

REPORT

INFORMATION AND MISINFORMATION ON THE CORONAVIRUS IN PORTUGAL

WhatsApp, Facebook and Google Searches

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This report analyses the way Portuguese citizens reacted to the Coronavirus/Covid-19 between 12 and 15 March 2020 through social networks and online searches, but it contextualises that information with data analysed since February.

It deals with the sharing of messages with misinformation about the Coronavirus/Covid-19 on WhatsApp, with the aim of identifying those messages, their level of virality and their truth or misinformation. It also takes a first look at new groups set up on Facebook to share information on the virus/disease, in order to identify community action in Portugal.

Facebook and Twitter posts by the main Portuguese media are also examined, together with the interactions they generate and movements of communities coming together on Facebook around the subject of Coronavirus/Covid-19. The online activity of the Portuguese concerning the subject is complemented with an analysis of Google searches that attempts to identify the major concerns for the Portuguese in the face of the pandemic.

This report is a development and extension of the report published at the beginning of March, on the [coverage of the subject of “Coronavirus”](#) in Google searches, online news and social networks. That report analysed the existing data until just before the first cases appeared in Portugal. The present report collects and analyses data from the last 30 days, until 14 March, i.e. already including reactions to those first cases, as well as measures to contain the pandemic, announced by the government on 11 March.

The collected data indicate that:

- The sharing of false, manipulated or misleading content on WhatsApp groups in Portugal is abundant and those messages are forwarded without any concern for reflection, verification or weighing the consequences of those shares.
- Since the collection and analysis of content shared on WhatsApp is particularly complex, we used a crowdsourcing strategy framed by a specific methodology.
- Of the four days analysed, the first two were those with most content received and messages were sent in a voluntary and anonymised way by users of the social network.
- Most of the messages with misinformation are recurrently forwarded. Out of over one thousand messages collected, 756 had repeated content.

- The most shared messages on WhatsApp are in audio format (approximately 70%), followed by text. Images and videos account for just over 5% each.
- The dominant feature in that content, after fact-checking the Top 10 most collected content, is the alleged testimony of a health specialist and the conspiracy theory.
- Since 2 March, the subject of “Coronavirus” has been very present both in media coverage and in its dissemination on social networks, but particularly so since 10 March. Overall, there were 16 thousand news items and over half a million posts, tweets and retweets during the last 30 days.
- Facebook and Twitter posts by the main Portuguese media maintain a growth trend, but the interactions they generate from the users of these social networks increased much more significantly, especially from 9 March, the day that exceptional measures started to be announced.
- On the pages and groups usually associated with the production and spread of misinformation, there is not much misleading political content, but there is a widespread attempt to use the subject to engage in political combat, similar to what had already happened, for example, with the forest fires.
- The new Facebook groups spontaneously created to share information on Covid-19 sprung up and grew very quickly. The 12 groups monitored by the MediaLab Iscte project already have over 650 thousand members and generate over 789 thousand interactions per week.
- The group “Isolamento Voluntário COVID 19” (Self-Isolation COVID 19), in particular, stands out from the rest: between 12 March, the day it was created, and 15 March, it reached 624 thousand members.
- With regard to Google searches, between 2 and 15 March, and within the subject of “Coronavirus”, the most searched terms were linked to knowing what to do, how to do it and what was happening. Searches on the subject increased from 7 March, the day some universities announced the end of face-to-face classes, and intensified from 9 March. Some of the terms looked up are connected to information conveyed by traditional media, but others are clearly triggered by information coming from social networks, such as the search for ibuprofen.

- The joint analysis of posts about the “Coronavirus” in social networks and messages shared on WhatsApp shows that, in this case, the moment when the search for and sharing of information on social networks was most intense was also that in which there was a greater tendency for misleading or alarmist messages to appear on WhatsApp. In other words, there seems to be a link between the moments when the subject was booming in social networks and the greater appearance of misleading or alarmist content.

I - Data collection methodologies (WhatsApp, Facebook and Google)

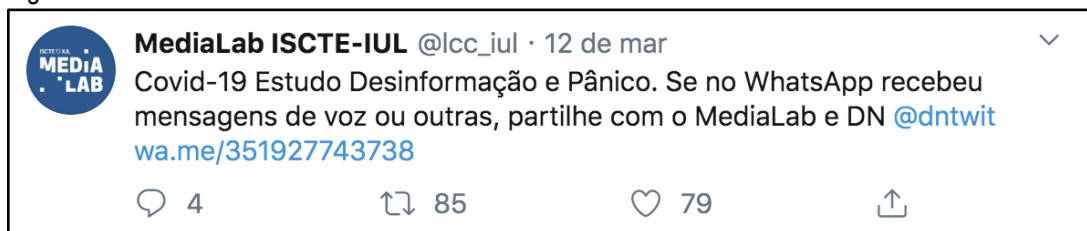
The data collection for this study was based on different communication platforms and used various tools. The aim was to collect multifaceted data that would allow us to understand the phenomenon under analysis from different perspectives. The time period defined was approximately the same for the different data collections, bearing in mind the specificity of each tool.

WhatsApp presents a greater challenge for research and, also for that reason, a greater danger in view of its ability to spread misinformation that cannot be monitored or fact-checked. This has to do with the fact that users are clustered into small groups (with a maximum of 256 users) and with the privacy of communications, which are encrypted and only accessible to those taking part in them.

Therefore, considering the aims of the project and the inherent challenges in collecting data circulating on WhatsApp, namely with regard to privacy, a phone number was made available and associated to a WhatsApp account in order to receive content circulating on the platform.

To publicise the study, the message “Covid-19 Study Misinformation and Panic. If you received voice or other messages on WhatsApp, share with MediaLab and DN @dntwit <https://wa.me/351927743738>” (figure 1) was posted on the Twitter and Facebook accounts of MediaLab and Diário de Notícias, encouraging people to send suspicious content and share the message making the call. The non-probability convenience sample was obtained through the snowball effect.

Figure 1: Tweet shared on the account of MediaLab Iscte



¹ Tweet Content “12 Mar

Covid-19 Study Misinformation and Panic. If you received voice or other messages on WhatsApp, share with MediaLab and DN @dntwitwa.me/351927743738

Caption: To receive messages suspected of containing misinformation on WhatsApp, a public call was made and associated to a mobile number linked to a WhatsApp account created for the purpose

Each message received was downloaded (if it was a text message, it was copied into a file), repeated messages were identified and then a content analysis of all the different messages was carried out. The analysis focused on generic data, such as content format, and on a set of more specific data, such as facts claimed or suggested by the messages, which were assigned a set of labels to better categorise the content.

Based on the set of claimed and/or suggested facts in the content being analysed, and after verifying the content and validating the information or not, the data was arranged into three colour categories:

- **Green** - No misinformation to be recorded
- **Yellow** - Contains inaccurate facts
- **Red** - Contains incorrect facts - Misinformation

Facts were assessed according to what was known at the time participants shared it with our WhatsApp profile. The content analysis was carried out by 9 voluntary coders from Iscte/Media Capital Postgraduate Degree in Journalism and other specialists, mainly from the field of health: Angela Rijo, Eduardo Acquarone, Fabrício Mattos, Gleice Luz, Livino Neto, Mafalda Dançante, Miguel Paisana, Patrícia Lopes and Susana Peixoto.

In the profile of the WhatsApp account created to receive messages suspected of containing misinformation, it was explained that the study was part of the project [Monitoring propaganda and misinformation in social networks](#). Participants were ensured their anonymity and no record was kept of the phone numbers from which messages were sent. The anonymisation of personal data that could appear in the content they shared was also ensured.

Between 7.30 pm on 12 March (when the WhatsApp number became available) and midnight on 16 March, 1002 messages suspected of containing misinformation were received. Of all the messages received, 233 contained original content, 756 contained repeated content and 13 links were no longer available at the time of the analysis. The frequency of content received per day can be seen in table 1. 13 March was the day with most messages received, although 77.7% contained repeated content.

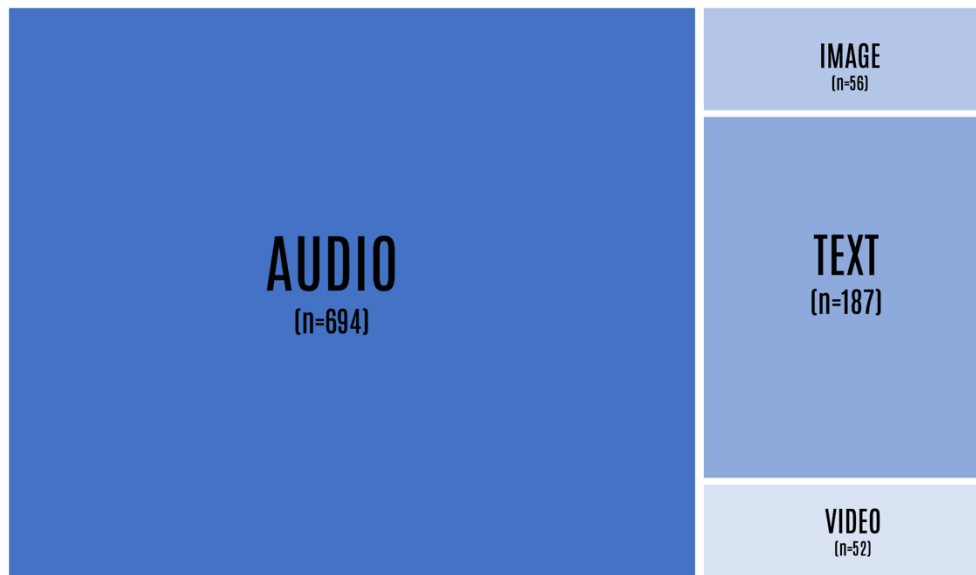
Table 1: Frequency of messages received according to days and originality

	March 12th (after 7.30 pm)	March 13th	March 14th	March 15th	TOTAL*
Received messages	177	465	229	118	989
Original	43	106	43	41	233
Non-original	134	359	186	77	756

Caption: Total number of messages received on the WhatsApp account per day (*In addition to the total, 13 links (on Facebook, Twitter and Instagram) were no longer available when the analysis was carried out)

Regarding the format of content for analysis (see figure 2), audio stood out (n=694), followed by text (n=187), image (n=56) and video (n=52). These data mirror the multiple media objects supported by the platform, as well as users' consumption and sharing preferences.

Figure 2: Quantifying content received for analysis according to format



Caption: Visualising the weight of each type of format according to the total

The frequency of the format of content for analysis, received per day, is presented in table 2. Even though audio stands out in number, most of the content was repeated. Text emerges as the format with the highest percentage of original contributions. It should be mentioned that, even when text arrived in the form of image (a screenshot, for example), the analysis focused on the content of the text.

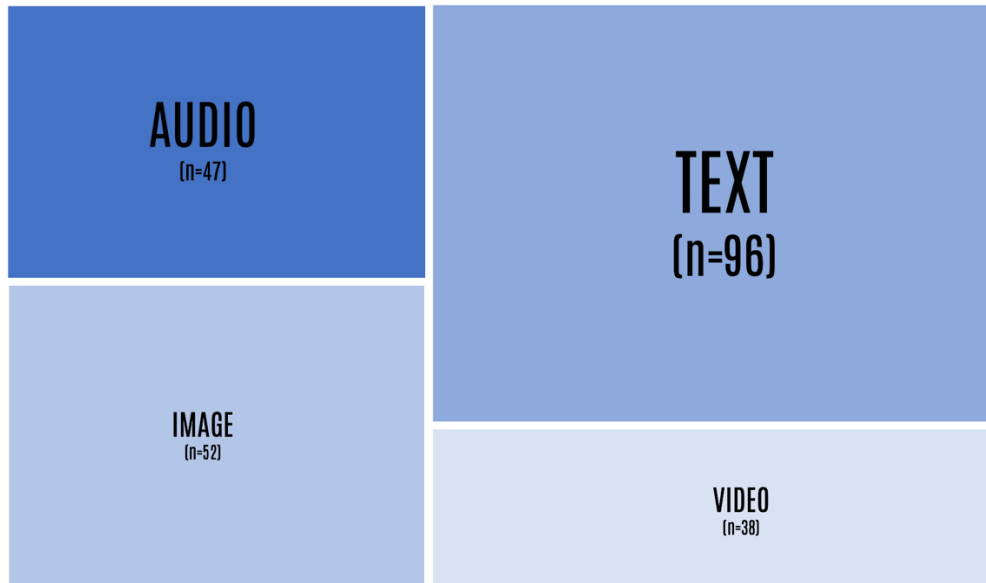
Table 2: Frequency of content format according to days

	March 12th (after 7.30 pm)	March 13th	March 14th	March 15th
Audio (total)	150	344	140	60
Original	18	19	8	2
Non-original	132	325	132	58
Text (total)	15	74	58	40
Original	14	46	13	23
Non-original	1	28	45	17
Image (total)	6	28	15	7
Original	6	25	14	7
Non-original	0	3	1	0
Video (total)	6	19	16	11
Original	5	16	8	9
Non-original	1	3	8	2

Caption: Formats received, distributed according to days and category [NOTE: In addition, 13 links (on Facebook, Twitter and Instagram) were no longer available at the time of the analysis]

The first phase of the analysis focused on the content identified as original (n=233), whose format was numerically distributed as seen in figure 3.

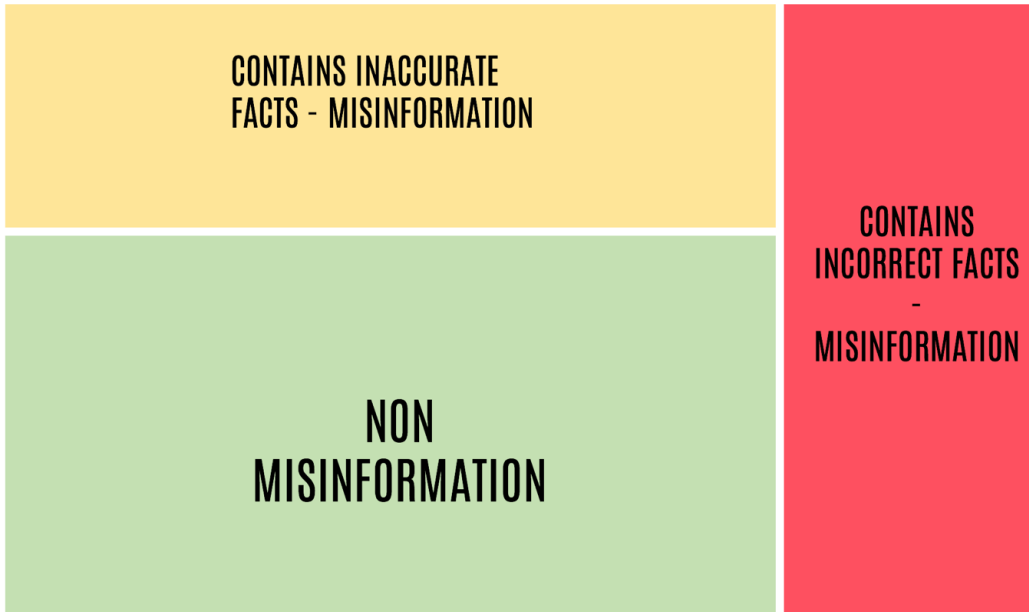
Figure 3: Quantifying original content for analysis according to format



Caption: Visualising the weight of each type of format for original content analysed according to the total

The preliminary results of this analysis and, according to the colour categories explained above, indicated that green was the most representative colour, followed by red and then yellow (figure 4). These data show that part of the content received was not flagged as misinformation or required more information. In fact, part of the green content originated in a humorous context, referring to memes, mockery or jokes.

Figure 4: Quantifying content without misinformation, with inaccurate facts or facts that require more information, and with incorrect facts - misinformation



Caption: Visualising the weight of each category of content analysed according to the total

A set of categories emerged from the content analysed, which essentially translate the different subjects approached in the messages analysed and are represented in the image below (figure 5). The focus of the analysis then shifted to the Top 10 of the most frequently received content.

Figure 5: Categories resulting from the analysis of original content received



Caption: Word cloud with weight of categories resulting from the analysis of original content received

Two tools were used for analysing the media’s news coverage of the Coronavirus/Covid-19 and how it spread through social networks: Foresight Brandwatch and CrowdTangle.

[Forsight Brandwatch](#) enables data collection both from social networks and from media websites by creating a query and defining a time interval. In this case, the query used was “*coronavírus OR "corona vírus" OR covid19 OR "covid 19" OR "covid-19" OR covit19 OR "covit 19" OR "covit-19" OR coronavirus OR "corona virus" OR "virus da china" OR "vírus da china"*” and the time period focused on the last 30 days, i.e. between 15 February and 14 March. With [CrowdTangle](#), in turn, it is possible to analyse the impact of posts from certain pages or public groups on Facebook, also by defining a time period and with or without a query. In this case, to restrict searches on the subject of “Coronavirus”, the same query created for Brandwatch was used here.

To analyse the search for information on the Coronavirus based on Google searches, [Google Trends](#) was used, namely its “Trending Searches”, which show the top 20 of the most Googled terms in a given country (in this case, Portugal), and “Explore”, which shows how a specific term behaves in terms of searches, as well as the districts where it is most searched and its evolution through time.

II - Fact-checking the most shared content on WhatsApp

MediaLab fact-checked more thoroughly the top 10 most received files (table 3), analysing the main facts presented and their validity. Out of the 10 files analysed, 9 are audio files and only 1 is a text file, reflecting the clear supremacy of sound files over the rest, which also happens in the sample as a whole.

Table 3: Top 10 most received files

		Number of times the file was received					
	File ID	Format	Total	March 12th (after 7.30 pm)	March 13th	March 14th	March 15th
1	30_12MAR ¹	AUDIO	148	37	89	17	5
2	26_12MAR ¹	AUDIO	134	36	78	15	5
3	31_12MAR ¹	AUDIO	70	20	36	12	2
4	65_13MAR ²	AUDIO	61		23	31	7
5	34_12MAR ¹	AUDIO	50	17	21	8	4
6	142_14MAR ³	TEXT	42			32	10
7	22_12MAR ¹	AUDIO	39	13	24		2
8	129_14MAR ³	AUDIO	39			12	27
9	98_13MAR ²	AUDIO	34		12	22	
10	23_12MAR ¹	AUDIO	25	8	12	3	2

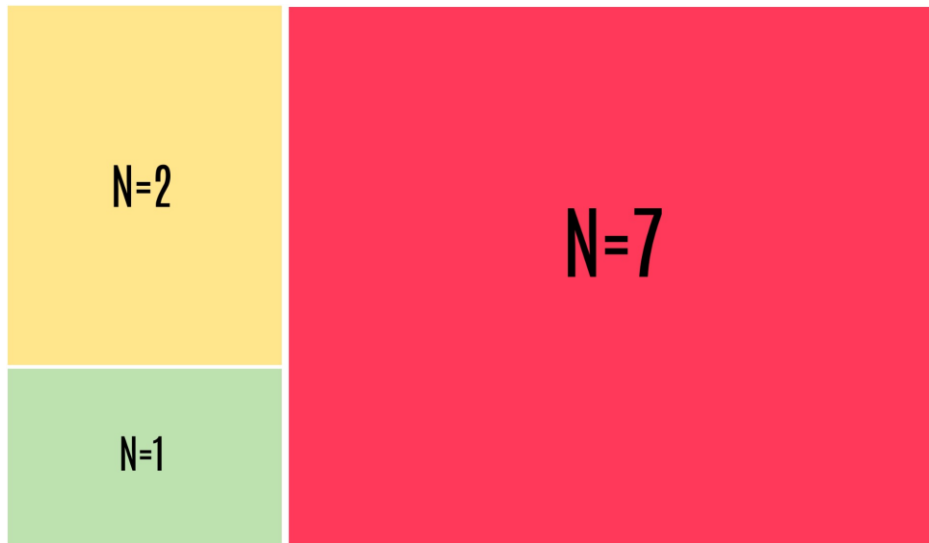
Notes

- 1 First received on day 12
- 2 First received on day 13
- 3 First received on day 13

Caption: Top 10 most received files, according to format and frequency

Concerning the truth of their content, 7 of the files were classified as red, as they contained incorrect facts. These 7 originals represent 405 files in total, which were received on MediaLab’s WhatsApp account. The 2 original files that were classified as yellow, as they contained inaccurate content or content requiring further information, were received 187 times. Only one of the files was labelled as green, with nothing incorrect or inaccurate to be recorded, and it was received 50 times.

Figure 6: Top 10 files received according to their truth



Caption: Top 10 files received according to their level of truth

In what follows, **content is described and the top 10** most received files are **fact-checked**. Validation is done in the text, using the above-mentioned colour categories:

- **Green** - No misinformation to be recorded
- **Yellow** - Contains inaccurate facts or facts that require more information
- **Red** - Contains incorrect facts - Misinformation

1 - “**In the corridor of Santa Maria**” (File 30_12MAR)

OVERALL ASSESSMENT - In general, data are confirmed, with some potentially misleading elements about the precautions to take.

DESCRIPTION:

1st time it appears: 12MAR2020

Audio of a woman (26_12MAR) who tries to suggest she is a doctor / nurse? From the Santa Maria Hospital.

FACTS CLAIMED:

About the hospital:

- In the Corridor of Santa Maria, it was found that two individuals - one aged 80 and another - one of which was not responding well to an antibiotic were infected with Covid-19.
- Those individuals were staying at “Serviço 1B de Medicina”, which in the meantime has been isolated.
- The doctors from that department appear not to be in quarantine.
- That the Head of the hospital was on a video call with the head of a hospital in Milan where people are dying in their thousands - then corrected to hundreds - and they have to choose who gets ventilators.

About the tests:

- That there are 3600 identified people waiting for a test but laboratories are not prepared to respond.

About the São João Hospital:

- That a 16-year-old girl infected by friends who were at the Venice Carnival is in a critical condition with no history of disease

Other facts

- Friend of a “Gonza” who is now coming from Argentina

Advice

- If you have symptoms such as phlegm, cough, body aches, fever, isolate
- If you have difficulty breathing, go to A&E

POSSIBLE FACT-CHECKING

About the hospital:

- *In the Corridor of Santa Maria, it was found that two individuals - one aged 80 and another - one of which was not responding well to an antibiotic were infected with Covid-19.* The fact that two inpatients at Santa Maria, who were initially hospitalised with pneumonia and in the meantime have been identified as having Covid-19, has been [confirmed](#).
- *Those individuals were staying at “Serviço 1B de Medicina”, which in the meantime has been isolated.* One of them would actually be staying at [“Serviço 2B”](#) but this data is not relative to the narrative.
- *The doctors from that department appear not to be in quarantine.*
- *That the Head of the hospital was on a video call with the head of a hospital in Milan where people are dying in their thousands - then corrected to hundreds - and they have to choose who gets ventilators -* The extreme situation in the North of Italy and the lack of hospital resources, namely ventilators, has been [confirmed](#). Whether the phone call actually took place is not possible to confirm.

About the tests:

- *That there are 3600 identified people waiting for a test but laboratories are not prepared to respond.* - There is no official indication that this is the case. There have been [articles](#) on the lack of capacity to test thousands in case this is necessary and, on the other hand, on the [reorientation of the military](#), for example, to increase national testing capacity.

About the São João Hospital:

- *That a 16-year-old girl infected by friends who were at the Venice Carnival is in a critical condition with no history of disease-* Confirmed. She is 17 years old and appears to be in a serious condition, according to an article in [Observador](#) and [Jornal de Notícias](#).

Other facts

- *Friend of a “Gonza” who is now coming from Argentina* - can be useful to identify the author.

Advice

- *If you have symptoms such as phlegm, cough, body aches, fever, isolate* - The cough associated with Covid-19 is dry.
 - *If you have difficulty breathing, go to A&E* - The advice is to call the health line Saúde 24 and not go to A&E.
-

2 - “Hi love” (File 26_12MAR)

OVERALL ASSESSMENT - Contains non-verifiable content and false content. Misinformation.

DESCRIPTION:

1st time it appears: 12MAR2020

Audio of a woman who says she is a doctor “*we doctors and health professionals*”. It is the same woman heard in file 30_12MAR “Corridor of Santa Maria”, which turned out to be the continuation of this first audio.

FACTS CLAIMED:

About the São Francisco Xavier Hospital:

- That a 33-year-old individual, living in Lombardy, Italy, was admitted to the São Francisco Xavier Hospital. He came to Portugal for the Carnival and has had phlegm, cough and fever. This individual appears to have been at numerous parties, dinners and events with dozens of people.

About the Curry Cabral Hospital

- That a 60-year-old man who was hospitalised there passed away after having been transferred from CUF Margem Sul (a private hospital on the south bank of the Tejo river)
- That a 64-year-old individual passed away in Margem Sul and that the INEM (emergency services) team that had tried to intubate him was in quarantine.

POSSIBLE FACT-CHECKING

About the São Francisco Xavier Hospital:

- *That a 33-year-old individual, living in Lombardy, Italy, was admitted to the São Francisco Xavier Hospital. He came to Portugal for the Carnival and has had phlegm and cough and*

fever. This individual appears to have been at numerous parties, dinners and events with dozens of people - There is nothing in the media about this case.

About the Curry Cabral Hospital

- *That a 60-year-old man who was hospitalised there passed away after having been transferred from CUF Margem Sul* - When the audio was recorded, there was still no record of deaths due to COVID19. Facts have already been checked by [Polígrafo](#).
- *That a 64-year-old individual passed away in Margem Sul and that the INEM team that had tried to intubate him was in quarantine.* - There is still no record of deaths due to COVID19. Facts have already been checked by [Polígrafo](#).

3 - **“Man, I was just talking about that with my boss”** (File 31_12MAR)

OVERALL ASSESSMENT - Several elements of misinformation and a rumour, which may be false, but has yet to be confirmed.

DESCRIPTION:

1st time it appears: 12MAR2020

Audio of a man who claims he has privileged contacts, namely within the medical community.

FACTS CLAIMED:

About his source

- Says he spoke with the Head of Vascular Surgery in Porto

About Italy

- Says operating rooms are being used as intensive care units
- Says people over 65 are no longer being intubated because there is no equipment for everyone.

About the DJ

- Mentions a DJ who tested positive for COVID19 and was at ModaLisboa and Lux

About supermarkets

- That in Porto there is hardly any food left in supermarkets.

POSSIBLE FACT-CHECKING

About his source

- *Says he spoke with the Head of Vascular Surgery in Porto* - not possible to confirm.

About Italy

- *Says operating rooms are being used as intensive care units* - there are several accounts of these types of adjustments.
- *Says people over 65 are no longer being intubated because there is no equipment for everyone.* - Inaccurate. What exists are [accounts](#) reporting that equipment is no longer

enough for everyone and that choices are being made based on age, physical condition and overall health.

About the DJ

- *Mentions a DJ who tested positive for COVID19 and was at ModaLisboa and Lux- the rumour is circulating on Facebook but has not yet been confirmed by any media or official institution.*

About supermarkets

- *That in Porto there is hardly any food left in supermarkets.* Although there have been isolated cases of stock-outs, supply chains continue to function as normal, with no significant record of cuts in supply.

4 - “U ok? I’ll be quick” (File 65_13MAR)

OVERALL ASSESSMENT - Most of the data is not possible to confirm, but the underlying idea that authorities are deliberately trying to hide the real number of infected people is misinformation.

DESCRIPTION:

1st time it appears: 13MAR2020

Audio of a man, the same who speaks in file 98_13MAR (*Lúcia, I’m sending you this message already from home*), addressing an influencer.

FACTS CLAIMED:

About his source

- Says he saw many things and was at several meetings with Heads of Hospitals in the Lisbon area
- Says he is a health professional
- Has already seen several CT scans of lungs

About the state of things

- There appear to be thousands of people infected and this information is not being made public at the moment.

POSSIBLE FACT-CHECKING

About his source

- *Says he saw many things and was at several meetings with Heads of Hospitals in the Lisbon area* - is not possible to confirm
- *Says he is a health professional* - is not possible to confirm
- *Has already seen several CT scans of lungs*- is not possible to confirm

About the state of things

- *There appear to be thousands of people infected and this information is not being made public at the moment* - nothing suggests numbers are consciously not being reported.
-

5 - “Dear family, as the only doctor among us” (File 34_12MAR)

OVERALL ASSESSMENT - Nothing to point out.

DESCRIPTION:

1st time it appears: 12MAR2020

Audio of a woman who says she is a health professional and seeks to give advice on Covid-19.

FACTS CLAIMED:

About her source

- Says she is a health professional and has direct access to information.

About the situation

- That the authorities are falling short of advice in what they consider to be a suspected case.
- Mentions the seriousness of the disease, especially for older people, smokers or people with health problems.

About infected people

- Mentions the cases at Santa Maria Hospital and the girl from Santa Maria da Feira.

POSSIBLE FACT-CHECKING

About her source

- *Says she is a health professional and has direct access to information* - is not possible to confirm.

About the situation

- *That the authorities are falling short of advice in what they consider to be a suspected case* - nothing to point out.
- *Mentions the seriousness of the disease, especially for older people, smokers or people with health problems* - nothing to point out.

About infected people

- *Mentions the cases at Santa Maria Hospital and the girl from Santa Maria da Feira* - nothing to point out.
-

6 - **Ibuprofen** (File 142_14MAR)

➔ Reencaminhada

DEFINE_ME
www.thelancet.com

Informação preliminar, estão a estudar a razão do percurso da doença em Itália ser mais grave. Um dos factores foi a maioria dos doentes ter tomado ibuprofeno em casa. Juntaram o vírus e ibuprofeno no laboratório e chegaram à conclusão que a administração de ibuprofeno acelera a multiplicação do vírus e que está relacionado com percurso mais grave da doença. Recomendam evitar ibuprofeno e administrar paracetamol, aspirina, diclofenac. E há este artigo que fala um pouco sobre isso.

[https://www.thelancet.com/journals/lanres/article/PIIS2213-2600\(20\)30116-8/fulltext](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(20)30116-8/fulltext) "Human pathogenic coronaviruses (severe acute respiratory syndrome coronavirus [SARS-CoV] and SARS-CoV-2) bind to their target cells through angiotensin-converting enzyme 2 (ACE2), which is expressed by epithelial cells of the lung, intestine, kidney, and blood vessels.4 The expression of ACE2 is substantially increased in patients with type 1 or type 2 diabetes, who are treated with ACE inhibitors and angiotensin II type-I receptor blockers (ARBs).4 Hypertension is also treated with ACE inhibitors and ARBs, which results in an upregulation of ACE2.5 ACE2 can also be increased by thiazolidinediones and ibuprofen. These data suggest that ACE2 expression is increased in diabetes and treatment with ACE inhibitors and ARBs increases ACE2 expression. Consequently, the increased expression of ACE2 would facilitate infection with COVID-19. We therefore hypothesise that diabetes and hypertension treatment with ACE2-stimulating drugs increases the risk of developing severe and fatal COVID-19."

18:20

OVERALL ASSESSMENT - Incorrect facts and inaccurate facts

DESCRIPTION:

1st time it appears: 14MAR2020

Text claims there is a proven direct link between the number of cases in Italy and the use of ibuprofen.

FACTS CLAIMED:

About its source

- Makes reference to a study published in the renowned medical journal "The Lancet".

About the situation

- Establishes a causal link between the use of ibuprofen and the worsening of symptoms.

- Mentions a laboratory study in which apparently that was proven.
- Says the article in “The Lancet” speaks a bit about that.
- Transcript of the article.

POSSIBLE FACT-CHECKING

About its source

- *Makes reference to a study published in the renowned medical journal “The Lancet”* - the study exists and can be consulted by accessing the link provided, but it is about the effect that some drugs for treating diabetes and hypertension can have in developing Covid-19. Even those conclusions have already been rejected by some medical bodies, as highlighted in [Observador](#).

About the situation

- *Establishes a causal link between the use of ibuprofen and the worsening of symptoms* - That link has not been clinically proven and at present is a mere hypothesis grounded in the association of ibuprofen with other viruses and asthma.
- *Mentions a laboratory study in which apparently that was proven* - there is no record of the study. The only study mentioned in other messages that were circulating with this narrative, at the University of Vienna, has already been [publicly denied](#) and labelled as “fake news” by the university.
- *Says the article in “The Lancet” speaks a bit about that* - It mentions that hypothesis but those were not the data analysed in the study covered by the article.
- *Transcript of the article* - nothing to point out.

7 - “Guys, my dad is there at the meeting” (File 22_12MAR)

OVERALL ASSESSMENT - Overall, it matches the facts but he is inaccurate in the sense that he mentions confirmed cases in schools, where it was parents who tested positive, and he gives the general idea that the government is not being transparent about the real extent of the problem.

DESCRIPTION:

1st time it appears: 12MAR2020

Audio of a man who claims to be the son of an employee of Infarmed (the National Authority for Medication and Health Products).

FACTS CLAIMED:

About his source

- Says his father is an employee of Infarmed, that they just had a meeting where they were given a number of guidelines by Infarmed’s executive board.

About the situation

- Says the government is deliberately trying to hide data and that the situation is out of control.
- Mentions there will be a press conference at the Ministry of Health at 6 pm

About infected schools

- Mentions there are already (on 12MAR) positive cases of Covid-19 in the following schools: Salesianos, Escola Básica da Alta de Lisboa, Alvalade, Sagrado Coração de Jesus

About people admitted to hospital

- Mentions there are already 7 or 8 cases of people who have been admitted to the Estefânia Hospital and Santa Maria

POSSIBLE FACT-CHECKING

About his source

- *Says his father is an employee of Infarmed, that they just had a meeting where they were given a number of guidelines by Infarmed's executive board-* Is not possible to confirm.

About the situation

- *Says the government is deliberately trying to hide data and that the situation is out of control* - Nothing suggests that.
- *Mentions there will be a press conference at the Ministry of Health at 6 pm* - There were several press conferences in the evening and he may be referring to one of them.

About infected schools

- *Mentions there are already (on 12MAR) positive cases of Covid-19 in the following schools: Salesianos, Escola Básica da Alta de Lisboa, Alvalade, Sagrado Coração de Jesus* -
 - *Salesianos de Lisboa* were associated with at least [one case](#) of a student whose mother has been confirmed to have Covid-19.
 - *Alta de Lisboa* there is no record.
 - *Alvalade* - too vague, but there are informal records of students infected with Covid-19 at a secondary school in the area.
 - *Sagrado Coração de Jesus* - [father of a student](#) tested positive for COVID19.

About people admitted to hospital

- *Mentions there are already 7 or 8 cases of people who have been admitted to the Estefânia Hospital and Santa Maria* - Confirmed on 11MAR by [SicNotícias](#), although it is not clear whether all cases have a confirmed diagnosis.

8 - “Morning guys, it’s André” (File 129_14MAR)

OVERALL ASSESSMENT - Inaccurate advice and some generalisations extrapolated from the Chinese to the Portuguese reality, which may not apply, mixed with reliable advice.

DESCRIPTION:

1st time it appears: 14MAR2020

Audio of a man who says he is [André Vitorino](#), a Portuguese football coach in China.

FACTS CLAIMED:

About his source

- Says he is André Vitorino, a Portuguese football coach in China.

Advice

- Explains a series of actions taken in China, which, according to him, actually managed to reduce the spread of the virus, such as:
 - Always wearing a mask when going out
 - Not eating salads or raw foods, only boiled.
 - Always wearing caps, eye shields, masks and gloves.
 - Only one person goes shopping.
 - Once home, removing clothes and washing them.

About the situation:

- Vaccines will be tested in April.
- Heat does not kill the virus.
- Children are more resistant.

POSSIBLE FACT-CHECKING

About his source

- *Says he is André Vitorino, a Portuguese football coach in China.* - Nothing to point out, the coach really gave [phone interviews](#) to television channels.

Advice

- *Explains a series of actions taken in China, which, according to him, actually managed to reduce the spread of the virus, such as:*
 - *Always wearing a mask when going out* - although there is [no consensus](#) on the benefits of wearing a mask, its use proved effective in containing the virus in China, as André mentions.
 - *Not eating salads or raw foods, only boiled* - Is one of the [recommendations](#) of the WHO.
 - *Always wearing caps, eye shields, masks and gloves when going out-* although there is [no consensus](#) on the use of this protective equipment, its use proved effective in containing the virus in China, as André mentions.
 - *Only one person goes shopping* - Is one of the [recommendations](#) of the WHO.
 - *Once home, removing clothes and washing them.*

About the situation

- *Vaccines will be tested in April.* - Some tests will start to be administered in April, but nothing ensures they are effective and will be available by then.

- *Heat does not kill the virus.* - The virus [has been transmitted](#) in hot and humid environments.
 - *Children are more resistant.* - Confirmed.
-

9 - “Lúcia, I’m sending you this message already from home” (File 98_13MAR)

OVERALL ASSESSMENT - Incorrect facts and some inaccurate generalisations and comparisons.

DESCRIPTION:

1st time it appears: 13MAR2020

Audio of a man who says he is a doctor and has a clinic, sent to Lúcia and Bruno. Seems to be the same man who speaks in 65_13MAR (*U ok?*)

FACTS CLAIMED:

About his source

- Says he is a doctor and owns a clinic.

About the situation

- That there are already over 5000 confirmed cases and that the media and government are only telling lies.
- That he just received an email being called to possibly report for duty.
- That the disease is worse than cancer or other diseases and that it “eats” a lung in 2 days.

POSSIBLE FACT-CHECKING

About his source

- *Says he is a doctor and owns a clinic* - Not possible to confirm.

About the situation

- *That there are already over 5000 confirmed cases and that the media and government are only telling lies.* - Nothing suggests that.
 - *That he just received an email being called to possibly report for duty* - Not possible to confirm.
 - *That the disease is worse than cancer or other diseases and that it “eats” a lung in 2 days-*
The comparison is clinically incorrect, just as the generalised statement about the harmful effects the virus can have on the lungs.
-

10 - “Well, this is really going to blow up” (File 23_12MAR)

OVERALL ASSESSMENT - Incorrect facts; although the sender might not have intended to misinform, he ends up doing it.

DESCRIPTION:

1st time it appears: 12MAR2020

Audio of a man who says he spoke with the son of Manuela Moura Guedes (a Portuguese public media figure), who told him the country would lock down the next day.

FACTS CLAIMED:

About his source

- Says he is his partner at “Couch” (a digital health startup) and that he is the son of Manuela Moura Guedes
- He, in turn, will have spoken with a number of important people, namely journalists.

About the situation

- That by the end of that day the government would lock down everything, so people better do their shopping and take care of everything because they might not be able to go out anymore.

POSSIBLE FACT-CHECKING

About his source

- *Says he is his partner at “Couch” and that he is the son of Manuela Moura Guedes* - not possible to confirm.
- *He, in turn, will have spoken with a number of important people, namely journalists.* - not possible to confirm.

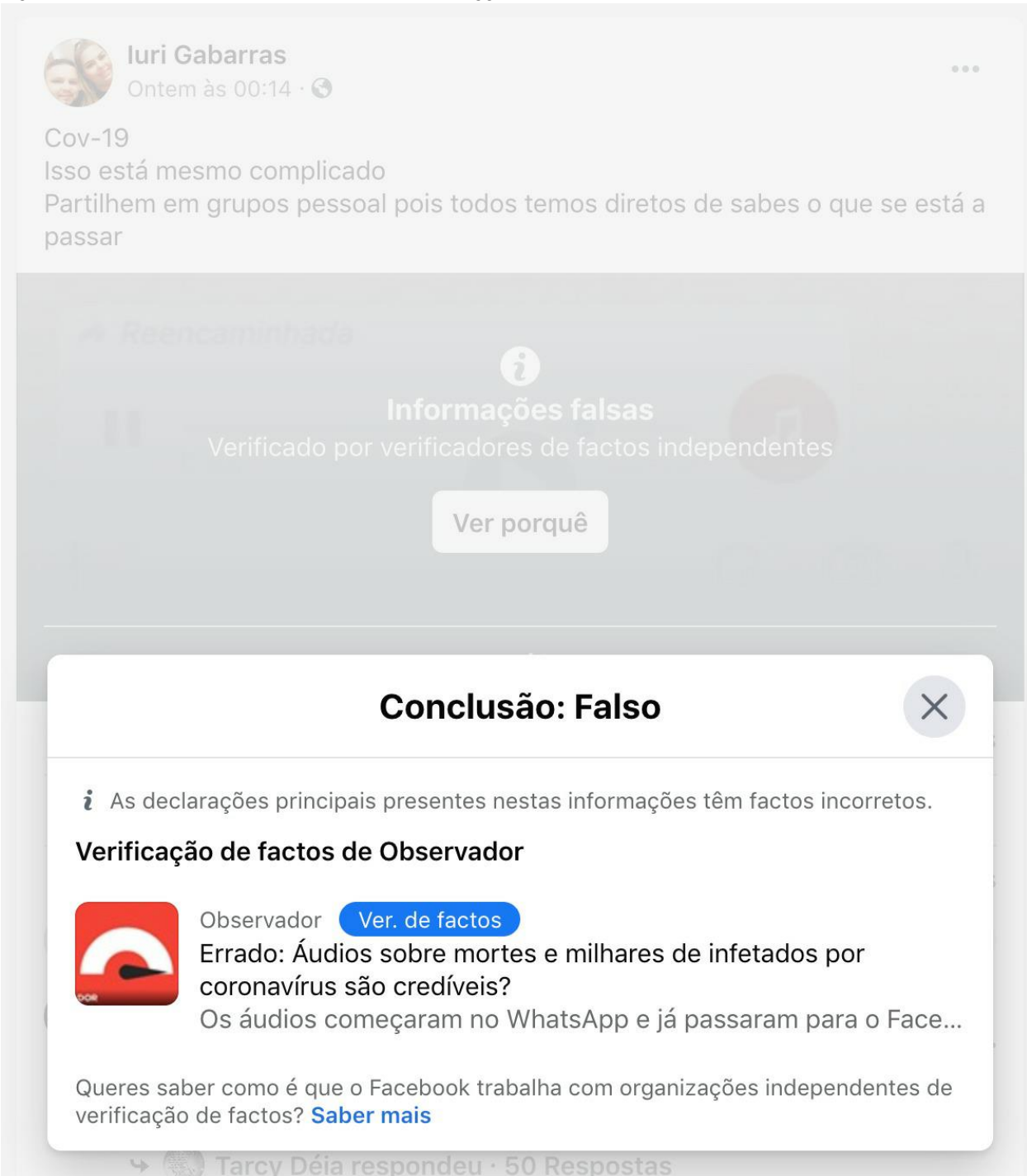
About the situation

- *That by the end of that day the government would lock down everything, so people better do their shopping and take care of everything because they might not be able to go out anymore.* - incorrect fact, which actually would be confirmed and contributed to send people flocking to supermarkets at the end of that day.

In an **assessment** carried out with the coders who analysed all the original content received by MediaLab, the wide variety of file types and discourse types (ranging from total alarmism to parody and jokes) stood out. The following common threads were identified:

- A first important set of audios, most of which Portuguese, with an underlying message of alarm and/or concern. Rumours prevail in them, of the type that come about through an acquaintance, a friend of a friend, and are often validated by an important figure, both from the sphere of medicine and from the sphere of politics or journalism. The anonymous nature and sentimental way in which many of these messages are passed on conveys a conversational tone to the discourse, making it personal and certainly contributing to make it go viral.
- A second set of posts, more in text and image form, with “pseudoscience” and a protoscientific discourse, which either use information to their own advantage or seek to provide “alternative” solutions to traditional medicine as a protection and cure against the disease. Here they benefit from the still scarce number of studies conducted on the recent virus, alongside the population’s anxiety about knowing how to better protect itself.
- Also noteworthy is the role of platforms and their interconnectedness, with MediaLab’s team having received several Facebook links flagged by its users. A significant number of those links were closed down during the 5 days of data collection and analysis, showing that Facebook managed to actively remove a lot of the content that MediaLab had flagged as red (figure 7), namely the more viral audios, which also circulated on Facebook in video format. (figure 8)

Figure 7: Example of content shared on Facebook flagged as false



Caption: Content shared on Facebook showing it was fact-checked

Figure 8: Example of a Facebook video with an image of the Government and NHS and containing a viral audio



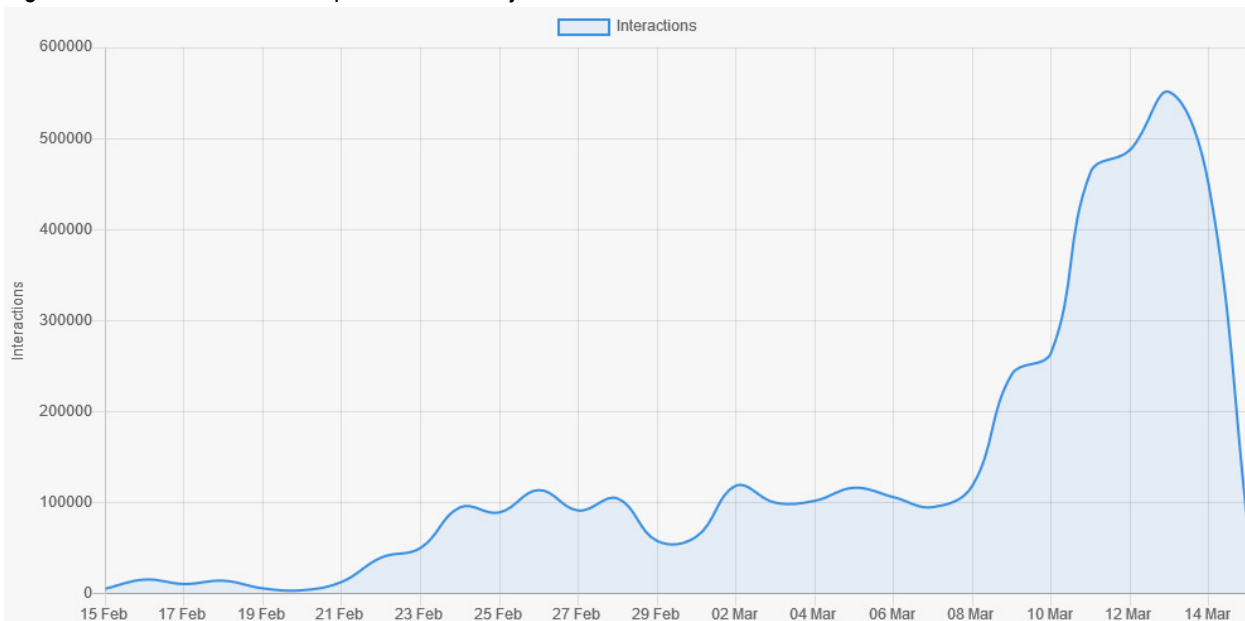
Caption: Audio of file 65_13MAR in a Facebook video with an image of the Government and NHS, which is no longer available

III - Facebook and Twitter posts by the main Portuguese media

In terms of the likes, comments and shares in content posted by the 70 main media on Facebook on the subject of “Coronavirus”², a total of 15992 posts were recorded in the last 30 days, between 15 February and 14 March, generating 3.7 million interactions. By comparison, in the 30 days between 4 February and 2 March, 7148 posts had been shared by the same group of pages, generating 1.134 million interactions in total.

This shows not only that the distribution of Coronavirus-related content on the Facebook pages of Portuguese media became more intense, but also that the interaction of social network users with that content also increased significantly (figure 9). This was felt already on 2 March (when the first confirmed case in Portugal became known), but especially from 9 March, when exceptional measures started to be announced (among which, the closure of schools) aimed at fighting the pandemic.

Figure 9: Interactions in media posts on the subject of “Coronavirus”



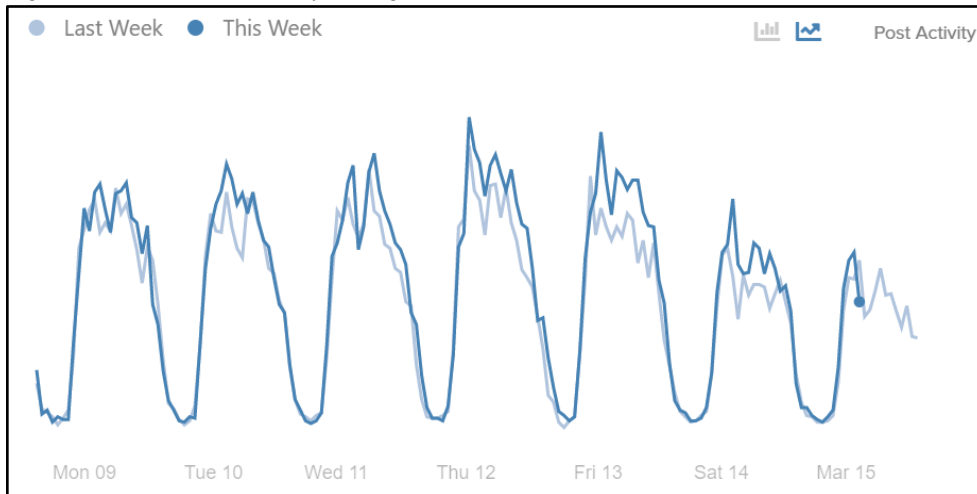
Caption: Number of daily interactions with the Facebook posts of the 70 main Portuguese media between 15 February and 15 March (until 3 pm). Source: CrowdTangle

By only comparing the last two weeks, which was when coverage of the subject of “Coronavirus” by Portuguese media was most intense (figures 10 and 11), it is possible

² This search was made by using CrowdTangle and the following query: coronavírus, corona vírus, covid19, covid 19, covid-19, covit19, covit 19, covit-19, coronavirus, corona virus, virus da china, vírus da china

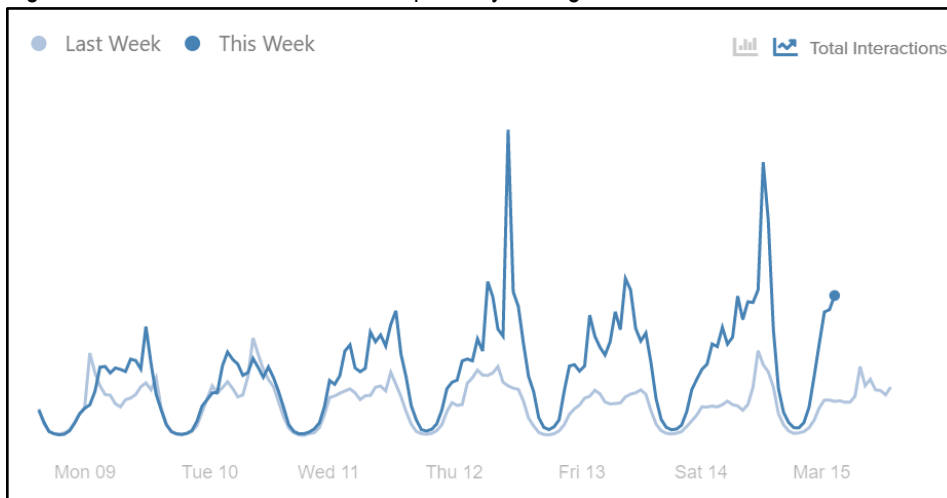
to see that a slightly larger number of posts generated an expanded number of interactions. There were more posts during the last week than during the seven days that preceded it, but there were, above all, many more interactions. This shows that users are actively interested in information provided by the media on the Coronavirus.

Figure 10: Facebook posts by Portuguese media



Caption: Facebook posts by the 70 main Portuguese media between 9 and 15 March, compared with the previous week. Source: CrowdTangle

Figure 11: Interactions with Facebook posts by Portuguese media



Caption: Number of interactions (likes, comments and shares) with Facebook posts by the main Portuguese media between 9 and 15 March, compared with the previous week. Source: CrowdTangle

If we look at the 25 items that generated most interactions over the last 30 days (figure 12), we mainly see posts praising health professionals and the initiatives aimed at paying

tribute to them, (positive) news on the first infected person considered to be cured and suggestions for entertainment at home. The praise for health professionals follows a pattern that is very similar to the one witnessed with firemen during the large forest fires in the summers of 2017 and 2018.

Figure 12: Posts by Portuguese media with most interactions on Facebook

Page Name	Message	Link Text	Total Interactions
TOTAL			3,698,241
Jornal de Notícias	Última Hora	Primeiro infetado com Covid-19 curado no Hospital de São João	19,283
Semanário SOL	Nem todos os infetados estão hospitalizados, p	Covid-19. OMS partilha guia para pessoas que estão a viver com alguém infetado	14,613
TVI24	São médicos que não trabalham no SNS, algun	Timeline Photos	13,864
TVI24	Médicos chineses, especialistas na luta contra	Timeline Photos	13,817
Observador	Atendendo à recomendação de que as pessoas	Se está em casa este sábado à noite, Salvador Sobral vai fazer um concerto "online" para s	13,197
SIC Notícias	EM ATUALIZAÇÃO:	Um dos primeiros infetados com coronavírus em Portugal com teste negativo	12,914
TVI24	Os portugueses foram à varanda aplaudir os profissionais de saúde que estão e vão trabalhar para travar o surto de Covid-19. Obrigada a t		12,617
SIC Notícias	Infecionologista diz que é pouco provável que tal	"Portugal na próxima semana vai estar numa situação semelhante a Itália"	12,531
Correio da Manhã	Noite lisboeta não ressentiu qualquer efeito do	Apesar das recomendações para conter coronavírus, Cais do Sodré enche-se de centenas	12,461
TVI24	ÚLTIMA HORA	Covid-19 em Itália: país inteiro em quarentena	12,054
SIC Notícias	Chama-se Daniele Macchini e é médico no hos	O apelo desesperado de um médico de Bérgamo: "Por favor, ouçam-nos, tentem sair de ca	11,730
Jornal de Notícias	Em atualização	Pingo Doce passa a fechar às 19 horas	11,478
Observador	João Nascimento notou a falta de ventiladores	Português reúne centenas de especialistas para criar novos ventiladores — que faltam em	11,406
Correio da Manhã	Cientistas do país estão a esforçar-se para des	China revela que vacina contra o coronavírus deverá estar pronta em abril	10,936
TVI24	ÚLTIMA HORA	Coronavírus: não há nenhum caso positivo em Portugal	10,743
Correio da Manhã	Quem criar perigo de "propagar doença contagi	Desrespeitar quarentena dá pena de prisão de cinco anos	10,378
Jornal de Notícias		Dois casos positivos de coronavírus no Porto	10,256
SIC Notícias	Em atualização	Hospital Santa Maria descobre covid-19 em doentes internados	9,258
SIC Notícias	O novo coronavírus pode ser a primeira pander	70% dos infetados na China estão curados	9,028
RTP Notícias	Coronavírus. Como agir?	Photos from RTP Notícias's post	8,750
Público	Depois de abrir a todos os leitores os seus text	Acesso gratuito: PÚBLICO desliga a paywall	8,693
Correio da Manhã	Miguel Albuquerque aproveitou a ocasião para	Governo da Madeira isenta população do pagamento de água e luz devido à pandemia de c	8,660
Correio da Manhã	Última pessoa infetada teve alta hospitalar na ú	Macau não tem qualquer infetado com coronavírus há mais de um mês	8,557

Caption: Ranking of the posts with most interactions (likes, comments and shares) published on the Facebook pages of the 70 main Portuguese media between 9 and 15 March, compared with the previous week. Source: CrowdTangle

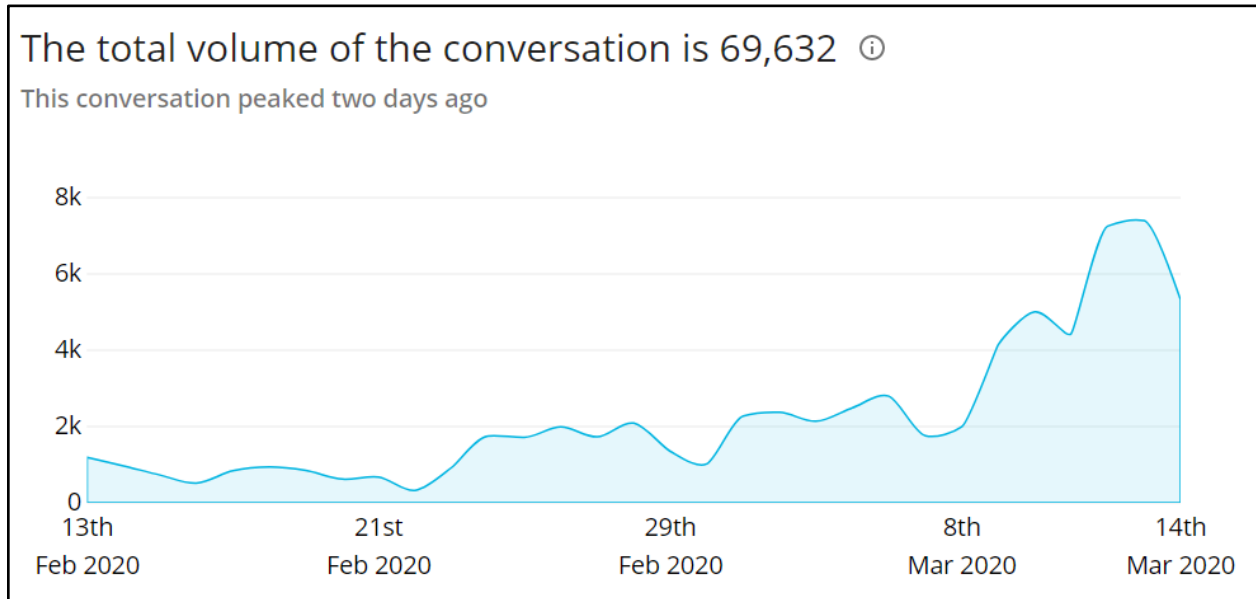
If we broaden the search on the subject of "Coronavirus" to all news items³ published online over the last 30 days (between 13 February and 14 March), we notice a pattern very similar to the one seen on the Facebook pages of the 70 main Portuguese media (figure 13). Overall, during these 30 days, 69632 news items about, or referring to, the Covid-19 pandemic were published, which corresponds to an average of 2240 news items per day (the day with most content published was 13 March, with 7397 news items).

By looking at the timeline, we can see the media were already thoroughly tackling the subject before 2 March, although coverage intensified after that date. However, it was

³ This search was made by using Forsight Brandwatch and the query: coronavírus OR "corona vírus" OR covid19 OR "covid 19" OR "covid-19" OR covit19 OR "covit 19" OR "covit-19" OR coronavirus OR "corona virus" OR "virus da china" OR "vírus da china"

truly after 9 March - and especially 12 March, when the suspension of classes was announced - that the subject gained even more prominence in the media agenda.

Figure 13: News items about the Coronavirus published by national media



Caption: News items referring to the Coronavirus published by Portuguese media between 13 February and 14 March Source: Forsight Brandwatch

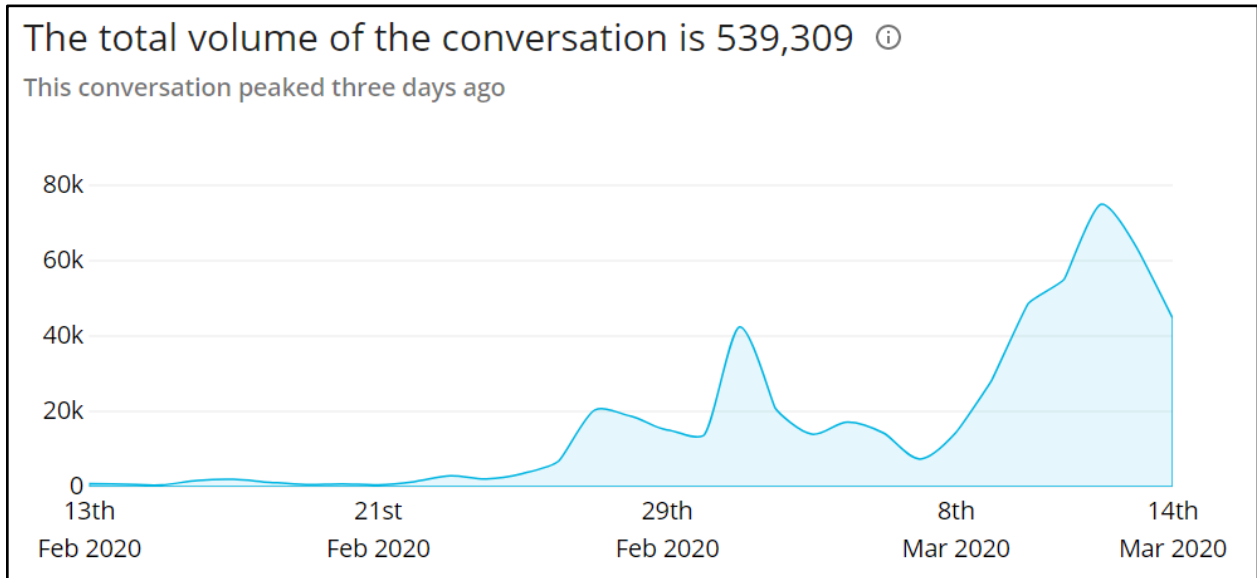
We can now compare the two patterns of media coverage of the “Coronavirus” with references to the subject in social networks in Portugal. This search is based on the same query⁴ used before and extends the collection of content to tweets and retweets on Twitter, posts on Reddit, forums and blogs, comments and descriptions on YouTube, and posts and comments on the public Facebook pages of the 20 main Portuguese media.

Overall, for the same period of 30 days, more than half a million items of content were published on the subject of “Coronavirus” in social networks in Portugal. As can be seen in figure 14, the subject was relatively discreet in social networks until 2 March, when the first case of infection was confirmed in Portugal. However, in spite of that peak on 2 March, the subject waned again in social networks until 10, 11 and 12 March. On 12 March, over 75 thousand items on the subject of “Coronavirus” were published in social networks in Portugal. This pattern is in line with what was previously observed: the media tend to keep the subject on their agenda in a more permanent way, but in social networks

⁴ This search used Forsight Brandwatch and the query: coronavirus OR "corona vírus" OR covid19 OR "covid 19" OR "covid-19" OR covit19 OR "covit 19" OR "covit-19" OR coronavirus OR "corona virus" OR "virus da china" OR "vírus da china"

there are “explosions” of interest in the subject, which have a far deeper reach but a much shorter duration.

Figure 14: Posts on the “Coronavirus” in social networks















Caption: Daily posts, tweets and retweets published on the subject of “Coronavirus” in social networks in Portugal between 13 February and 14 March. Source: Foresight Brandwatch

On the pages and groups that commonly share misinformation and are continuously monitored by the project [Monitoring propaganda and misinformation in social networks](#), the number of posts on the Coronavirus also grew, but there was mainly an increase in the interactions generated by those posts. However, the presence of misinformation continues to not be significant in those groups, which focus more on the political situation.

IV - Posts in Facebook groups dedicated to the Coronavirus

A trend that is worth highlighting in Facebook is the creation and/or exponential growth of several public groups dedicated to Covid-19. Out of the 12 Portuguese groups focusing specifically on the Coronavirus, which started to be monitored, only two already existed the previous week. In practice, they represent 648 thousand members in total (until 14 March), most of whom joined over the last days (figure 15).

Figure 15: Ranking of Facebook groups dedicated to Covid-19 based on number of interactions

Group Name	Total Interactions	Interaction Rate	Avg. Posts Per Day	Group Members	Growth % and #
Average Total	56,916.58	1.263%	84.60	53,960.42	0%
1  Isolamento Voluntário COVID 19	398,648	0.968%	10.6	556,577	—
2  Coronavírus Portugal informações - Corona virus	136,356	0.318%	591.6	17,357	+531.39% +14,608
3  COVID-19 Portugal	112,496	0.323%	81.9	60,599	—
4  Coronavírus Portugal informações - Corona virus	9,527	0.357%	78	4,767	—
5  Coronavirus updates portugal-non boring	7,240	3.067%	94.4	326	—
6  Coronavirus Updates Portugal	7,170	1.008%	75.7	1,877	+167.38% +1,175
7  COVID19 #Alcochete - Informações úteis	6,748	2.242%	12.1	3,523	—
8  Covid19 Portugal - Informações	3,112	1.517%	27.6	1,055	—
9  COVID19 - Alojamento SOLIDÁRIO para profissionais de saúde	611	0.963%	8.9	935	—
10  CORONAVÍRUS covid-19	573	2.41%	20.1	166	—
11  Covid 19 Portugal	512	1.98%	11.6	303	—
12  Coronavirus - Noticias	6	—	2.7	40	—

Caption: Ranking of Facebook groups dedicated to Covid-19 based on number of interactions over the last 7 days.

Source: CrowdTangle

One of those groups - “Isolamento Voluntário COVID 19” (*COVID 19 voluntary isolation*) - was created on 12 March at 4.30 pm and on 15 March it already had 624 thousand active members (figure 16). In this study it is not possible to ascertain whether the sudden growth in the number of members of this group is due to suggestions from Facebook itself or suggestions that users make to each other, but both mechanisms are expected to have been at stake.

Figure 16: Growth in the number of members of the group “Isolamento Voluntário COVID 19”

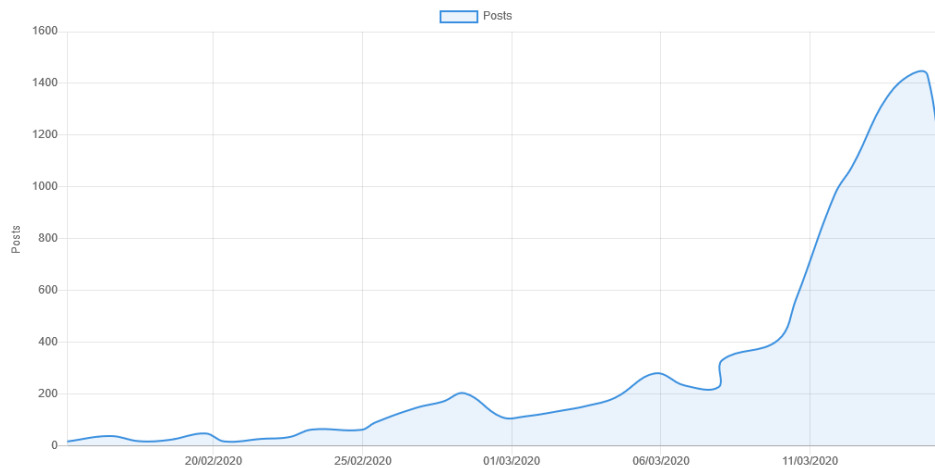
TIMEFRAME	TOTAL	GROWTH	% GROWTH
Mar 08, 2020	0	---	---
Mar 09, 2020	0	+0	+0.000%
Mar 10, 2020	0	+0	+0.000%
Mar 11, 2020	0	+0	+0.000%
Mar 12, 2020	168.3K	+0	+0.000%
Mar 13, 2020	356.7K	+188.4K	+111.94%
Mar 14, 2020	556.6K	+199.9K	+56.03%
Mar 15, 2020	624.8K	+68.2K	+12.25%

Caption: Growth in the number of members of the group Isolamento Voluntário COVID 19 over the last 7 days.

Source: CrowdTangle

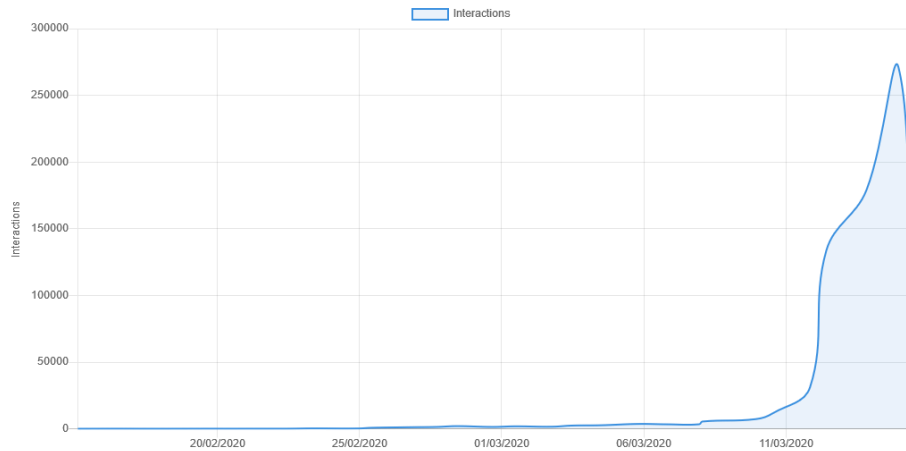
Graphs showing the activity of these groups also illustrate this trend. The number of posts made (figure 17) over the last week is a lot higher than during the previous weeks, but - mainly - the interactions generated by those posts (figure 18) are even higher.

Figure 17: Number of posts made in Facebook groups dedicated to Covid-19



Caption: Posts made in Facebook groups dedicated to Covid-19 over the last 30 days

Figure 18: Interactions with posts in Facebook groups dedicated to Covid-19



Caption: Interactions with posts in Facebook groups dedicated to Covid-19 during the last 30 days.

This suggests that Facebook users were a lot quicker in spontaneously organising themselves to create and participate in public groups aimed at clarifying issues around the subject of “Coronavirus”. Although the number of posts shared in those groups increased over the last month, the interactions generated by those posts grew mainly during the last week. This substantial increase is linked to the emergence of the group “Isolamento Voluntário COVID 19”, which managed to attract 550 thousand members in only 4 days of activity.

On the other hand, when taking a look at the subjects posted, shared and commented on in those groups, it is noticed that they are mainly used to clarify doubts about the disease, share information considered important and pay tribute to the health professionals who are fighting the pandemic. The next table (4), which shows the 25 posts with most likes, comments and shares within these 12 groups as a whole, during the last 7 days, illustrates that.

Overall and over the last 7 days, 7688 posts were published in these 12 groups, generating a total of 789 thousand interactions.

Table 4: Posts with most interactions in Facebook groups dedicated to Covid-19

Group Name	Message	Total Interactions
Total		788,949
1 Isolamento Voluntário COVID 19	3º dia de isolamento ultrapassado 🙌 Hoje somos 570.000 membros. Peço desculpa pela falta de resposta a	32,303
2 Isolamento Voluntário COVID 19	*Continuação da corrente de ontem* Hoje às 22h00 seremos mais à janela e desta vez a cantar o hino nacio	29,760
3 Isolamento Voluntário COVID 19	PARTILHEM este grupo, vamos alargar a rede de pessoas conscientes e de entreaduda! Este grupo tem por	27,992
4 Isolamento Voluntário COVID 19	Hoje às 22h00 vai haver uma corrente de esperança e energia dedicada a todos os profissionais de saúde q	24,262
5 Isolamento Voluntário COVID 19	Fronteiras terrestres encerradas em Portugal durante 1 mês!	21,145
6 Isolamento Voluntário COVID 19		19,845
7 Isolamento Voluntário COVID 19	Informação consolidada sobre o apoio da Segurança Social em caso de apoio aos filhos que ficam em casa	17,689
8 Isolamento Voluntário COVID 19	*Encerramento de Escolas - apoio a famílias * O trabalhador SÓ PRECISA apresentar esta declaração preer	16,774
9 Isolamento Voluntário COVID 19	Aos trabalhadores por conta de outrem com crianças até aos 12 anos, podem descarregar a declaração do s	16,058
10 Isolamento Voluntário COVID 19	2º dia terminado e juntos somos mais de 360.000 membros! Volto a agradecer o apoio de todos nesta causa	15,720
11 Isolamento Voluntário COVID 19	*Números atualizados* Vamos ter todos calma e ultrapassar esta crise com a máxima tranquilidade. Tudo ist	11,535
12 Isolamento Voluntário COVID 19	Novos números * Não entremos em alarmismo, estes números são meramente indicativos. Vamos manter a	11,362
13 Isolamento Voluntário COVID 19	Faltam apenas uns minutos para dar início à corrente. A sua presença é fundamental!	10,400
14 Isolamento Voluntário COVID 19	Para todos os Pais e todas as Crianças, permitindo uma rotina útil e necessária.	9,417
15 Isolamento Voluntário COVID 19	*2º Dia de Isolamento Voluntário* Ontem foi dia de perceber como iria ser a nova rotina familiar dos próximos	8,994
16 Isolamento Voluntário COVID 19	Bom dia a todos 🌍 Começamos o dia com a informação do estado de alerta na Madeira!	8,657
17 Isolamento Voluntário COVID 19		8,524
18 Isolamento Voluntário COVID 19	Atenção que as faltas justificadas para acompanhamento dos filhos até 12 anos é fora dos períodos de inter	8,494
19 Isolamento Voluntário COVID 19	Este grupo vai ser bom para apoio moral, para saber que não estamos sozinhos nem isolados. O espírito hu	8,188
20 Isolamento Voluntário COVID 19	Finalmente escolas do país fechadas!! Vamos aguardar a informação, e a explicação do porquê só encerrar	8,016
21 Isolamento Voluntário COVID 19	O INÍCIO... Começa agora a necessidade de Organização, de Estruturar o dia a dia de forma a minimizar o i	7,820
22 Isolamento Voluntário COVID 19	Eu e a minha família já estamos por termos uma pessoa amiga infetada	7,616
23 Isolamento Voluntário COVID 19	Uma agradecimento especial aos membros que perceberam o intuito deste grupo e nos estão a ajudar a der	7,488
24 COVID-19 Portugal	A sério???? Isto não aconteceu!? 😞😞	7,224
25 Isolamento Voluntário COVID 19	Pelo Princípio da Prudência foram tomadas medidas de limitação e proibição. É crime Propagar Doença Con	7,066

Caption: Posts with most interactions in Facebook groups dedicated to Covid-19 over the last 7 days. Source: CrowdTangle

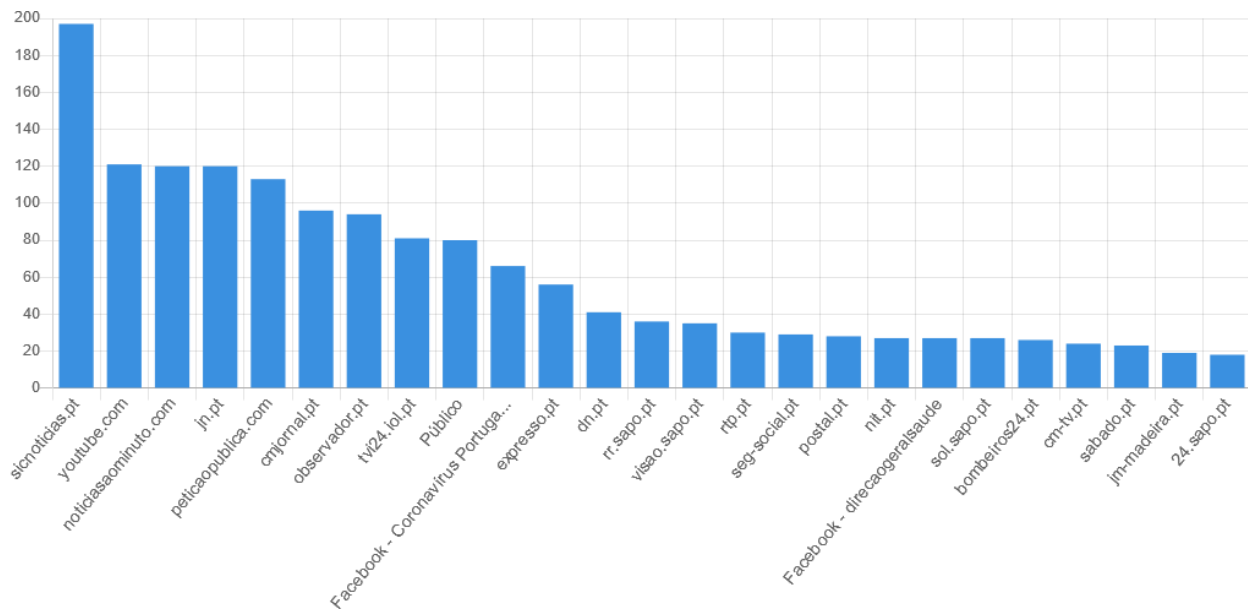
As can be seen in the table above, most of the posts with most interactions within these 12 groups as a whole mention the “waves” created in support of medical staff, encourage the groups themselves to grow and answer doubts about what to do in these new circumstances.

The very fast emergence and growth of these groups reflects an attempt by users to create or join platforms that produce and share information helping them understand how to deal with the situation. The same had happened, for example, during the devastating fire season in 2017, when several groups and pages emerged in support of firemen, having later evolved to cover other subjects.

By looking at the origin of the links shared on groups dedicated to Covid-19 (figure 19), it is noticed that most of the posts use the media as their source, with some important exceptions. YouTube appears as the second most used source and, although many videos are news reports or videos shared by official bodies, others issue from less credible, more conspiratorial or partisan sources.

The platform peticaopublica.com was also intensely used to share several petitions asking for the government to take measures, such as closing borders and certain places. It is still important to note that, even though it does not occupy a prominent position, the website bombeiros24.pt, usually associated with the dissemination of false information, appears among the sources most used by these groups.

Figure 19: Media most used in posts on Facebook groups dedicated to Covid-19



Caption: Quantifying the media most used in posts on Facebook groups dedicated to Covid-19

Just as it did for WhatsApp, MediaLab used CrowdTangle to extract the list of most viral posts from the set of selected groups. That top 10 was fact-checked case by case, although nothing was identified as worthy of notice.

Most of the posts were messages of support for the NHS staff and appeals to the general public, others were informative, sharing the main measures and procedures included in the package of measures that took effect on 12 March.

V - Google Searches

The number of searches for terms linked to the Coronavirus increased substantially from 2 March, the day that the first two cases of people infected with the virus in Portugal were made public. Since then, searches increased in number, but there were also more terms looked up. Between 2 and 15 March and, within the subject of coronavirus, the terms most searched were linked to knowing what to do, how to do it and what was happening. (figure 20)

Figure 20: Searches for “Coronavírus” in Portugal between 16 February and 14 March



Caption: Growth in the number of searches for “Coronavírus” in Portugal between 16 February and 14 March - Source: Google Trends

Searches connected to schools soared between 10 and 11 March and on each day were more than 100 thousand. On 13 March, when Leya (the largest Portuguese publishing company) announced it would offer free access to its Virtual School (an online study platform for students from year 1 to year 12), this was the term most searched for, with 50 thousand searches (ex aequo with Netflix).

What is searched on Google can give us clues about the information citizens need. Terms such as “mitigation”, “contingency plan”, “state of emergency”, “quarantine”, “precautionary isolation” and “state of alert” were widely searched, in a clear search for information about subjects that the Portuguese are not used to.

Football is usually one of the terms most searched on Google, and it continues to be important, even in connection with the Coronavirus, with searches about football leagues cancelling matches, matches that will not take place and football players suspected of being infected or already infected with the coronavirus.

The searches for DGS (the General Directorate for Health) and OMS (the World Health Organisation) may indicate that Portuguese citizens search for reliable information concerning this subject.

Searches about medicine that can help fight Covid-19 or worsen its symptoms have also been in the top 20 of the last 4 days. It is worth noting the search for ibuprofen (the second most searched term on 14 March), which may be connected to the news that started spreading in France, namely that people infected with the virus were advised not to take this medicine. On day 15, the term “Remdesivir”, a medicine that appears to reduce the viral load in patients with Covid-19, was the second most searched term.

Concern over the number of people infected also comes across in the searches, namely in terms such as “coronavírus infetados Portugal” (“coronavirus infected Portugal”), “coronavírus infetados” (“coronavirus infected”) or “mapa coronavírus Portugal” (“map coronavirus Portugal”). Knowing what are the symptoms of Covid-19 also triggered searches in Portugal, where this subject was searched on several consecutive days.

Regarding misinformation and searches, we highlight the case of Cristiano Ronaldo. The name of the player was the term most searched on 14 March (with over 20 thousand searches), due to all the news that came out about how he would convert the hotels in his chain CR7 into hospitals, which turned out to be false, as confirmed in the [Fact-check by Observador](#).

VI - Concluding remarks

The analysis by MediaLab identified positive and negative social appropriations of the social networks focused on during the period of analysis.

It showed that, initially, misinformation was virtually absent (before the first cases of infection were announced). Then there was a strong spread of misinformation on WhatsApp, mainly through voice messages, followed by a positive appropriation of social networks, through Facebook groups aimed at sharing information and setting up support networks, etc.

During the period analysed, the media became a central source of information for Facebook groups dedicated to supporting and sharing experiences of social distancing. They also showed their important role in fighting misinformation and protecting people from it, namely through fact-checking processes, such as those conducted by “Polígrafo/SIC and “Observador”, or by analysing context and good practices, which was the case of “Diário de Notícias”.

However, some media were not immune to misinformation, as proven in the case of “Cristiano Ronaldo’s Hotels”, where several media fell for the false rumour spread by social networks.

Misinformation, during this initial period of social distancing in Portugal, teaches us a few lessons that will stay with us throughout the pandemic.

The first is that health misinformation seems to take root in falsehoods associated with the credibility of health professions in Portuguese society, namely the medical profession. In this case, the voice messages shared, both the ones by health professionals and the scams associated with fake professionals, go viral because, for the average citizen, a message shared on WhatsApp by a health professional carries the same authority as an appointment or face-to-face contact with a doctor.

Although most of the messages with misinformation seem to be associated with fake health professionals, it is worth highlighting that the real health professionals are probably as or more scared than the average citizen, because they are at the epicentre of the pandemic. However, in the context of health communication, it is important to remember that a voice message on WhatsApp follows the same rules of communication as a face-to-face appointment with a patient.

On WhatsApp, a message shared by a health professional - a doctor, nurse, chemist - carries the same authority as an appointment, so it is important that when professionals speak or send voice messages on WhatsApp, or even when they give interviews on Skype, they are aware of that and of the social responsibility they hold.

The second lesson to be drawn from this analysis is that, although Facebook, Twitter and Instagram can be moderated, and misinformation can be removed and stop being available to users, the same does not happen on WhatsApp, where there is no moderation. Therefore, people receiving the messages will have to be the main agents countering misinformation: by being prudent and keeping a critical eye.

During this pandemic, social distancing on social networks must also be a priority. We ought to keep a mental distance from the messages we receive. If we stopped greeting people we know with kisses and handshakes, why should we share messages that come our way only because they are being sent by people we know?

Finally, when going through a health crisis as severe as this one, the way we use social networks has consequences. The sense of powerlessness in the face of the pandemic may make us want to do something to help and often this can be the motivation to pass on a message on WhatsApp. It is important that people realise that passing on messages that say “everything is out of control”, “people have died”, “everything will close” or the like in no way helps the sender or anyone else.

A social balance between opposite practices in social networks seems to have developed during the initial days of the pandemic in Portugal: on the one hand, the use of misinformation to fuel panic; on the other hand, informative mutual aid practices. However, only by analysing the weeks and months ahead will it be possible to say whether one trend will prevail over the other.