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The epidemic account of dengue fever and influenza A (H1N1)in Espírito Santo press media: similarities and differences

La experiencia epidémica del dengue y la influenza A (H1N1) en los medios impresos de Espírito Santo-Brasil: similitudes y diferencias

A experiência epidêmica da dengue e influenza A (H1N1) na mídia impressa do Espírito Santo: semelhanças e diferenças

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ABSTRACT: This study analyzedthe dengue and influenza A (H1N1) epidemics in the printed media of Espírito Santo state (ES). All reports from November 2007 to December 2010were collected from the newspaper *A Tribuna*. The data collected from the Health Information Systems were quantitatively analyzed as per their editorial characteristics, theirdate of distribution and the number of reported cases and deaths due to the respective pathologies. Dengue was pinpointedin 1.870 articles, 133.641 notifications and 94 deaths in the period. H1N1 was pinpointedin 411 news stories, 519 cases and 15 deaths. There was a significant statistic difference in the representations of dengue and influenza A (H1N1) concerning the cover, the editorials, the editorial space and type

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of opinionated report. There was a stronger statistical correlation between the number of deaths, notifications and news reports of dengue, when compared to the same correlations for influenza A (H1N1). The number of reported cases directly influences the spread of the news of the diseases studied. Contemporary epidemics are complex events, in which media constructions participate actively, bringing risk perceptions intofocusthat may exponentially raise tensions and meddle in health policies.
Keywords: Epidemics; Health Communication; Epidemiology; Public Health.

RESUMÉN: El estudio analizó las epidemias de dengue y influenza A (H1N1) en los medios impresos de Espírito Santo (ES). Recolectamos todos los artículos que abordaron estas epidemias, desde noviembre de 2007 hasta diciembre de 2010, en la revista *A Tribuna*. Los artículos fueron analizados en relación con sus características editoriales, distribución temporal y relación con el número de casos reportados y muertes de las respectivas patologías recogidas en los Sistemas de Información de Salud. Dengue registró 1.870 artículos, 133.641 informes y 94 muertes en el período. El H1N1 ya registró 411 noticias, 519 casos y 15 muertes. Hubo una diferencia estadísticamente significativa en las representaciones de dengue y influenza A (H1N1) con respecto a la portada, editoriales, espacio editorial y tipo de artículo de opinión. Hubo una correlación estadística más fuerte entre el número de muertes por dengue, notificaciones y noticias, cuando se compararon las mismas correlaciones para la gripe A (H1N1). El número de casos reportados influye directamente en la mediatización de las enfermedades estudiadas. Las epidemias contemporáneas son eventos complejos, en los que participan activamente las construcciones de los medios, poniendo en escena percepciones de riesgo que pueden aumentar exponencialmente las tensiones e interferir con las políticas de salud.
Palabras clave: Epidemias; Comunicación en Salud; Epidemiología; Salud Pública.

RESUMO:O estudo analisouas epidemias de dengue e de influenza A (H1N1) na mídia impressa do Espírito Santo (ES). Foram coletadas todas as matérias que abordavam essas epidemias, no período de novembro de 2007 a dezembro de 2010, no periódico *A Tribuna*. Foram analisadas as matérias em relação às suas características editoriais, à distribuição temporal e à relação com o número de casos notificados e mortes pelas respectivas patologias, coletado nos Sistemas de Informação em Saúde. A dengue registrou 1.870 matérias, 133.641 notificações e 94 mortes no período. Já a H1N1 registrou 411 notícias, 519 casos e 15 mortes. Houve diferença estatisticamente significante nas representações de dengue e de influenza A (H1N1) no que diz respeito à chamada na capa, aos editorias, ao espaço editorial e ao tipo de matéria opinativa. Houve correlação estatística mais forte entre o número de mortes, notificações e notícias de dengue, quando comparadas às mesmas correlações para influenza A (H1N1). A quantidade de casos notificados influencia diretamente na midiatização das doenças estudadas. As epidemias contemporâneas constituem eventos complexos dos quais as construções midiáticas participam ativamente, colocando em cena percepções de risco que podem elevar exponencialmente as tensões e interferir nas políticas de saúde.

Palavras-chave: Epidemias; Comunicação em Saúde; Epidemiologia; Saúde Pública.

INTRODUCTION

Epidemics make part of the human experience and have composed popular imagination for millenia, from religious iconographies to contemporary information and communication technologies[1]. To the realm of epidemiology, an epidemic is defined as the incidence of a disease in a number of people above the expected in a given period of time[2]. The sociological interpretation, however, understands epidemics as complex acute events that bring into scene the explanatory schemes, the cognitive and symbolic universes of a given time and place[3]. Certainly, the spread of news by the mediaplays a role in the various epidemic representations –whether they are biomedical or sociohistorical–forming the very phenomena about which they speak and guiding a given perception of reality.

Considered one of the main recurring diseases today, dengue hasshowed dramatic global expansion in recent decades, exposing approximately half the world's population to a risk of infection[4], according to the World Health Organization (WHO). There have been episodes of the disease in the Brazilian territory since the middle of the nineteenth century and beginning of the twentieth century, a period in which public health attention was turned to yellow fever, which was the reason for campaigns to eradicate *Aedesaegypti*. Since the 1980s, dengue contagion has been uninterrupted, and, in 2016, 1.496.282 probable cases and 629 deaths[5] were registered. Considered neglected by the WHO, dengue differs from this group in Brazil because it reaches in different ways all social strata and is evidenced by the media[6,7]. Influenza A (H1N1) was the first influenza pandemic in the 21st century, spreadingthrough 207 countries and amounting to an estimate of 18.000 deaths from 2009 to 2010[8].Announced on April 25, 2009, the disease caused by a new influenza virus was a trigger for alert not only for public health agencies, but also for the press, which reported intensely the pathology, initially called "swine flu", "new flu" or "swine flu"[9].

According to Waisbord[10], both dengue and influenza represent health issues that had usually been given limited press coverage in Latin American newspapers, whose sources were mostly specialists. However, the scenario changes when both diseases cease to be exclusive news report of health sites and dominate offer of information: dengue usually in summer and periods of rainand influenza often in winter. The 2009 influenza A (H1N1) pandemictranscends the boundary of the usual technical news sites of the flu and becomes the main topic of public debate as intense media coverage fosters a sense of risk and spreads new socialrules, such as use of masks, hygiene, social distancing[10], and, later, mass vaccination.

In Brazil, despite having had the news space divided with influenza A (H1N1) in 2009, dengue fever remains constant in the news roll call of diseases due to recurring epidemic cycles that affect the population to a greater or lesser extent, depending on viral circulation and conditions

that promote infection[9]. Thus, even with specific epidemiological dynamics, the two pathologies represent powerful references to analyze epidemic experiences that have coexisted in the contemporary media landscape.

In the state of Espírito Santo, dengue occurs throughout the state, mostly occurring in the metropolitan region of Greater Vitória (RMGV) – composed of seven municipalities where 48% of the state population is concentrated (724 inhabitants/km²) and in whichthe municipal average of IDH = 0.748 – and the north region, composed of 15 municipalities, bearing the largest demographic void in the state (36 inhabitants/km2), with the presence of large estates and municipal average of IDH = 0.677[11]. Out of the 78 municipalities in the state, 20 are considered priority for dengue, and only six municipalities are considered free of *Aedes* infestation[12]. In 2009, ES registered 519 cases and 15 confirmed deaths by H1N1, which motivateda mass vaccination of almost half of the population of Espírito Santo in the year 2010[13].

In this sense, journalism constitutes a central instance based on its role as mediator and provider of information and guidance on social reality. However, it is not a matter of reality itself, since its production meets certain professional rules, editorial, political and business interests, in addition to its own competition with other media. Thus, there are variations in coverage also in relation to health issues, which can highlight an epidemic and mobilize the public to face it or stimulate risky behavior contrary to the recommendations of specialists and health institutions. From this perspective, considering the importance of journalism as a communication and health instrument in the strategy to control epidemic events, and acknowleging the magnitude of these two poignant public health problems (both a pandemic and a recurrent epidemic in Brazil), this study aims to analyze the contemporary epidemic experience in the print media of Espírito Santo, from the study of two epidemics occurring in the state of Espírito Santo, influenza A (H1N1) and dengue, from 2007 to 2010.

METHODOLOGY

This is a longitudinal retrospective quantitative study in which the researched material comprised all the reports on dengue and influenza A (H1N1) published in the highest circulation newspaper within the state (*A Tribuna*) from November 1, 2007 to December 31, 2010 in dengue's case, and from April 2009 to December 2010 in influenza A's case (H1N1). Reports of dengue fever in Espírito Santo have been occurring since 1995, with two major epidemics occurring in 2008 and 2009[12]. Thus, the temporal cut of the study corresponds to a period of epidemics of large magnitude in the state, whether it is dengue (seasonal cut from November of the year prior to the 2008 epidemic to December 2010) or the H1N1 pandemic (watching its global epidemiological characteristics until its remission in 2010).

A descriptive analysis of the reportsrelated to their editorial characteristics, temporal distribution and the number of reported cases and deaths by the respective pathologies found in

the Health Information Systems were carried out. A retrospective survey of journalistic subjects omitting advertisements, which encompassed in their content the keywords “dengue”,“H1N1”, “influenza A”, and “swine flu” was also carried out.

To collect the data, the digital collection provided by the newspaper *A Tribuna* was used, containing all the copies of the newspaperin Portable Document Format (PDF) throughout the years studied (totaling 1.157 editions). *A Tribuna* is in the list of the major newspapers in Brazil with paid circulation, ranked 18th in printed circulation and 27th in digital circulation[7].

The selection of the articles was carried out by two skilled researchers, using two complementary search systems: the advanced search tool of Adobe Acrobat Reader DC and the Intelligent Information Search System, aLine. aLine system is a data mining tool developed by the High Performance Computer Laboratory of the Federal University of Espírito Santo (UFES), in partnership with the Health Observatory in the Media-Regional-ES, which enables the retrieval of information present in indexed collections through of search for keywords, regardless of the location of the information in the pages of newspapers[14,15].

The survey of the articles was registered in a Microsoft Excel version 2010 spreadsheet, and wassorted out according to: disease/descriptor; date; news headline; page; presence of cover call; editorial; format of the material; type of opinionated format: (a) charge; (b) reader’s letter; (c) editorial; (d) article; (e) column.

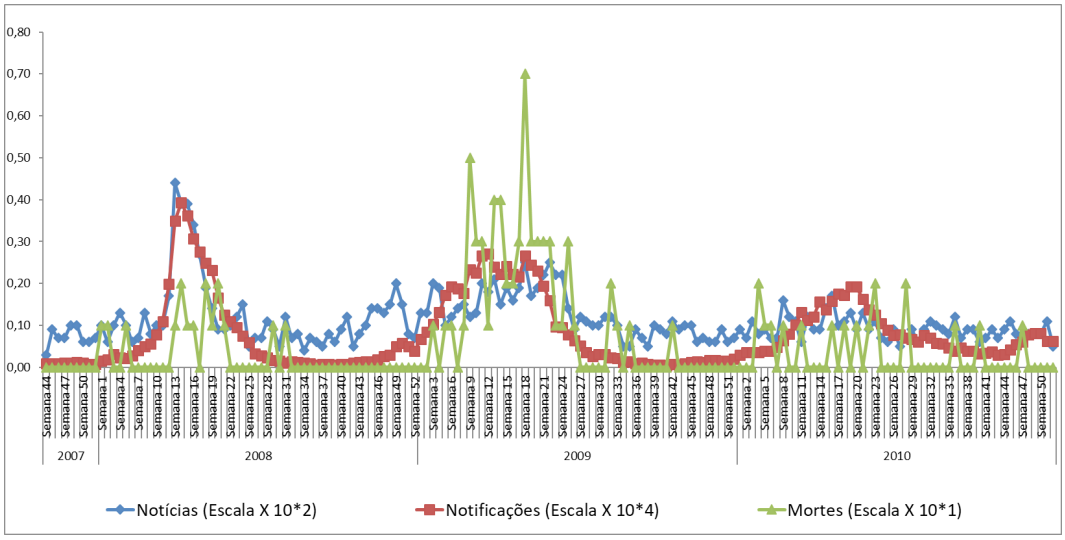
Data on mortality from dengue and H1N1 were extracted from the Mortality Information System (SIM) and information on the notifications of both diseases was taken from the Information System of Notifiable Diseases (SINAN). In addition, morbidity and mortality data on dengue were updated with the information provided by the State Health Department of Espírito Santo (SESA-ES).

The variables were processed in a database in the program SPSS 21.0 for Windows and the treatment of the data was carried out by descriptive and inferential analysis with calculations of relative and absolute frequencies and application of the tests of linear association and bySperman correlation, adopting a level of significance of 5%. Correlation levels (r2) were analyzed by the following criteria: Strong Correlation: r2 equal to or greater than 0.70; Moderate Correlation: r2 from 0.50 to 0.69; Poor Correlation: r2 equal to or less than 0.49.

RESULTS

A total of 2.281 articles were collected throughout the period of the study, from which 1.870 were on dengue and 411 on influenza A (H1N1). Regarding dengue, 1.870 articles, 133.641 news reports and 94 deaths were registered in the period, as shown in Figure 1.

Figure 1. Temporal distribution of the number of cases, reports and deaths from dengue, from November 2007 to December 2010, Espírito Santo-Brazil

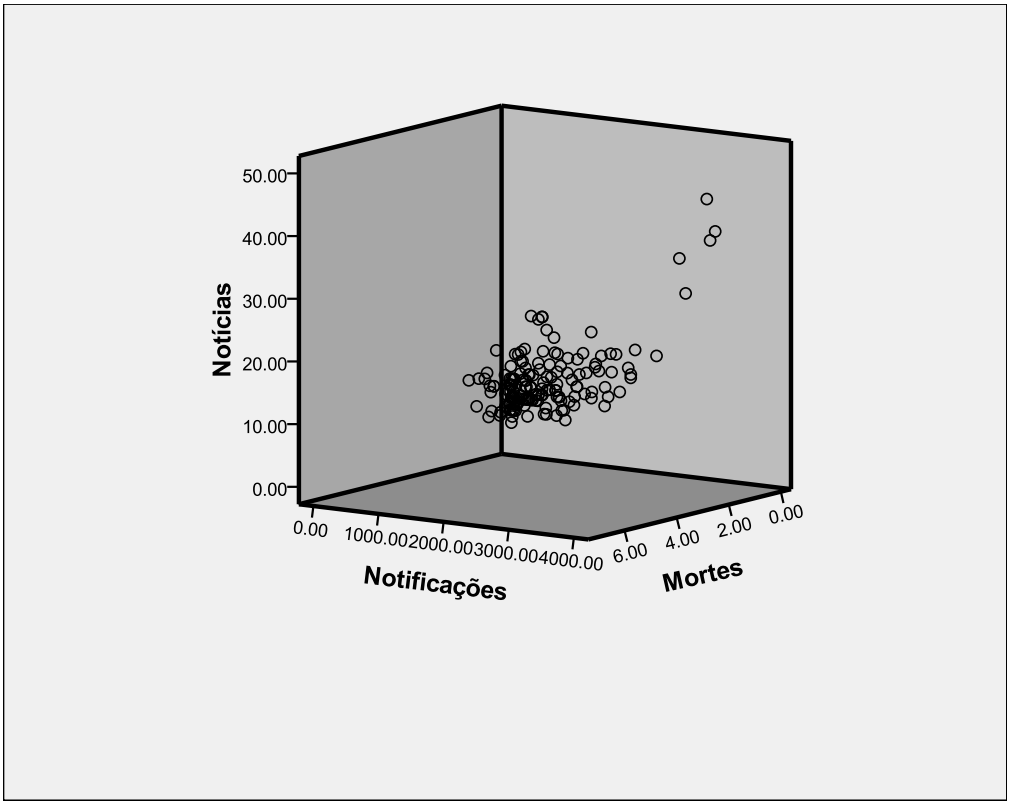


In 2008, there was a significant amount of news in epidemiological week 13 (n = 44), followed by weeks 14 (n = 39) and 15 (n = 39). In terms of news reports and deaths from dengue, these weeks also showed significant results, from which 3.485 were reported cases and one was a death case in week 13. In addition to the 3.936 cases and the two deaths casesin week 14, there were 3.614 cases and one death case in week 15.

In the same period of 2009, there was an increase in the number of reports, notifications and deaths from epidemiological week 11 to week 22, in which week 12 had the highest number of notifications (n = 2713), and week 18 had the highest number of news reports and death records (n = 25 in = 7, respectively). The phenomenon re-occurred in the same period of 2010. However, the news, deaths and notifications were lower than in previous years, in which the number of reports in the epidemiological week 16 (n = 17), of notifications at week 19 (n = 1918) and deaths at weeks 23 and 28 (both with n = 2) were higher. It is demonstrated that dengue fever is seasonal in the weeks of higher number of notification of cases, despite some variations related to the epidemiological weeks, due to instabilities of rainy seasons in ES.

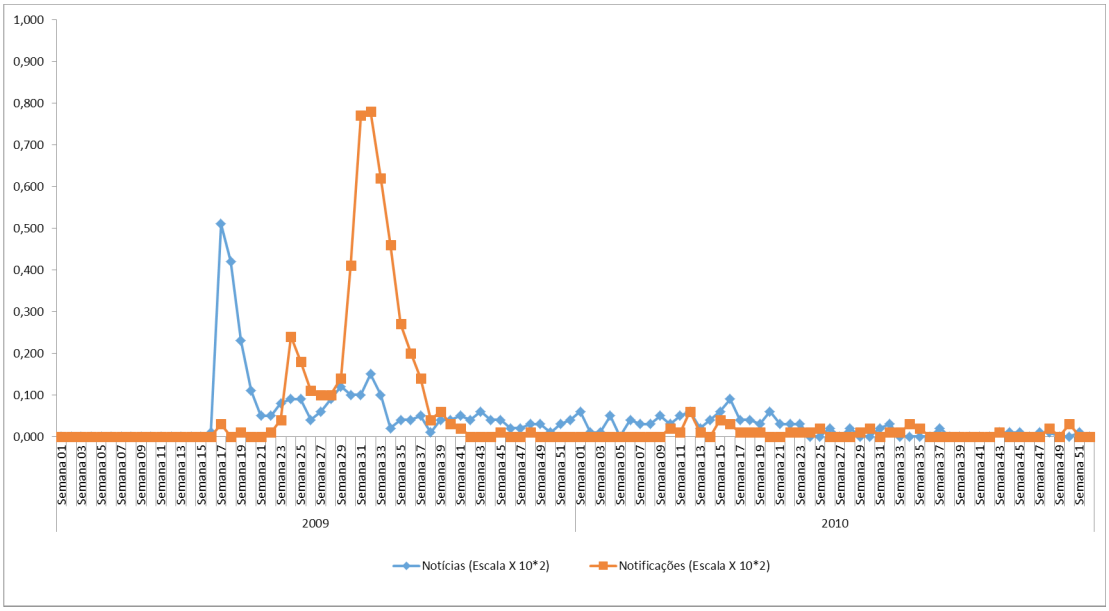
It was also possible to notice that there was a moderate correlation between the number of reports and notifications of dengue fever (r2 = 0,591), and a weak correlation between the news and the number of deaths (r2 = 0,437), as shown in Figure 2. Among the number of deaths and the number of reports of pathology (r2 = 0,509), the correlation was moderate.Consequently, the correlation between the variables is positive, that is, the higher the number of notifications and deaths by dengue, the greater the number of news reports on the disease.

Figure 2. Statistical correlation between the reported cases, the deaths and the news articles on dengue, between 2007 and 2010, Espírito Santo-Brazil



Regarding influenza A (H1N1), there were 411 news reports, 519 cases and 15 deaths, according to the time distribution per epidemiological week, asillustrated in Figure 3.

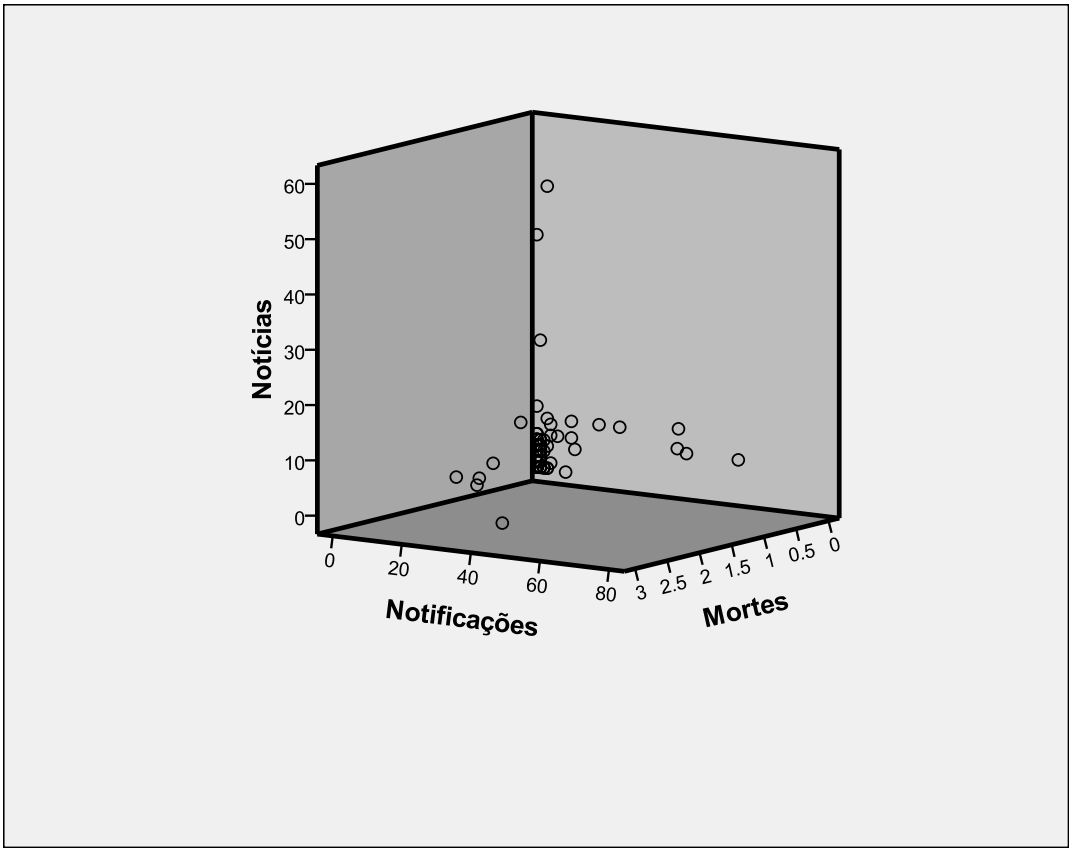
Figure 3. Time distribution by epidemiological weeks of the number of news articles and notifications for influenza A (H1N1), from January 2009 to December 2010, Espírito Santo-Brazil



The news about influenza A (H1N1) appeared in the 16th epidemiological week (April 25, 2009; n = 1 news) and its dissemination reached a peak in the 17th epidemiological week (n = 51) with three cases reported in the state in the period. A parallel should be drawn between dengue and influenza A (H1N1), since dengue's mechanism of transmission depends on a specific vector (*Aedesaegypti*), while the far more contagious influenza A (H1N1) is transmitted from person to person. The highest number of cases occurred from the 31st to 34th epidemiological week with 77, 78, 62 and 46 cases, sequentially. In this period, deaths from influenza A (H1N1) in the state (n = 2, n = 2, n = 1 and n = 3 deaths sequentially) were also reported. In 2010, both the number of cases and the number of news items decreased significantly, with only one death recorded throughout the entire year in the 48th epidemiological week.

Another analysis showed that there was a statistically significant but weak correlation between news and reports of influenza A (H1N1) (r2 = 0,476), and a moderate correlation between deaths and disease reports (r2 = 0,524). In addition, there is a positive and weak correlation between news and deaths from influenza A (H1N1) (r2 = 0,279), which is the weakest of all correlations tested in this study (Figure 4).

Figure 4. Statistical correlation between the reported cases, the deaths and the news articles on influenza A (H1N1), between 2009 and 2010, Espírito Santo-Brazil



According to Table 1 and regarding editorial characteristics, there was a statistically significant difference in the news production of dengue and influenza A (H1N1) concerning cover calls, editorials, editorial space and type of opinionated article. In both dengue and influenza A (H1N1)

articles, the cover material was a minority, and influenza A (H1N1) appeared proportionally in more cover calls than dengue fever did.

Table 1. Editorial characteristics of dengue and influenza A (H1N1) material, 2007-2010, Espírito Santo-Brazil

		Dengue		Influenza A (H1N1)		Total		p-value*
		n	%	n	%	n	%	
Cover	no	1827	97	385	94	2212	97,0	<0,001
	yes	43	3	26	6	69	3,0	
Editorial	books supplements	6	0,3	7	1,7	13	0,5	<0,001
	city	1085	58,0	177	43,0	1262	55,3	
	science	35	1,8	43	10,0	78	3,4	
	culture	124	6,6	50	12,1	174	7,6	
	economy	42	2,2	15	3,6	57	2,5	
	sports	12	0,6	16	3,8	28	1,2	
	international	5	0,2	27	6,5	32	1,4	
	opinion	374	20,0	31	7,5	405	17,7	
	politics	187	10,0	45	10,9	232	10,1	
Space	informative	547	29,2	295	71,7	842	36,9	<0,001
	opinionated	657	35,1	114	27,7	771	33,8	
	advertisement	7	0,3	1	0,2	8	0,3	
	service	659	35,2	1	0,2	660	28,9	
	article	15	2,2	2	1,7	17	2,1	<0,001
	letter to the editor	270	40,7	15	12,9	285	36,5	
	column	369	55,6	97	83,6	466	59,8	
	interview	9	1,3	2	1,7	11	1,4	

*Linear-by-linear association

Source: Authors

As for the editorials, both issues came out with a certain frequency in the published articles in the circulating city. Dengue was highly valued in opinion polls, followed by politics and culture. On the other hand, influenza A (H1N1) had an expressive publication rate in the culture, politics and science editorials, respectively.

Regarding editorial space, there was a significant difference between the publication of the disease, where dengue was published primarily in opinion and service spaces and influenza A (H1N1), in informative spaces.

Regarding the articles classified as opinionated, both dengue and influenza A (H1N1) reportswere prevalent in readers' column formats followed by letters to the reader format.

DISCUSSION

Some records in the scientific literature indicate that there was an incidence of dengue virus throughout the Americas from the 19th century until the first decades of the 20th century, when an epidemiological silence occurred, probably due to the eradication of *Aedesaegypti* in several countries of the continent[16]. But suchsilence was short-lived. As early as the 1960s, new serotypes were associated with epidemics of "classic" dengue fever and the incidence of dengue virus became increasingly intense.Consecutive epidemics have reached large urban centers since then.

In Brazil, the first dengue epidemic was documented in 1981 and 1982 in Boa Vista (RR). After four years, in 1986, a new epidemic occurred again in Rio de Janeiro, caused by the serotype DENV-1. The epidemic caused by the same serotype (DENV-1) in 1986 and 1987 presented two epidemic waves in two successive summers. In the first two years of the 1990s, dengue remained almost entirely restricted to the states of Rio de Janeiro, Ceará, Alagoas and Pernambuco. In the following years, viral incidence (DENV-1 and DENV-2) of the disease expanded rapidly to other areas of the Brazilian territory, becoming endemic[17]. In 2001, the incidence of the DENV-3 in Rio de Janeiro was confirmed, and it was responsible for the 2002 epidemic in Brazil. After this period, there was a decline in the number of notifications, but it resumed its growth, reaching higher numbers than those of the previous epidemics, particularly in 2008, 2010 and 2011. The situation worsened in 2013 when dengue affected the center-west, southeast and south regions of the country. Such situation is a consequence of the continuous geographical expansion of the *Aedes* and of the simultaneous and cyclicalincidence of the three serotypes (DENV-1, DENV-2, DENV-3)[17].

It is true that macrofactorsunrelated to the health sector are instrumental for the proliferation of *Aedesaegypti*: urban agglomeration, water supply and housing conditions, people and cargo traffic between countries, and global climate change[6], among others. In addition, the great adaptability of the mosquito to the human-inhabited environment and the ignoranceabout how to erradicateit have constrained the control of this disease, allied with the fact that safe and effective vaccines against the virus are not yet available[17]. However, the supposedly "villainy" of *Aedes* and the accountability of the population remain key resources in health communication and education campaigns. Thus, the flaws of the intersectoral public policies, the economic centrality and the centrality of the processes of social determination of the disease are outweighed

by strengthening messages of individualization of risk and control of its factors[18].

In Brazil, the distribution and the importance of dengue epidemics differacrossthe various regions and cities, due to their territorial magnitude and the large number of densely populated urban centers. Also, there are still factors, such as the variety of weather conditionsfound in the country and the fact that the periods of introduction of the different serotypes of the dengue virus in each area are out of sync[17].

Espírito Santo is one of the states of the federation in which a large number of serious cases of the disease occurred in 2010. It happened throughout the state, with higher concentrations in the metropolitan region, Cachoeiro pole, and the northern region. Reports of dengue in Espírito Santo have been occurring since 1995, with two major epidemics in 2008 and 2009[12].

There are indications that no other infectious disease has received so much attentionin the news reports recentlysuch as dengue has, possibly due to the cyclical incidence of its epidemics and the risk of death by its hemorrhagic form. Dengue has always had a special place in the press, according to Ferraz and Gomes[9]. Such fact could also be observed in the newspaper *A Tribuna*throughout the study period, from November 2007 to December 2010 (Figure 1), when there have been news reports on dengue fever published. Hence dengue can be considered not only anepidemiological phenomenon, but also a mediaticone, which directly influences the scheduling of the disease on the public agenda and perceived relevance of the population. However, in order to promote positive effects in the public debate regarding this public health problem, it is essential to ensure critical journalistic coverage that contextualizes its social determinants, rather than a strictly biomedical approach or focused on dramatic aspects.

A study on dengue coverage in a newspaper in Pernambuco found that the news about the disease fell within almost all criteria of news reports: unpredictability (epidemic as a singular event), social weight (a disease that affects society as a whole), number of people involved (infected people and potential patients, in addition to recorded deaths), geographical vicinity and current affairs[9].

The news production of dengue in ES follows the epidemiological trends as well as the findings of other studies[9,19]. In the newspaper with the largest circulation in the state, dengue had a small number of cover calls and was predominant in the city editorial, in which themes related to the state (mainly its metropolitan region) and most health reports in general are concentrated[20]. Another important characteristic is the large number of articles published in the newspaper's service spaces and opinionated reports, usuallyfor columns and letters of the readers. Such feature points to the agenda of the topic in spaces non-exclusive to journalists, who give voice to columnists and mostly to the population, through letters of the readers or spaces specifically designedto citizens' complaintsand doubts. In addition, service journalism provides with information readers who seekadviceto help them on a daily basis[20]. In dengue's

case, since it is an endemic disease, information on its contagion, preventive measures and updated information about the service network and services available in the Unified Health System (SUS) for the population were recurrent.

Remarkably, dengue is an infectious disease that has held a high level of media visibility in therecent years due to the cyclical incidence of its epidemics and the risk of death for its severe types[9]. In Espírito Santo, the disease was ranked fourth in visiblilityin the main local newspapers in 2011 and 2012, accounting for 3,4% of all coverage of diseases published in the period[7].

However, the pandemic of influenza A (H1N1) in 2009 largely took the media spaces in Brazil, possibly contributing to high levels of public anxiety[21]. Sensationalist and alarmist news coverage, for example, may have contributed to the creation of an image of generalized anxiety, leading to the desperate compulsive purchase of masks and medications. Thus, influenza A (H1N1) has become in the media a great novelty in the field of viral diseases of the 21st century and at the same time as a recurrent memory of the devastating Spanish influenza epidemic of 1918[22].

Carneiro et. al[8]re-affirm that the onset of a new human influenza virus, which would come from the variation of an avian virus, was expected in the Asian continent years ago. Thus, when the transmission of avian influenza A (H5N1) virus was noticed in this region, the predictions seemed to be accurate, since only one mutation of the virus would be enough to enable an effective transmission of the disease from human to human. However, as the author emphasizes, a new type of pandemic virus was expected to appear sometime somewhere in the world. And this is exactly what happened to the (H1N1) virus A, which became the first influenza pandemic of the 21st centuryagainst all predictions to the H5N1[8].

In different media, the memory of the Spanish flu is evoked to underline the sensation of risk before the new pandemic being announced. War metaphors are constant in this approach[23].Such analogy to their deadliness, however, is decontextualized from contemporary biotechnological development. On March 25, 2009, WHO declared an “international state of emergency”, raising the alert to level 6 on July 11 of the same year. However, despite the initial nervousness, the disease was less lethal than expected[22].

The Ministry of Health carried out mass campaigns in various media from the containment to the mitigation phase of the disease in order to give visibility to the actions taken by the Brazilian government to fight the pandemic, aiming to reassure and safeguardthe welfare of the population. Preventive messages on social networks, television, radio and printed materials were circulated, addressing signals, symptoms and preventive measures[22].

The coverage of influenza A (H1N1) in the newspaper *A Tribuna*showed a higher percentage of cover calls compared to dengue, despite still representing a low amount of material. This means that H1N1 was more prominent on the front pages. One of the signs to justify this is the fact that it is a new pandemic. The articles weremainly published in the city editorial(43%), and dengue likewise. It is worth mentioning, however, that coverage in international media was predominant at the beginning of the epidemic, once the discovery of the epidemic in Mexico and the United States was reported at the time, and the first cases investigated in Brazil began to be reported in the news in that newspaper from April 27, 2009 onwards.

Unlike dengue, the news of spread of influenza A (H1N1) in *A Tribuna* was shownpredominantly in informative spaces. Such predominance can be understood as a new reference, about which little was known. However, the publications in column were also more numerous among the articles published in opinionatedspaces. Similar to the work by Gomes and Ferraz[23],*A Tribuna*coverage regarding influenza A (H1N1) falls at the end of 2009, as the deadliness of the virus is acknowledged as not so high. It re-occurrs somewhat stronger in 2010, when the vaccine against influenza A (H1N1) in SUS is debated and later made available, triggering vaccination campaigns throughout the country, from March 22to May 21, 2010.

The drop in the interest of the press at a time when the deadlinessof H1N1 is perceived asbeing lower than expected indicates the usual pattern of media coverage in media-epidemic cycles defined by Waisbord[10]. According to the author, such dynamics of publicizing health issues in the media goes through three typical phases: the absence or reduced presence of the theme in special sections; the long duration and ranking in the news cycle (at the height of the epidemic); and the resumptionto minimum coverage. As a result, as the numbers of cases/deaths stabilize, or health systems respond well and cease to be the center of political debates, the media appreciation also “cools down”, for the possibility of narrating problems and conflicts is lost[10],which represent well-established appeals for the media and for society in general.

The results of the study showed that the media epidemic experiences of dengue and influenza A (H1N1) had similarities concerning the positive correlation between the numbers of cases and deaths and the amount of material published on the pathologies. In this case, the news values related to extraordinary news, tragedy and death were reiterated, in which “good news is bad news”. Galtung and Ruge[24] explain negativity as one of the news values from the perspective that negative news is more unexpected than positive news, in the sense that the events referred to are rarer and less predictable. Negative news is also more easily agreed and unequivocal in the sense that there will be consensus on the interpretation of the event as negative, such as deaths. Precisely, deaths have the potential to exponentially increase the drama of coverage, as well as its weight as a political issue[3].

In recent years, emerging diseases have had higher number of victims and have been intensively exploited by the media, becoming abundant sources of collective fear, invoking a “time of alert”,

combined with the dissemination of risk speech[25].Such risks outdo different areas and can be approached from different perspectives. In epidemiology, for example, it was the embodiment of the concept of risk that has made the study of noncommunicable diseases possible, which represented a huge extension of its object of study and the creation of epidemiological indicators related to the perception of risk[26].

The risk is essentially related to the future, with predictions andprospects that have not yet occurred, but can happen at any moment. They are related to the future that may or should be avoided. Hence the logic of the risk implies a distinctive mode of insertion in time;once the risk may be partially known, the future may and should be shaped based on the decisions made here and now, and the estimates make the event predictable and avoidable by scientifically oriented human action. In health, it refers mainly to negative events and ways to avoid them, i.e.,the disease can be avoided and there is an action in the present time lying in the hands of subjects so as to prevent it from happening.

In this perspective, there is an increasing plethora of themes reinforcing the relationship between the media, health and risk. According to Van Loon[27], the media are part of the technological constellation through which risks are brought to reality, that is, they have the potential to construct different meanings for situations of risk.

The two epidemics targeted in this study bear distinct epidemiological characteristics, despite bringing together epidemic experiences with strong media appeal. In this sense, it is understood that the newsworthiness of the epidemics echoes the logic of the risk that increasingly features the relationship between the media and the health-disease processes, whether in their individual or collective manifestations[3].

It is therefore understood that in the contemporary epidemic experiences, the assessment of the alternatives of health policies to face epidemics considers the media representation, not only because specialists detect the perception of the risk of the population, but also because the media coverage is decisive in the shaping of such perception[3]. This risk perception is a subjective process, constituted by the individual interpretations of the subjects. In general, it guides decision making, and the media narratives can both assist the direction of society to adopt preventive measures, for example, as contributing to the reproduction of fallacious content, with serious health consequences. That is why the relevance of ensuring responsible communication with society.

Certainly, the comparison between news reports (case-representative events or group of cases) and individual data (mortality and notification) represents a complex symbolic comparison, configuring a limitation of the study, together with the difficulty of ensuring the exact media coverage of the entirestate.

However, the media coverage analysis of dengue and influenza A (H1N1) under epidemiological bias has been a powerful methodological option to pinpoint and assess media-epidemic cycles[10], which laid emphasis on health guidelines in journalistic agendas.

CONCLUSION

Dengue and influenza A (H1N1) epidemics were widely reported in the largest circulation newspaper in Espírito Santo state from 2007 to 2010. Similarly to other studies, it was observed that the press coverage was monitored according to the epidemiological trends in the period. As a result, there was a positive statistical correlation between the number of deaths, notifications and news reports of the two pathologies in question. Regarding influenza A, it is important to consider that the intense media coverage, even with the low deadliness of the disease in ES, may have been influenced by the pandemic profile of the disease that "comes from outside", making the news production – and the perception of the risk – well anticipated in relation to the incidence of the virus and the occurrence of autochthonous cases and deaths.

As for the editorial characteristics, there was regularity of reports in the city editorial and a small percentage of cover calls connected to both dengue and influenza A (H1N1). Regarding the editorials, the approach to the diseases was different, since dengue was primarily published in opinion and service spaces and influenza A (H1N1) in informative spaces.

It is true that in what health issues are concerned, especially epidemics, media participation is actively involved. Far from being narrowed down to a mere broadcaster of information, media produces and constitutes the very phenomena of which it speaks and guides a given perception of reality. Hence contemporary epidemics are understood to constitute complex events, in which media constructions actively participate, bothacting as a relevant communication and health device that fosters public understanding andputting into play risk perceptions that can exponentially raise tensions and meddlewith health policies. Thus, the interfaces between media and health should deserveappropriate attention, especially from the ones responsible for the monitoring and control of epidemics in SUS.

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