Analysis of adherence to the teleconsultation service after classroom and distance learning

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Abstract

Objective: To deepen the analysis of the findings in the digitized records and archived in the institutional database, made available by the field team technicians after the face-to-face training and the distance in one of the health regions in the state of Bahia, in order to measure the use and adherence to the service, in view of the methodological and strategic improvement in these training actions adopted by the Nucleus of Telessaúde Bahia. Method: This is an observational, analytical study, taking as a sample the annual competence of 2017, considering the registration in the National Telehealth Platform and the consecutive requests for teleconsultations identified by the applicant. Results: Seventy-one documents were analyzed, covering 100% of the municipalities that make up the studied health region, totaling 1,584 trained professionals and an effective 30% registration in the Platform. Conclusion: The documental analysis proved to be an important database for studies of adherence to the offers of the Telehealth service. However, adherence was considered low, however, with potential for effectiveness and increase of requests when methodologies were used to follow the health professionals sensitized in the training offerings.
Keywords: Telemedicine; Remote Consultation; Primary Health Care; Public Health Informatics.

Resumen

Análisis de la adhesión al servicio de teleconsultoría después de capacitaciones presenciales y a distancia. Objetivo: Profundizar el análisis de los hallazgos en los registros digitalizados y archivados en la base de datos institucional, puestos a disposición por los técnicos del equipo de campo después de las capacitaciones presenciales ya distancia en una de las regiones de salud en el estado de Bahía, a fin de medir el uso y la adhesión al servicio, teniendo en vista el perfeccionamiento metodológico y estratégico en estas acciones de capacitación adoptadas por el Núcleo de Telessaúde Bahia. Método: Este es un estudio observacional analítico, teniendo como muestra la competencia anual de 2017, considerando la efectividad del registro en la Plataforma Nacional de Telessaúde y las solicitudes consecutivas de teleconsultorías identificadas por solicitante. Resultados: Se analizaron 71 documentos referentes al 100% de los municipios que integran la región de salud estudiada, totalizando 1.584 profesionales capacitados y un efectivo de 30% de registro realizado en la Plataforma. Conclusión: El análisis documental demostró ser una importante base de datos para estudios de adhesión a las ofertas del servicio de Telessaúde. Sin embargo, la adhesión fue considerada baja, sin embargo, con potencial de efectivación y aumento de las solicitudes cuando instituidas metodologías de acompañamiento de los profesionales de salud sensibilizados en las ofertas de capacitación.
Palabras-clave: Telemedicina; Consulta Remota; Atención Primaria de Salud; Informática en Salud Pública.

Resumo

Análise de adesão ao serviço de teleconsultoria após capacitação presencial e a distância. Aprofundar a análise dos achados nos registros digitalizados e arquivados no banco de dados institucional, disponibilizados pelos técnicos da equipe de campo após o treinamento presencial e a distância em uma das regiões de saúde do estado da Bahia, a fim de mensurar o uso e a adesão ao serviço, levando em consideração a melhoria metodológica e estratégica dessas ações de treinamento adotadas pelo Núcleo de Telessaúde da Bahia. Método: Trata-se de um estudo observacional analítico, que tem como amostra a competência anual de 2017, considerando a efetividade do registro na Plataforma Nacional de Telessaúde e os pedidos consecutivos de teleconsultoria identificados por solicitante. Resultados: foram analisados 71 documentos referentes a 100% dos municípios que compõem a região de saúde estudada, totalizando 1.584 profissionais treinados e efetivos 30% do registro realizado na Plataforma. Conclusão: A análise documental mostrou-se um importante banco de dados para estudos de adesão às ofertas de serviços da Telessaúde. No entanto, a adesão foi considerada baixa, porém, com o potencial de realização e aumento de solicitações quando foram instituídas metodologias de acompanhamento dos profissionais de saúde sensibilizadas em ofertas de treinamento.
Palavras-chave: *Telemedicina; Consulta Remota; Atenção Primária à Saúde; Informática em Saúde Pública.*

Introduction

One of the major concerns for Primary Care (PC) is to encourage health professionals to work in the Family Health Strategy (FHS), especially in remote, underserved regions and priority areas where there is a shortage or absence of professionals that hinders the effective universalization of health, access and promotion of a fairer and more equitable Unified Health System (UHS)[1].

Over the years, the Ministry of Health (MH) has launched and implemented programs for valuing, training, providing and retaining health professionals as strategies for strengthening UHS. These strategies arise, in part, from the understanding that immersion in PC is fundamental for the qualification of professionals who are more committed to the reality of the population and to regional particularities[2].

One of these strategies that the MH has been doing to combine information and communication technology with health care, refers to the National Telehealth Program Brazil Networks as the protagonist of actions that seek to improve the quality of service and primary care (PC) in the Unified Health System (UHS) across the country, integrating education and service through information technology tools that provide conditions to promote teleassistance and tele-education[3].

For the World Health Organization (WHO), telehealth enables the provision of health services in cases where distance is a critical factor, enabling the diagnosis, treatment and prevention of diseases, research and evaluation and continuing education[4]. In the same vein, the Pan American Health Organization[5] defines telehealth as the use of information and communication technologies (ICT) to provide health services, especially when distance makes it difficult to provide them. This same international body recognizes telehealth as a worldwide reference in tele-technology to promote and expand access to health care, especially for people living in remote areas[6].

Telehealth in primary care, established by Ordinance GM/MS no. 2,554, of October 28, 2011, is part of the National Telehealth Brazil Networks Project, and aims to develop actions to support the health care and permanent education of primary care teams, aiming at education for work in the perspective of improving quality of care, broadening the scope of actions offered by these teams, changing care practices and organizing the work process through the provision of teleconsultation, second formative opinion and tele-education[7].

In the state of Bahia, the discussions that corroborate the offer, start in 2010 from Ordinance No. 402/2010 published by the Ministry of Health, repealed the following year by Ordinance No. 2,546, of October 27, 2011[7], in which the Telehealth Technical Scientific Center of Bahia is established, through the approval by the Bipartite Interagency Commission (BIC) of the Single Telehealth Project, CIB Resolutions Nº 260 and 261/2012[8].

These Resolutions approve the composition of the Bahia State Steering Committee of Telehealth Brazil Networks linked to the BIC and approves the Single Telehealth Project in the State, endorses and guides municipalities that are the headquarters of the Telehealth Center when the use of resources, respectively.

However, program activities were initiated only in 2013 with the aim of achieving positive results in resolving primary care, reducing costs and travel time, retaining health professionals in hard-to-reach places, improving agility in the workplace service provided, besides optimizing the resources within the system as a whole, benefiting UHS users.

With the challenge of serving the entire territory of Bahia and strengthening integrated UHS planning, telehealth became one of the indicators in the Guidelines, Objectives, Goals and Indicators (SISPACTO) agreement from 2013 to 2015, with the agreed goal of expanding the number of Telehealth Brazil Networks points, in addition to the implementation of permanent education actions to qualify care networks and increase the population coverage estimated by primary care teams[9].

In 2017 it was used as one of the external evaluation components of the 3rd cycle of the National Program for Improving Access and Quality of Primary Care (PMAQ), making up the permanent education sub-dimension, as it is a communication resource available to primary care professionals, which allows to answer specific questions or to obtain the opinion of another professional about the management of a clinical case, offers support in the decision of the clinical intervention, thus expanding the team's ability to care, reducing costs and travel time of users[10].

This permanent education component is understood by the Bahia Telehealth Center through teleconsultation and

second formative opinion services as tele-education offers, where, in its Art. 2, Ordinance GM/MS 2,546/2011 defines teleconsultation as:

> "consultation registered and performed among health workers, professionals and managers through two-way telecommunication instruments, in order to clarify doubts about clinical procedures, health actions and issues related to the work process [...]".

It still classifies it as synchronous when it is a request made in real time from videoconferencing features, or asynchronous when done through offline text messaging.

The same ordinance defines the Second Formative Opinion (SFO) as:

> "systematized response, built on bibliographic review, the best scientific and clinical evidence and the ordering role of primary health care, to questions originating from teleconsultations, and selected from criteria of relevance and pertinence in relation to UHS guidelines".

For the Ministry of Health, tele-education, also called distance education (EAD), enables learning through systematically organized and human-mediated teaching resources, presented in different information supports, and can be used alone or in combination[11].

Thus, considering the strengthening of the program at the state level and its potential for support and professional qualification at a distance and in remote places, it is pertinent to verify at what level the training made to use the platform and other Telehealth services has been an effective strategy. Therefore, it is proposed to answer the following hypotheses/problems: Did PHC health professionals trained/monitored, in person and at a distance, to use the National Telehealth Platform made teleconsultation requests during the period? Did they join the offer by making new requests?

This study is justified by considering telehealth in Bahia as a service of the Unified Health System and as such, is governed by the principles of public administration. Thus, in 2017, a large number of professionals from family health and primary care teams trained and registered at the National Telehealth Platform to request teleconsultations were observed.

However, considering the principle of efficiency, it is necessary to proportionally verify the activation of these registrations with requestor profiles in the platform and their effective use of the services.

Thus, the aim of this study is to deepen the analysis of institutional records to verify and evaluate the processes of qualification and identification of applicants, and to measure the use of the service from consecutive requests for teleconsulting.

This analysis is possible from the comparison of the active records of workers and requests for teleconsultations carried out on the national platform, with the records made available after training, in view of better organization and internal planning of actions, assuming that one of the telehealth middle activities is the training in territory, which aims to raise awareness and the first contact to develop the professional's bond with the use of telehealth offerings.

Method

This is an observational analytical study based on the institutional records of the Telehealth Center Bahia, obtained after face-to-face and distance learning, as opposed to the data provided by the National Telehealth Platform (teleconsultation flat table and flat structure table).

The database analyzed refers to the year 2017, considered the period with the largest number of requests for teleconsultation made at the State Department of Health. The technical team was composed of professionals who perform management, administration, teleconsultation, field monitoring, communication, designer and information technology.

This study is based on the East Health Region, which is the most complex region in the state and the main responsible for inferring health indicators. They cover 47 municipalities, including the capital Salvador, as well as four Health Operational Bases (HOB), Camaçari (06 municipalities), Cruz das Almas (09 municipalities), Salvador (10 municipalities) and Santo Antônio de Jesus (22 municipalities).

Aiming at a first approximation with the object of study, and the delimitation of the objectives, we sought to analyze the participation records of the qualifications held in the period, digitized and archived in the institutional database. The production and availability of these documents are the responsibility of the field monitoring technicians. During the training activities participants completed an attendance list informing personal data such as full name, institution and municipality that are linked, function or position they hold, as well as email and telephone contact. This list is scanned and filed at the headquarters of the Bahia Telehealth Center.

The analysis included the nominal identification of all trained professionals, according to this study, the type and date of the training performed, identification of the municipalities and reference Health Operational Bases - HOB that comprise the East Health Region, in addition to the period and number of teleconsultations on the Platform.

These data were collated with the records found in the Flat Table, consolidated report that records requests for teleconsulting, and in the Structure Table, consolidated report that records the professionals, both made available by the National Platform of the Ministry of Health.

In the second moment, the appropriate quantitative proportions of the qualifications carried out with the municipalities that make up the East Health Region were analyzed, in

order to identify among the professionals trained by the Telehealth Center, those who made their registration in this platform, those who made requests for teleconsulting and their characteristics, as well as the frequency of these requests, in addition to the professional profile of the applicants graphically arranged for analysis.

This study considered the voluntary registration as a criterion for implementation/activation in the National Telehealth Platform of the Ministry of Health. This first voluntary approach with the service tools is considered an important initiative that produces bond between peers.

Results

Seventy-one documents produced in 2017 were analyzed, covering 100% of the municipalities that make up the Eastern Health Region of the State, totaling 1,584 professionals trained by regional workshops and face-to-face training in the municipalities, as well as virtual training offerings such as web conferencing training (WT) and follow-up web conferencing (FW) (Table 1).

Table 1: Characterization of the qualifications performed

TABLE 1: CHARACTERIZATION OF THE QUALIFICATIONS PER FORMED			
Health Operational Bases	Type of training	Total by type of training	Total of trained professionals
Camaçari	Workshop	2	40
	Classroom training	13	272
	Web follow-up	2	4
	Web training	4	105
Grand total		21	421
Cruz das Almas	Workshop	2	99
	Classroom training	2	113
	Web follow-up	2	4
	Web training	3	79
Grand total		9	295
Salvador	Workshop	1	62
	Classroom training	28	542
	Web follow-up	0	0
	Web training	1	32
Grand total		30	636
Santo Antônio de Jesus	Workshop	1	51
	Classroom training	9	160
	Web follow-up	0	0
	Web training	1	21

Source: BAHIA. Telehealth Center Bahia, 2017.

There is a significant offer of predominant in-person training in three of the four HOB, accounting for 68.6% of the total of trained professionals, with Salvador Bases as the largest number of trained professionals, followed by the Camaçari Base. The follow-up web conferencing (FW) occurred in only two bases and in an unrepresentative amount. The regional workshops were held mainly in March and July.

In graph 1 it is possible to follow monthly the type of training offered in the region and period of the study.

Graph 1: Monthly offer by type of training. Source: BAHIA. Telehealth Center Bahia, 2018.
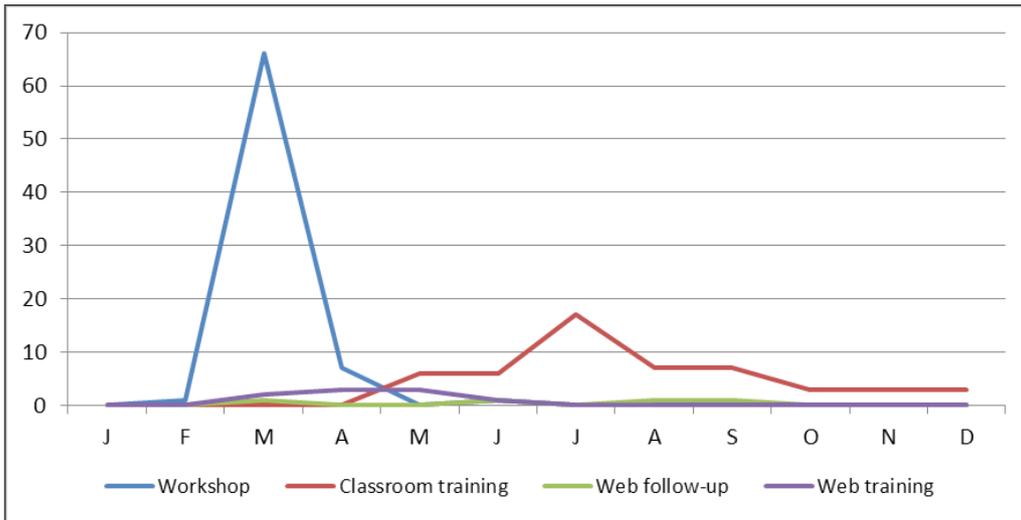
Source: BAHIA. Telehealth Center Bahia, 2018.

In the analysis of trained professionals in the period, only 478 (30%) made the registration in the National Telehealth Platform. However, 560 other registered professionals were identified, without, however, having participated in any training offer during the study period. Together, the registrations totaled 1,038 records in the National Platform in the year studied for the Region.

Among these professionals sensitized during the training and with completed registrations, 151 were identified who made requests for teleconsulting, representing 31.5% of this total post-training registrations. However, by observing the amount of trained professionals (1,584 professionals), this percentage reduces to less than 4.3% of applicants who participated in some training and made requests.

With regard to teleconsulting, approximately 24% of all production at the Telehealth Center in 2017 came from the East Health Region, with 920 requests in total. Of these, 445 (48%) came from the 151 applicants trained to use the Platform this same year. The complementary percentage of 52% corresponds to applicants with registrations made in previous years.

Graph 2 shows comparatively the number of registrations made, the total number of requesting professionals registered in the Platform, as well as the number of teleconsultations requested, with monthly frequency, throughout 2017. The months of November and July stood out with the highest number of requests, and there is no regularity between these variables.

Graph 2: Monthly monitoring of registrations, applicants and requests for teleconsulting in 2017.
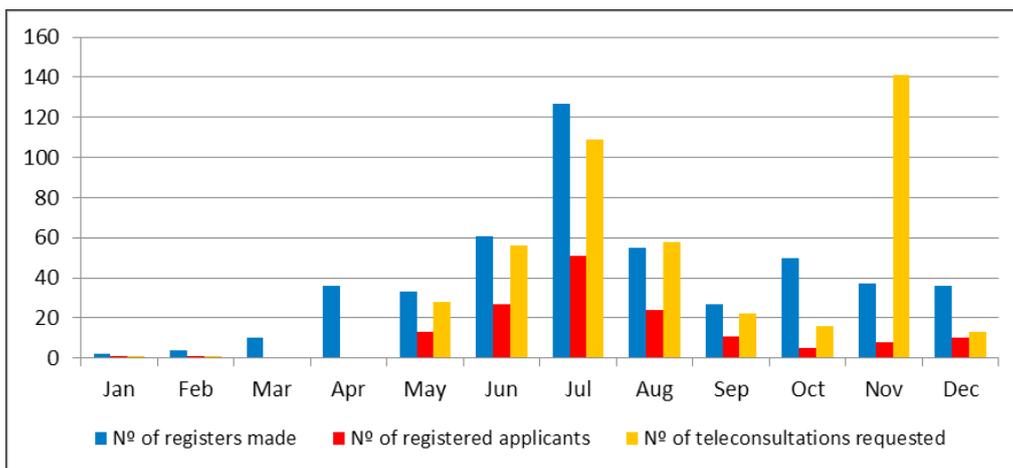
Source: BRAZIL. National Telehealth Platform, 2018

It is also observed that among the professionals registered in 2017 who performed teleconsultations (151), 55% made only 1 request, 17.89% requested 2, 13.9% requested 3, only 2.65% made 4 requests and 10.6% requested 5 or more teleconsultations. From the general data analysis we have the following result indicator flowchart (Flowchart 1):

Flowchart 1: Result Indicators Source: Own authorship.
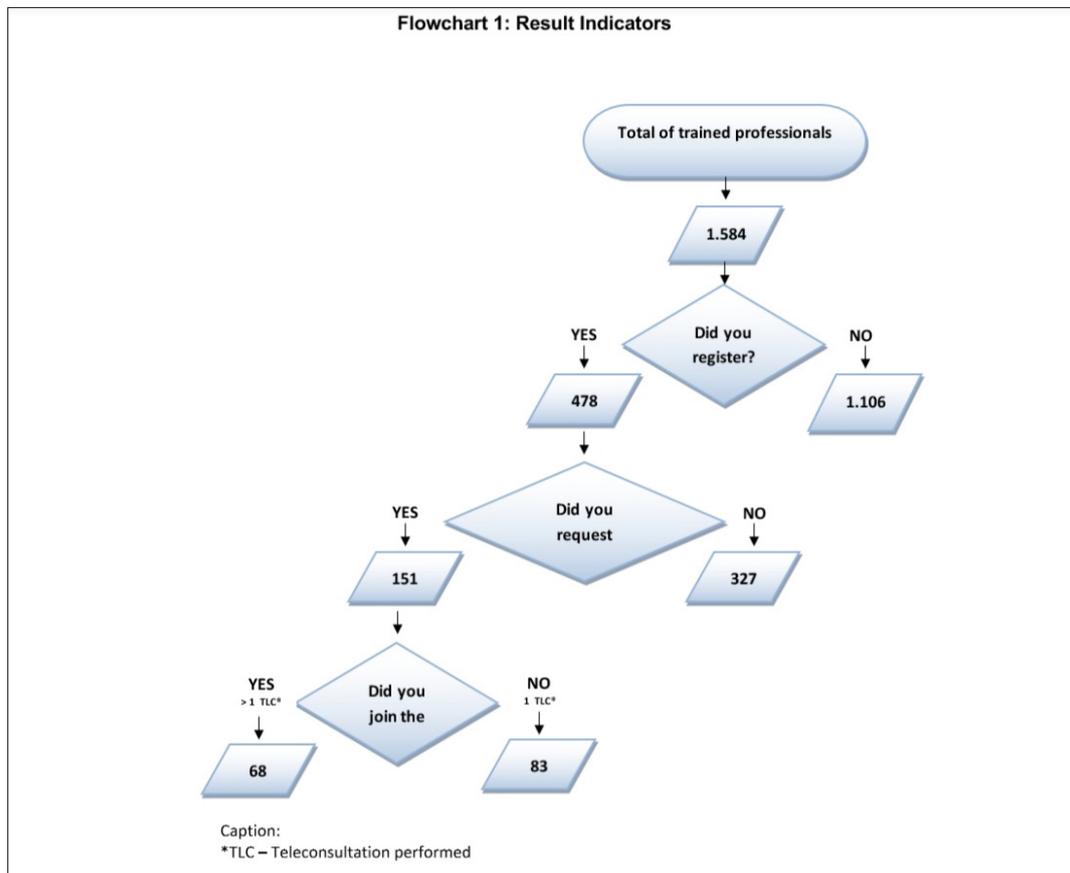
Source: Own authorship.

The profile of applicants is predominantly female with 86.1% of the total number of applicants, being 72.3% higher education professionals, with emphasis on the nursing category and, among males, the highlight is the medical category with 46.6% higher education applicants. Community Health Agents (CHAs) stand out in both genders among mid-level/technical professionals (Table 2).

FEMALE (130)			
SUPERIOR		MIDDLE/TECHNICIAN	
TOTAL	CATEGORY	TOTAL	CATEGORY
52	Nursing	17	CHW
13	Dentistry	14	Nursing technician
11	Medicine	2	Oral Health Technician
6	Nutrition	2	ADM
4	Social Worker	1	OHA
4	Physiotherapy		
3	Psichology		
1	Pharmacy		

MALE (21)			
SUPERIOR		MIDDLE/TECHNICIAN	
TOTAL	CATEGORY	TOTAL	CATEGORY
7	Medicine	4	CHW
3	Dentistry	2	Nursing technician
2	Nursing		
1	Social Worker		
1	Physiotherapy		

Source: BRAZIL. National Telehealth Platform, 2018

Discussion

To have access to the teleconsultation service in the state, health professionals must work in primary health care, have their valid CNES registration, register on the Telehealth Center website (www.telessaude.ba.gov.br), either voluntarily or participate in on-site or distance learning (virtual), based on the use of ICTs, performed by higher level professionals, technicians of the Center and who make up the field team.

Each technician of the field team develops training actions to raise awareness and use of the Telehealth service, such as workshops, face-to-face or distance learning (web conferencing training), distance monitoring (follow-up web conferencing) and monitoring of telehealth services in the Health Region of the state of your responsibility.

Thus, to request teleconsultations, it is necessary to use communication elements, such as computers, smartphones and broadband connections, where voice resources and non-verbal language can be transmitted by non-presential means, exploiting the multimedia resources available.

In addition to the offerings already defined, tele-education also includes web lectures, web classes, web seminars, distance learning courses, the provision of virtual spaces for interaction and dynamic learning objects, among others[3].

The teleconsultations are also characterized as questions asked by PHC/FHS workers, answered by a multiprofessional team and notorious knowledge in PHC, asynchronously (Via text) within 72 hours, or synchronously (Via video), scheduled previously, according to peer availability. The answers are based on the best available scientific evidence, considering local realities and the principles of the Unified Health System (UHS) and PHC.

The number of teleconsultation requests observed in this study showed similar proportions, both for professionals trained to use the service, and among those who were sensitized by different strategies.

Currently, the Bahia Telehealth Center uses a communication and digital marketing plan to promote the services offered, from content to the monthly newsletter, production of news for websites and social networks (Facebook, Youtube and Whatsapp), internet and mailing list pieces, audiovisual content, in addition to coverage of events (internal/external) and partnership with the advisory of state communication for dissemination.

Although low use has been identified, teleconsulting has proven to be an important educational resource to support the clarification of doubts of PHC professionals worldwide, with the potential to reduce referrals to specialists, as well as providing improvements to the quality of care[12].

Schmitz's report[13], in a national study among the telehealth centers, demonstrates the low demand for teleconsultation requests by PHC professionals and that the various topics addressed in these requests have been quite specific and related to experiences in telediagnosis or support. to the outpatient regulatory complex[12].

Another study conducted in the state of Minas Gerais showed that teleconsultation requests, although not yet incorporated into the routine of health professionals, highlight the potential of teleassistance regarding the qualification of care in primary health care[14].

It is important to emphasize that the teleconsultations carried out in Bahia, during the study period, are derived from spontaneous demands of health teams, and no regulatory process of teleconsulting for specialties or telediagnosis was instituted, which reinforces its potential for qualification with health professionals.

In general, there is a predominance of women, with a higher level relative to the nursing professional category, factors also observed in other national studies[15]. Salomão[16] reinforces this characteristic in the state of Bahia, when conducting a study on the requests for teleconsultation made by nursing professionals between 2015 and 2017. It also reports that the main doubts were motivated from administrative processes, according to the International Classification for Primary Care used in teleconsulting.

Considering the adhesion to the teleconsulting service, it is considered low with only 34% of applicants among the 445 professionals who made their registration from some training offer. Most of the requests made (55%) presented an isolated behavior by professional, which suggests an experimental character of the service, not giving continuity in the use. Only 27% of applicants made 3 or more teleconsultations.

In March, the workshops were the most predominant type of training, however, with low return in registrations and absence of requests. The target audience in the workshops is mainly made up of municipal managers and primary care coordinators.

Offering the service to this public requires an approach focused on health management, evaluation and planning processes, fostering the expansion of decision-making autonomy in order to make its use more attractive and relative to their daily lives.

The month of July was quite representative in numbers of registrations made, as well as requests for teleconsulting. However, the percentage of registered applicants, due to the type of training applied, exclusively face-to-face training, remained below 50%, suggesting the use of the service by applicants sensitized by previous training or other strategies offered by the center.

November also drew attention for the volume of requests, the largest in the year observed, however, with low expressiveness of registrations and registered applicants. In-person training was the only type of training offered.

From the overall analysis, the number of applicants registered was well below the number of people who were sensitized by some offer of training in all the months observed in the study. The initial approach is an important resource for persuading the professional, who must realize the benefits of using the offer considering local aspects and needs and characteristics of the target audience.

For Onça[17], it is necessary for the technical team to perceive some factors for strengthening group learning, such as local management support for capacity building; sufficient time to perform the activity; control over local organizational events, with no competition between agendas; should awaken learning and qualification opportunities with experts and reference technicians; easy access to written information and guidance are considered important factors in promoting group learning behaviors.

Borges[18] reinforces that training is used to support individuals in the acquisition of new skills and knowledge, aiming at improving functional performance by creating situations that facilitate the acquisition, retention and transfer of learning that make sense in their work routine.

It is important to advance further studies to ascertain the induction of teleconsultation requests from the training processes, as well as to verify the evaluation of the requesters to the answers provided by the service. The analysis of these factors contributes to the assessment of the offer quality evaluation indicators and the building of bonds.

Salomão[16] found in his study that approximately 72% of requests for teleconsultation among the nursing category were evaluated in Bahia during the period observed and with a favorable level of satisfaction in 93% of them.

For Santos[19], teleconsultation tends to be procedurally incorporated into the organization of local care, reinforcing that health practices, as they are sensitized to the use of new technologies, inaugurate other possibilities from the institutionalization of a new care device.

Haddad[20] stresses that in measuring the service utilization rate, in many cases, there is a resistance at the initial moment of awareness that should be overcome with new learning opportunities. In this way, follow-up becomes a key complementary strategy.

However, the study showed a low realization of FW supply in the period and region studied. For the Ministry of Health[4], this is an important tool, especially for the development of links with health team professionals, promoting high capillarity of Telehealth offerings, as well as having an instructive pedagogical character to use the offerings and facilitating the verification of the obtained results by the actions already developed.

The same author suggests periodic realization (usually bimonthly) of FW, in order to in order to develop links between health professionals from AB and technicians of the Telehealth Center, promoting technical and institutional support, as well as strengthening the Permanent Education Policy.

Haddad[20] corroborates the effectiveness of follow-up and also points out that when frequent follow-up measures are taken with applicants, this decrease in teleconsultation request rates is not verified and stabilization takes place on the highest plateau.

This study presents an approach on the use of the teleconsulting service with important contributions to the development of strategies for sensitization of Primary Health Care professionals, not finding other studies that indicate the direct monitoring of requests made by health professionals.

Conclusion

The documentary analysis of the training records proved to be an important database for studies of health professionals' adherence to the Telehealth service offerings. Thus, it was demonstrated that adherence to the service in the Eastern Health Region of the State is considered low, however, with potential for fulfillment and increased requests when monitoring methodologies of professionals already sensitized with some offer of training were instituted.

Most of the requests made occurred in isolation, suggesting an experimental character and no use value. Thus, it is necessary to use these opportunities to link professionals, through the follow-up webs, considering the previous training to use the offers and demonstrate possible difficul-

ties and other limiting factors for adherence to the services offered by the Telehealth Center. Also, from this study, it is possible to analyze the profile of requests made in previous years.

However, further studies are needed to investigate this behavior in other Health Regions of the State, in order to demonstrate possible difficulties and other limiting factors for adherence to the services offered by the Telehealth Center. Also, from this study, it is possible to analyze the profile of requests made in previous years.

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