Hypertension, Diabetes Mellitus and the Elderly. The aforementioned service was chosen because it is a pioneer in the implementation of the MACC in that region.

The researcher first contacted the AAE coordination, scheduling a date and time for her visit to the service. On that day, the study proposal was presented and promptly accepted by the coordination. The researcher received a list with the names of the health professionals in the service, contacted each one, introduced herself and explained the importance and reasons for participating in the research. Health professionals from the AAE who have been working in the RAS for at least three months were eligible for the study; exclusion criteria were not eligible. Only one professional who has been working in the service for less than three months did not meet the eligibility criteria. Thus, of the 23 professionals who worked in the RAS, 22 were considered eligible for the survey and were invited to participate; of these, only one refused to participate in the research for private reasons. After formal and voluntary acceptance, 21 health professionals participated in the study, as follows: five doctors, four nurses, four psychologists, three nutritionists, two social workers, one physiotherapist, one speech therapist and one pedagogue.

Data were collected from February to July 2020. Three collection techniques were used: intensive interview, observation with moderate participation, and analysis of documents used by the AAE to monitor and supervise the APS teams. The combination of different points of view, the diverse background of the participants, the use of various sources of information and the use of multiple data collection techniques are consistent with the methodological framework[16]. Data were collected by a researcher, nurse, graduate student and with experience in the techniques used, who first introduced herself and explained the importance and reasons for participating in the research.

Observation with moderate participation occurred during matrix support activities, totaling 30 hours of activity, which were recorded in a field diary. Document analysis occurred concomitantly with the observation based on the verification of the tools used for the

APS matrix activity, recorded in electronic spreadsheets. These analyzes made it possible to investigate the periodicity of contact with the APS and the quality of the records made by the AAE. The information collected based on the analysis of documents was also recorded in a field diary, meeting the assumptions of the triangulation method[17] that involves crosschecking data sources used in qualitative research.

For the interview, a question guide with information about professional occupation, gender, age, education and time working in the AAE, in addition to questions related to matrix support was prepared. The guide was submitted to face and content validity[18] carried out by eight members of the Study and Research Group on Chronic Conditions (GEPECRON). For validation, the theme was approached in greater depth and apparent analysis was carried out regarding the semantics and clarity of the questions and theoretical analysis of each item regarding content and relevance[18]. With the advance of the COVID-19 pandemic in the country, the assistance at the AAE service was modified in compliance with state technical guidelines. Therefore, interviews were carried out on a one-to-one basis, with the aid of technology using videoconferencing apps and video calls, and secrecy and privacy were ensured. The interviews lasted approximately 45 minutes, were audio-recorded and transcribed in full by the researcher.

The combination of the techniques adopted allowed triangulation in the analysis process, providing methodological rigor to guarantee valid and reliable results[17]. For the analysis of data related to the content of the interviews, analytical techniques of initial and focused coding[19] were used, carried out with the aid of the MAXQDA® software, version 20.0.8. The initial coding[19] involves transcribing the material collected through a rigorous examination of the analyzed sentences, which are broken down into keywords. In this step, data were identified and sorted according to the similarities and differences of the dimensions discovered line by line, and 42 codes were revealed. Focused coding[19] requires classification, synthesis, integration and organization of data from the most significant or frequent initial codes or categories. At that moment, a synthesis of the codes was carried out, and these were grouped by similarity, resulting in the formation of two categories.

Field diary records referring to the stages of observation and consultation of documents were analyzed manually after the interviews were coded. They were used to support the understanding of the facts and clarify the participants' speeches, as well as to support the value judgments attributed to the evaluative analysis.

To give meaning to the objective of the investigation, the interpretation of this analytical construction was supported by the adopted conceptual basis[5]. Its theoretical

principles were used to correlate the results obtained on the implementation of the MACC in the health service.

The research was approved by the Permanent Commission for Project Evaluation and the Permanent Committee on Ethics in Research with Human Beings (COPEP), according to Protocol No. 4,032,609, and with Resolutions 466/2012 and 510/2016 of the National Council of Health on human research. All participants signed the Informed Consent Form (TCLE) and, to ensure their anonymity, they were identified by Letter P (Participant) followed by the interview order number.

RESULTS

The study included 21 health professionals, mostly were female, aged 25-61 years, and physicians were the oldest participants. Most attended at least one specialization course, and the participants had experience of more than one year in AAE.

The results presented revealed how AAE health professionals perceived matrix support, its influence on the qualification of care and the identification of challenges that weaken its consolidation. The process of analysis allowed the grouping of data, synthesizing them into three categories: Understanding the specificities of matrix support; Matrix support as a qualifying element of assistance; and Challenges for consolidating matrix support.

Understanding the specificities of matrix support

The evaluation showed the existence of different perspectives on matrix support among professionals, who perceived it as an important training strategy for APS teams, and as a contribution to the management of care for individuals with chronic conditions.

The use of the Word Cloud visual resource (Figure 1) allowed us to identify that the most frequent word was “training”.

Figure 1 - Understanding of the specificities of matrix support by health professionals in Specialized Outpatient Care. Maringá, Paraná, Brazil, 2020

Source: Research data generated through MAXQDA® software, 2022.

Matrix support as an educational support of APS occurred through an agreed and previously defined schedule, based on the themes suggested by APC professionals or arising from the difficulties identified by AAE professionals. According to the set schedule, AAE professionals would go to the APS to share moments of scientific improvement.

> *It's about talking. We go there, get together and ask: "Do you have any questions? What would you like to hear?" So, we are open to what they have to say.* (P15)

> *[...]we have a theme that is relevant to the issue of the elderly, which can be: blood pressure treatment in the elderly, falls of elderly people, requesting exams for the elderly, the situation of the elderly with their multiple morbidities, multiple medications, interactions, in short ... so I think that this is the most relevant work in the entire MACC.* (P04)

Matrix support was also recognized as a care management strategy, carried out through meetings and discussions of priority cases between the APC and AAE teams. In these meetings, treatment planning is carried out, goals are set and care plans are built together.

> *In these matrix activities, cases are discussed, dates for evaluation are defined to check the actions taken, which actions were successful, what needs to be reassessed.* (P17)

> *This discussion of cases between us (AAE professionals) and UBS professionals is valuable because we add more information and create a complete care plan composed of medical, physiotherapy, nutritional guidelines, etc. it is a care plan made by many hands, involving the specialized service and the basic service.* (P04)

Understanding the aspects of matrix support suggests that the AAE provides an educational support backed by training, meetings and case discussions, demonstrating that the actions carried out by specialized care corroborate the prerogatives of matrix support by the MACC.

Matrix support as a device that qualifies care

The professionals said that the implementation of matrix support proposed by the MACC was decisive for changes in professional practices in the AAE. In this professional occupation, the repercussions of matrix support for individual professional development; for comprehensive care, and for the health of people assisted in specialized care were presented**.**

Regarding individual development, matrix actions added knowledge with constant exchanges of expertise between professionals from different professional occupations.

> *When I listen to the observations made by my colleagues, my consultations are more consistent and also more effective.* (P04)

> *These exchanges* (of opinions) *have been very good for me. Sometimes, I alone don't have a solid opinion about a given situation. And these case discussions allow us to listen to the opinions of other professionals. This helped me a lot*. (P15)

Matrix support also had a favorable impact on the development of comprehensive care. The contact between APS and AAE during the matrix activities favored the consolidation of the professional practices of both teams, enhancing the integrality of health actions.

> *Perhaps this is the perfect space for us to be able to make all these connections. We work in secondary care, and thus we need to relate to primary and tertiary care. So, we have been working to help improve APS, together with professionals who work in each municipality. We get to know each nurse, each team, the strengths and weaknesses of each municipality, and I think that this, more than anything else, was what enhanced the work. A very strong relationship was built.* (P01)

> *If an elderly woman who has experienced violence knows that we provide a protection service for the elderly, that we can make the appropriate referral, get in touch with them to obtain consent for the case study, talk about it, about what each service can offer, we will be offering another type of care. This knowledge about APS allows us to know the paths we must walk.* (P11)

The improvement in the health of people with chronic conditions was one of the outcomes influenced by the implementation of matrix support in the AAE. Matrix actions consolidated professional practices, qualifying care, generating behaviors that can add value to the health of people assisted in specialized care.

> *The establishment of a multidisciplinary team allows professionals to talk during consultations and exchange information. All of this benefits patients*. (P17)

> *The care currently offered is very special. I don't think this is available even in private medical appointments: a multidisciplinary follow-up with a doctor, nurse, nutritionist, physiotherapist, social worker… and in addition to all this support, there is also case discussion and matrix support in primary care. It is special care. (P16)*

The implementation of matrix support in the AAE was evaluated positively for the individual development of the professionals involved, for comprehensive care and for the health of people with chronic conditions assisted in specialized care. Given its potential, matrix support was considered a transforming element of professional practices, whose exchange of information and knowledge allowed the apprehension of new knowledge among peers, strengthening the development of MACC in the AAE for the care of people in chronic situations.

Challenges for the development of matrix support

Some elements were perceived as a challenge for the development of matrix support practices in the service. The scarce participation of APS medical professionals in the moments scheduled for training, meeting and discussion were considered harmful aspects for the provision of comprehensive care and that weaken the implementation of matrix support.

> *The only negative aspect is that the local doctor is never present. At first, when we visited the municipalities, we wanted to understand the concept of the MACC, but now the professionals don't go there anymore.* (P19)

> *Typically, doctors are always struggling to provide excellent care for every patient they see. So, it is difficult for them to be available to participate in a continuing education situation.* (P04)

> *Many (physicians) are not interested in training and matrix support meetings. When I get in touch and the APS doctor shows interest in mental health, it's very good, because work flows and patients are better treated and their health improves.* (P03)

Despite the availability of different tools to facilitate communication between the points of care, the evaluation revealed failures by APS professionals to maintain periodic

communication with the AAE. The reasons mentioned by the participants were work overload, lack of motivation or lack of interest in using the matrix support.

> *I think we demand a lot from the APS, and they have a nurse, a nursing technician, five or six ACS, depending on the team. Some UBS have NASF once a week, that is, they distribute NASF personnel. We have to take much more care of APS. And we just keep, complaining, asking APS to solve everything! I know that things are like this: "You can't come on a certain day because I have to assist a pregnant woman, on some days I have to assist an elderly person, on some days I have to assist a child", you know, we get there and realize that they don't even know where to start. (P06)*

> *Sometimes, we realize that network service needs a bit of discipline, needs that everyone do their best, and sometimes that service is fragile, and that gets in the way. (P02)*

The obstacles that jeopardized the proper implementation of matrix support by the AAE expressed weaknesses arising from the APS. The identified results may show gaps in the contact between APS and AAE through matrix support. This result should be considered when the AAE is responsible for the educational support of APS indicating that it is necessary to address the importance of matrix support with professionals in the care network to ensure comprehensive care for people with chronic conditions.

DISCUSSION

The gradual introduction of MACC in Brazilian health services allowed an approximation with several tools for the management of chronic conditions[20], many of them composed of light technologies that are based on bonding and welcoming relationships[21]. Matrix support is a tool based on the sharing of care between teams of general practitioners and specialists, in favor of comprehensive care centered on the user's needs[6].

AAE health professionals understood the specificities of matrix support as educational support and contribution to care management. According to the MACC, training, meetings and case discussions between the points of care respond to the pedagogical component recommended by matrix support[4].

However, training was shown as an example of actions linked to matrix support, which may suggest an attitude that is still rooted in the vertical, hierarchical model, where specialists need to train APC professionals. Matrix actions provide spaces for dialogue between the teams and opportunities for professionals to play a leading role, their search for new knowledge and new practices, and so they are relevant for the qualification of the service[22].

A similar result was found in a study whose team from the Family Health Support Center (NASF) assumed a supervisory and guiding role for Family Health teams, generating conflicts and an antagonistic context to the comprehensiveness of care[23].

It should be noted that matrix support is based on horizontality, on the dialogic perspective and on the lack of authority in the relationship between the teams of general practitioners and specialists[1,4]. Therefore, interdisciplinary relations must have a collaborative posture in an attempt to overcome the existence of possible power relations[6].

The professionals' attitude was consistent with the assumptions of matrix support by integrating the specialized service with primary care and, therefore, providing a more comprehensive and less fragmented exchange of knowledge. Matrix support activities are based on interdisciplinarity, knowledge sharing and coordination between the different points of the RAS[24,25]. The change in the attitude of health professionals reveals a greater understanding of the complexity associated with living with chronic conditions, allowing that secondary care cases are brought together with primary care cases, and assuming care responsibilities[8].

One benefit of the proximity between AAE and APS for matrix support actions is the strengthening of the bond between the points of the care network with a view to comprehensiveness[25,26]. Thus, the proximity between the points of the care network increases the co-participation of the actors in the care processes, improving the quality of care[27].

The sharing of cases, the collective work, the ease of access among professionals enhances networking and, therefore, may improve the quality of life of people with chronic conditions[3,7,28].

Individuals with a chronic condition are the subjects of the matrix process[4],and the sharing of knowledge and comprehensiveness between the points of care collaborate so that matrix support actions have a favorable impact on the health of the people assisted.

As an evaluative research, the identification of weaknesses that challenge the consolidation of matrix support in AAE offers conditions for peers to intervene and transform their reality, qualifying matrix support from the MACC perspective.

The challenges for the implementation of matrix support face obstacles related to changes in work relationships, changes in the way health care is operationalized, and changes in health education centered on medical knowledge[29]. The incorporation of matrix practices in medical residency programs within the scope of the SUS revealed that the preponderant presence of the Flexnerian model in the training of physicians favors a division of labor that

makes integration with the other professionals of the team difficult, which results in thinking and acting centered in the health/disease process[30].

Moreover, for the establishment of horizontal relationships through joint actions and discussions between APS and AAE, professionals from family health teams must have time for shared activities. However, the difficulty of getting all the team members together and the overload of APS members were perceived as barriers to the collaborative construction of matrix support actions in other studies[3,23,28].

For adequate matrix support, qualified communication is necessary. Thus, specialized backend actions can be consolidated. The communication between teams of generalist practitioners and specialists must be uncomplicated and periodic. This means that matrix support depends on commitment, availability and changes of all parties involved [25,29].

The results revealed that the fragility of communication can be caused by work overload, lack of motivation or lack of interest in the use of matrix support by APC professionals. When the APS perceives matrix actions as one more obligation to be fulfilled, the recognition of its own difficulties in understanding and applying the device is fragilized[1,4].

This evaluation attempted to stimulate the transformations that have occurred in the service since the implementation of the MACC, as it was carried out with the participation of actors who can intervene and change their reality, qualifying matrix support actions and having a positive impact on the health of people with chronic conditions monitored by the service.

The limitations of this study concern are the fact that it covers a single specialized care service with recent insertion of the MACC, and that technicians, managers and users were not involved as research participants.

FINAL CONSIDERATIONS

The evaluation of the implementation of matrix support in AAE was considered by the professionals of the healthcare service as satisfactory. The matrix support for the specialized health teams qualified the professional care provided to the people assisted in the service, enabled the integrality of care and provided the management of the care of people with chronic conditions.

In the evaluative research, elements were identified that weaken the full use of matrix support in accordance with the MACC. These elements include gaps in communication with APC professionals and remnants of the hierarchical model, as matrix support actions are

reduced to mere training, diverging from horizontal references that presuppose the indissociability between teaching and learning.

The results presented can contribute to a better qualification of the matrix practices used by AAE, which should start through educational strategies with professionals in the care network. These strategies aim to strengthen matrix practices, organized in a dialogical and reflective perspective, which value different perceptions and corroborate the prerogatives of the tool for comprehensive care for people with chronic conditions.

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