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New configurations of matrix support in times of the COVID-19 pandemic

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Abstract *The aim of this study was to analyze the different configurations of matrix support stemming from changes prompted by the COVID-19 pandemic by investigating the work process of an Expanded Family Health Center (NASF) in Maricá, Rio de Janeiro, Brazil. We conducted a qualitative study using data collection methods selected according to the circumstances of the pandemic: web survey, semi-structured interviews, document analysis and searches of health information systems. The data were analyzed using the hermeneutic-dialectic method. The findings show an increase in mental health problems among both patients and health workers, the need to mobilize sociopsychological support networks, an expansion of remote support, especially for professionals from supported teams, and reduced presence of specialists in the community. The study shows that work processes became more individualized and focused inside clinics, and that minimum teams had limited capacity to care for the health problems related to COVID-19, confirming that NASFs play an essential role in primary health care.*

Key words *COVID-19, Primary Health Care, Expanded Family Health Center, Matrix Support, Qualitative Research*

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Introduction

Brazil's public health system, *o Sistema Único de Saúde* (SUS) or Unified Health System, has gone through profound changes since the first case of COVID-19 was confirmed in the country in February 2020. The devastating pandemic that ensued imprinted important changes in work processes across different services, which were forced to adapt protocols, operational flows and other care arrangements in response to the preventive measures implemented to curb the spread of SARS-CoV-2. In addition, the public health emergency increased the burden and pressure on health workers.

Initially, resource allocation prioritized severe cases and increasing the availability of hospital beds, with primary health care (PHC) being reduced to secondary status, despite its capillarity across Brazil's municipalities and capacity to implement pandemic control measures. Health surveillance, health care, support for vulnerable groups and routine service interventions are some of the activities that should be developed in this scenario[1-3]. With the start of mass vaccination, PHC was brought back to the forefront due to the expertise and experience of the primary care workforce in the implementation of vaccination campaigns.

In the midst of poor national coordination and a weak federal government and Ministry of Health response to the ensuing pandemic, the disease spread out of control. This lack of control was reflected in the large number of cases and deaths and duration of the pandemic[4]. There were also delays in the implementation of measures to support the economy and employment, leading to the resurgence of social vulnerabilities[5].

With the spread of the pandemic and increasing number of cases of COVID-19, other demands arose, including treatment of long COVID[6]. The various direct and indirect long-term effects of the pandemic, such as mental health problems, deepening poverty and food insecurity, as well as the aggravation of chronic conditions caused by the temporary disruption of follow-up treatment increased strains on health services and led to the mobilization of different levels of care, especially PHC[2,7,8].

Expanded Family Health Centers (NASFs), made up of interprofessional teams[9] that provide specialist rearguard support in PHC focusing on collective and group interventions, also needed to adapt to the pandemic. Under a matrix support organizational framework, NASF specialists provide primary care centers (PCCs) with technical-pedagogical and clinical-care support[10]. How supporters and supported teams work engenders different support function arrangements and configurations, which in turn affects health care delivery.

A NASF can be understood as a team that enhances shared expanded care through matrix support. Matrix support is a shared management resource that promotes more dialogical and less vertical work processes[11]. To be effective, it requires certain institutional arrangements – such as team meetings and other protected collective spaces – that should be valued and legitimized by management. However, due to COVID-19, these arrangements have been reduced or temporarily suspended.

NASF specialists have an essential role to play in the response to the COVID-19 pandemic and other public health emergencies[12], which in turn implies the need to generate knowledge about new modes of working. Despite the attention given to matrix support by the literature, little is known about the work of NASF teams in times of pandemic. The aim of this study was therefore to analyze new configurations drawing on the data from a qualitative study investigating NASF work processes in Maricá, Rio de Janeiro, Brazil.

Methods

The study was conducted in the second semester of 2021 in Maricá, which is part of the state of Rio de Janeiro's Metropolitan Region II and had a population of 168,000 in 2021, according to the Brazilian Institute of Geography and Statistics. Undergoing an expansion process, PHC coverage was around 98% of the projected population, with 54 family health teams (FHTs) working in 24 PCCs and 6 NASF teams with 48 staff. It is worth mentioning that, unlike national trends during the study period[12], the number of NASF teams in the municipality increased from 2 to 6.

We adopted a qualitative approach as, according to Minayo[13], qualitative methods allow the researcher to understand "people's interpretations of how they live, construct artifacts and themselves, feel and think"(p.57). Furthermore, work processes go beyond the regulations that shape professional practices, being played out in encounters between concrete subjects who have beliefs, desires, values and interests.

The restrictions imposed to curb the spread of COVID-19 were considered when defining the

methods. For this reason, we used a combination of primary and secondary data obtained from a web survey, semi-structured interviews, document analysis and SUS information systems. The data were gathered and processed separately and integrated and combined in the discussion[14].

Online surveys are practical and do not require face-to-face interaction. Using focus groups or face-to-face interviews would have increased the complexity of the research process given the restrictions that were in place and the unpredictable epidemiological scenario at the time of data collection. A web survey was therefore conducted to map and understand Modes of organization of the NASF work processes during the pandemic. The survey was created using Google Forms and consisted of 1 open-ended question and 25 multiple choice questions, none of which were obligatory. We avoided questions that could identify the respondent due to the researcher's involvement in the area. In many of the questions it was possible to choose more than one option, while others used a Likert scale, given that matrix support has multiple modes of functioning and possibilities of professional-professional interaction[15,16].

After tabulating the survey results, we performed a preliminary analysis of the data to identify relevant points that could serve as a frame of reference for the individual interview guide to gather complementary information that the web survey did not capture due to the limitations of this method[17].

We interviewed three former managers and technical supporters of the social health organization (*Organização Social em Saúde* - OSS) that took over the management of the municipality's primary care services in March 2020. Two of the interviews were online and the third was conducted face-to-face at the request of the interviewee, taking the recommended precautions.

Two other data collection techniques were also used: document analysis, to identify and discuss the development of NASF guidelines and regulations between 2008 and 2021; and the analysis of secondary data taken from the SUS's primary care health record system, e-SUS, and the National Registry of Health Facilities, to cross-check data on the expansion of FHS coverage in the municipality and number of NASF teams and staff.

Data analysis was performed using the hermeneutic-dialectic method. The primary data comprised the results of the interviews, which are products of a singular experience mediated by collective experience. In this sense, the data is circumscribed by concepts and modes of working that either converge towards or deviate from the rules and regulations, as the latter are reframed by the actions of the agents who enact them and these agents "simultaneously hold collective interests, which bring them together, and individual interests, which distinguish them from each other and counterpose each other"[13](p.347).

We developed a conceptual framework illustrating the relationship between the concept of matrix support and the work activities listed in the primary care guidelines (CAB No. 39) and specific roles and responsibilities described in the 2017 National Primary Health Care Policy (PNAB)[18,19]. These documents were chosen because CAB No. 39 is the main guidance document for everyday work practices in NASFs and the PNAB was the prevailing relevant policy at the time despite changes implemented in recent years[20,21].

The conceptual framework was not intended to limit the scope of the study or prevent different types of modes of operation of matrix support from appearing. Rather it was used as a tool to assess compliance with a set of recommended practices and compare that which is on paper with actual practice, using the framework as a frame reference to create singular maps[22] that reveal practices that go beyond that which is prescribed.

To synthesize and facilitate understanding of the phenomenon under study[13], we used 5 categories of analysis: professional profile of the NASF members – what is valued by the management; interprofessional relations – modes of co-management[11] adopted by supporters and supported teams; work processes during the COVID-19 pandemic – forms of organization of professional practices during the pandemic; health patterns during the pandemic – health problems identified during the period; and management and the NASF – support provided by city council technical areas and the OSS for interventions performed by the specialists.

These categories intersect with the conceptual framework, helping to gain a deeper understanding of the limitations of the prevailing rules and regulations in face of the health needs arising from the pandemic. There is an open agenda when it comes to NASF work processes, with the latter being shaped by new demands and specialist duties, roles and responsibilities not envisaged in CAB No. 39 and the PNAB. These shortcomings result in the need to develop new guidance and official rules and regulations addressing the specific needs of the pandemic.

The study was conducted in accordance with ethical and legal norms and standards for research and the study protocol was approved by the research ethics committee (reference code CAEE 47280621.9.0000.5240). After approval, we initiated "warm-up" in the field, a strategy used to maximize adherence to the study. Initially we presented the study at the meetings of the 6 NASF teams to explain the objectives and methods and emphasize the importance of conducting an in-depth analysis of work processes. Each meeting was attended by an average of 5 professionals and held in a well-aired open space using personal protective equipment.

Before sending the web survey by WhatsApp, we sent a text to the team WhatsApp groups, reiterating the explanation given at the meetings confirming that participation in the study was voluntary and that any information provided would remain confidential. The web survey link was sent individually to 38 professionals selected according to the inclusion criteria: working in the NASF team for at least 3 months.

Two reminders were sent over a period of 28 days: one after 8 days and the second during the last week of the period. This strategy was adapted from previous studies using mail surveys, where reminder letters were sent[23], in this case replaced by text messages. Thirty-two professionals answered the survey, corresponding to 84% of the individuals contacted.

Results and discussion

At the time of data collection, there were 6 NASF teams with 48 members: 7 physiotherapists, 6 social workers, 6 nutritionists, 6 psychologists, 5 pharmacists, 5 speech therapists, 5 pediatricians, 4 physical educators, 3 obstetrician-gynecologists and 1 nurse. Each NASF team provides support for between 8 and 10 family health teams, amounting to a total of around 54 teams, 1 Street Clinic and 1 indigenous health clinic, covering 100% of the municipality's primary care teams.

There were 2 types of employment contracts (5 workers were career civil servants and 43 were hired by the OSS) and 4 working hours arrangements (40 hours and 30 hours a week, for contracts defined in specific legislation; 20 hours per week for career civil servants; and 16 hours per week for doctors hired by the OSS). Differences in working hours directly affect support capacity, resulting in overburdening for some professions. Doctors for example need to divide the 16 hours to be able to provide support for up to 10 teams. This also occurs with some physical educators, who provided support for all the teams in the health district they are allocated to. In addition, this type of arrangement significantly decreases the presence of specialists in "minimum teams", sometimes hampering participation in team meetings, case discussions, home visits and co-management between the NASF team and family health team, resulting in a more vertical approach.

Configurations of support in Maricá

Chart 1 (Modes of organization of the NASF in Maricá during the pandemic) shows the results of the work processes mapping done using the primary data broken down into the 5 categories of analysis. These data reveal types of arrangements, modifications and the interventions performed by the specialists after the changes driven by the pandemic.

The results show that a little over half of the professionals joined the NASF during the pandemic, constituting new teams. However, most of the staff had experience with matrix support in other municipalities before joining. This is possible when policies and practices are consolidated through an increase in the number of qualified staff resulting from investment made by the Ministry of Health from 2008, interrupted by the *Programa Previne Brasil* (Prevent Brazil Program)[12,21].

Most of the team members sought out pandemic training opportunities; however, a considerable proportion (37.5%) did not attend COVID-19 training, despite major changes in organization and interventions. Some professionals participated in training offered by organizations outside the SUS, although it was not possible to guarantee the quality and depth of these courses. It is important to highlight that a number of professionals received training from the supported teams (one-quarter of the respondents), revealing that support was two-way.

Another important point is that little investment was made by the city council technical areas and OSS to promote the discussion of COVID-19, with only 12.5% of specialists mentioning that they participated in training offered by local management. The lack of training offered by local management reveals a low level of investment in continuous training and professional development. The training of NASF professionals gains even greater relevance as acquired knowl-

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Chart 1. Modes of organization of the NASF in Maricá during the pandemic.

Professional profile of NASF members
New team, with most members joining during the pandemic due to a switch in management of PHC. Half of the team members had worked in matrix support before joining the team. Most team members received training in matrix support from local management, particularly those who had joined the team before the pandemic. A little over half recognized that the official government documents that guide matrix support practices contribute to their work processes.
Interprofessional relations
NASF work schedules were defined jointly with the supported team; however, some specialists defined schedules independently. The professionals who most sought NASF support were nurses and CHWs. Most of the cases referred to specialists were discussed upon referral or during follow-up. Specialists participated in family health team technical meetings at the invite of mangers and upon the initiative of the NASF, which offered to be present in group meetings. Interconsultations involved mainly NASF members and family health team nurses. NASF specialists worked jointly with other NASF members in many actions. NASF teams held periodic internal planning meetings (generally weekly) with the participation of most of the team. Support materials and continuous training was offered to supported teams when the need was identified or when requested by teams or patients.
Work processes during the COVID-19 pandemic
Most team members took part in pandemic training activities; however, a considerable number of professionals reported not having participated in training on COVID-19. New work processes were discussed mainly with NASF members from the health district, with guidance being provided by management. NASF professionals reported that the professionals who provided most support during the pandemic were other NASF members. Most specialists mentioned that there was an increase in demands over the course of the pandemic. Individual appointments were held respecting all protocols. Collective activities were suspended temporarily, being resumed with the adoption of health protocols. Home visits were performed with a reduced number of professionals. The services provided by the Psychosocial Care Network were the most requested by NASF teams. WhatsApp was the most widely used communication tool to provide remote support to patients and supported teams, using text messages and voicemail; many professionals reported not providing remote support to patients. Physical structure was considered inadequate for the work of professionals during the pandemic.
Health patterns during the pandemic
The most mentioned problems were mental health problems – especially anxiety – followed by problems in the category diet and nutrition. Besides Psychosocial Care Network services, NASF teams also requested social assistance services during the period.
NASF management
The professionals reported that management was supportive when it came to issues involving COVID-19. Few training opportunities were offered by the city council to discuss aspects related to the pandemic. The way in which information on the health care network was made available was considered satisfactory. General meetings promoted by local management were considered spaces that provided the opportunity for discussion.

Source: Authors, 2023.

edge reverberates in the supported teams, either through knowledge and practice sharing or direct patient and group care. However, respondents reported that local management provided key support to specialists concerning COVID-19 issues, behind only NASF members themselves, who provided the highest level of support during the pandemic.

NASF work schedules were defined together with the supported teams and other specialist

team members. Planning interventions together with those who request support and collectively discussing how they will be performed means that those who contract the interventions share responsibility for actions. When the latter are involved in the planning and management of work processes, health care gains a different meaning for those who deliver it, with gains that extend beyond utilitarian value: work producing a commodity – health care – and engendering changes in the worker[11].

Another relevant aspect of this arrangement relates to intervention enabling conditions, such as physical infrastructure and protected physical spaces for group activities, interconsultation and individual appointments. Home visits, for example, depend on certain conditions, such as guaranteeing transport to the patient's home. This requires joint planning to establish agreements between teams with support from local management.

The results show that the professionals who most seek support from NASF teams in this context are nurses and community health workers (CHWs), followed by doctors, PCC managers, auxiliary nurses and dentists and/or oral health teams. One of the managers suggested that this may be explained by various factors, including the fact that the number of CHWs per team is higher than other professionals and these workers continued to work in local communities even during the pandemic. Another reason is that CHWs are authorized by the technical area to directly request NASF support, decentralizing procedures and ensuring that support is not restricted to doctors and other professionals with degree-level qualifications.

The results of one of the Likert survey questions show that the main partners of interconsultations were NASF professionals, followed by nurses and doctors.None of the 32 specialists who responded the survey selected the maximum score from a scale of 1 to 5 for joint appointments with doctors, in contrast to other professionals who obtained at least one maximum score. This may have a number of explanations. First, it may not have been possible to offer interconsultations due to the social distancing measures introduced to curb the spread of COVID-19. Second, it could due to lack of openness of doctors to specialists or vice-versa. Another factor that hinders interconsultations is conflicting work schedules on the days NASF professionals are in the PCC and availability of doctors for shared consultations. According to the interviewees, when specialists come up against barriers to accessing family health teams and are unable to link up with minimum teams, they often seek space together with fellow team members.

With regard to interconsultation, besides knowledge sharing, it is important that the professionals who are sharing the case hold joint responsibility. These consultations should not be restricted to the family health team receiving a second opinion or technical advice from a specialist[24]. In shared consultations, groups of different professionals interact with the patient and with each other in an action involving different forms of management of the health problem. The technical-pedagogical dimension of matrix support operates through collaboration and observation, with knowledge and practice sharing enhancing the capacity of all involved to deliver effective care.

One of the main challenges of matrix support is to develop a working model in which actions and interventions are co-managed. To this end, teams need to have spaces for discussion and joint planning. While case discussions alone do not guarantee co-management, without this practice the old forms of referral that the NASF aims to overcome are repeated[18]. More than that, both teams need to believe in the power of teamwork, realize the importance and greater effectiveness of this type of arrangement and be open to cooperating and task sharing in collective spaces.

Group patient activities were temporarily disrupted due to the implementation of social distancing measures to curb the spread of COVID-19. On the other hand, there was an increase in individual appointments, usually in the form of interconsultations. Elective appointments and certain lines of care had to be suspended, affecting NASF performance indicators, according to one interviewee.

There was also a reduction in the number of professionals doing home visits and less activities were developed in the community. Due to the temporary disruption of group activities, work processes were organized in a more individualized manner inside clinics. This modus operandi is different from that usually adopted in primary care[2,3], which combines individual care with a community-based and family-centered approach.

Many specialists reported that they did not use tele-support or tele-consultation even when social distancing measures were in place. In this respect, it is worth highlighting that the NASF did not have an institutional telephone at the time of data collection. By not having access to a protected number, many workers may not have

felt comfortable giving their personal telephone number and mixing professional and personal life, receiving calls and text messages outside working hours and meeting demands that go beyond the requirements of their role.

An important consideration is the feasibility of tele-support, given that many patients have low socioeconomic status and may not be able to afford a smartphone and internet, or are older persons who do not have the necessary knowledge and experience to use communications technologies. Care should therefore be taken to ensure that greater use of these tools does not become a new barrier to access, producing health inequities. According to Fonseca and Morosini[25], different aspects should be considered when expanding the use of digital communication technologies, including the loss of importance of territorialization due to the reduced circulation and presence of health professionals in the local community. The authors also highlight the need to "be attentive to the risk of exacerbating the invisibility of the social dynamics of disease and limiting the focus of care, emphasizing clinical aspects that reinforce the complaint-treatment approach that the FHS seeks to overcome"[25](p.219).

On the other hand, most professionals provide remote support to supported teams, especially using WhatsApp. This communication tool is widely used by health professionals and many cases were already being shared using this platform even before the pandemic. However, exchanging messages alone does not constitute co-management of care, with the platform often being used to pass information through superficial communications, giving a false sense of sharing and working as a team[26].

Health problems related to the COVID-19 pandemic

The results of the question about types of demands related to the pandemic – the only open-ended question in the *w*eb survey – revealed 37 problems, which are listed in Chart 2 according to strategic NASF areas[27]. The last column shows the number of times each problem was mentioned. However, this division is merely schematic, given the multifactorial nature of most of the problems.

The most cited problems were mental health problems, which is consistent with national data. A recent study showed an increase in the number of workers insured by National Social Security Institute on long-term sick leave due to mental and behavioral disorders in 2020, revealing that the pandemic has had a major impact on mental health in Brazil[28].

As a reflection of this situation, there has been an increase in the utilization of the services of the facilities that make up the local Psychosocial Care Network (RPHC), including 1 Psychosocial Care Center II, 1 Child and Youth Psychosocial Care Center, 1 Psychosocial Care Center for Alcohol and Other Drugs, and 4 multidisciplinary psychosocial care teams, run by the city council to replace the outpatient model.

The second most common problems were those related to diet and nutrition. The most mentioned problem was obesity, followed by weight gain, overweight, poor eating habits and eating disorders. Hunger was also included in this category, although this problem may also be encompassed by the social service category, as it is related to increase in poverty, lack of family income and unemployment. Although intrafamily violence was also included in this category, it is understood that violence is multifactorial. The most common problems in the category rehabilitation, understood here in the widest sense of the word, were motor sequelae, generalized pain and joint pain, which may be associated with problems related to a sedentary lifestyle, lack of physical activity and muscle weakness, included in the body practices and physical activity category.

Although limited in number, the problems included in this category provide some insights into health needs after the advent of the COVID-19 pandemic[6]. The multifactorial and multicausal nature of most of the problems listed in Chart 2 reinforces the importance of the co-management of health interventions by interdisciplinary teams.

Given the persistence of symptoms associated with the disease, associated problems and long COVID, it is essential to develop guidance documents like those published by the Ministry of Health during the Zika public health emergency in 2016[29]. It is worth highlighting that the lack of technical guidelines and organizational and clinical regulations for NASFs during the pandemic, resulted in the emergence of self-managed processes in teams, who had to create or customize singular forms of working.

The following is a list of NASF interventions identified in the investigated work processes and literature review: (a) tele-support for supported teams, tele-consultation and tele-patient monitoring; (b) replacement of group appointments with remote activities and groups; (c) produc-

Chart 2. Health patterns during the pandemic.

Strategic NASF area	Problem	Occurrences
Mental health	Anxiety	12
	Mental health	7
	Depression	5
	Panic disorder	2
	Fear	1
	Distress	1
	Insomnia	1
	Global developmental delay	1
	Behavior disorders	1
Diet and nutrition	Obesity	4
	Weight gain	2
	Hunger	2
	Overweight	1
	Unhealthy eating habits	1
	Eating disorders	1
	Irregular eating	1
Rehabilitation	Motor sequelae	3
	Generalized pain	2
	Joint pain	1
	Speech	1
	Language problems	1
	Follow-up with a nutritionist	1
	Respiratory and motor sequelae-related swallowing changes	1
Social service	Family conflict	1
	Intrafamily violence	1
	Domestic violence	1
	Unemployment	3
	Increase in poverty	2
	Lack of family income	1
	Barriers to accessing public policies	1
Body practices and physical activity	Problems related to a sedentary lifestyle	1
	Lack of physical activity	1
	Muscle weakness	1
Women's health	Menstrual irregularities	1
Other problems	Stroke	1
	Decompensated diabetes mellitus	1

Source: Authors, 2023.

tion and dissemination of informative material on the pandemic and videos showing remote health actions; (d) psychosocial support for supported teams and patients; (e) support for testing and vaccination strategies; (f) identification and follow up of patients with long COVID-19 symptoms; (g) monitoring of socially vulnerable groups; and (h) identification and mobilization of support networks in health territories[2,3,8,30-33].

The list of activities reveals the modes of organization of matrix support throughout the pandemic, with the possibility of incorporating many activities into NASF practices in other contexts. Other practices were already used by the specialists and expanded during the pandemic, such as information and communication technologies, which began to be used *en masse*, especially for team communication.

As mentioned above, care must be taken to ensure that the utilization of digital communication technologies does not pose a new barrier to access to services or result in a detachment from family health team roles and responsibilities. In this sense, it is important to be attentive to the possible distancing of health professionals from the community, ensure that the replacement of face-to-face contact by remote interaction does not result in a loss of longitudinality and reduced engagement with patients and families, and assess whether the reduction in face-to-face group interaction implies weakening community engagement and the collective[25,26].

It is important to highlight the importance of identifying patients with symptoms of long COVID-19 and the proper follow-up and monitoring of cases that can be managed by primary care services using collective and individual care strategies. This reinforces the need for family health teams to *pay more careful attention to patient needs and the importance of* interprofessional support for emerging cases, regardless of severity[2,3,8]. It is also important to understand the technical limitations of these teams in unpredictable scenarios such as those experienced during the pandemic.

Final considerations

This study revealed that new modes of organization of matrix support work processes became more prominent during the health emergency, confirming the study hypothesis. At certain times the teams needed to shift away from the community-based approach, temporarily disrupting groups and home visits, focusing on individual care interventions during severe periods, and performing functions apparently out-

side the scope of their core duties and the roles and responsibilities of PHC. These possible and necessary configurations were determined by the circumstances of the pandemic.

Playing a pivotal role in the organization of the work of health teams, matrix support needs to constantly adapt to the conjunctural needs of the SUS, driving instituting movements and processes of creation. In the case studied here, the pandemic forced a rethink and the modification of work practices in health services.

The advent of the pandemic expanded the list of clinical demands addressed by PHC, which require further clarification. These demands justify the existence of NASF teams and matrix support, which operate by developing actions with supported teams and delivering care directly to patients and groups. The multifactorial nature of most problems arising during the pandemic identified by this study reinforces the importance of the interprofessional approach adopted by the NASF. Monitoring health needs, modifying modes of operating and interventions, has to do with the permanence of the NASF in the SUS and is a way of counterposing the dismantling of the public health system witnessed during the study period.

The resumption of funding of the NASF, redesigned for a newly shaped team, the "eMulti" – a multidisciplinary primary health care team[34] – reaffirms the importance of matrix support for the provision of comprehensive longitudinal care through shared consultation and case discussions, the joint definition of therapy plans and interventions in the community. Advances are also being made in the form of modifications and new practices, such as the incorporation of remote care – one of the legacies of the pandemic – and the establishment of performance indicators from 2024.

With regard to methodology, analyzing the results of the questionnaire before the interviews with managers allowed us to identify relevant points for inclusion in the semi-structured interview guide and gather complementary information that the web survey did not capture due to the limitations of this method. In addition, the in-field "warm up", where we presented the study at team meetings, and sending reminder WhatsApp texts contributed to the adherence of workers to the study.

The analysis was limited to NASF professionals and managers, with members of the supported teams and patients not being included, demonstrating the importance of further research on this topic. This was due to time constraints and the circumstances of the COVID-19 pandemic, limiting the scope and breadth of the study.

Collaborations

Boths authors were responsible for study conception, data analysis and interpretation and drafting the article, and approved the final version to be published.

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References

1. Engstrom E, Melo E, Giovanella L, Mendes A, Grabois V, Mendonça MHM. *Recomendações para a organização da Atenção Primária à Saúde no SUS no enfrentamento da COVID-19*. Rio de Janeiro: Fundação Oswaldo Cruz; 2020.
2. Giovanella L, Martufi V, Mendoza DCR, Mendonça MHM, Bousquat A, Aquino R, Medina MG. A contribuição da Atenção Primária à Saúde na rede SUS de enfrentamento à COVID-19. *Saude Debate* 2020; 44(n. esp. 4):161-176.
3. Rede de Pesquisa em APS. *Bases para uma Atenção Primária à Saúde integral, resolutiva, territorial e comunitária no SUS: aspectos críticos e proposições*. Rio de Janeiro: Organização Pan-americana de Saúde, Abrasco; 2022.
4. Giovanella L, Medina MG, Aquino R, Bousquat A. Negacionismo, desdém e mortes: notas sobre a atuação criminosa do governo federal brasileiro no enfrentamento da COVID-19. *Cad Saude Publica* 2020; 44(126):895-971.
5. Matta GC, Rego S, Souto EP, Segata J, organizadores. *Os impactos sociais da COVID-19 no Brasil: populações vulnerabilizadas e respostas à pandemia*. Rio de Janeiro: Observatório Covid-19, Editora Fiocruz; 2021.
6. Miranda DAP, Gomes SVC, Filgueiras PS, Corsini CA, Almeida NBF, Silva RA, Medeiros MIVARC, Vilela RVR, Fernandes GR, Grenfell RFQ. Long COVID-19 syndrome: a 14-months longitudinal study during the two first epidemic peaks in Southeast Brazil. *Trans R Soc Trop Med Hyg* 2022; 116(11):1007-1014.
7. Mendes EV. *O lado oculto de uma pandemia: a terceira onda da COVID-19 ou o paciente invisível* [Internet]. 2020 [acesso 2022 nov 21]. Disponível em: https://www.conass.org.br/biblioteca/o-lado-oculto-de-uma-pandemia-a-terceira-onda-da-covid-19-ou-o-paciente-invisivel/.
8. Rede APS. *Pós-COVID-19 e a importância da ESF para o cuidado e reabilitação* [Internet]. 2020 [acesso 2023 fev 23]. Disponível em: https://redeaps.org.br/2021/08/15/pos-covid-19-e-a-importancia-da-esf-para-o-cuidado-e-reabilitacao/.
9. Peduzzi M, Agreli HLF, Silva JAM, Souza HS. Trabalho em equipe: uma revisita ao conceito e a seus desdobramentos no trabalho interprofissional. *Trab Educ Saude* 2020; 18(Supl. 1):1-20.
10. Almeida ER, Medina MG. A gênese do Núcleo de Apoio à Saúde da Família (NASF) na agenda da atenção primária à saúde brasileira. *Cad Saude Publica* 2021; 37(10):1-16.
11. Campos GWS. *Um Método para Análise e Cogestão de Coletivos: a constituição do sujeito, a produção de valor de uso e a democracia em instituições: o método da roda*. 5ª ed. São Paulo: Hucitec; 2015.
12. Mattos MP, Gutiérrez AC, Campos GWS. Construção do referencial histórico-normativo do Núcleo Ampliado de Saúde da Família. *Cien Saude Colet* 2022; 27(9):3503-3516.
13. Minayo MCS. *O Desafio do Conhecimento: pesquisa qualitativa em saúde*. 9ª ed. São Paulo: Hucitec; 2006.
14. Creswell JW. *Projeto de Pesquisa: métodos qualitativo, quantitativo e misto*. 5ª ed. Porto Alegre: Artmed; 2021.
15. Escola Nacional de Saúde Pública Sergio Arouca (ENSP). Fundação Oswaldo Cruz (Fiocruz). *Orientações sobre ética em pesquisa em ambientes virtuais. Comitê de Ética em Pesquisa. Ver 1*. Rio de Janeiro: Fiocruz; 2020.
16. Dalmoro M, Vieira KM. Dilemas na construção de escalas tipo likert: o número de itens e a disposição influenciam nos resultados? *Rev Gestao Org* 2013; 6(3):161-174.
17. Boni RB. Websurveys nos tempos de COVID-19. *Cad Saude Publica* 2020; 36(7):1-4.
18. Brasil. Ministério da Saúde (MS). *Núcleo de Apoio à Saúde da Família. Cadernos de Atenção Básica, número 39*. Brasília: MS; 2014.
19. Brasil. Ministério da Saúde (MS). Portaria nº 2.476, de 21 de setembro de 2017. Aprova a Política Nacional de Atenção Básica, estabelecendo a revisão de diretrizes para a organização da Atenção Básica, no âmbito do Sistema Único de Saúde (SUS). *Diário Oficial da União* 2017; 22 set.
20. Giovanella L, Franco CM, Almeida PF. Política Nacional de Atenção Básica: para onde vamos? *Cien Saude Colet* 2020; 25(4):1475-1482.
21. Brasil. Ministério da Saúde (MS). Portaria nº 2.979, de 12 de novembro de 2019. Institui o Programa Previne Brasil. *Diário Oficial da União* 2019; 13 nov.
22. Deleuze G, Guattari F. Introdução: Rizoma. In: Deleuze G, Guatarri F. *Mil Platôs - Capitalismo e esquizofrenia 2. Vol. 1*. São Paulo: Editora 34; 2011.
23. Flick U. *Introdução a metodologia de pesquisa: um guia para os iniciantes*. Porto Alegre: Penso; 2013.
24. Gutiérrez AC. *Núcleo de Apoio à Saúde da Família do Território Escola Manguinhos: análise sob a perspectiva do apoio matricial* [tese]. Campinas: Universidade Estadual de Campinas; 2014.
25. Fonseca AF, Morosini MV. Nota técnica: O caráter estratégico do Agente Comunitário de Saúde na APS integral. *APS* 2021; 3(3):210-223.
26. Previato GF, Baldissera VDA. A comunicação na perspectiva dialógica da prática interprofissional colaborativa em saúde na Atenção Primária à Saúde. *Interface (Botucatu)* 2018; 22(Supl. 2):1535-1547.
27. Brasil. Ministério da Saúde (MS). Portaria nº 154, de 24 de janeiro de 2008. Cria os Núcleos de Apoio à Saúde da Família - NASF. *Diário Oficial da União* 2008; 4 mar.
28. Mrejen M, Rache B, Nunes L. *COVID-19 e Saúde Mental: Uma Análise de Tendências Recentes no Brasil*. IEPS 2021; 20:1-5.
29. Brasil. Ministério da Saúde (MS). *A estimulação precoce na Atenção Básica: guia para abordagem do desenvolvimento neuropsicomotor pelas equipes de Atenção Básica, Saúde da Família e Núcleo de Apoio à Saúde da Família (NASF), no contexto da síndrome congênita por Zika*. Brasília: MS; 2016.
30. Costa AFR, Lopes CA, Gonçalves FS, Gonçalves RP. Reorganização do trabalho do NASF-AB no enfrentamento da pandemia COVID-19: um relato de experiência. *Com Cien Saude* 2020; 31(3):33-39.
31. Oliveira MAB, Monteiro LDS, Oliveira RDC, Moreira TS, Marques ACF, Silva UMA, Oliveira NA, Pereira GFC, Silva ACS, Santana RM. A prática do núcleo de apoio à saúde da família do Recife no enfrentamento à pandemia COVID-19. *APS* 2020; 2(2):142-150.

32. Rede APS. *Experiências de atuação NASF no enfrentamento da COVID-19* [Internet]. 2020 [acesso em 2023 fev 25]. Disponível em: https://redeaps.org.br/2020/06/05/experiencias-de-atuacao-nasf-no-enfrentamento-da-covid-19/.
33. Secretaria de Estado de Saúde do Rio de Janeiro. *Nota Técnica SAPS/SGAIS/SES-RJ nº 01/2020. Orientações quanto à atuação do NASF-AB no contexto de pandemia COVID-19*. Rio de Janeiro; 29 jun 2020.
34. Brasil. Ministério da Saúde (MS). Portaria nº 356, de 22 de maio de 2023. Institui, define e cria incentivo financeiro federal de implantação, custeio e desempenho para as modalidades de equipes Multiprofissionais na Atenção Primária à Saúde. *Diário Oficial da União* 2023; 22 maio.

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