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Original Article

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Extended family health and basic care center (NASF-AB): an evaluative study on its actions with hypertensive and diabetic people NASF-AB: a study evaluation

Núcleo ampliado de saúde da família e atenção básica (NASF-AB): um estudo avaliativo sobre suas ações com hipertensos e diabéticos

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Abstract

Introduction: the implementation of actions with hypertensive and diabetic individuals promoted by the Extended Family Health and Basic Care Center (NASF-AB) is a relevant element for evaluative studies. Objective: to evaluate the implementation of NASF-AB in relation to its actions of food/nutrition and physical activity/body practices in the care of hypertensive and diabetic patients in the family health strategy (ESF) of Petrolina - PE. *Methodology*: This is an evaluative study of type 1b implantation analysis, which identified the degree of implantation (GI) of the NASF-AB and the influence of political and structural contextual factors. *Results:* It was found that the GI and its structure and process dimensions were partially implemented. When analyzing the context, it was found that it was favorable to implementation so that the political approach was more favorable than the structural approach. In turn, the NASF-AB process was favorably influenced by political factors such as knowledge about the NASF-AB, institution of partnerships, increased responsibilities and innovation in practices, however, the structure was unfavorably influenced by factors such as the physical structure of health units, team climate, professional ties and investments in NASF-AB. *Conclusion:* The partial implantation reveals the need to overcome strong obstacles so that this policy is able to induce effective improvements in the care of hypertensive and diabetic patients in the ESF.

Keywords: health evaluation; diabetes mellitus; systemic arterial hypertension; health care

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Resumo
Introdução: a implantação das ações com hipertensos e diabéticos promovidos pelo Núcleo Ampliado de Saúde da Família e Atenção Básica (NASF-AB) é elemento pertinente para estudos avaliativos. *Objetivo:* avaliar a implantação do NASF-AB em relação às suas ações de alimentação/nutrição e atividade física/práticas corporais na atenção a hipertensos e diabéticos na estratégia de saúde da família (ESF) de Petrolina – PE. *Metodologia*: Trata-se de um estudo avaliativo de análise de implantação do tipo 1b, que identificou o grau de implantação (GI) do NASF-AB e a influência de atores contextuais políticos e estruturais. *Resultados:* Foi verificado que o GI e suas dimensões de estrutura e processo estavam parcialmente implantados. Ao analisar o contexto, verificou-se que o mesmo foi favorável à implantação de forma que a abordagem política foi mais favorável do que a abordagem estrutural. Por sua vez, o processo do NASF-AB foi influenciado favoravelmente por fatores políticos como conhecimento acerca do NASF-AB, instituição de parcerias, ampliação de responsabilidades e inovação nas práticas, entretanto, a estrutura foi influenciada desfavoravelmente por fatores como a estrutura física das unidades de saúde, clima de equipe, vínculos profissionais e investimentos no NASF-AB. *Conclusão:* A implantação parcial revela a necessidade de superar fortes obstáculos para que essa política consiga induzir melhoras efetivas no cuidado com hipertensos e diabéticos na ESF.
Palavras-chave: avaliação em saúde; diabetes mellitus; hipertensão arterial sistêmica; atenção à saúde

Introduction

The high prevalence of Systemic Arterial Hypertension (SAH) and Diabetes Mellitus (DM) is closely related to the population's lifestyle. Given the chronicity of these condition and the complexity of their control, the Primary Health Care (PHC) constitutes at the main level of care for these patients, because through the Family Health Strategy (FHS) educational health actions are promoted aimed to the change of behaviors, as well as longitudinal care for these diseases[1-4].

The stimulus for actions that promote health and life quality for patients with SAH and DM has emerged in the last decades with the formulation of policies and/or interventions in PHC that usually follow the guarantee of comprehensive and resolutive service of the demands imposed by these conditions[3-4].

On this perspective, the Extended Family Health and Basic Care Centers (NASF-AB) are constituted in a recent policy of the Health Ministry to give support to the Family Health Teams (EqSF) through multiprofessional teams, providing an attention to the health with greater solvability and expanding the scope of actions[5]. Through health professionals such as nutritionists, physics education teachers, psychologists, among others found at NASF-AB, there is an opportunity to enhance the management of SAH and DM. This way, the group formed by the EqSF and the specialized support offered by the NASF-AB is shown as foundation in the health care inside the network of attention to the carriers of these diseases.

The NASF-AB disposes nine strategical areas to serve as focus on its actions, but the importance of actions of alimentation/nutrition (A/N) and physical activity/body practices (PA/BP) is noticeable for the carriers of these grievances. Currently, the need of a special attention to the development of actions on these areas is revealed due to its influence to the prevention and control of SAH and DM[6-7]. However, on the current management of these diseases, what can be seen is the mismatching of precautions being performed in different levels of attention to health, raising a bad coordination of care and users dissatisfaction [8].

From this new organization dynamic of health services and the articulation between NASF-AB and ESF, it's necessary

to rethink the actions of all the ones involved (community, health professionals and managers) aiming to make the needed change happen: effective production of health to the registered population. This way, a political agreement is is required among the parts and use of adaptative mechanisms and appropriation of different contexts for an effective implantation of the NASF-AB [9].

Therefore, the analysis studies of implantation provide methods and evaluative approaches that may evaluate the ties between the intervention (programs, policies, services, actions) and its context of insertion on the production of effects, in which particularly becomes important when the intervention is complex, with multiple components in which the context may interact in different ways [10].

Thus, this study had as objective to evaluate the implantation of NASF-AB relating to the actions of A/N and PA/BP in attention to the Carrier of SAH and DM of ESF of Petrolina – PE.

Material and Methods

Sample and type of study

This is about an evaluative study of analysis of implantation according to the component 1b proposed by Champagne *et al*[11]. This type of analysis permits to identify the degree of implantation of an intervention in function of the contextual characteristics. A single case study with a single level of analysis[11] was performed in the municipality of Petrolina-PE.

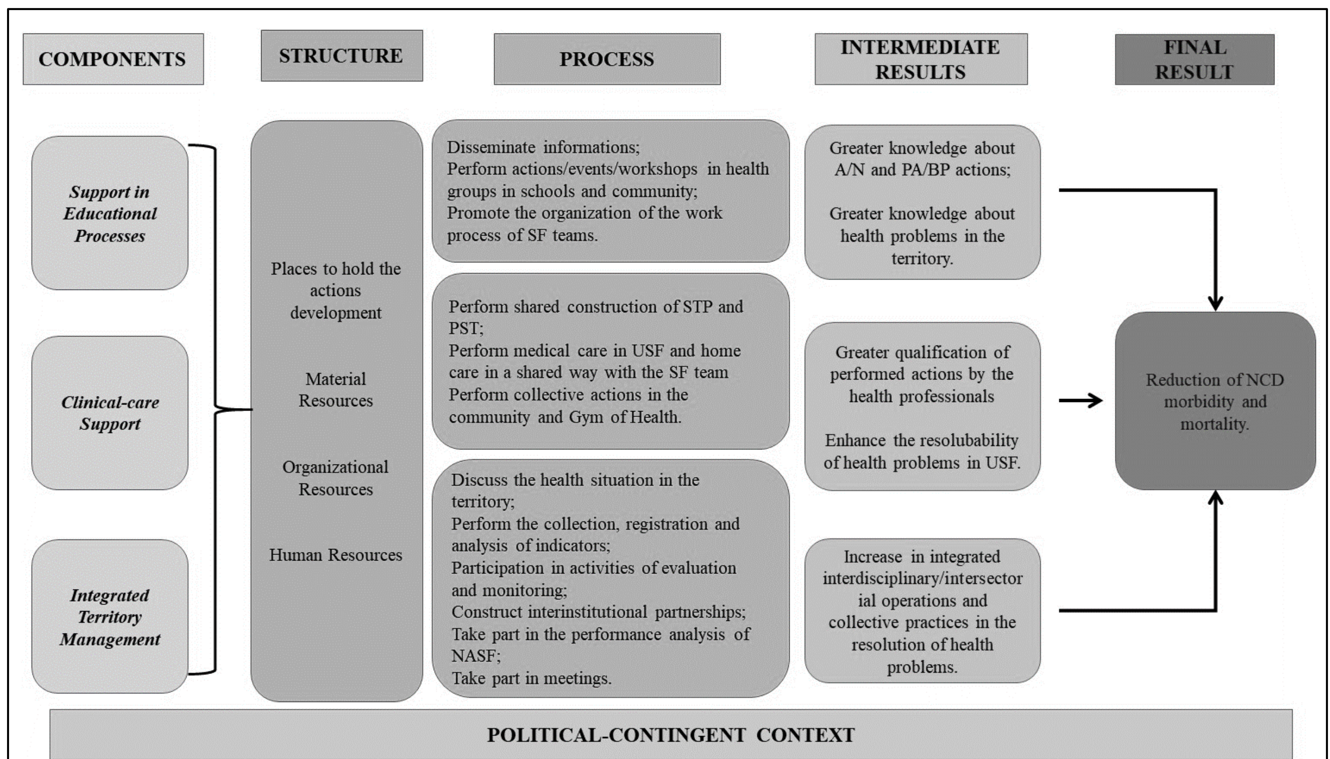
Petrolina is located at south-west region of Pernambuco State at 734km from the capital, in the semi-arid region of northeast. It hás a network of health services that cares for the development of the ESF, with the NASF-AB installed since seven years ago. This municipality is constituted as na important Center of health organization in the state of Pernambuco. [12]

It's worth mentioning that the study has been linked to the entitled Project *"Núcleo de Apoio à Saúde da Família (NASF-AB): uma análise dos componentes alimentação, nutrição e atividade física na rede de atenção aos hipertensos e diabéticos em Pernambuco",* performed by the research group of the Evaluation Lab, Health Monitoring and Surveillance (LAM-SAÚDE) from Institute Aggeu Magalhães of Oswaldo Cruz Foundation (FIOCRUZ) – Pernambuco. This project at which this study is linked was submitted and approved by the Committee of Ethics in Researches of IAM/Fiocruz-Pernambuco (Opinion N°1.644.126) with its execution being obedient to the norms that govern the researches with human beings.

Research design

The Logical Model – ML of the intervention and the Analysis and Judgment Matrix (MAJ) were constructed and validated, which contained a series of indicators for assessing the degree of implementation (GI) and its structure dimensions and process of NASF-AB relating to actions of alimentation, nutrition and physical activity/body practices. Structured questionnaires were made from the MAJ. The contextual assessment was based on the political and contingent model formulated by Denis and Champagne[13] in which the semi-structured script for the collection of contextual data was built.

Figure 1 – NASF-AB's Summarized Logical Model in relation to the actions of alimentation, nutritional and physical activity/body practices.



Source: Based on the ML of the research Project with reference to Lira[16].
Caption: SF – Family Health; A/N – Alimentation and Nutrition; PA/BP – Physical Activity/Body Practices; PTS – Singular Therapeutic Project; PST – Health in the Territory Project; USF – Family Health Unit; NCD – Chronic Noncommunicable Disease.

Inclusion and Exclusion Criteria

As this is a case study, the inclusion and exclusion of research participants was conditioned to their potential contribution to data collection. In this sense, all the NASF-AB teams in Petrolina and their team of managers and coordination of primary care were selected, in addition to some ESF professionals.

Procedures

From the MAJ, structured questionnaires were made to evaluate the structure and process. In the structure, the places for the development of NASF-AB actions, material resources, organization resources and human resources were evaluated, corresponding to a number of 18 MAJ indicators. Regarding to the process, all NASF-AB actions of A/N and PA/BP for hypertensive and diabetic users grouping them in three components in this dimension: support in educational processes (16 indicators), clinical and pedagogical support (14 indicators) and integrated territory management (22 indicators), in total of 52 indicators.

In this stage, the structured questionnaire was applied to eight nutritionists and a physical educator from NASF-AB in Petrolina, covering the nine existing teams.

To calculate the GI of the structure and process dimensions, the sum of the scores obtained in the indicators for each dimension was performed separately, divided by the expected score for the dimension, and then multiplied by 100. The total GI (structure + process) was established in a weighted way, considering

that the process dimension was more important than the structure dimension in the implementation of NASF-AB in relation to the areas under study. In this sense, weight four was assigned to the structure dimension and weight six to the process. Thus, the total IG was obtained from the following equation[1]:

$$\textbf{Total GI} = \left(\frac{(4\sum E^1 + 6\sum P^1)/10}{(4\sum E^2 + 6\sum P^2)/10}\right) * 100$$

[1]Where Σ E¹ = Sum of the scores obtained in the indicators that made up the structure dimension; Σ P¹ = Sum of the scores obtained in the indicators that made up the process dimension; Σ E² = Sum of the scores expected in the indicators that made up the structure dimension; e Σ P² = Sum of the scores expected in the indicators that made up the process dimension.

The value judgment considered the following cutoff scores: < 25.0% – not implanted; from 25.1% to 50.0% – incipient implantation; from 50.1% to 75.0% – partially implanted; and >75.1% – implanted[14].

In the context assessment stage, the scripts were applied to two professionals from the municipal health management (Board of Directors of Primary Care and NASF-AB Coordination), two doctors and two nurses from the ESF, a community health agent and Five NASF-AB professionals.

After collecting data and reading the interviews resulting from the application of semi-structured script, a content analysis proposed by Bardin[15] was used, thus, creating thematic categories that could contribute to identify the influence of the political and structural context of Petrolina in the GI of the NASF-AB. They were created as follows below.

For each report, the creation of positive and negative nuclei was allowed. It was concluded that the context of the thematic category was favorable when the number of positive nuclei was greater than that of negative and vice versa for unfavorable ones. The final context was favorable when the number of favorable thematic categories was greater than that of unfavorable ones (number of favorable categories greater than 50.0%) and vice versa. In tie cases the tiebreaker criteria was the judgment of the importance of the thematic categories for the implementation of the intervention.

Seven categories for each context were created, namely:

- Political: types of cooperation between the actors; knowledge about the work of NASF-AB; expansion of responsibilities in the care of patients with SAH and DM; partnership mechanisms for carrying out A/N and PA/BP actions; management participation in NASF-AB's A/N and PA/BP actions; planning and monitoring of NASF-AB's A/N and PA/BP actions; innovation in practices.
- Contingent (structural): attributes of managers; NASF-AB work environment; Professional bonds; financial resources; team atmosphere; physical structures of family health units for NASF-AB to operate; formalization of NASF-AB's work in the face of A/N and PA/BP actions.

After determining the context, its influence on the degree of implementation was verified by analyzing the possible relationships between them through a triangulation of data.

Results

Degree of implementation of NASF-AB in relation to actions of alimentation, nutrition and physical activity/body practices in the city of Petrolina.

The total GI of NASF-AB in relation to alimentation, nutrition and physical activity/body practices in the city of

Petrolina, is partially implemented, receiving a percentage score of 58.8%.

Structure Implementation Degree

The structure dimension of the NASF-AB corresponds to all the resources necessary for the performance of A/N and PA/BP actions. It was classified as partially implanted (59.3%).

However, the criteria "place to carry out actions with the community", "e-SUS records", medical reports", and "routing flow protocols", therefore, all considered implemented (IM>75.1%). "Institutional Vehicle" was the only criterion considered not implemented (IM> 25.0%).

The other criteria varied from incipient implantation to partially implanting, with the majority being classified in the latter classification as shown in the table in Figure 2. When highlighting the elements previously mentioned as implanted, the NASF-AB has important inputs in its structure to improve the care of hypertensive and diabetic patients in Petrolina.

Figure 2 – Scoreboard (%) by criterion and indicator of the structure dimension of NASF-AB in the city of Petrolina.

DIMENSION	CRITERION	INDICATOR	SCORE ACHIEVED (%)	SUBTOTAL OF CRITERION (%)
STRUCTURE	Place to hold meetings	% of USF under NASF-AB coverage area that have a place to hold meetings	59.3	59.3
	Place to carry out the actions with the community	% of USF under the NASF-AB coverage área that have a location in the USF/SMS/community to carry out actions with the community	77.8	77.8
	Supplies for the actions	Existence of office supplies	55.6	55.6
	Informative material	Existence of informative material related to the theme of A/N	55.6	44.4
		Existence of informative material related to the theme of PA/BP	33.3	
	e-SUS files	% of USF under NASF-AB coverage area that has an Individual Activity Sheet	80.6	89.8
		% of USF under NASF-AB coverage area that has a Collective Activity Sheet	88.9	
		% of USF under NASF-AB coverage area that has a Procedures Sheet	100.0	
	Reports	% of USF under NASF-AB coverage area that has medical reports for users to use NASF-AB	77.8	77.8
	Equipments	Existence of equipments	55.6	55.6
	Computer with internet Access	% of USF under NASF-AB coverage area that has computers with internet Access for the use of NASF-AB	55.6	55.6
	Transportation	Existence of vehicles	11.1	11.1
	Routing flow protocol	% of USF under NASF-AB coverage area that has routing flow protocol	77.8	77.8
	Primary Care Notebooks	% of USF under NASF-AB coverage that has Primary Care Notebooks	38.9	38.9
	Instrument to carry out the diagnosis of the territory	Has the instrument (method, reference author, etc.) to perform the diagnosis of the territory	33.3	33.3
	Qualified NASF-AB team	% of NASF-AB professionals that received qualification/training on the A/N theme in the last two years	44.4	50.6
		% of NASF-AB professionals that received qualification/training in the subject of PA/BP in the last two years	18.5	

		Existence of nutritionist and physical educator in the NASF-AB team	88.9	
	STRUCTURE DIMENSION TOTAL			**59.3**

Source: self elaboration
Caption: A/N – Alimentation, nutrition; PA/BP – physical activity/body practices; USF – Family Health Unit; SMS – Municipal Health Department; NASF-AB – Family Health Support Center; e-SUS – SUS electronic system.

Implantation Process Degree

The process dimension was classified as partially implemented, considering its percentage score of 58.7%, as shown in the table in Figure 3.

All components of the process dimension were considered partially implemented, receiving the following scores: Support in Educational Processes – 62.7%; Clinical and Pedagogical Support – 61.5%; Integrated Territory Management – 52.3%.

In the 'Support in Educational Processes' component, only the criteria "disclosure of informations" and "support for health groups" were considered implemented. "Conducting workshops with the family health team and the community" and "guidance regarding to the work process of family health teams regarding the topic under study" were considered to be incipient implementation

(Figure 3).

Context of implementation of NASF-AB in relation to actions of alimentation, nutrition and physical activity/body practices in the city of Petrolina

The political approach showed 57.1% of favorable categories, being classified as favorable to the implementation of NASF-AB in relation to actions of alimentation/nutrition and physical activity/body practices in the city of Petrolina. On the other hand, when dealing with the structural context of NASF-AB in relation to the actions of A/N and PA/BP in Petrolina, its implementation was considered unfavorable with 57.1% of unfavorable categories.

Analysis of relationship between the context and the degree of implementation of NASF-AB

The presence of only 50% of favorable categories can explain the partial implementation of both the structure and the process of the degree of implementation of the NASF-AB in relation to the actions of alimentation, nutrition and physical activity/body practices in Petrolina.

Discussão

Regarding to the degree of implementation of the NASF-AB structure, the existence of routing flow protocols, for example, is an important element for the continuity of care when checking the limits in the ESF for resolving health problems of users with these chronic diseases. The articulation of services within the Health Care Network and its different levels is necessary to ensure the integrality of health actions[1].

However, there is an incipient implementation of many criteria, of which the "qualified NASF-AB team" stands out (Figure 2). This weakness in the qualification of the team was also found in the studies carried out by Fernandes *et al*[17] e Reis *et al*[18] when investigating the work of NASF-AB professionals in APS. Fagundes[19] points out that the lack of training of professionals in this team can hurt one of the guidelines of this proposal: permanent health education for professionals and users, since the NASF-AB couldn't be using its work tools correctly.

In addition, it is observed that "places to hold meetings", information materials",

"equipment", "computers with internet Access", "vehicles", among others, were also resources that set up a weakened structure for NASF-AB and this directs means for the precariousness of the proposal in strengthening the resolution of primary care and its role of coordinating care in the health service network. Martinez *et al*[20] point out that in many investigations there are indications of structural problems, mainly related to the physical structure of health units, transportation for professionals and the lack of strategic inputs.

The partial implementation of the structure dimension of the NASF-AB opens debates for the importance of the structural aspects being more and more effective, since it holds important elements and should be considered in the set of priorities, as it allows the construction of effective and humanized health actions. Therefore, the structure is a component that tends to increase the quality of the team, organizations and health services.

In turn, in the degree of implementation of the process, when looking simultaneously at the criteria considered to be implemented and those with incipient implantation, it appears that the NASF-AB has weaknesses in educational practices. Anjos *et al*[21] bring this theme reflecting on the importance of making critical reviews of these educational processes developed by NASF-AB professionals so that their work process with EqSF can be carried out, in order to bring the population to a new conception and way to assist in health.

In the 'Clinical-Pedagogical Support' component, the criteria "registration of activities performed on the e-SUS forms", "use of routing flow protocol", "individual home care", and "use of medical reports" stand out, since all were classified as implanted. "Shared construction of a Health Project in the Territory" and "actions of alimentation/nutrition and physical activity/body practices in conjunction with the Health's/city's/similar Gym" were classified as not implemented and incipient implantation, respectively (Figure 3).

This component can be considered an important set of actions that favor the induction of matrix support, directly impacting the achievement of the NASF-AB[22-23] objectives. The non-implementation of several activities of clinical-care support, may be collaborating so that this team develop limiting actions which have repercussions on weaknesses in the coordination of care in partnership with the EqSFs.

Finally, in the 'Integrated Territory Management' component, it can be seen that the criteria "integrated planning" and "articulation of health services through institutional partnerships" were classified as implemented. On the other hand, the "performance of collection, registration and analysis of indicators of safety and alimentation and nutritional diagnosis and physical activity/body practices" and "NASF-AB team meetings" were set up as non-implanted and incipient implanted, respectively (Figure 2).

The NASF-AB supports management and care, being a strategy for organizing care and management practices with the guideline of forming collective spaces that subsidize prevention and health promotion actions, intramural or territorial, as well as local planning and management[24-25]. Thus, the activities seen in this last component, being considered as implemented and partially implemented, may give rise to the difficult consolidation of this guideline.

Regarding the evaluation of the context in its political approach, it was noticed that the knowledge about the NASF-AB work process was a favorable category in this context, since it was identified that the EqSF know the NASF-AB and offer the possibility of performances at the same time to its work process:

> "they *[Community Health Agents]* have a good mentality to understand the work process, the planning, the

groups, when we want to set up a group they always support us and we depend on their support because they are the bridge between us and the community. " (NASF-AB Professional)

According to Andrade *et al*[9], the recognition of a specialized support team can open margins for multidisciplinary work, expanding the management of the peculiarities of the community and its needs, in order to relieve or minimize the emerging problems.

In Petrolina, it was also seen that the NASF-AB and the EqSF work with hypertensive and diabetic patients in order to expand the responsibilities of both teams, being a category also favorable:

"I often call and say: 'look, I'm referring a patient, which I think that it's this, take a look for me'. They *[NASF-AB]* do it. He goes under some tests, obviously he doesn't follow the diagnosis, because he knows up to his limit, but you can get it, look, it's right there, we can do it, while we wait for a kilometer consultation with specialists" (ESF Doctor)

The multiprofessional work is based on the search for answers in the core of competence and responsibility of each profession, when the questions arise precisely from the need to extrapolate them, through practices in common fields of competence and responsibility[26]. This way, NASF-AB has been seeking to recognize the limits of each Field of knowledge. To this end, they establish partnerships along this path that are most of the times indispensable to increase the resolution of demands, determining another favorable category in the political context:

"Whenever they *(NASF-AB)* can, they bring people both from the area connected with the colleges, or some specialist in a certain health matter, from the Petrolina Serological Guidance and Assistance Center, or even as now that we are going to make the vegetable garden the AMA people came, Who are already part of it that moves plants, these things to analyze the soil, so they look for partnerships. (Community Health Agent)

The search for these partnerships was also verified in the studies by Volponi *et al*[27], Gonçalves *et al*[28] and Maciel *et al*[29] who found out that the NASF-AB established the proper partnerships, thus, stimulating reflections on interdisciplinary action and potential for changing practices. Translated into actions of alimentation and physical activity, these practices have been innovated in a playful, creative and inducing meaningful interprofessional relationship within the scope of the EqSF providing another favorable category:

"Usually (...), as I said, we always work on the issue of healthy eating with a lecture, video complementation, with workshops, so we also always try to change it, not only present the lecture, talking and speaking, but also to make people understand the concept of healthy eating, knowing healthy foods, knowing how to differentiate, identify..." (NASF-AB's Professional)

The political context in Petrolina, when considered as favorable, demonstrates how the actors develop their A/N and PA/BP actions in the daily life of NASF-AB practices, revealing sometimes contradictory means to their implementation. The possibilities and opportunities emanating from these relationships could lead to the exchange of knowledge, joint discussions and the elaboration of care plans in common agreement between professionals.

In turn, in the structural approach, the physical structures of the family health units are unfavorable to the actions of the NASF-AB. In the municipality of Petrolina there is also an organizational arrangement in primary care called Specialized Multiprofessional Service (AME), which guarantees a greater spectrum of services by the union of two or more EqSF and a greater range of services of a specialized and basic

nature. But even in these AME it's seen that there are infrastructure problems for carrying out the actions of the NASF-AB:

> "When we talk today about the composition of AMEs that Petrolina had, it has a good side and a bad side, because AMEs were structures built recently, so we believe that it has a modern standard with a structure to welcome these professionals and these patients. But when we come to the practice, we have AMEs or even UBS, which we don't even have an outdoor space to develop health education actions." (NASF-AB Manager.)

When it comes to the physical structure of family health units, this is a factor treated as negative in some studies carried out with the NASF-AB[20, 28, 30]. Martinez *et al*[20] point out the unanimity of this problem persisting in several Brazilian municipalities and that this, in addition to causing mismatches in the implementation of NASF-AB, is seen in its origins by the chronic underfunding process in the health sector.

Another category of the unfavorable structural context is the financial resources for NASF-AB. These are considered scarce and, in addition, are not specific to the actions of A/N and PA/BP:

> "(...) in reality, we need to increase the number of services offered, but the amount of resources to finance in service does not increase." (NASF-AB Manager)

> "Not of alimentation. It's not Just about food, it is in general, physiotherapy... for NASF-AB in general. As I told you that we work, we make folders, we make prints and this is the resource we have, but there's no financing for that." (NASF-AB Professional)."

The efficient use of local resources, often already available, as well as financing directed to health promotion and prevention actions are essential for the adequate control of DCNTs, however, it is worth noting that the scarcity of investments with financial resources is already pointed out in studies as a factor that implies discontinuities in the work process with these diseases[31].

In addition, another unfavorable category was the professional ties. The reality of contracting professionals with fragile employment ties in Petrolina generates negative effects that are added to those of the previous implication of financial resources:

> "It interferes negatively, because we lose, let's say, the thread, we come with a group of professionals working at a pace, then for some reason it walks away, asks to leave there, we have to put another one that will start from scratch, (...)" (Primary Care Department)

Reis *et al*[18]affirm that the work process of NASF-AB health professionals is related to the organizational conditions in which the services offered are available, which is one of the determining factors for maintaining the quality standards of the health actions developed.

Another unfavorable category was the work environment. In Petrolina, the EqSF are different in several aspects (size, time, team composition, workflows, etc.), creating an environment that gives rise to different ways of multiprofessional action for the NASF-AB:

> "I have seven units, it's not that all are the same. They're not the same, but among these seven I have three that I can do a bigger performance than the others." (NASF-AB Professional)

Being considered as unfavorable, the structural context reveals the need for adaptations of NASF-AB as a health organization so that there's a more effective performance of A/N and PA/BP actions with hypertensive and diabetic users as a way to optimize the logic of co-responsibility and integrated care

management required for the performance of this multiprofessional team.

The analysis of all categories allowed to infer that approximately 50% of them were considered favorable to the implementation of NASF-AB in relation to the actions studied. When analyzing the importance of each category in the development of actions, it is seen that in many of them there is evidence of these actions being carried out in a way that institutes NASF-AB as an element that induces changes, although weaknesses are revealed. Therefore, Petrolina's political context and final contingent was considered to be favorable.

Regarding to the analysis of the relationship between the context and the degree of implementation of the NASF-AB, it was realized that the knowledge about the work of the NASF-AB can be a factor that favors the implementation of some criteria of the GI of the process, such as "shared clinical care with family health team professionals" and "participation in family health team meetings", therefore, there is recognition of importance of a specialized support team in ESF activities with hypertensive and diabetic patients.

Through shared consultation and participation in EqSF meetings, the NASF-AB guarantees a moment where there is an exchange of knowledge between professionals and incorporation of new knowledge by the teams with proposals for activities, projects and collective thoughts[7,26]. Thus the existence of professionals from the reference teams that recognizes the NASF-AB's performance and favors the performance of integrated activities, may favor the implementation of A/N and PA/BP actions, contributing to the resolution of the demands arised by hypertensive and diabetic users.

The articulation of health services through interinstitutional partnerships with institutions and local entities for the development of actions' was another criterion implemented that may be related to the political context in which is part of the mechanisms of partnerships for carrying out the actions. When working with A/N and PA/BP the NASF-AB addresses external partner sources to assist in these actions and these interinstitutional articulations are kept for a long time. This fact corroborates what is referred by Assis *et al*[32] who inform that the maintenance of these partnerships is necessary to promote health education, which tends to favor the gradual incorporation of new life habits.

'The dissemination of information on the topic' was another criterion considered implemented that possibly may be influenced by the political context when it comes to innovation in practices. It was seen that the actions of A/N and PA/BP are developed in order to contemplate the needs of the territory and with creative feature and stimulator of new practices.

Therefore, NASF-AB in Petrolina contributes to strengthen the capacity of the EqSF care for hypertensive and diabetic users so that they receive a greater spectrum of information on self-care, lifestyle and adoption of healthy eating habits. The dissemination of information through health education and permanent education actions, therefore, reflects what NASF-AB brings in terms of innovation in the teams' work process, in other words, providing the production of new knowledge in action, by instituting the collective management of care with a view to a committed interdisciplinary clinic.

When dealing with the structure of the NASF-AB, it was seen that its partial implementation sets up weaknesses in the provision of necessary items to carry out these actions in the municipality of Petrolina. 'Materials for the actions', 'Informative materials', 'Computers with internet access', 'Equipment', 'Basic Care Notebooks', 'Tool for diagnosing the territory' were criteria that were partially implemented in the municipality.

The negative influence of the structural context of NASF-AB implantation may be the factor that explains the low percentage obtained in the GI. The

final resources for NASF-AB teams reveal an insufficient investment for their actions and have no specific direction to finance them. It's also seen that the family health units don't have the minimum equipment/materials required to assist in these actions, even though they have a different organizational arrangement like the AME, and there is a turnover in the NASF-AB professional staff.

Investments for NASF-AB teams are referred in literature as professional qualification and hiring of human resources[31]. The National Policy for Primary Health Care[5] states that it's the responsibility of the municipalities and the Federal District to fund materials and actions for the development of the minimum activities described in the tasks of the actions of the different professionals who will compose the NASF-AB. Thus, the effective hiring of professionals, their proper qualification and distribution of equipment to assist in the actions can be items that must be handled in a fruitful way for the NASF-AB teams, promoting improvements around their implementation in Petrolina.

The normative provisions of the NASF-AB require the acquisition of a support infrastructure such as, for example, local regulations for the operation of the NASF-AB, institutional supporters, institutional transportation, professional qualification and permanent education for the NASF-AB, among other items[24]. However, Martinez *et al*[20] emphasize that there are important structural similarities in most Brazilian municipalities in regards to the precarious working conditions of NASF-AB, especially in infrastructure, in the lack of effective professionals and material, which express the weakness of the proposal in strengthening principles of primary care and its role of coordinating care in the health service network.

Considering the premise of interdisciplinarity, the use of physical spaces should not be restricted to the logic of exclusive spaces for the NASF-AB, but should be shared between different professionals and activities. This sharing is what will allow the construction of a new way of working in health centered on the user, with quality, resolution and equity[21].

Finally, it's clear to point out that the NASF-AB structure and process for A/N and PA/BP actions have more complex relationships with their structural and political factors. By favoring actions, the political context opens the opportunity for NASF-AB to elaborate educational processes, clinical-pedagogical assistance and integrated territory management in order to contemplate mosto f the criteria established in its ML; however, the structural context doesn't allow the success of these actions due to a weakened structure that hardly supports these practices.

Conclusion

The total GI of NASF in relation to alimentation, nutrition and physical activity/body practices in the municipality of Petrolina, is partially implemented, with a percentage score of 58.8%. GI total do NASF em relação à alimentação, nutrição e atividade física/práticas corporais no município de Petrolina, encontra-se parcialmente implantado, com uma pontuação percentual de 58,8%.

Considering its partial implementation in Petrolina, it's evident that there are actions in the structure and process dimension that have not been carried out by NASF-AB, which may be favoring the fragmentation of care or the failure to carry out some of these actions that promote healthy habits for the public with SAH and DM.

The context, despite being considered favorable, pointed out several elements that don't favor the implementation of these actions by the NASF-AB, requiring changes in the political and structural order that aim to strengthen the role of the NASF-AB in these themes in relation to the health care provided to hypertensive and diabetic users.

It was evidenced that the implantation analysis study offered methodological resources opportunely valid for the attempt to verify the opportunities and weaknesses that the NASF-AB has been having in the city of Petrolina when working with actions of alimentation/nutrition and physical activity/body practices. These results can be used to support managers in decision making, promoting the necessary improvements in health actions developed by NASF-AB.

References

1. BRASIL. Ministério da Saúde. Estratégias para o cuidado da pessoa com doença crônica. Brasília: Ministério da Saúde; 2014.
2. Bortoluz S, Lima LA, Nedel FB. Condições de saúde e utilização de um serviço de atenção primária em pacientes hipertensos e/ou diabéticos. *Ciência & Saúde* 2016; 9 (3): 156-166.
3. Duncan BB, Chor D, Aquino EML, Bensenor IM, Mill JG, Schmidt MI, Lotufo, PA, Vigo A, Barreto SM. Doenças Crônicas Não Transmissíveis no Brasil: prioridade para enfrentamento e investigação. *Rev. Saúde Pública* 2012; 46 (Supl): 126-34.
4. Goulart FAA. *Doenças crônicas não transmissíveis: estratégias de controle e desafios e para os sistemas de saúde.* Brasília: OPAS; 2011.
5. BRASIL. Ministério da Saúde. Política Nacional de Atenção Básica. Brasília: Ministério da Saúde; 2012.
6. Amaral MN, Silva MEK. Atuação do nutricionista no núcleo de apoio à saúde da família: desafios da interdisciplinaridade no cuidado à saúde. *Trab. Educ.* 2015; 24 (2): 143-55.
7. Furtado GVM, Knuth AG. Núcleo de Apoio à Saúde da Família (NASF-AB) em Rio Grande/RS: percepções sobre o trabalho realizado pela educação física. *Rev. Bras. Ativ. Fís. Saúde* 2015; 20 (5): 514-23.
8. Pinheiro CTMA. *Gestão das Doenças Crônicas: Implicações na Prática nos Cuidados de Saúde Primários - Unidade E* [dissertação]. Lisboa: Universidade Aberta; 2009.
9. Andrade LMB, Quandt FB, Campos DA, Delziovo CR, Coelho EBS, Moretti-Pires RO. Análise da implantação dos Núcleos de Apoio à Saúde da Família no interior de Santa Catarina. *Saúde Transform. Soc.* 2012; 3 (1): 18-31.
10. Hartz ZMA, Silva LMV. *Avaliação em Saúde: Dos Modelos Teóricos à Prática na Avaliação de Programas e Sistemas de Saúde.* Salvador: EDUFBA; 2005.
11. Champangne F. A análise de implantação. In: Brousselle A. *Avaliação: conceitos e métodos.* Rio de Janeiro: Fiocruz, 2011.
12. Prefeitura Municipal de Petrolina (PMP). *Plano Municipal de Saúde 2014-2017.* Petrolina: SMS; 2013.
13. Denis J, Champanhe F. Análise da implantação. In: Hartz, ZMA. *Avaliação em saúde: dos modelos conceituais à prática na análise da implantação de programas.* Rio de Janeiro: FIOCRUZ; 1997.
14. Ferreira VSC, Silva LMV. Intersetorialidade em saúde: um estudo de caso. In: Hartz ZMA, Silva LMV. *Avaliação em Saúde: Dos Modelos Teóricos à Prática na Avaliação de Programas e Sistemas de Saúde.* Salvador: EDUFBA; 2005.
15. Bardin L. *Análise de Conteú*do. São Paulo: Edições 70; 2011.
16. Lira RC. *Elaboração e validação de um questionário para avaliação da implantação do componente alimentação, nutrição e atividade física do NASF-AB em Pernambuco, PE* [dissertação]. 2017. Recife: IAM/FIOCRUZ; 2017.
17. Fernandes JM, Rios TA, Sanches VS, Santos MLM. NASF-AB's tools and practices in health of physical therapists. *Fisioter. Mov.* (Online) 2016; 29 (4): 741-50.

18. Reis ML, Medeiros M, Pacheco LR, Caixeta CC. Avaliação do trabalho multiprofissional do Núcleo de Apoio à Saúde da Família (NASF-AB). *Texto Contexto Enferm* 2016; 25 (1): 01-09.
19. Fagundes AA. *A atuação do nutricionista nos Núcleos de Apoio à Saúde da Família (NASF-AB)* [tese]. Brasília: Universidade de Brasília; 2013.
20. Martinez JFN, Silva MS, Silva AM. O Núcleo de Apoio à Saúde da Família em Goiânia (GO): percepções dos profissionais e gestores. *Saúde Debate* 2016; 40 (110): 95-106.
21. Anjos KF, Meira SS, Ferraz CEO, Vilela ABA, Boery RNSO, Sena ELS. Perspectivas e desafios do núcleo de apoio à saúde da família quanto às práticas em saúde. *Saúde Debate* 2013; 37 (99): 672-80.
22. Souza TT, Calvo, M.C. Resultados esperados dos Núcleos de Apoio à Saúde da Família: revisão de literatura. *Rev. Saúde Soc.* 2016; 25 (4): 976-87.
23. Nascimento DDG, Oliveira MAC. Reflexões sobre as competências profissionais para o processo de trabalho nos Núcleos de Apoio à Saúde da Família. *Mundo saúde* 2010; 34 (1): 92-96.
24. Brasil. Núcleo de Apoio à Saúde da Família. Brasília: Ministério da Saúde; 2014.
25. Tesser CD. Núcleos de Apoio à Saúde da Família, seus potenciais e entraves: uma interpretação a partir da atenção primária à saúde. *Interface Comun. Saúde Educ.* 2017; 21 (62): 65-78.
26. Correia PCL, Goulart PM, Furtado JP. A avaliabilidade dos Núcleos de Apoio à Saúde da Família (ASF). *Saúde Debate* 2017; 41 (espec.): 345-59.
27. Volponi PRR, Garanhani ML, Carvalho BG. Núcleo de Apoio à Saúde da Família: potencialidades como dispositivo de mudança na Atenção Básica em saúde. *Saúde Debate* 2015; 39 (espec.): 221-31.
28. Gonçalves RMA, Lancman S, Sznelwar LI, Cordone NG, Barros, JO. Estudo do trabalho em Núcleos de Apoio à Saúde da Família (NASF-AB), São Paulo, Brasil. *Rev. Bras. Saúde Ocup*. 2015; 40 (131): 59-74.
29. Maciel MS, Coelho MO, Marques LARV, Rodrigues Neto EM, Lotif MAL, Ponte ED. Ações de saúde desenvolvidas pelo núcleo de apoio à saúde da família – NASF-AB. *Saúde (St. Maria)* 2015; 41 (1): 117-22.
30. Ribeiro MDA, Bezerra EMA, Costa MS, Branco CEC, Araújo Neto JD, Moreira AKF, Filgueiras MC. Avaliação da atuação do núcleo de apoio à saúde da família. *Rev. Bras. Promoção Saúde* 2014; 27 (2): 224-31.
31. Santos SFS, Benedetti TRB. Cenário de implantação do Núcleo de Apoio à Saúde da Família e a inserção do profissional de Educação Física. *Rev. bras. ativ. fís. saúde* 2012; 17 (3): 88-194.
32. Assis LC, Simões MOS, Cavalcanti AL. Políticas públicas para monitoramento de hipertensos e diabéticos na atenção básica, Brasil. *Rev. Bras. Pesqui. Saúde* 2012; 14 (2): 65-70.

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