Coverage and Information Treatment of Zika in Ecuador: Analysis of News From National Newspapers *El Universo* and *El Telégrafo*

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Zika is an infectious disease that emerged as an epidemic in Latin America in 2015 and arrived in Ecuador at the start of 2016. This research analyzes the coverage that two national Ecuadorian newspapers gave to this sanitary emergency. Journals *El Telégrafo* and *El Universo*, the first one of government domain and the other one of a private company, were chosen to be studied, and interviews with journalists who reported before, during and after the epidemic, were conducted. The results showed that: In most news articles, a single source is handled, preferably the official or institutional one; that the majority of articles were about the international situation rather than local or national information; that alarm content is privileged over the preventive; and finally that the earthquake that hit the Ecuadorian coast in April 2016 weakened the coverage of Zika, even though the epidemic was at its outbreak at the time in the country. There is a need for journalists to be trained to cover these types of emergencies in order to better inform the people and follow up diseases cycles in order to arrange their own news agenda and work more on solution approaches.

Keywords: Zika, Ecuador, media coverage, *El Telégrafo*, *El Universo*

Introduction

Zika fever is a disease caused by a virus transmitted by the bite of the Aedes Aegypty mosquito, the same species that causes yellow fever, Dengue and Chikungunya. The diseases mentioned have caused epidemics in some Latin American countries, and in 2015, Zika fever became one of the biggest concerns of national and international health agencies. In May 2015, Brazil confirmed the first local cases of the virus in the northeast side of the country, while Colombia reported the autochthonous presence of the virus in October of the same year (WHO, 2015). The virus kept on spreading and on December 1st, 2015, the World Health Organization (WHO) and the Pan American Health Organization (PAHO) issued an epidemiologic alert about the possible relationship of the virus, which at the time was present in nine countries, with numerous congenital anomalies and Guillain Barré syndrome.

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In January 2016, the first two cases of Zika imported into Ecuador were confirmed in two citizens residing in Quito who had traveled to Neiva, Colombia. However, the reports of the Public Health Institute of Ecuador (Ministerio de Salud Pública) started counting the cases as of 2015. Between 2015 and 2016, 2,957 cases of Zika were identified and in 2017, 2,413 were confirmed. The most affected provinces were Manabí, Guayas, Santo Domingo, Esmeraldas, and Los Ríos, all of them located on the coastal side of Ecuador. On February 1st, 2016, the WHO declared the Zika virus, which by the time was circulating in 24 countries, a public health emergency of international importance. Facing this situation, both national and international health agencies created strategies to contain the epidemic that included communication as a fundamental part of them. "Media, from both affected and non-affected countries, are a basic channel for transmitting relevant information", says a WHO statement, issued on March 1st, 2016.

Having reviewed the epidemic background, it is necessary for the academy to examine the performance of the Ecuadorian media that, in addition to the epidemic, had to face an earthquake of magnitude 7.8 that hit the northwestern coast of the country on April 16th, 2016 and that caused irreparable damages in the population. This research aims to contribute to the discussion about the effectiveness of the media maintaining the population informed, while contributing to the process of enclosing the Zika epidemic. To do so, two newspapers were chosen to be analyzed, one of government domain, *El Telégrafo*, and another of a private company, *El Universo*, to compare their reaction before the crisis. Three main moments of the evolution of the epidemic were identified according to epidemiological gazettes issued by the Public Health Institute of Ecuador: the stage prior to the arrival of the virus to the country (October 20, 2015-April 18, 2016); the stage during its circulation (April 25th, 2016-September 26th, 2016); and the moment after it (July 25th, 2017 onwards).

Five objectives were established. First, to determine if the two Ecuadorian media studied produced preventive news about the virus. Second, to identify what sort of news (informative, educational, preventive, or of alert) they covered during the circulation of Zika in the country. Third, to determine if the earthquake was one of the reasons that affected the production of news about the epidemic, since there was a decrease in March 2016 that was more evident from April, or what caused the reduction. Fourth, to identify the current state of the Zika virus outbreak in Ecuador. Lastly, to determine whether media has given the virus satisfactory coverage and to determine what kind of informative content was privileged in the news about the epidemic. From each objective, three hypotheses were proposed, one main, one alternate, and one secondary, which are described below in the methodology. They were proved right or wrong through monitoring news production of *El Universo* and *El Telégrafo*.

Methodology

The first step of the research process was to pick the newspapers to be analyzed. *El Universo* and *El Telégrafo* journals were chosen for their national scope and for their proximity to the main areas affected by the virus outbreak located on the Ecuadorian Coast. Both are coastal media with headquarters in Guayaquil. Moreover, they meet a particular feature that was of special interest when drawing conclusions: *El Universo* is a private journal and *El Telégrafo* is one of government domain. Therefore, the contrast of both allowed enriching the understanding of how the media work in Ecuador in crisis situations and what are their limitations.

Three hypotheses were formulated for each objective or goal. Some hypotheses were actually predictable. Hypotheses for the first goal regarding to preventive news were: (1) Ecuadorian media did not carry out

preventive coverage on Zika; (2) Zika virus expanded rapidly across the continent, so the preventive coverage was nil; and (3) the first outbreaks of Zika in the continent were very isolated, so no media considered them relevant. The methodology applied to verify these hypotheses was qualitative and quantitative, since it was necessary to count the number of news issued and their content. To prove them, an examination of both media *El Universo* and *El Telégrafo* was conducted. Both media and the news articles were established as variables; while the indicators handled were the amount of news articles published before the arrival of Zika to Ecuador and its consequent epidemiological outbreak.

Regarding to the type of news emitted the hypotheses were the following: (1) The newsworthy approach that prevailed in the media during the Zika epidemic in Ecuador was about its rapid spread in the country and the continent; (2) the journals issued news mostly focused on the measures that were being taken in the country to combat the virus; and (3) information focuses mainly on scientific studies about Zika. The methodology implemented was qualitative. An evaluation of the news generated by the media and its classification by content and approach were the instruments used. The variables chosen were the news approaches and the scientific studies Zika carried out during the outbreak. Lastly, the indicators were the types of approaches and the number of scientific studies referred in the news.

The following hypotheses were established for the third objective about the considerable decrease in the production of news that started from April: (1) An earthquake of magnitude 7.8 shook Ecuador in April 2016, so all the media focused mainly on covering the catastrophe; (2) the Zika outbreak was controlled from that date, therefore, the media had no news to cover; and (3) investigations about Zika stopped from that date. A quantitative methodology was chosen to prove the hypotheses. The instruments were the search for news that were issued as of April, the follow-up of the scientific studies about Zika and the identification of the date of the epidemic outbreak mitigation. The variable identified corresponds to the analysis of the situation. Lastly, the indicators used were the amount of news produced and the most relevant events that took place in the country as of April 2016.

For the fourth goal about the current state of the epidemic and its coverage, the hypotheses were the following: (1) Ecuadorian competent public entities have not pronounced efficiently about the state of the Zika outbreak in Ecuador, so the media do not know what the real situation is; (2) the media have not monitored continuously the Zika outbreak, so the post coverage has been deficient; and (3) the worst phase of the outbreak culminated, but it is not fully controlled, so it is not really possible to talk about a post-epidemic. The methodology implemented was qualitative and quantitative. The instruments used were the monitoring of press releases issued by competent public entities, the identification of the date of containment of the epidemic, and the classification and evaluation of the type of news issued. The variables determined were post-epidemic news and information issued by the public health institute. The indicators correspond to the amount of news produced after the epidemic and the number of newsletters or press releases of the public health institute, Ministerio de Salud Pública.

Finally, the hypotheses formulated for the last objective about the type of content that was privileged in the media were: (1) It was reported mainly about the possible relationship between Zika and other diseases, such as microcephaly and Guillain-Barré syndrome; (2) mostly preventive news was issued to help citizens protect themselves against the virus; and (3) the international situation of Zika was privileged, especially of countries, such as Brazil and Colombia, where the outbreak affected more people. The methodology used was quantitative and qualitative. The instrument implemented was the classification and evaluation of the type of

news issued. The variable identified was the content of news and the indicator determined was a classification chart of the news issued.

All this information was organized in a chart and then the monitoring of both media was carried out. One hundred and forty-four news from *El Universo* and 138 informative pieces from *El Telégrafo* were collected. The collected articles were classified by extension: short, medium, and long; by the type of source: opinion, official, unofficial, and testimonial; by the level of understanding of the note: understandable, not understandable, more understandable, and less understandable; by geography: national and international; and by type of information: informative, educational, preventive, and of alert. In addition, the news gathered was classified in stages; the three main ones that correspond to the pre-epidemiological outbreak moments, during the outbreak and post-epidemic. However, there was a time identified in which the cases of Zika in the country decreased and subsequently rebounded; therefore, two secondary stages were added that correspond to a second epidemiological outbreak and its containment.

To complete this monitoring and analysis of published news, we interviewed journalists who cover health in the newspapers studied. From *El Universo* newspaper, Marjorie Ortiz, the research coordinator, and Sandra Miranda, a reporter of the *El Gran Guayaquil* section participated. From *El Telégrafo*, Shirley Serrano, editor in charge of the Society section, and María Fernanda Arteaga, health, education, and environment reporter, collaborated. The recommendations of Nora Bär, editor of Science and Health in *La Nación* newspaper of Argentina, that she gave us in a personal interview on October 26th, 2017 and from a workshop, she gave during the International Conference of Scientific Journalists in San Francisco, California about epidemic coverage, specifically of Zika was considered as well.

Zika Coverage in Ecuador

Which Was the Preventive Coverage Ecuadorian Media Give to Zika Epidemic?

As mentioned by Urbina-Medina, Noguera, Levy, Carrizo, and Betancourt (2016, p. 114), "Communication in crisis and epidemic outbreaks is an interactive process of information and opinion exchange between people, groups and institutions", and the media play a very important role in this conversation. Depoux et al. (2018, p. 9) agreed that public health authorities and journalists are consubstantial parts of risk communication on a massive scale: "the authorities give the warning, the media spread the message and the population communicates the message through their social networks". In the case of the Zika epidemic, these roles must be fulfilled during three specific stages that correspond to the pre-epidemic, the epidemiological outbreak, and the post-epidemic.

During the pre-epidemic, it is necessary to privilege prevention coverage, although it would be best if it is maintained during the whole the crisis. In this way, according to Urbina-Medina et al. (2016), the media can help prevent contagion, reduce it, and maintain people's calm. This is where a key concept fits: preventive journalism. One of the characteristics that Barnabas gives to this branch is the anticipation of the facts that could result in a conflict or crisis.

Thus, what was expected of the media in Ecuador, due to the dangerous proximity to countries that had already reported cases, is that they began to produce news focused on the nature of the virus, the symptoms and forms of infection, the number of patients confirmed in the affected countries, the possible relationship of the virus with microcephaly and Guillain Barré syndrome, and the actions that health agencies were taking. However, the first news issued on the subject that appears in *El Universo* and *El Telégrafo* was on October 20th,

2015, when the public health institute issued an epidemiological alert to the possible introduction of Zika into the country. A short time later, on January 2nd, 2016, the presence of two suspicious cases in Ecuador was notified. In that period of time, from October to January, news was issued about the havoc that the virus was causing in countries, like Brazil, but because of the rapid arrival of Zika to the country it can be concluded that preventive coverage was not sufficiently anticipated. According to media monitoring, from October 20th, until the 16th week of 2016 (April 18th), the phase that is considered as the pre-epidemic, *El Universo* produced only 13% of preventive news, while *El Telégrafo* produced 15%, and this trend continues throughout the outbreak.
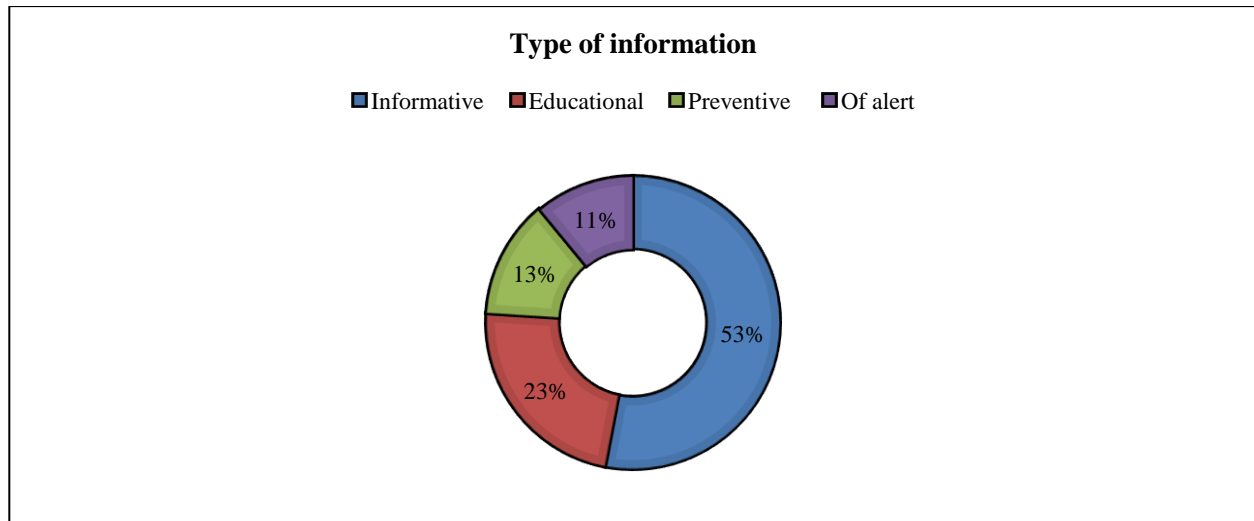

Figure 1. Preventive coverage of *El Universo*, October 20th, 2016-April 18th, 2016 (Source: The authors).
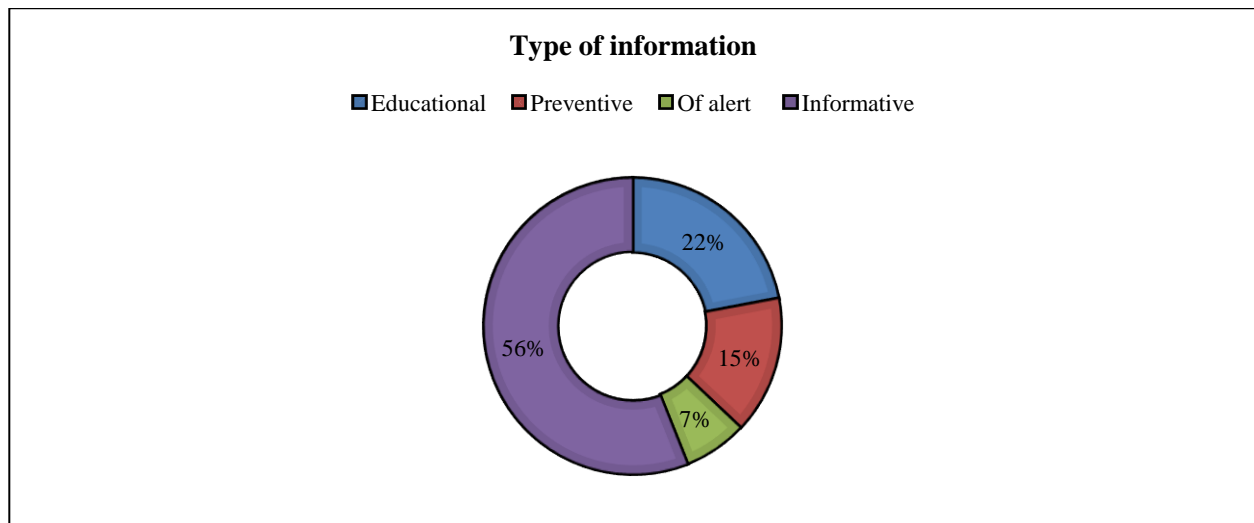

Figure 2. Preventive coverage *El Telégrafo*, October 20th, 2016-April 18th, 2016 (Source: The authors).

One of the reasons that explain the almost absent coverage of preventive news is that the first outbreaks of Zika on the continent were very isolated, so no media considered their coverage relevant. Zika was first discovered in 1947 in Uganda in the Macaco Rheus, a species of primate, during yellow fever surveillance. Years later, the first human cases were detected in Nigeria (Depoux et al., 2018).

Since then, sporadic cases and small clusters of patients were reported in tropical Africa and Southeast Asia before emerging in the Pacific Islands in the late 2000. The first reported major outbreak of Zika fever infected 5,000 of 6,700 inhabitants on the Western Pacific island of Yap, in Micronesia (Western Pacific) in 2007, followed by a larger epidemic in French Polynesia (South Pacific) with 28,000 persons (11% of the population) who sought medical care in 2013 and 2014. Two thirds of the population of 270,000 was infected in about six months by the virus (Depoux et al., 2018).

In March 2015, Brazil reported suspicious cases and confirmed them in May of the same year. Then, the virus spread rapidly across the continent. "The distinctive feature of the Zika outbreak lies in its astonishingly rapid geographical expansion" (Depoux et al., 2018, p. 1). Brazil, as mentioned, was the first country affected by the epidemic in question, followed by Colombia. A year later, in 2016, more than 33 countries along Latin America, the Caribbean, the United States, Europe, and Asia reported native cases of transmission by the virus or imported cases.

This explains why there was a weak preventive coverage in Ecuador, even though it was not the only country. Rodríguez-Morales and Willamil-Gómezc (2016) stated that "the recipient countries of Chikungunya and Zika were not fully prepared for these emerging arbovirosis" and that little research had been done previously on them, so many aspects of its pathology, clinic, as well as of its handling were not clear enough.

Journalists interviewed of the newspapers analyzed state that the media cannot give priority to prevention but to what happens in the current. In addition, they insist on the limited space they have in the print version of the journals.

Marjorie Ortiz of *El Universo* believes that

> health issues are present in the newspaper because they cause a great impact in the people. What is good, in general, is not news. We always look for what needs to be corrected and that affects people. That is our priority. The space we have on paper is very limited. The authorities assume the positive news. It is up to the media to verify if that is the true. (EP01[1])

Shirley Serrano of *El Telégrafo* says that

> unfortunately, a preventive approach does not sell much. The media do not give coverage to prevention because it has no greater significance as news. In the printed newspaper, we have 2 pages per day for the entire Society section that is not only health, so space is very limited. (EP04[2])

Although Zika has lost relevance to the media's conjuncture since the epidemic seems to be controlled, journalists must remain alert to health discussions and monitor which diseases are emerging for when the time arrives to generate preventive news. Both *El Telégrafo* and *El Universo* have shown that the alert component of news hooks the attention of the audience. When there is an alarm, people take prevention recommendations into account. This not only happens with epidemics but also with possible disasters, such as earthquakes and floods.

What Newsworthy Approach Prevailed During the Zika Epidemic in Ecuador?

Another aspect that has to be analyzed of the coverage that media give to epidemics is the approach and one of the ways to do so is to identify their sources. "The approach under which a message is presented provides the recipients with an 'interpretive context' on the subject addressed" (Palacios, 2011, p. 207). It is normal that in this type of situation, many actors are involved. On the one hand, there are official sources that

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[1] EP01: Entrevista personal con Marjorie Ortiz (El Universo), 13 de julio de 2018.
[2] EP04: Entrevista personal con Shirley Serrano, editora encargada de la sección Sociedad en el diario El Telégrafo, 13 de julio de 2018.

correspond to the spokespersons of public health institutions or local or national authorities. There can also be found the expert source that includes specialists, scientists, doctors, epidemiologists, among others. Moreover, there is the testimonial source, that is, the infected people, their families, their neighbors, and the affected community. And finally, there is the unofficial source, which can be activists or non-governmental organizations.

In a journalism preventive guide and coverage of risk situations of the Andi network of Latin America and United Nations International Children's Emergency Fund (UNICEF), it is pointed out that a quality informative article, in addition to collecting several sources, should take into account one more aspect: the number of different points of view about the same event or scenario addressed by the news. In most of the news issued by the two newspapers studied, this does not happen. The privileged source is, with few exceptions, the official one, which is important, but shows that the media ignores or do not pay much attention to other voices.
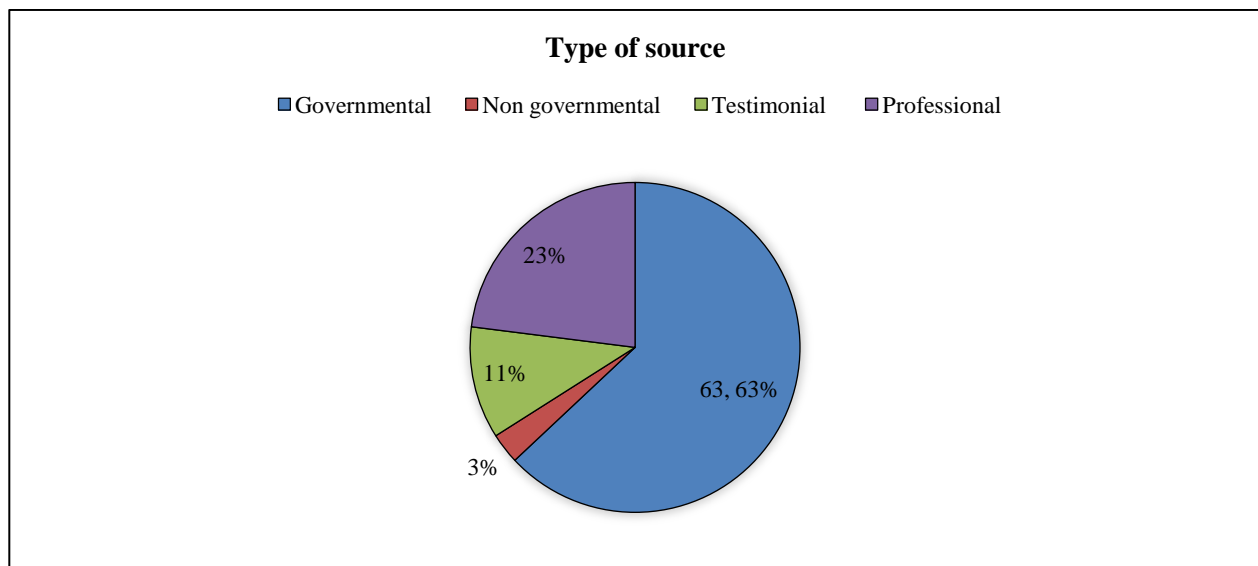

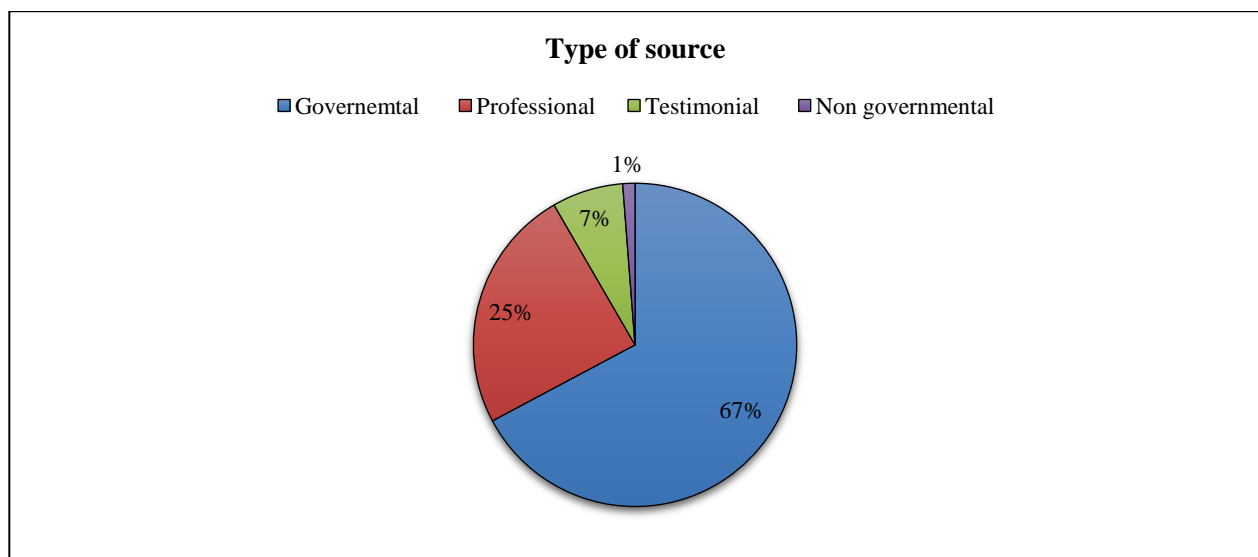*Figure 3.* Types of sources of *El Universo* (Source: The authors).

Figure 4. Types of sources of *El Tel égrafo* (Source: The authors).

What mentioned above could be explained by the limited resources the media invested in sending journalist teams to the most affected areas or because of the lack of skills those teams had to address the issue. An analysis conducted in El Salvador on the coverage of the epidemic underlines that most reporters are not trained to cover health issues or epidemiological data, therefore, writing about Zika, as new information on its nature was found, was challenging. In addition, the lack of human and logistic resources and the haste, one of the characteristic of the media, hinder the production of deeper notes. The result was the use of a single source, the governmental one, which only reported updates of the number of infected, contingency measures recommended by health authorities, and the route the virus was taking at different times.

In this context, the main and alternate hypothesis was confirmed. The news approach that prevailed in the media during the Zika epidemic in Ecuador was focused on its rapid expansion across the country and the continent. And the media issued news mostly focused on the measures that were being taken in the country to combat the virus, while the third hypothesis is ruled out, as the media did not favor the coverage of scientific studies.

It is common in Ecuador and in other countries that journalists get involved in the media without previous specialization. In fact, they usually specialize along the way with the years of experience gained covering different topics in various sections they have been in charge of or have belonged to. Marjorie Ortiz, for instance, began as a health editor at the newspaper *El Universo* in 1999 and today is the research coordinator. She says: "I could not go on vacation in the time of the strikes because there was no other [health expert] to replace me. I had to find a different approach every day" (EP01).

Fernanda Arteaga, a reporter of *El Telégrafo* believes that "there are no journalists specialized in health, that I know of, in any newspaper in Ecuador" (EP03[3]).

Another reporter Shirley Serrano says,

> Ideally, there should be such training for journalists but the immediacy with which we work in the media is the limitation always. We have problems interviewing doctors because we don't understand their terms. It is the duty of the journalist to inform him or herself previously about the subject that will be treated to understand it better. Journalists act as translators. (EP04)

Most of the time, a journalist who covers health is the same who must handle issues of education, environment, or city and usually for the same section labeled as "Society", where no themes are given exclusivity, as it is the case of big areas of hard news, such as politics, economics, and sports.

Due to the haste and informative immediacy and because a single journalist covers several areas at the same time, the privileged source is usually the governmental. The public health institute is the most consulted and authorized voice in the articles, even more if there was an emergency. We found that *El Telégrafo* had more official data in its news than *El Universo*. "The ministry takes two weeks in advance to tabulate the data we ask for. We always try to havethe official source and even if that means postponing the publication we will wait for its response", says Shirley Serrano (EP04). She adds:

> We take great care not to spread suspicions or unnecessary alarms to avoid panic in the population. Even if some entity, other than the MSP, speculates, we do not spread it. If they say "it is presumed that there are 80 cases of Zika", we do not put it. Assumptions generate confusion. Each hospital has data but there are no global statistics at a national level. (EP04).

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[3] EP03: Entrevista personal con María Fernanda Arteaga, redactora de salud, educación y ambiente en el diario El Telégrafo, 13 de julio de 2018.

Inside *El Universo* newspaper whenever there is a health emergency or an epidemic, such as Zika, that issue becomes a priority of the news agenda that could not wait too long to be published. Journalists from the journal mentioned believe that there was a blockade of information towards the newspaper to censor it since the previous president, Rafael Correa, considered it a newspaper of the "opposition". Sandra Miranda claims,

> When we asked for data from the MSP, they didn't answer us. In the day-to-day coverage for El Gran Guayaquil section we could only wait a maximum of 4 days. In the research unit we have more time and we wait up to 4 months. (EP02[4])

With the change of government on May 24, 2017, access to public information has improved but remains tricky. Senior officers and technicians cannot be consulted directly and journalists are asked to send a questionnaire before accepting interviews. Marjorie Ortiz recounts this scenario:

> Before Correa I could go to hospitals and visit them even without making an appointment. The authorities understood the importance of the press and received us. [With Rafael Correa's government], the secrecy of the authorities caused that the press could not oversee the actions in the field of [public] health. In the past, the telephone was used to call the authorities so they could be interviewed. Now you have to send an email, schedule the appointment and then make the interview, even if it is by phone. Authorities with fewer command did not want to speak for fear of losing their jobs. But the lack of witnesses and data reduces the rigor of journalistic work. We had to mention *El Telégrafo*, Andes, El Ciudadano, all official media, which did have the official information [public institutions] did not give us. (EP01)

The legal statute that regulates media and communication, known as Ley Orgánica de Comunicación (LOC), in force since 2013 in Ecuador, contemplated the right of the sources to answer back if they were not satisfied with the information presented about them. The LOC is still in force but on December 18, some reforms were approved in the Congress, so that these regulations cease to be so punitive with the media. Among these changes were the prohibition of prior censorship, rectification, and replication (El Telégrafo, 2018).

Journalists of *El Universo* remember receiving one replica after another in all the newspaper sections. The public health institute did not give them the information they requested but did invite them to their events. Regarding to the Zika epidemic, they had to publish a denial of a case found on Trinitaria Island, in Guayaquil. Fernanda Arteaga remembers it like this:

> I met a patient, I talked to her, we took detailed photos without her face to protect her because she was pregnant but later [after publishing the patient's story] I got a reply telling me that the case was not Zika but Chikungunya. The authorities denied it was a Zika case and made some kind of pressure on the family so that they later blamed me for publishing their case. My editor in El Gran Guayaquil supported me. I had the evidence of my report, but the reply was published anyway because of the law. Only the minister or vice minister were the official sources to which we could access. Although we went to health centers, epidemiologists did not always want to talk to the press, even less identify themselves. (EP03)

In short, both newspapers with national impact had marked differences in accessing to sources of information. One could directly access to the official source for being a public newspaper and the other had all the obstacles ahead to get data or interviews, so journalists were obliged to cite the competition to be able to publish current information.

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[4] EP02: Entrevista personal con Sandra Miranda, redactora de la sección El Gran Guayaquil en el diario El Universo), 13 de julio de 2018.

Why the Zika Coverage Was Reduced From April 2016?

A noticeable decrease in the production of news about the epidemic is perceived as of March 2016. In that month, only 10 articles on the subject were issued and as of April, the decrease is accentuated with only four published informative articles.

April was a difficult month for Ecuador. On April 16, 2016, an earthquake of magnitude 7.8 shook the northwestern coast of Ecuador and left 671 deaths and the material damages were estimated in $3,344 million (CNN en Español, 2017). This is the most logical explanation of why the media analyzed reduced the production of news, despite the decline since March. In fact, this was the first hypothesis proposed to determine a reason. Another hypothesis was that the epidemic had been controlled; however, reports from the public health institute indicate that it was in the 16th week of 2016, that is, from April 18, when there was a considerable emergence of Zika cases in the country.
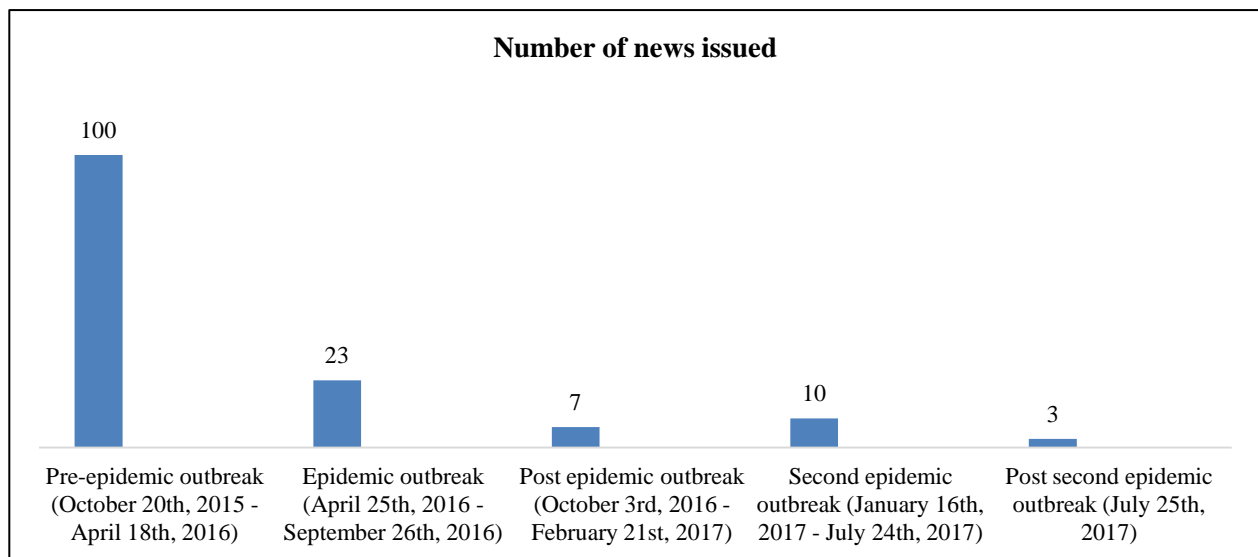

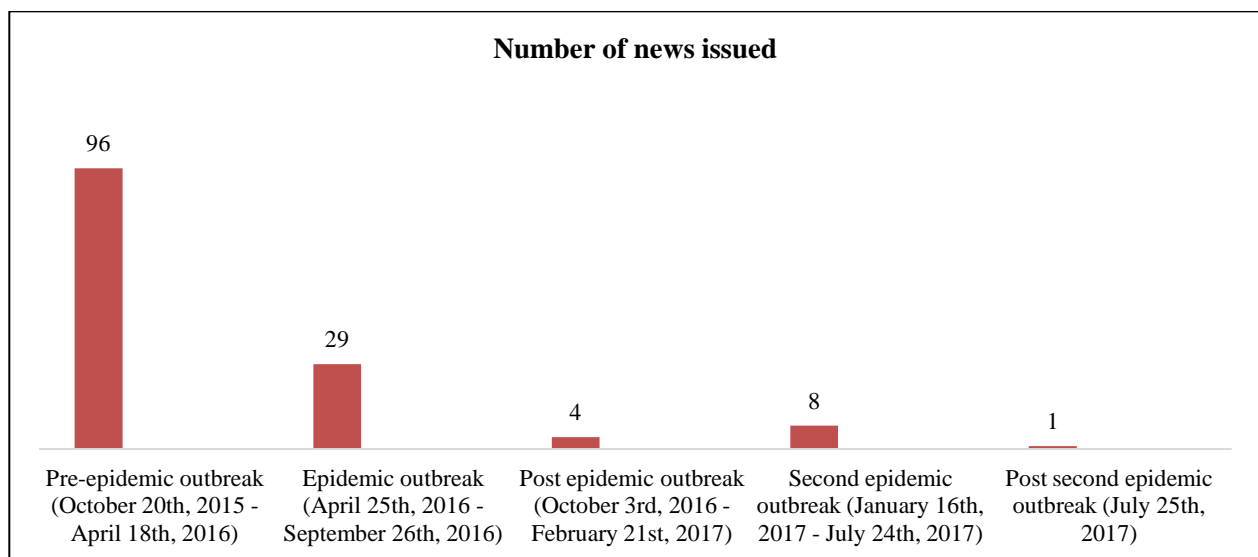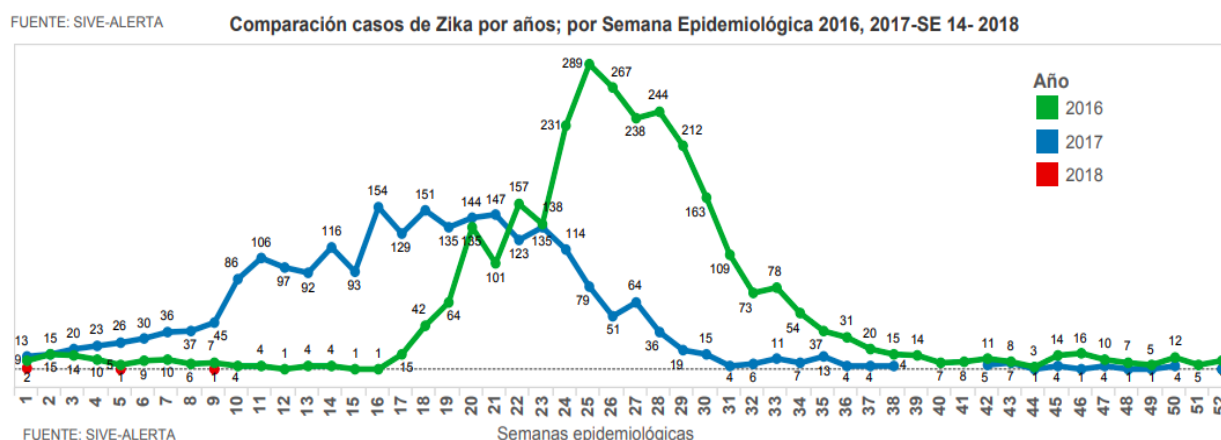*Figure 5.* News production by stages of *El Universo* (Source: The authors).

Figure 6. News production by stages of *El Telégrafo* (Source: The authors).

During 2017, until the 52th week, 2,413 cases have been confirmed. The provinces with the most cases were Guayas, Manabí and Sto. Domingo. Until the 14th week of 2018, only four cases of Zika were confirmed.

Another suggested hypothesis was that no new scientific studies were being conducted as of that date, so media lost interest in covering the subject. However, in April 2016, the World Health Organization and the Pan American Health Organization presented a database where scientific research on the virus is compiled and categorized. In addition, a press release from the European Commission issued on March 15, 2016, details that it would give 10 million euros to finance research on Zika, so this hypothesis was dismissed.

The damaged caused by the earthquake turned the media to focus their news on the tragedy, despite the increase in cases of Zika in the country and the imminent increase in the risk of virus expansion.

FUENTE: SIVE-ALERTA

Comparación casos de Zika por años; por Semana Epidemiológica 2016, 2017-SE 14- 2018

FUENTE: SIVE-ALERTA

Semanas epidemiológicas

Durante el año 2017, hasta la SE 52 se han confirmado 2413 casos de Zika, las provincias con el mayor número de casos fueron Guayas, Manabí y Sto Domingo de los colorados. Hasta la SE14 del 2018 se han confirmado cuatro casos de infección por ZIKV.

Figure 7. Comparison of Zika cases by years; by Epidemiological Week (SE) 2016, 2017-SE 14-2016 (Source: Ministerio de Salud Pública).

Which Has Been the Post Epidemic Coverage Media Has Given to Zika in Ecuador?

Until the first week of 2017, 2,942 people across the country were affected by Zika fever and until the last week of that year, 2,413 infected people were added to that number. In 2018, until the 14th week, only four cases of virus infection have been confirmed.

The climax of the epidemic took place in June 2016, at the 25th week, in that period 289 cases were counted and the trend kept on going until August, in the 29th week when the cases began to decline. In 2017, there was a significant rebound in cases, although it does not compare with that of the previous year. The 16th week of 2017 was when more cases were reported, 154, and the trend continued until the 24th week, later on the number of infected decreased. Taking into account these time periods, media monitoring was carried out to find an answer to the question. The findings were not encouraging.

After the first epidemiological outbreak in the 25th week of 2016, the news articles about Zika issued from *El Universo* add up to seven; while after the second outbreak, they add up to three. The news from *El Telégrafo* about the virus after the two outbreaks reach one. However, while it is true that the amount of news reflects how effective the post-epidemic coverage was made by the media in Ecuador, the quality and content also matters, and luckily the findings about those aspects are positive because the news do correspond to the moment in question. The PAHO Journalistic Manual for the Ethical Coverage of Emergencies and Disasters

states that one of the most important actions that a medium must take after a disaster or epidemic is to follow it up. There is recommended to:

Generate information that evaluates the quality of public policies in the recovery of the emergency or disaster. Reflect the progress and also the delays in the public management, whether from the State or local governments (PAHO, 2011, p. 23).

This guide also suggests that after a crisis enough time should be invested in conducting in-depth investigative reports that address "causes, consequences, mention legislation, present solutions and offer diverse voices". *El Universo* fulfills both aspects of quality and content, despite the small amount of news generated.

The alternative hypothesis proposed to solve this question is met by mentioning that the media have not continuously monitored the Zika outbreak, so the post-coverage has been deficient. While the main hypothesis that was initially presented has been more useful to explain the findings, this premise suggested that the competent public entities have not pronounced efficiently about the state of the Zika outbreak in Ecuador, so the media are unaware of the situation and cannot report accordingly. That is actually true. The Public Health Institute in Ecuador, unlike countries, like Brazil or Colombia, has not issued an official statement announcing the end of the national emergency for Zika nor has it disclosed information about the status of patients, or about the precautionary measures citizens should take. The third hypothesis proposed opens the way to a possibility that should be paid attention in the coming years: The worst phase of the Zika outbreak has culminated, but it is not fully controlled yet, as there could be a rebound given the sporadic cases that have been found and could increase due to weather conditions.

What Informative Content Is Privileged in the News About Zika in the Ecuadorian Media?

The privileged content in the news published by both media was about the possible relationship between Zika and other diseases, such as microcephaly and Guillain-Barré syndrome. Microcephaly is a congenital defect that causes babies' heads to be smaller than expected, and that causes cerebral atrophy. Guillain-Barré on the other hand, is a disease that paralyzes the muscles of the body and can cause permanent damage; it occurs when the body's immune system attacks part of the nervous system by mistake. The rise of patients from both disorders was linked to the explosion of cases of Zika in Brazil and Colombia, and other affected countries. News contents vary, some are about the number of people affected by Zika, microcephaly, and Guillain-Barré others about scientific studies to verify the cause-effect relationship of the virus, and others about the measures that international and national organizations took to avoid more infected. Having exposed that, the first hypothesis is proven.

On the other hand, according to the collection and classification of news, the first and third hypotheses proposed to solve this question are also met, since the type of content of both *El Universo* and *El Telégrafo* has been about the international situation of countries, like Brazil and Colombia. Headlines, such as "In Brazil, cases of microcephaly related to the Zika virus rise to 4,074" or "Colombia confirms two cases of microcephaly associated with the Zika virus" are recurring. According to the geographical classification, most news' are international.

However, the alternative hypothesis proposed was not proven, because not enough preventive news was issued to help citizens protect themselves against the virus. As shown in Figures 1 and 2, preventive news reaches small percentages.
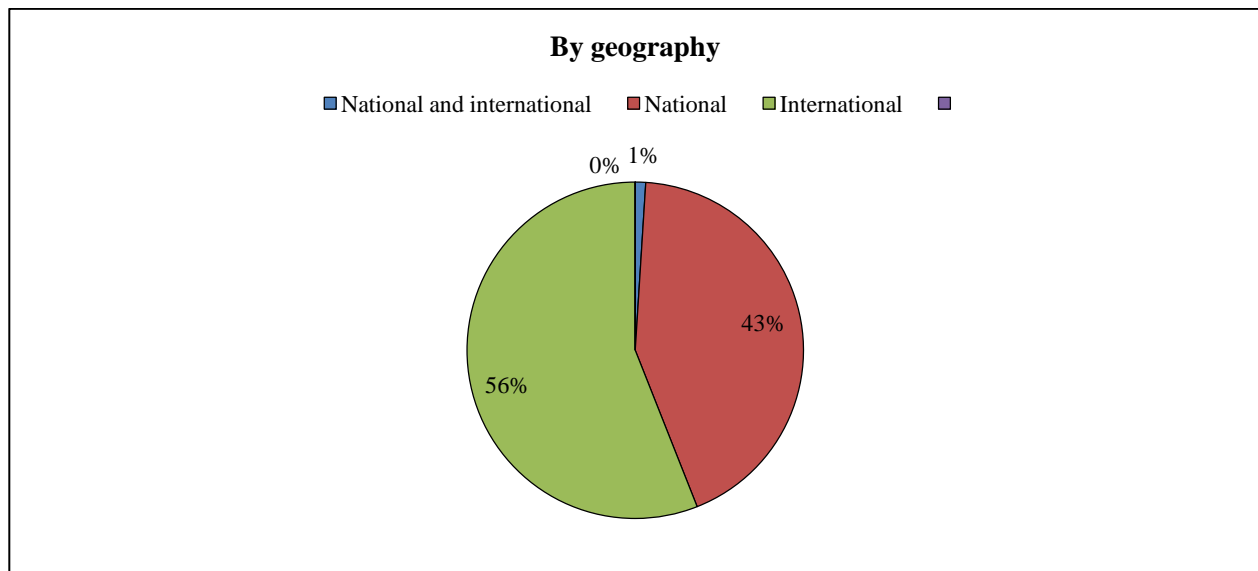
By geography

☐ National and international ☐ National ☐ International ☐

0% 1%

43%

56%

Figure 8. News classification by geography of *El Universo* (Source: The authors).

By geography

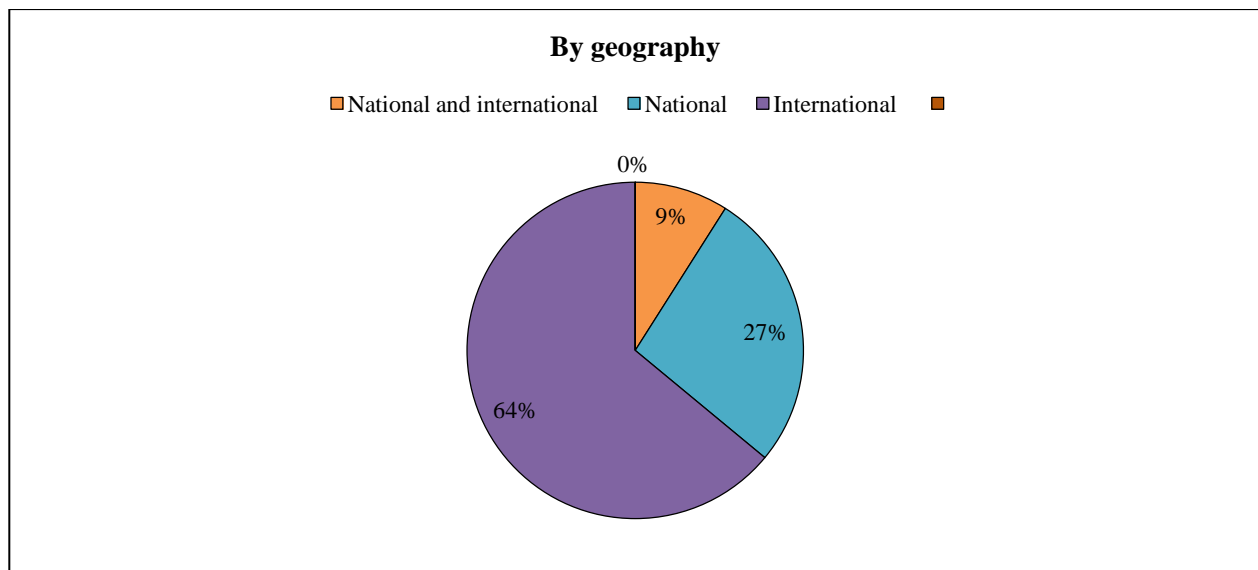☐ National and international ☐ National ☐ International ☐

0%

9%

27%

64%

Figure 9. News classification by geography of *El Tel égrafo* (Source: The authors).

Conclusions

Zika affected much of Latin America, reaching even North America and some European and Asian countries. In 2015, it arrived for the first time in Brazil, where the highest number of cases was registered followed by Colombia. At the end of that year, the WHO issued the first worldwide epidemiological alert for the numerous cases of Zika reported in nine countries, in addition to its possible relationship with the increase in children born with microcephaly and people affected with Guillain-Barr ésyndrome.

In January 2016, the public health institute confirmed the first two imported cases of the virus in a woman and her son residents in Quito who had traveled to Neiva, Colombia. 2016 was the most critical year for Ecuador concerning to the virus, but also due to the strong 7.8 magnitude earthquake that hit the Ecuadorian coast. Media are essential during times of crisis, both for their work reporting the progress of the

epidemic, and for its importance in disseminating preventive and educational information in order to contribute to the control. Considering that, two newspapers were chosen to observe how their reaction was after the spread of the virus. *El Universo* and *El Telégrafo* were the two journals selected for their major influence in the country and also for their particularity of being private and public, respectively, so the findings found could be contrasted in greater depth. Journalists interviewed from both media told their experiences regarding access to official sources. According to their testimonies, *El Telégrafo* was able to access information from the public health institute, even if that meant a delay of up to 15 days for publishing news. On the other hand, *El Universo* was unable to obtain data from that entity, so it was necessary to cite government media as sources.

In summary, preventive coverage of the Zika epidemic was very poor in Ecuador due to its rapid expansion, and because the first outbreaks of the virus on the continent were very isolated. In addition, prevention is not news for the media. Journalists remain convinced of that. However, it was a mistake of both newspapers not to have reported the situation of Latin American countries, such as Brazil and Colombia that first confirmed the presence of Zika, before its arrival to Ecuador.

As the epidemic progressed, the news that privileged the media was precisely about the international situation rather than the national. There are no journalists in Ecuador who dedicate exclusively to cover health issues, but they are also in charge of other areas, such as environment, education, and city. From March 2016, the media reduced the production of news about Zika, which was more noticeable in April of the same year, after the earthquake. The outbreak during that date was at its climax, so the earthquake explains the reason why media lost interest in the topic. Despite this, it is important to note that the epidemic did not grow significantly. Although, due to the hundreds of destroyed homes and families after the earthquake, the risk of insalubrity became greater.

The media analyzed did not give satisfactory coverage to the epidemic, at least not in all its aspects and there is some uncertainty as to what its status is. Although the cases reported in 2018 are scarce, the authorities have not officially pronounced on the end of the epidemic, therefore, the media cannot reproduce the information, and it is not advisable to report independently.

Recommendations

All journalists interviewed from *El Telégrafo* and *El Universo* agree that training is essential and they are willing to be trained either by public health institutes or international agencies. None of them claim receiving a health journalism training by any entity. Shirley Serrano recalls that on one occasion the public health institute invited the media to discuss a reform before giving a press conference and she believes that this can be a good strategy to the better understanding of protocols and technical terms needed to inform properly. "It is as if we were given a class, as a training meeting" (EP04). But this experience has not been repeated.

Media must privilege the coverage of infectious diseases and epidemics, such as Zika, Dengue, and Chikungunya at a national level rather than at an international one. Although the limitation would always be the lack of time and human resources to follow up health emergencies quickly enough, editors should establish organizational mechanisms for their journalistic teams, so they can build their own agendas of topics about health problems that are common in Ecuador.

The educational and preventive approaches must be continuous. The discourse that prevention does not sell should be dismissed of journalism conceptions because prevention is precisely the best weapon to prevent

disasters. Health does sell because it involves the quality of life of the people. Moreover, infectious diseases, such as Zika can be reactivated at any time by the climate and the proliferation of mosquitoes, and journalists have a social responsibility to inform about them.

Journalists must follow up epidemics before, during and after their outbreaks, so the audiences would be able to have information, context, a better understanding of the situation, and therefore, make better decisions. Following-up means also monitoring scientific studies about the sanitary emergency. In addition, explaining scientific terminology in their articles in an easy and understandable way is a priority for all reporters. The domain of technical language is precisely the best weapon of journalism to avoid panic and generate timely alerts. That is a collective work journalists need to carry out with official and professional sources, considering always the human component of people's testimonies, without caricaturing or revictimizing them.

Researchers provide their societies with a distorted view of science.

> (...) They only deal with portents, oddities and unusual extremes: a bacterium that feeds on oil, a highly exotic tribe and some wise man who managed the integral calculus from the cradle. While those things are true, they give the idea that science is a company of geniuses of theater who deal with curiosities and portents, and hide the fact that it is the daily work of people like them […] that puts order in the chaos of ignorance. (Cereijido, 1997, pp. 121-122)

If we use understandable language, we will for sure avoid alarming news. And the result of that will be to come up with a solution approach to the news. Audiences look for positive information and are tired of cruel and sad news. This is known as "solutions or constructive journalism" already applied in world media, such as the BBC and Vice. BBC Voice + AI director and founder of BBC Trending and BBC Hacks, Mukul Devichand, explains what it is about:

> Solutions-focused journalism sees itself as investigative. The dilemma is how to write a headline, a tweet or an update that hooks towards the solution and not towards the alarm. (…) Normally, when you try to interview someone, you look for the bad things to make them fall. But we identify their unique characteristic of what they do and what is the solution they offer. We ask if the solution is really applicable, viable, sustainable over time. It is not about killing history, but we do want to show the public how feasible the solution is. Thus, solutions journalism can be taken as a starting point for activists and decision makers. (Orbe, 2018, pp. 78-79)

All news should inform, educate, prevent, and alert. Besides, multimedia tools should be incorporated into the narrative of the stories if we think of an audience that increasingly consumes news more frequently through social networks and the Internet rather than on paper. Data visualization through infographics and explanatory videos are useful resources that should be displayed in the same article and not in other windows if it is digital.

Finally, here are the recommendations of Nora Bär, a long-standing scientific journalist from La Nación newspaper in Argentina, who covered the Zika epidemic in her country:

> One of the main problems posed by an emerging disease that was not known in our continent was the confusion of scientists. They themselves did not know what was happening and sent us conflicting messages. This situation required us to contrast many arguments, not to consult with one or two but many [sources]. And even, when there were no scientific agreements, transmit those points to the audience. As journalists our mission is to offer the best information available. We must be rigorous in coverage, ensure that the sources are reliable, not make exaggerated proposals, rely on scientific consensus rather than individual arguments and avoid sensationalism. (EP05[5])

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[5] EP05: Entrevista personal con Nora Bär, editora de Ciencia y Salud en diario La Nación de Argentina, 26 de octubre de 2017.

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