

Teleducation in the Amazon

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Date of Receipt: February, 11, 2020 | Approval date: September, 15, 2020

Abstract

Objective: Report the Tele-education practices in the Amazon during 2016, from the 2nd semester until the first semester of 2019. **Method:** Descriptive study, with qualitative approach. based on document analysis. **Results:** During the cohort period of the study, it was found that more than one thousand Tele-education activities were already performed, with Medicine being the area that stood out with the most 52% of the total activities performed. **Conclusions:** The use of information and communication technologies, in the case of tele-education, contributes to the effectiveness of continuing education for students and health professionals, especially in the Amazon region, leading to training and capacity building in the most distant areas. **Keywords:** Distance Education; Telemedicine; Health Education.

Resumen

Teleeducación en La Amazonia.

Objetivo: Informar las prácticas de teleeducación en la Amazonía durante 2016, desde el segundo semestre hasta el primer semestre de 2019. **Método:** Este fue un estudio descriptivo, con enfoque cualitativo. basado en el análisis de documentos. **Resultados:** Durante el período de cohorte del estudio, se descubrió que ya se habían realizado más de mil actividades de teleeducación, siendo la medicina el área que se destacó con la mayoría del 52% del total de actividades realizadas. **Conclusiones:** El uso de tecnologías de información y comunicación, en el caso de la teleeducación, contribuye a la efectividad de la educación continua para estudiantes y profesionales de la salud, especialmente en la región amazónica, lo que lleva a la capacitación y al desarrollo de capacidades en las áreas más distantes. **Palabras-clave:** Educación a Distancia, Telemedicina, Educación em Salud.

Resumo

Tele-Educação na Amazônia.

Objetivo: Relatar as práticas de tele-Educação na Amazônia durante o período de 2016, a partir do 2º semestre, até o primeiro semestre de 2019. **Método:** Estudo descritivo, com abordagem quali-quantitativa, a partir da análise documental. **Resultados:** Durante o período de coorte do estudo, verificou-se que já foram realizadas mais de mil atividades de tele-Educação, sendo a Medicina a área de atuação que mais se destacou com 52% do total das atividades realizadas. **Conclusões:** O uso de tecnologias da informação e comunicação e a tele-Educação, contribuíram para a eficácia do ensino continuado aos estudantes e profissionais da área da saúde, principalmente na região Amazônica, levando formação e capacitação nas áreas mais longínquas. **Palavras-chave:** Educação a distância; Telemedicina; Educação em Saúde.

INTRODUCTION

The State of Amazonas has a territorial extension corresponding to 40.46% of the Northern Region, 18.45% of the entire Brazilian territory and 31% of the total area of the Brazilian Amazon, and is therefore considered the largest state in the Federative Republic of Brazil. The main means of transportation used in the region is the river, since the few existing roads are unable to provide land support to the inhabitants of most municipalities in the state. The enormous distances and difficulties of locomotion through the rivers are factors that directly interfere in the development of the municipalities in the interior of the state. The capital city Manaus presented in 2010 a Human Development Index (HDI) in the range considered High (between 0.700 and 0.799), the other municipalities are in lower ranges, such as Atalaia do Norte, which presented an HDI of 0.450, is in the low range (between 0 and 0.499)¹.

The life of the amazons is surrounded by many challenges. The distances and difficulties of access to means of diagnosis and displacement to health reference centers in the capitals of the Amazon states may result in loss of life or high financial cost to the health system. In this context, teleshealth represents an assistance and education tool focused on improving the populations' quality of life and saving financial resources to the Single Health System (SUS)².

In August 2005, the activities of the Amazon Telemedicine Center of the State University of Amazonas (UEA) were initiated. It later became the operational base for the Telehealth Center of the Telehealth Program Brazil in Amazonas. The Amazon Telehealth Center is located at 68 points, as can be seen in Figure 1, of which 5 are located inside indigenous villages. These points are distributed in the Amazonian municipalities benefiting more than 500 ESF (Family Health Strategy) professionals registered within the state. These data have an impact on the effectiveness of telepresence of medical specialties in the state, where it is practically impossible or unlikely to maintain and retain a specialist, with the professional and financial weight that their presence would represent for the municipality.³

Telehealth represents a set of strategic tools for the prevention and promotion of Health in the state of Amazonas. Among the modalities of practices, the Tele-Education by web conference is included. This modality enables a significant number of participants located in locations located at great distances from each other, which is characteristic of the Amazon region, to interact in real time.⁴

The main objective of this research is to understand and interpret Tele-Education in the Amazon, demonstrating its effectiveness and difficulties over the last three years, enabling the dissemination of the knowledge generated by the State Telehealth Center of Amazonas.

METHOD

A descriptive research was conducted with a quality-quantitative approach. The Tele-Education information was collected from the database of the State of Amazonas Telehealth Center -NT AM, being them: reports, records of frequency of Tele-Education activities, among others inherent to the research. During the period of three years, Tele-Education activities were carried out on a weekly basis covering all municipalities.

Tele-Education is a continuous education service that aims to expand the training of family health teams through technology. The Tele-Education services provided by the State Telehealth Center of Amazonas-NT AM are: 1) Web talks: These are lectures on various themes in the area of health, aimed at sharing information and knowledge for health professionals in the state; 2) EAD Courses: Aims to promote training on a theme, focusing on the reality of SUS workers and their needs. They are constituted by educational modules with structured content and stimulus to the logical interaction of collaborative learning; 3) Web Seminars: Activity with discussion of a given theme with the presentation of two or more exhibitors with domain on the subject, followed by debate. It is an educational offer in order to develop specific knowledge, active learning, providing exchange of experiences and reflection on daily work; 4) Discussion Forum: Meeting or meeting that is held to discuss issues of common interest among participants. The objective is to promote an educational process facilitated by social interaction in an environment that enables discussion, exchange of experiences and collaborative learning; and, 5) Matriculation Meeting: Meeting or meeting with the objective of discussing various issues pointed out by health workers and also clinical cases, of work process and/or management, promoting a process of shared construction based on integration and dialogue among different professionals.

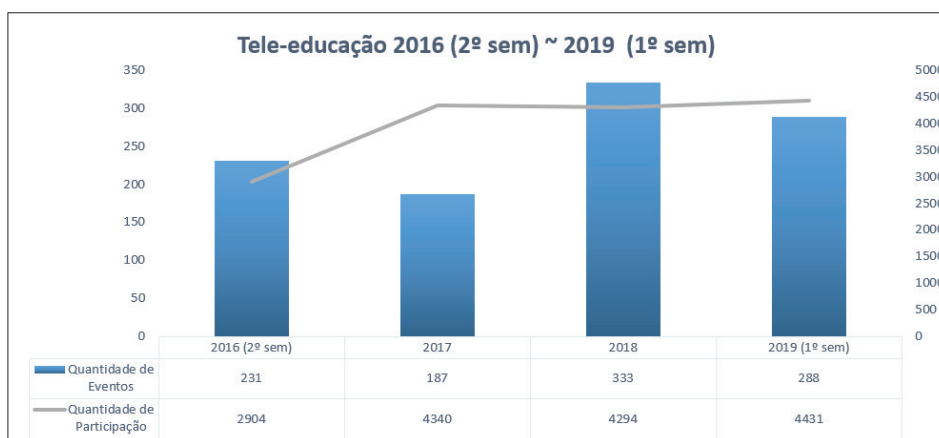
As for their form of transmission, Tele-Education events are classified in two ways: synchronous or asynchronous. The synchronous form is when the activity is transmitted live with the participation of one or more speakers, while the asynchronous form is carried out when there is a retransmission of some activity already carried out.

The activities are carried out through the IPTV streaming platform, which makes it possible to carry out video conferences in low speed internet, as is the reality of many municipalities in the Amazon region. The participant will be able to follow the transmission both via web (through the web. ip.tv link) and via desktop application, it should be noted that the latter provides better connection stability as well as the possibility of video interaction by the participant. In both cases, to access the transmission, the participant will only need to enter a username and select the NT AM channel. As for effective participation in the Tele-Education activity, the participant must fill out an online form where he/she inserts an individual password made available by NT AM, and this password will be valid until one day after participation in the activity.

RESULTS AND DISCUSSION

As shown in Figure 1, NT AM has already conducted 1,039 Tele-Education activities and trained about 15,969 students and health professionals. As we can see, the number of events as well as the number of participants has increased over the years. Erno et al, in Rio Grande do Sul, over a period of 6 years, conducted 688 second opinion activities, 28 distance education modules, 24 meetings and 170 web talks.⁵

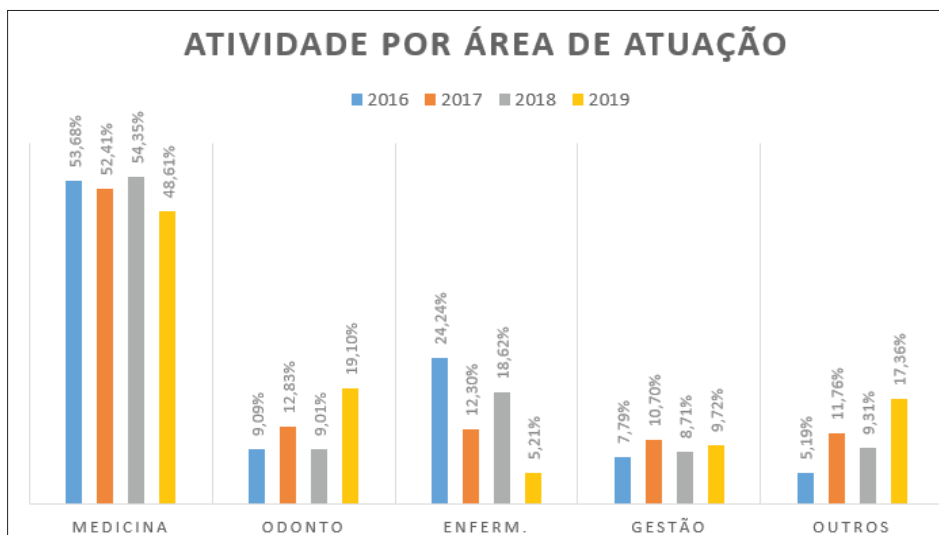
Figure 1 - Tele-Education Index in the State of Amazonas from 2016 (2nd semester) to 2019 (1st semester).



Source: State of Amazonas Telehealth Center -NT AM, 2019.

The area of health that stood out the most in Tele-Education activities was Medicine Figure 2, with approximately 52% of total Tele-Education activities from 2016 to 2019, followed by Nursing (15%) and Dentistry (12.5%). The other activities were classified in Management, which are those related to the area of administration, such as hospital area management, with 9.14% of the total activities. The other activities were inserted in the field Other, such as the activities of defense of CBT (Course Conclusion Work), dissertations and thesis, with 11% incidence. Magdala et al in Pernambuco, found a low adherence of physicians to Tele-Education⁶. This result may be related to the lack of specialized professionals in the area of medicine in Amazonas, which leads to a greater need for specialized information for the generalist living in these remote areas, increasing the demand for this area. There is also the fact that the country doctor, for the reasons described above, uses teleconsultancies, which brings him/her closer to the platform, facilitating the adherence to Tele-Education.

Figure 2 - Tele-Education activities performed from 2016 (2nd semester) to 2019 (1st semester).



Source: State of Amazonas Telehealth Center -NT AM, 2019.

The implementation of Tele-Education still faces obstacles mainly regarding connectivity, especially because our Internet is satellite. In the state, the telehealth points have connection speed equal or inferior to 256 Kbps. The ideal for webconference sessions is a speed higher than 512 Kbps. The low connection quality did not affect, in most cases, the visual part of the presentation of seminars and lectures as to the format used in the electronic presentation.

CONCLUSION

Over the years, NT AM has carried out more than a thousand Tele-Education activities, training more than fifteen thousand professionals. Thus, the importance of Tele-Education in the Amazon region is evident, since it allows access to the most remote areas of the region, contributing to the improvement and qualification of students and health professionals.

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Conflicts of interest: The authors declare no conflict of interest in the content of this work.

Financing: The authors declare no funding funds in the content of this work