Analysis of a pandemic in the Italian newspapers: the A(H1N1) experience

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ABSTRACT

BACKGROUND: in 2009 a novel infective agent, A(H1N1), was recognized by the World Health Organization (WHO) as a pandemic virus. Like most European countries, Italy experienced a single pandemic wave during fall-winter 2009. The objective of our study was to evaluate the news reports and the representation of the A(H1N1) pandemic in the Italian newspapers both quantitatively and qualitatively.

METHODS: from April 24th, 2009 to February 28th, 2010, seven national newspapers were monitored for the quantitative reporting of A(H1N1). In a three month sample period, reports were evaluated qualitatively by considering their front page presence, tones used for headlines, and images and figures dedicated to the topic.

RESULTS: in a ten month window, a total of 1220 articles were published. The reporting period showed four peaks and one hollow, with a similar pattern for all the newspapers. During the three-month sample period, we found a total of 382 articles, 98.4% of which appeared on front pages, 33.8% of which contained headlines using alarming tones, and 47.8% which contained info-graphic elements.

CONCLUSIONS: the A(H1N1) 2009 pandemic in Italy was mild; nonetheless, newspapers devoted great attention to the new influenza and used alarmist tones. In similar situations, there are several areas where scientists should play a greater role. Scientists should support journalists in understanding scientific issues and help them translate scientific information into news items. Scientists should also help to contain the anxiety aroused in lay people by a pandemic, and support vaccination efforts dedicated to it.

Key words: News reporting, Pandemic, A(H1N1), Mass media, Medical journalism

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INTRODUCTION

Influenza is currently the greatest pandemic disease threat to humankind (1). Influenza A viruses (*Orthomyxoviridae*, genus *Influenzavirus* A family) are endowed with remarkable biological dynamism and, because of their propensity for rapid and unpredictable antigenic variation, they have been described as "masters of metamorphosis" (2). Indeed, one distinctive feature of these infective agents is their ability to modify their surface antigens, hemagglutinin (H) and neuraminidase (N), continuously. There is a universal consensus that the only predictable characteristic of influenza viruses and pandemics is their unpredictability (1, 2). Major influenza

epidemics show no predictable periodicity or pattern, and all differ from one another. The minimum requirement for the initiation of a pandemic seems to be a major change or shift in the hemagglutinin antigen. These variations are usually due to genetic rearrangement between viruses of human origin and viruses of animal (avian or swine) origin (2, 3). The resulting virus could differ from previous viral strains and, thus, can lead to global dissemination and disease by the mutated virus.

Three worldwide pandemic outbreaks of influenza have occurred in the 20th century. The most devastating influenza pandemic in recorded history occurred in 1918 to 1919, when a completely new influenza virus subtype named influenza A(H1N1), commonly known as the "Spanish influenza", emerged and spread around the globe in four to six months. Several waves of infection occurred over a two-year time span killing an estimated 40-50 million people. The second pandemic occurred in 1957 and was named influenza A(H2N2), commonly known as the "Asian influenza". The third pandemic can be traced to 1968 and was caused by influenza A(H3N2), commonly known as the "Hong Kong influenza" (3).

A novel influenza of swine origin named the A(H1N1) virus (or "swine flu") was detected in April 2009. Swine flu could be efficiently transmitted through human-to-human contact. It was first detected in Mexico and then rapidly spread worldwide, thus initiating the first influenza pandemic of the 21st century (4). On April 24th, 2009, the World Health Organization (WHO) issued a phase 3 pandemic alert due to the presence of a rapidly disseminating virus. The gravity of the situation quickly scaled upwards, and on June 11th, 2009, the pandemic alert level was raised from phase 5 to phase 6, thus officially declaring the start of the 2009 influenza pandemic. Consequently, the novel influenza A(H1N1) virus was designated as a potential threat to worldwide health. WHO alert phases for epidemics are represented as follows:

- Phases 1-3: predominantly animal infections, few human infections.
- Phase 4: sustained human-to-human transmission.
- Phase 5-6 (pandemic): widespread human infection.
- Post peak: possibility of recurrent events.
- Post pandemic: disease activity at seasonal level.

This rapid escalation of pandemic phases,

and the alarm spread by WHO, was most likely attributed to the geographical increase of the virus spread, rather than an increase in its virulence (5).

Like most European countries, Italy experienced a single pandemic wave during fall-winter 2009. In Italy, the virus was detected for the first time on May 2nd, 2009, and no substantial activity was detected during the summer. The pandemic spread mostly after schools re-opened in mid-September and until mid-December. After an initial period (September–mid-October 2009) characterized by a slow exponential increase, a sudden and sharp increase was observed by mid-October. The 2009 pandemic wave peaked in mid-November and subsided in December 2009. A pandemic vaccination program started in mid-October 2009 and involved high-risk individuals and essential public sector workers, such as health care workers, policemen, firemen, etc (6). Overall, the 2009 pandemic in Italy was mild; nonetheless, media devoted great attention to the topic.

The role of the media in communicating health topics to the public is important due to the high volume of information that can be conveyed, the speed with which it is communicated, and the simplicity (compared to the scientific articles) of its reporting. There is a consensus that accuracy and completeness should be essential components of health articles, especially in view of the increased role individuals take in managing their own health, particularly in crisis situations. To avoid fear and false hopes , there is no room for incomplete and inaccurate information (7).

This study aimed to evaluate the news reports and the representation of the 2009 A(H1N1) pandemic in the Italian newspapers both quantitatively and qualitatively. The aim was to understand the features of the information that were divulged by major Italian newspapers in a 10-month period, and in a three-month sample period corresponding to the peak of the pandemic. This analysis was complemented by searching for blogs related to influenza in order to have an overview of a debated topic, namely vaccination.

METHODS

From April 24th, 2009 to February 28th, 2010 we monitored newspaper reports of A(H1N1), or "swine influenza", published in five major national daily newspapers (*Corriere della Sera,*

La Repubblica, La Stampa, Il Sole 24Ore, Il Messaggero), and in two opinion newspapers one having a catholic underpinning and one oriented towards left-winged information (*Avvenire and L'Unità,* respectively). This was performed in order to assess the quantity and quality of the news items. National newspapers were selected according to their average diffusion in Italy in 2009, listed in the Italian press certification (8):

- *Corriere della Sera*: average diffusion n=539 224
- *La Repubblica*: average diffusion n=485 286
- *La Stampa*: average diffusion n=300 578
- *Il Sole 24 Ore*: average diffusion n=291 405
- *Il Messaggero*: average diffusion n=202 257
- *Avvenire*: average diffusion n=106 363
- *L'Unità*: average diffusion n=53 221

Sport dedicated newspapers were excluded from the analysis. News reports were analyzed manually and independently by two qualified observers through the use of keywords, "A(H1N1)", "influenza", "epidemic", and "pandemic".

The 10-month timeframe considered reported on the emergence of the new influenza in Mexico and USA (April 2009, debut of the influenza, alert phase 4 rapidly upgraded), its peak (November 2009, maximum diffusion of reports, alert phase 6), and a follow-up period (January 2010, low reporting, still alert phase 6). Throughout this period, there was much controversy regarding vaccination. Reports taken from the three month peak sample period were analysed according to quality empirical indicators. Within the article, headlines have a prominent position and may be considered, per se, as an independent "copy". The role of headlines is to identify the "tone" of the article, to summarize its contents, to express the position or the attitude of the author, or to arise interest or provoke the reader. Traditionally, headline styles can be *slang*, *referential*, *allusive*, *metaphoric*, *evaluative*, and *emotional*.

- Slang mimics spoken language and is used when the journalist wishes to involve the reader.
- Referential (factual) just refers the fact.
- Allusive is used to establish some empathy.
- Metaphoric refers to metaphors; this is a style which selects the audience, since only people with a certain cultural background may immediately understand such metaphors.
- Evaluative expresses an assessment of the topic and conditions the reader.
- Emotional aims to have an impact and raise emotion in the reader.

As a complementary analysis, in the same 10-month period, blogs on influenza were considered in order to monitor the debated topic of vaccination.

RESULTS

10-month quantitative analysis

In the timeframe considered, the seven newspapers analyzed published a total of 1220 reports related to A(H1N1) (Figure 1). Reports showed four peaks and one hollow, a pattern shown consistently for all of the newspapers, with the exception of the two opinion newspapers. Articles in *L'Unità* were comparatively less numerous due to the lower number of pages normally published in this opinion newspaper.

Qualitative analysis of the three-month sample period

The number of reports published in the three-month sample period (data for each of the single following months: April 2009; November 2009; January 2010) was 382, corresponding to 31.3% of the total considered (n=1220).

Reports were classified according to their journalistic nature (*Service:* more than one report; *Report*; *Short Report*; *Articles*; *Brief articles*), showing the following classification for the three-month sample period:

- Service: Total n=164 (42.9%), (April n=90; November n=73; January n=1)
- Report: Total n=135 (35.4%), (April n=65; November n=62; January n=8)
- Small report: Total n=60 (15.7%), (April n=35; November n=25; January n=0)
- Articles: Total n=7 (1.8%), (April n=7; November n=0; January n=0)
- Brief articles: Total n = 16 (4.2%), (April n=5; November n=8; January n=3)

In our study, almost all reports (376 out of 382 corresponding to 98.4%) appeared on the front pages, 175 (45.8%) directly and 201 (52.6%) through sensational headlines alone. Figure 2 presents these figures graphically, divided by month.

Table 1 shows the tones used in the 364 out of 382 headlines published throughout the three-month sample period, and details relevant to all the classes of titles. This type of analysis was only carried out on these 364 articles, due

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FIG. 1

NUMBER OF REPORTS PUBLISHED FROM APRIL 2009 TO JANUARY 2010

NUMBER OF REPORTS PUBLISHED

Legend:
- L'UNITÁ
- IL MESSAGGERO
- LA STAMPA
- CORRIERE DELLA SERA
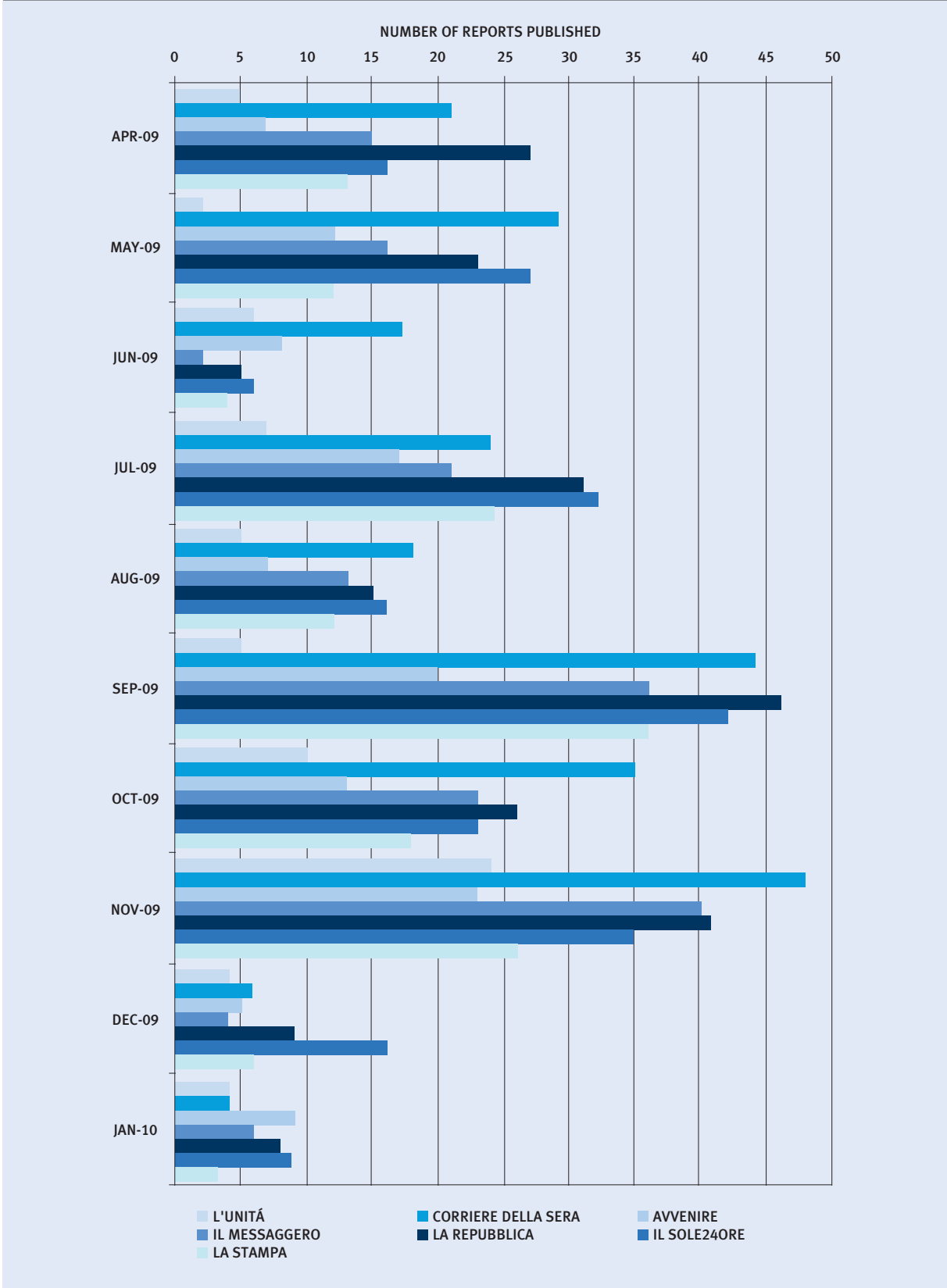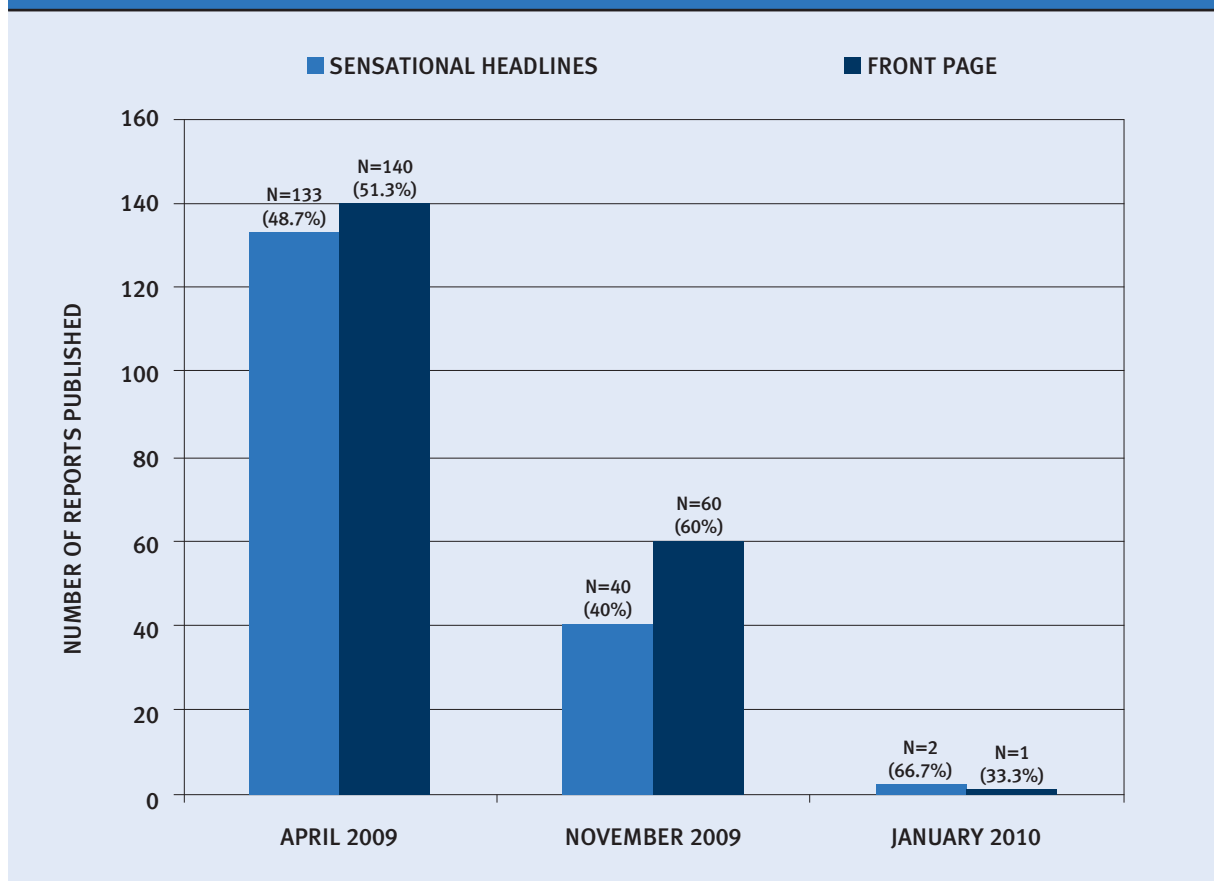- LA REPUBBLICA
- AVVENIRE
- IL SOLE24ORE

FIG. 2

GRAPHICAL REPRESENTATION OF REPORTS PUBLISHED IN THE THREE-MONTH SAMPLE PERIOD

to a clerical error. Major classes of headlines were: factual in 145 cases (39.8%), emotional in 120 cases (33.0%), slang in 20 cases (5.5%), metaphoric in 19 (5.2%), evaluative in 54 (14.8%) and allusive in 6 (1.6%). A consistency in the choice of tone was apparent among the different newspapers, with the exception of *La Repubblica*, which favoured an emotional tone in 50.6% of its reports.

A total of 188 out of 382 reports (46%) analysed in the three single-month sample periods were accompanied by one or more pictures and/or other graphical elements, (in journalistic jargon considered info-graphics). Examples of pictures and graphical elements included library archive and current pictures, bio-security practices, schemes, drawings and graphical visual representations of information, statistics and data. Ninety out of the 188 (47.9%) info-graphic elements featured an alarming tone, typically showing health operators and people in the street wearing surgical masks, mostly take from library photos. Politicians

and opinion leaders were present in 57 out of the 188 info-graphic elements, while health authorities and laboratories were present in 41. No particular differences emerged between the five national newspapers with regards to the nature of graphical elements and photos used, nor regarding the tone of these elements. The two opinion newspapers avoided the use of info-graphics.

Influenza blogs analysis

We identified 1369 blogs on influenza; 520 (38%) of these discussed vaccines.

We analyzed the top ten ranking blogs. All ten were against vaccination for two reasons: safety concerns and the idea of an alleged plot involving health authorities, doctors and pharmaceutical companies, the so-called "conspiracy theory".

Safety concerns were common in these blogs, with claims about the dangerous nature

TABLE 1

TONES OF HEADLINES PUBLISHED IN THE THREE-MONTH SAMPLE PERIOD (ON 364 ARTICLES)						
NEWSPAPERS	FACTUAL N (%)	EMOTIONAL N (%)	SLANG N (%)	METAPHORIC N (%)	EVALUATIVE N (%)	ALLUSIVE N (%)	ALL HEADLINES N
CORRIERE DELLA SERA	42/75 (56.0)	17/75 (22.7)	0	0	16/75 (21.3)	0	75
LA REPUBBLICA	16/81 (19.8)	41/81 (50.6)	5/81 (6.2)	7/81 (8.6)	9/81 (11.0)	3/81 (3.7)	81
IL SOLE 24 ORE	27/53 (50.9)	14/53 (26.4)	2/53 (3.8)	3/53 (5.7)	5/53 (9.4)	2/53 (3.8)	53
IL MESSAGGERO	22/60 (36.7)	20/60 (33.3)	0	9/60 (15.0)	8/60 (13.3)	1/60 (1.7)	60
LA STAMPA	10/30 (33.3)	9/30 (30.0)	4/30 (13.3)	0	7/30 (23.3)	0	30
AVVENIRE	12/38 (31.6)	11/38 (28.9)	9/38 (23.7)	0	6/38 (15.8)	0	38
L'UNITÀ	16/27 (59.3)	8/27 (29.6)	0	0	3/27 (11.1)	0	27
TOTAL FOR ALL NEWSPAPERS	145/364 (39.8)	120/364 (33.0)	20/364 (5.5)	19/364 (5.2)	54/364 (14.8)	6/364 (1.6)	364

of vaccines due to the presence of chemicals in their formulation (such as anti-freeze, ether, formaldehyde, quicksilver, and bacteria).

The "conspiracy theory" was common to 9 of the 10 blog groups analysed. In particular, 7 made allegations of a cover-up. Regulatory and medical authorities were thought to avoid disclosing this information to the public in order to avoid dispersing negative information about vaccines. This caused bloggers to suggest that vaccination was exclusively motivated by profit. Allegations of collusion were present in 6 groups. Pharmaceutical companies and physicians were accused of benefiting from adverse reactions to vaccines in order to increase their "business". In five blogs, suspicion emerged that governments protected vaccine manufacturers and doctors by minimizing side effects caused by vaccines.

DISCUSSION

Providing health information during disease outbreaks is a fundamental component of outbreak control strategies (9). Health authorities, hospitals, commercial enterprises, and mass media all deliver health and medical communication in different forms. With such a vast amount of biomedical and clinical information available, any action to ensure the spread of clinically relevant articles is welcome (10).

In particular, the broadcast media have a crucial role in the circuit of information transmission, acting as an important "validator" of scientific information for lay people (11). Giving people health information is extremely important and could help increase awareness and promote behavioural change necessary for disease prevention, thus reducing fear and improving health in the society. Regarding influenza, media coverage influences timing and annual receipt of vaccination (12). However, the quality of medical journalism and the numerous recommendations available for medical reporting are not always sufficient to guarantee the selection and reliability of news reporting (7).

Internationally, the messages from the media were alarming (13) and intense (14) during the A(H1N1) pandemic. Influenza has always been a popular topic in newspapers (15), to such an extent that an Author titled his

paper "Newspapers are first to catch influenza" (16), but after the SARS case, the attention of newspapers towards this topic has further increased. This, in turn, has impacted on the policymaking of major health organizations such as the WHO, the Center for Disease Control (CDC), and the European Center for Disease Prevention and Control – ECDC (17-19). The policies now include timely health communications, along with surveillance, quarantine, isolation, and travel restrictions, as prominent tools to help contain any outbreak. A further explanation for the increased interest stimulated by the media could be their use of the conceptual "killer" metaphors attributed to SARS (20), contrary to the militaristic language normally adopted for diseases like cancer, which inherently implies a concept of fighting and defeating the illness. The official policy of health authorities is reflected in the high number of reports (n=1220) published in the considered newspapers. On average, the reports on the A(H1N1) topic alone corresponded to 95.8% of all reports on health issues published in similar newspapers in a 10-month period from 2006 to 2007. This evidence derives from an unpublished study carried out by the Authors' affiliation Centre for Studies in Drug Communication. (21)

International Health Authorities clearly established themselves as the main source of information, but mass media reacted by overestimating and exaggerating the problem (14). Concerted efforts have been made to develop a vaccine and suitable antiviral therapies. An attempt for a collective control over the virus has manifested itself in the proliferation of press and media coverage (22), creating an overload of information unrelated to the real proliferation and severity of this particular influenza. However, telephone surveys conducted in the UK did not show any unnecessary widespread alarm among the general population (23). The UK experienced the highest number of media reports in the first days (n=1070) (15) of the outbreak, against a European average of 128 reports. Authors documented 140 reports in one week in Italy. The prominent coverage in the initial reports on the front pages, and the high percentage of alarming headlines, clearly failed to explain the rapid escalation in WHO alert phases and did not truly reflect the virulence of the virus, but only its rapid and sustained community level outbreak. The escalation of alert phases was, in fact, only linked to a geographical factor.

This is the only EU comparative study available regarding media coverage of the pandemic, referring only to the first days of the pandemic in the three major national newspapers and the website of the main broadcaster in each country (14). For Italy, the Author reports 140 articles, well in line with the average for the 31 European countries considered (n=128). More recently, an Italian study has compared the Italian press versus the scientific recommendations focusing on vaccine prevention; the information reported was usually correct, but sometimes it failed to convey clear messages (24). It is worth mentioning that another study (25) has also reported a series of interviews on avian influenza and pandemic planning carried out by journalists of the major Australian press radio, and television media organizations. Journalists perceived that the most trusted sources on health issues were respected.

The Italian newspapers differed from the general situation when analyzing the tones used. Indeed, our study shows that only 40% of Italian headlines were assessed as "factual", against 70% in the mentioned European study. Headlines are important in journalistic communication; they identify the tone of coverage, summarize the topic, express the journalistic attitude, and stimulate interest in the readers. Moreover, when using info-graphic elements, in Italy 48% of graphical/pictorial elements were classified as "alarming". Again, our study shows that practically all reports (98.4%) had the "honor" of the front page, which on the one hand reflects the attention given to the policy on behalf of the health authorities but, on the other, may be considered as an over-exposition of the problem. The position of a report in a newspaper is extremely important since the choices of both the page and the section drive and influence the reader. The journalist's choice becomes the reader's choi The analysis of influenza blogs showed that more than 40% of blogs discussed vaccines. Interestingly, the top ten ranked blogs were all explicitly against vaccination both for safety concerns and the so-called "conspiracy theory", the latter being sustained by most blogs (90%).

Bloggers suggested that vaccination was motivated exclusively by profit. They accused pharmaceutical companies and physicians of benefiting from adverse reactions to vaccines in order to increase their "business".

Overall, the need for improved communication plans has been recognized by the European Commission after the experience with A(H1N1). The European Commission has launched a call, under the framework program FP7 (26), for the development of an evidence-based behavioural and communication package capable of responding to major epidemic outbreaks. The research should focus on how human behaviour influences disease transmission, vaccine acceptance, and antiviral therapy acceptance in the general population during a crisis situation. The development of appropriate communication methods during a crisis situation, especially regarding complicated messages and advice based on uncertainties, should favour the development and testing of strategies to support vaccine uptake through improved communication. The focus of this research should be a better fact/information preparedness for the next major outbreak so as to minimize deviations between perceived and intended messages (26).

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