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TELECOMMUNICATIONS AND THE FUNDAMENTAL RIGHT TO HEALTH PROTECTION

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ABSTRACT:
The emission levels and the impact that electromagnetic fields have worry governments around the world. In 2011, the Council of Europe warned about the effects of these. The International Telecommunication Union – ITU-T established recommendations that contain essential elements for the deployment of infrastructure. In Colombia, Law 1751 of 2015 addresses issues such as exposure limits, public and environmental health, and risk management. Therefore, the objective of this article is to describe a real picture of whether the capabilities and functions of telebases affect the fundamental right to health protection. To do this, a descriptive methodology was used, reviewing academic, scientific and legal documents. The results show that, despite the considerations, there is no clear evidence that guarantees that there is a real risk to the health of people who are near the telebases. Although the conclusion is reached that health is a fundamental right and should be considered above other types of rights such as digital inclusion.

Keywords: law, ionizing radiation, health, telecommunications.

1. Introduction

The emission levels and the impact that electromagnetic fields have are something that worries governments around the world. With the advancement of mobile technology, companies providing these services have been forced to increase antenna installations. In different societies, there are concerns about the harmful effects that antennas have on their body and since they are practically

surrounded by them, questions cannot be avoided about their incidence (Llamosa, Díaz and Cardona, 2015).

For the year 2011, the Council of Europe, under resolution 1815, issued a warning about the possible effects of these electromagnetic fields, also pointing out that reasonable measures should be taken so that the greatest number of people are exposed and raising awareness. through information campaigns, thus allowing communities to know if there was any type of risk or not, being nearby (Ross, 2011).

Currently, it has not been scientifically proven that the electromagnetic fields produced by mobile phone service antennas generate any type of damage to health; These remain below the metrics accepted by the different standards and laws that regulate said exposure (District Planning Secretariat (SPD), 2019).

However, situations have arisen where being close to these antennas has caused some type of injury to people's health and, in fact, some medical communities have accepted that some of the diseases can worsen or even develop due to the exposure to electromagnetic fields. This has caused complaints to be filed, which can be a clear example that, in some way, being close to these facilities can significantly affect health and the environment (Llamosa et al., 2015).

The legal system at the international level is based on protecting the health of citizens. In Colombia, for example, this is reflected in Law 1751 of 2015 (Constitutional Court, 2016), and stipulates that any violation of this law directly affects the well-being and integrity of Colombians. For this reason, actions were established, such as guardianship, to protect them against any threat or violation of their right, especially when said transgression causes irreparable harm.

The competent authorities give operating licenses to mobile service companies to install bases to provide a better service; The places where they must be installed is determined by the geolocation and the coverage that the band can provide, so the place is in a certain way predetermined and there cannot be room for a change of area since that would imply moving all the other antennas. This is in stark contrast to other fundamental rights that have emerged as a result of new technological developments, where most people need to be connected and businesses need to provide; This right is digital inclusion (Ramírez and Sepúlveda, 2018).

Now, the right to health prevails due to its institutional rank, compared to other rights, thus having a discussion regarding the problems presented by being close to electromagnetic fields and the possibility that each individual can have the same opportunities regarding to digital inclusion.

In Colombia, there are regulations that make the installation processes of mobile antennas and the metrics of the electromagnetic fields that the antennas emit viable; These measurements are based on internationally determined standards; However, this regulation does not raise in its guidelines or do not take into account the real impacts on health that these areas may have and do not respond to solutions based on the reduction of harmful effects for people and the environment (Gallego, Torres and Castañeda, 2014).

Therefore, the objective of this article is to describe the current state by reviewing legal documents and academic scientific characteristics to provide a real picture of whether the capabilities and functions of telebases affect the fundamental right to health protection and thus clarify the doubts raised.

2. Development

Currently in force, Colombia has within its laws, regulatory instruments that establish the standards of inspection, surveillance and control of each process that concerns the placement, installation and operation of telecommunications service stations in the territorial aspect. In accordance with this, an analysis and review of the national regulatory framework for the processes of location, installation and operation of mobile telephone base stations was carried out, to determine the limits of public exposure to electromagnetic fields, public health, the environmental and risk management.

2.1. ITU Recommendations

The International Telecommunication Union – ITU-T, which is the sector in charge of telecommunications standardization, develops recommendations that are fundamental for the development of the global ICT infrastructure. These recommendations, known as the K series, provide technical guidelines on exposure to electromagnetic fields and non-ionizing radiation emitted by telecommunications infrastructure. Its objective is to guarantee optimal health conditions for exposed people and the technical personnel who operate said infrastructure. These recommendations are important from both a technical and commercial point of view for the standardization of telecommunications (ITU, 2004) (Robledo, 2018). These recommendations are:

K52: Provides guidance on whether radiated telecommunications equipment meets safety limits for human exposure to electromagnetic fields and provides calculation methods and procedures to evaluate whether such equipment is compatible with human health.

K61: Provides guidance on electromagnetic field measurements and numerical predictions to verify that telecommunications equipment meets human exposure limits.

K62: Evaluation of compliance with radiated emissions at the system level determined through mathematical models.

K70: Defines techniques to limit people's exposure to electromagnetic fields in the vicinity of radio communications stations.

K83: Indicates how to monitor the strength level of the electromagnetic field

K90: Indicates how to monitor the intensity level of the electromagnetic field.

K91: Provides guidance on the assessment, evaluation and monitoring of human exposure to radiofrequency electromagnetic fields.

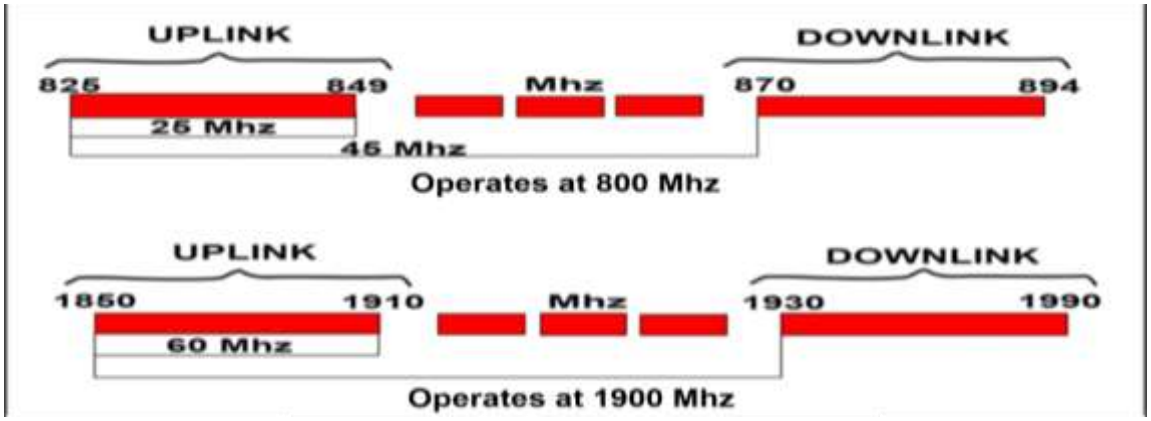
K100: Specifies measurements of radio frequency electromagnetic fields to determine compliance with human exposure limits when the base station is placed in service.

K113: Specifies measurements of radio frequency electromagnetic fields to determine compliance with human exposure limits when the station is in service.

2.2. Public exposure limits to electromagnetic fields.

In Decree 195 of 2005, the objective of limiting "…exposure of people to electromagnetic fields produced by radio stations in the frequency band from 9 KHz to 300 GHz and establishing unique guidelines and requirements in the procedures for the installation" is stated. of radio stations in telecommunications" however, "the provisions of this decree do not apply to unintentional emitters, radio frequency receiving antennas, inherently compliant sources and user terminal radio equipment or devices"

That said, it can be stated that the mobile telephone service meets all its requirements, since the companies providing the service use the recommended bands, between 800 and 1900 MHz with direct transmission in the GSM system and bands that reach at 2100 MHz (2.1 GHz) in the UMTS system as shown below in Figure 1.



Source: http://repositorio.unicauca.edu.co

Figure I. Recommended bands to provide mobile telephone service.

Figure 1 shows the ranges established in MHz to guarantee quality mobile telephony service for operations at 800 MHz and 1900 MHz.

2.3. Public health.

In the ten-year plan that covers the years from 2012 to 2021, it establishes public health as a priority area, where it promotes a healthy habitat, understood as the group of public standards, strategies and sectoral and disciplinary activities to improve the quality of life. and public health, positively establishing the environmental and health determinants of health, in the environments where people operate and in which they are also responsible for the contribution of their own individual and collective well-being. "Among the objectives of the healthy habitat component is: intervening with a differential approach on the health and environmental determinants of health related, among others, to electromagnetic radiation"

Law 715 of 2011 also establishes that territorial entities are responsible for the inspection, surveillance and control of environmental risk factors that affect human health. Furthermore, article 7 of decree 195 of 2005 determines that: "in matters of public health, it is up to the territorial entities to exercise the functions of inspection, surveillance and control in accordance with the provisions of Law 715 of 2001, for which they may apply security measures and impose the corresponding sanctions, by virtue of the provisions of articles 576 et seq. of Law 9 of 1979, which dictates sanitary measures.

2.4. Environmental aspect.

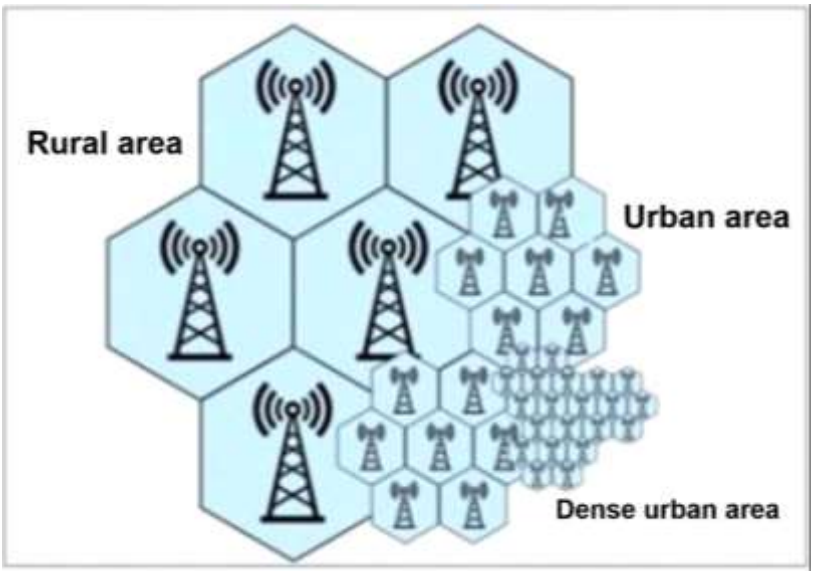
In the decree – Law 2811 of 1974 of the national natural resources code, articles 302 and 304 declare that "the community has the right to enjoy urban and rural landscapes that contribute to their physical and spiritual well-being; Therefore, in carrying out the works, the urbanizing people or entities, public and private, will try to maintain harmony with the general structure of the landscape."

In the Colombian constitution of 1991, for environmental rights, article 79 states that "all people have the right to enjoy a healthy environment. The law will guarantee the participation of the community in decisions that may affect them"; On the other hand, article 80 states that "the State must prevent and control the factors of environmental deterioration, impose legal sanctions and demand reparation for the damage caused."

For this reason, it is the state that is in charge of preventing and controlling cases that may have an impact on the environment and that are a product of the areas where telecommunications antennas are located. In order for these standards to be met, the government requires companies providing this type of service to implement measures that minimize the visual impact generated by their stations through camouflage or that two companies of the same service use the same tower (see figure 2).

For the prevention and precautionary measures established for the exposure of electromagnetic radiation to people, the provisions of article 1 of law 99 of 1993 in paragraph 6 are found:

… The results of the scientific research process will be taken into account in the development of environmental policy. However, environmental protection departments and individuals will follow the precautionary principle, that is, when there is a risk of serious or irreversible damage, the lack of absolute scientific certainty should not be used as a reason to postpone effective measures nor the costs of preventing degradation. environmental.



Source: taken fromi0.wp.com

Figure II. List of the number of antennas allowed per area.

In figure 2 you can see the number that the antennas must have according to the area in which they are located.

2.5. Risk management.

Regarding risk management, the government establishes that hazards must be identified, analyzed and evaluated and activities that prevent and minimize them must be carried out. This was defined in the strategies of the national disaster prevention and response plan, established in Decree 93 of 1998, in Law 1523 of 2012 and in CONPES 3146 (National Planning Department of Colombia, 2001), where it was determined that: "knowledge about risks of natural and anthropic origin" and "the incorporation of risk prevention and reduction in the Territorial Planning and Development Plans and, in the Sectoral Development Plans." In Law 388 of 1997, municipalities were also decreed to map the sectors in which there was greater risk due to the populations that could be found in the areas near the antennas and later this process became a fundamental part of the management. of risks from radiation emissions from the stations.

3. Methodology.

For the development of this article, the descriptive methodology was used. According to (Guevara, Verdesoto, and Castro, 2020) the objective of this type of research is "to describe some fundamental characteristics of homogeneous sets of phenomena, using systematic criteria that allow establishing the structure or behavior of the phenomena under study, providing systematic information. and comparable with that of other sources.

The information provided by the research is based on true sources of articles, chapters and different academic documents that focus on the main topic, and then record, analyze and interpret the fundamental characteristics of the systematic criteria and that are comparable with other sources that allow the development of this document.

4. Results and discussion.

Once the regulatory instruments that govern telecommunications at the international and national level have been analyzed and defined, the following results and opinions can be obtained on the different topics mentioned:

4.1. From the location of service stations.

The location and configuration of mobile telephone stations in the regions is due to the need to ensure and provide a continuous and efficient service; Otherwise, a social right such as digital inclusion

would be violated and people in places where a good service was not provided would be at a disadvantage and the digital divide would be widening (Vera, 2019), therefore, it is necessary to increase the stations so that coverage increases and in this way guarantee digital inclusivity for all (Valencia, 2019).

However, the Law establishes the right to health as a fundamental right above social rights, therefore, service stations must be in line with principles established in the constitution and laws; In other words, the duty of operators when establishing a location for a mobile telephone service station must be based on the indications of the Ministry of Information Technologies, according to the current legal framework and the development plan (Escobar, 2020).

The establishment of telecommunications stations is a legitimate activity as long as there is full knowledge of the radiation limits; Otherwise, it can become a serious violation of the right to health and personal integrity. Everything changes depending on the assumed compliance and care in the conditioning of communication facilities (Valencia, 2019).

In short, the current regulatory restrictions on the use of the electromagnetic spectrum by organizations are due to the fact that the areas they use are part of the territory of Colombia and belong to the state; Therefore, they obey reasons of sovereignty and therefore must guarantee the security of citizens. For this reason, the government entities in charge of telecommunications must exercise their power to manage, monitor and control the electromagnetic spectrum, granting permits for the provision of the service, if they comply with the regulatory exercises that guarantee the health of nearby inhabitants. to the stations above any other right (Constitutional Court, 2016).

4.2. From public exposure to electromagnetic fields.

Once the management of the permits has been carried out and compliance with the regulations set out regarding compliance with the relevant exposure limits, companies are not required to carry out measurements after their implementation, nor to present a declaration of Radioelectric Emissions Conformity (CER), Therefore, mobile telephone service operators have no obligation to carry out the respective measurements to evaluate whether or not they are complying with the limitations established for electromagnetic fields that affect people (public function, 2005). Too often, through negligence or carelessness, telecommunications companies have ignored legal specifications for the installation of radio frequency antennas. Here an infinite conflict of interests arises between them and the citizens who consider their basic right to health and personal integrity (Escobar, 2020).

For this reason, and in the exercise of their duties, it is the obligation of the urban or municipal curator to evaluate and grant operating licenses to the facilities, making periodic evaluations of these and determining from time to time that they are still under the legal framework (Function public, 2021).

4.3. From damage to health.

Currently there is no close relationship between the radiation emitted by service stations and health; Although the radio frequencies emitted can be uncomfortable for humans, action must be taken in advance and the location of the antennas must be legally regulated at the distance indicated by the ITU, especially in areas frequented by homes, educational institutions, hospitals, among others, since that in this way the right to health and physical integrity is guaranteed (MINTIC, 2018).

Although the World Health Organization (WHO) has repeatedly spoken out and said that there is no danger as such, there is mistrust among people, due to the popular belief of the irreparable damage that could be caused by being close to seasons (WHO, 2019). This is supported by the research and studies carried out reported on the contamination of electromagnetic radiation, since they are not enough to demonstrate the opposite (Serna, 2017). Although based on current regulations, each municipality can evaluate the health conditions of the inhabitants of areas surrounding the towers, with the aim of determining if the cause of any common illness in the population is due to exposure.

In Colombia there is a precautionary principle, but laws or regulations have not yet been established to prevent possible adverse effects harmful to health due to exposure to electromagnetic radiation emitted from mobile telephone base stations (MINSALUD, 2019). Therefore, the complete identification, evaluation and management of potential risks created due to public exposure to antenna

radiation should be considered as an essential part of the municipal land use planning and risk management process.

However, the World Health Organization (WHO) has recognized certain diseases attributed to electromagnetic pollution. There is even evidence of health and environmental problems that require adequate attention, for this reason, it is crucial that regulations continue to be updated to fully safeguard health, governments must improve and disseminate clear information that allows people to better understand the technology and its possible impacts.

5. Conclusions

Colombia does not have any legal provision with which to guarantee the safety of citizens in terms of radiological protection or the adverse effects of exposure to radiation not emitted by mobile telephone service stations, in addition, the entities incur national non-compliance and local testing and monitoring functions, and in this way control public exposure to electromagnetic radiation, although there is a regulation that specifies the existence of the mentioned functions.

When justifying the need for risk management evaluation, in relation to the potential risks posed by public exposure to electromagnetic radiation emitted by a base station, there is a very important tool, such as the precautionary principle; But it is not the only principle that can be used, because there are other important principles that are relevant to good risk management, such as Principles of proportionality and consistency and non-discrimination that can be applied to the protection of the environment and public health.

Well-managed potential scenarios to detect dangers from electromagnetic radiation emitted by mobile telephone stations located in urban areas require strength and close coordination, cooperation and supervision between national and local law enforcement forces with functions and powers in territorial planning, environmental management and of risks, public health and telecommunications, in order to guarantee greater efficiency and effectiveness and take actions and limitation measures, planning, monitoring and control measures to evaluate compliance with periodic radio frequency emissions, when introducing and sharing new technologies.

The sentences T-1077 and T-397 were able to achieve a great advance in the protection of Colombians from electromagnetic pollution, these acts of accusation ordered actions such as launching a national program to protect the health of Colombians, given the undeniable fact that Cell phones and their devices that transmit electromagnetic signals can cause cancer.

Thanks to this, Colombia has regulatory tools that define the ability to manage, monitor and control the installation and operation of mobile telephone stations that comply with this applicable national regulation, and carry out analysis with emphasis on the scope defined by this standard, such as for example the limit of human exposure to electromagnetic fields to protect human health.

It is understood that the increase in mechanisms that can protect people's health in the current regulations could be detrimental to mobile operators, due to the control of field intensity levels, but, ideally, the regulation would be a guide for companies that provide the service and look for ways to improve their technology.

Although there is no direct relationship between the radiation emitted by communication antennas and its effects on health, it is necessary to take preventive measures and adjust the position of the towers to the minimum distance, to avoid exposure to electromagnetic signals that can cause significant damage; It is the work of government agencies in the national territory such as the Ministry of Commerce, Industry and Tourism, the Ministry of the Environment and the Ministry of Health, Provincial Territory and Municipal Territory, mainly residences, educational institutions, hospitals. This is the way to protect the right to health, live with dignity and protection of physical safety, non-discrimination and protect a healthy environment, especially from those who have contracted diseases related to electromagnetic pollution.

Failure to recognize diseases caused by electromagnetic pollution indicates a health and environmental problem that must begin to be addressed appropriately. That is why regulations must continue to be updated to fully protect health, governments must encourage clear disclosure so that

people know the healthiest ways to use technology, to help reduce the impact of electromagnetic fields on human health.

Finally, health is a right above the social, because it is linked to life, it is considered fundamental. Therefore, it can be protected through a guardianship procedure, as long as it meets the requirements of sequentiality and immediacy and if the actor tries to demonstrate the danger, harm or effect thereof.

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