# Influence factors on the success of hospital communication via *social networks*

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**Abstract**

**Introduction.** The object of study for this article is online communication in Spanish hospital corporations, specifically in those centres that are more influential on Twitter. **Hypothesis and objectives.** We will be working with the hypothesis that hospitals demonstrate a low level of participation in social media, despite the interest shown by users. The main objective is to define the characteristics and the strategy in order to propose ideas to optimise the relationship between hospitals and citizens, by means of social networks. **Methodology**. The methodology followed is based, fundamentally, on a quantitative and qualitative analysis of the activity on Twitter of the specialised health centres with a greater interaction. **Results.** Patients demonstrated an interest in the information and the activity that health centres share on their social networks, and these messages can be classified as: non-health related, or related to matters extrinsic to healthcare that also arouse considerable interest, followed by messages about prevention and health promotion, and recognition of the people that play an important role in certain hospital proceedings. Along these lines, we can state that, in general, an intimate tone is adopted. **Conclusions.** This study serves as a base from which to propose several strategies aimed at improving communication between the hospital and its various stakeholders and, therefore, situations that surround the users of healthcare systems; situations that are focussed on the relationship between medical attention and citizen wellbeing.

**Keywords**
Healthcare Communication; social networks; hospitals; health.

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## 1. Introduction and theoretical framework

Research activity in the field of health is becoming more and more intense and diverse. "Information about health in contemporary society is included in social policies and (...) can provide important benefits to the wellbeing of a society" (Peñafiel & Echegaray, 2014, p. 6).

Similarly, there is a varied body of literature about institutional social networks in different professional fields (Gómez & Paniagua, 2014; Huertas & Mariné, 2014; Palomo, 2014; Campos Freire, Rivera Rogel & Rodríguez Hidalgo, 2014; Campos Freire & Ruas Araujo, 2016).

Nonetheless, when it comes to healthcare institutions, in particular hospitals, the object of study for this article, and their communicative activity via social networks, scientific publications are far from copious.

A study by Rando (2014) of hospitals in Andalusia, both publicly and privately funded, emphasises a lack of coherence between the objectives approved by hospital directors once the transmission of messages via social networks to the various stakeholders had been decided on and started, and the results obtained with this communicative activity.

There is clearly a gap between a hospital's reasons for participating in a social network (Rando, 2014): to invite dialogue, interaction or participation by society in the virtual space; to learn about citizens' healthcare needs; to put itself on the map and strengthen links with the population; to make its identity better known and improve its quality of life; among other aspects, and the consequences of this action. In this way, fundamental characteristics of social networks (Cervera, 2008), such as a virtual space for conversation, interactive exchange of knowledge, experiences and dialogue, among others, is not be reflected today in a generalised way in the sector of healthcare communication in the hospitals in the autonomous community of Andalusia, for example.

Several studies stress the potentiality of hospital social networks and the benefits for society; highlighting the fact that the new scenario represents "a growing space for interpersonal interaction" (Shepherd, Sanders & Doyle, 2015, p. 408), "a virtual community where they [citizens] can find encouragement, get answers to specific health-related questions, and a place to share their success stories" (De la Pena & Quintanilla, 2015, p. 495), as well as a tool with great potential for online initiatives that require promotion (Koteyko, Hunt & Gunter, 2015).

De la Pena & Quintanilla (2015, p. 495) assert that "the quest for health and well-being can be easily embraced with the aid of digital media to reach millions of people who share similar goals and seek answers to their health-related concerns."

A study of organisations of patients with rare or uncommon diseases, and their activity on social networks, by Castillo, López & Carretón (2015, p. 679) considers these networks to be a "source of knowledge" whose "active and collaborative attitude influences developments in medical research".

In the same vein, but concerning patients in palliative care, and the use of Twitter in particular, other authors (Nwosu, Debattista & Rooney, 2015) express that this social network presents a novel opportunity for participation and ongoing dialogue with the different social groups. Nonetheless, in the last three appraisals, the information disregards the interaction between the institution and the citizen, choosing to focus on the already extensively developed relationship between individuals who share the same life situation.

In their analysis of the use of social networks in the prevention and treatment of HIV, Taggart, Grewe, Conserve, Gliwa & Roman (2015) also consider Twitter to be beneficial, in that it improves the ability to access and share information, among other aspects. Nonetheless, these authors stress that there are certain disadvantages, such as technological barriers, lack of physical interaction and privacy, and cost.

The use of Twitter by hospitals is also analysed from an economic point of view, since, as Gomes & Coustasse (2015) point out, communication via this social network means "savings of resources"; an opportunity to cut costs by eliminating unnecessary visits to the doctor, for example. In the same vein, Blázquez, Cantarero & Pascual (2015) and Richter, Muhlestein & Wilks (2014) state, in the case of Facebook, that hospital directors believe that there is a considerable opportunity for the participation of consumers at a low cost.

Nonetheless, as well as the scientific literature that highlights the benefits of healthcare communication via social networks, there are other publications, albeit fewer, that see signs of harmful effects, or potential dangers. These include the loss of privacy or security when sharing information (Mattingly & Joseph, 2015), and the lack of specialised training, both in health and the use of social networks, of professionals that work in the field of hospital communication (Rando, 2014). With regard to the first deficiency, Peñafiel, Camacho, Aiestaran, Ronco & Echegaray (2014, p. 135) highlight, in one of their studies on the dissemination of healthcare information, that there is a lack of "educational perspective; professional specialisation is required and doctors and journalists must strengthen a better relation by minimising the differences which separate them".

In addition, as a study about corporate communication alluding to aspects of social responsibility by Ros & Castelló (2011, p.47) indicates, despite the "possibilities for interaction and dialogue that these spaces offer, social media are still rarely used as channels for the communication of responsibility", and used instead for purely business and advertising messages.

In any case, and independent of the positive or negative aspects analysed, it is hard to find studies that attempt to analyse, in a scientific way, the losses or gains in patient and family quality of life and wellbeing by using social networks as a communication channel between the hospital and the citizen. This is despite the fact, as mentioned earlier, that this is one of the effects that is assumed to have the greatest impacts on citizens.

Yet for an effect of such importance for citizens to occur, the meeting between society and healthcare entities must not only be real, but also productive. According to the state of hospital communication on social networks, the Internet has become a vehicle that allows, with the passing of time, more diversified communication actions focussed on health, even though citizen participation in health-related matters via the web is relatively low (Prestin, Vieux, Sana & Wen-ying, 2015).

In the American context, Jha, Lin & Savoia (2016) establish the lack of connection between the content made available on social networks like Facebook in the health departments of the United States of America, and the health conditions affecting the population. This interesting reflection lies in the lack of funding and human resources fundamentally, which the authors find in these American healthcare entities.

Concurrently to the profusion of healthcare social networks, there are still some corporations that have decided to avoid social media, or to feel their way into the territory (Oviedo, 2013), with direct communication in social networks between doctors and patients being more normal than between healthcare institutions and patients.

But regardless of whether it is hospitals or healthcare professionals that communicate with society, there are socio-economic and demographic variables that have contributed to noticeable differences in the use of social networks, fundamentally based on accessibility to information (Yang & Wenjing, 2014), socio-economic level (Delgado, Gazzotti & Santoro, 2015) and age (Prybutok & Ryan, 2015, & Suit, Winkler & Campbell, 2015).

In addition, the life experience of the individual who accesses the information about health via the social networks is yet another significant variable, since those suffering from an illness, and their close family and friends, are more likely to participate in healthcare networks (Yang & Wenjing, 2014).

However, despite the fact that patients and their families show more interest in hospital social networks, whether or not participation in these networks is a useful tool to improve a pathological state is questionable. Urrutia-Pereira, Avila & Cherrez-Ojeda (2015, p. 25) expound on this matter in a study on the supervision of children with asthma by their parents. These people valued the specialised program that uses social media during the treatment of asthma, even though "few use it to control their children's disease".

Campisi, Folan & Diehl (2015) argue that it is unclear how to participate in social networks in order to be able to influence the quality of life of individuals, since these individuals differ in their experiences, motivations, and amount of time using the networks.

## 2. Methodology

With the goal of getting a better idea of the keys to improving the communicative relationship between hospitals and citizens through social networks, the focal point of the study will be the specialised health centres, at national level, with greater degrees of interactivity, being as they are considered more influential. By analysing their activity in social networks, we obtain a list of shared actions, as indicators of activity in social media that stimulates citizen participation.

To do this, in April 2016 we performed several searches on the web page *topinfluencers.net* related to the numerical value known as the *Klout Score*. This quantifies the degree of influence a person, brand or entity has on social media with a value from 1 to 100, as the web page itself determines. With a score of over 40, a person or entity is considered influential, an 'influencer', in their sector.

The *Klout Score* is different from other indexes, which only show the volume of content generated in social networks or the number of followers, for example. The reliability of the *Klout Score* index lies in the fact that it is the result of cross-referencing the aforementioned data, obtained from the seven foremost social networks in Spanish society, with other types of information, for example, whether the content shared has given rise to any type of interaction between the one who posted the message and the reader (a response, conversation, copying the message, assessing it, etc.).

Therefore, if we look at the *Klout Score* of the 'Health Centres and Health' sectors, performing the search in *topinfluencers.net* by activities, we find ourselves in positions number 54 and 56, with a value of 53 and 52, respectively, taking into account that the activities that appear to have the most influence in the social networks are 'Cinema and TV', 'Communication Media' and 'Football'.

In *Klout's* ranking by activities, the 'Health Centres and Health' categories are placed immediately before a cooking programme broadcast by the Spanish public television network *TVE 1*, MasterChef, and twelve points below *Gran Hermano* (Big Brother), a reality show broadcast in Spain by the private network *Tele 5*. According to the list, *Gran Hermano*, classified as a category, generates more influence among Internet users with an interest in social networks than health centres or health do, in general.

Delimiting the object of study and performing the search on the Klout Score for 'Hospital', we find a ranking of the 19 hospital centres on national territory with the highest values for influence. However, there is an obvious difference between the centres that occupy the first eight places, with a score of over 50, and the rest, with a lower score.

To complete the study of the interactivity of these hospitals with citizens on social networks, we have used Twitter's measuring tool, Twitonomy (April 2016). This tool has been used to perform a quantitative analysis of the Twitter accounts of the 19 Spanish hospitals and hospital groups selected.

This study is supplemented with a scheme of qualitative analysis based on research studies like the one carried out by Paniagua & Gómez, 2014, in which they study the content shared by organisations, in this case Spanish universities, on Twitter. In this way, the most retweeted tweets and the favourites selected by users of this social network are examined, in each of the hospital centres.

In total 190 tweets were selected. These were classified according to an in-house categorisation, based on the aforementioned study, with the goal of obtaining information about the content that the most influential hospitals draw on in their communication with society.

### 3. Results

Among the hospital centres that appear in topinfluencers.net as those that generate the most activity amongst citizens, the Hospital Clínic de Barcelona stands out, with a score of 61 (60.61) and 13,500 followers. Going by geographical areas, Valencia has five hospitals in the ranking and Barcelona has four. In the Andalusian provinces of Málaga, Cádiz and Almería we can find five of the centres in the ranking, while Alicante, Albacete, Murcia and León provide one hospital each. As for centres that are accountable to national hospital groups, Hospital Quirón and Hospitales Nisa also appear on the list, with units located in various locations around Spain. [Graph 1 and Table 1]

Conspicuously absent from the list of the most influential Spanish hospitals, in the case of Andalusia, is the Hospital Infanta Margarita in Córdoba, accountable to the Andalusian Health Service. In 2015 this was the hospital centre with the greatest presence on social networks, according to data published by the Observatorio Permanente de Tecnología de la Información y Comunicación, or Permanent Observatory of Information and Communications Technology in Healthcare (ObservaTICS). This is a clear example of the difference between an abundance of communicative activity on behalf of a hospital on social networks, and the reaction of citizens to this.
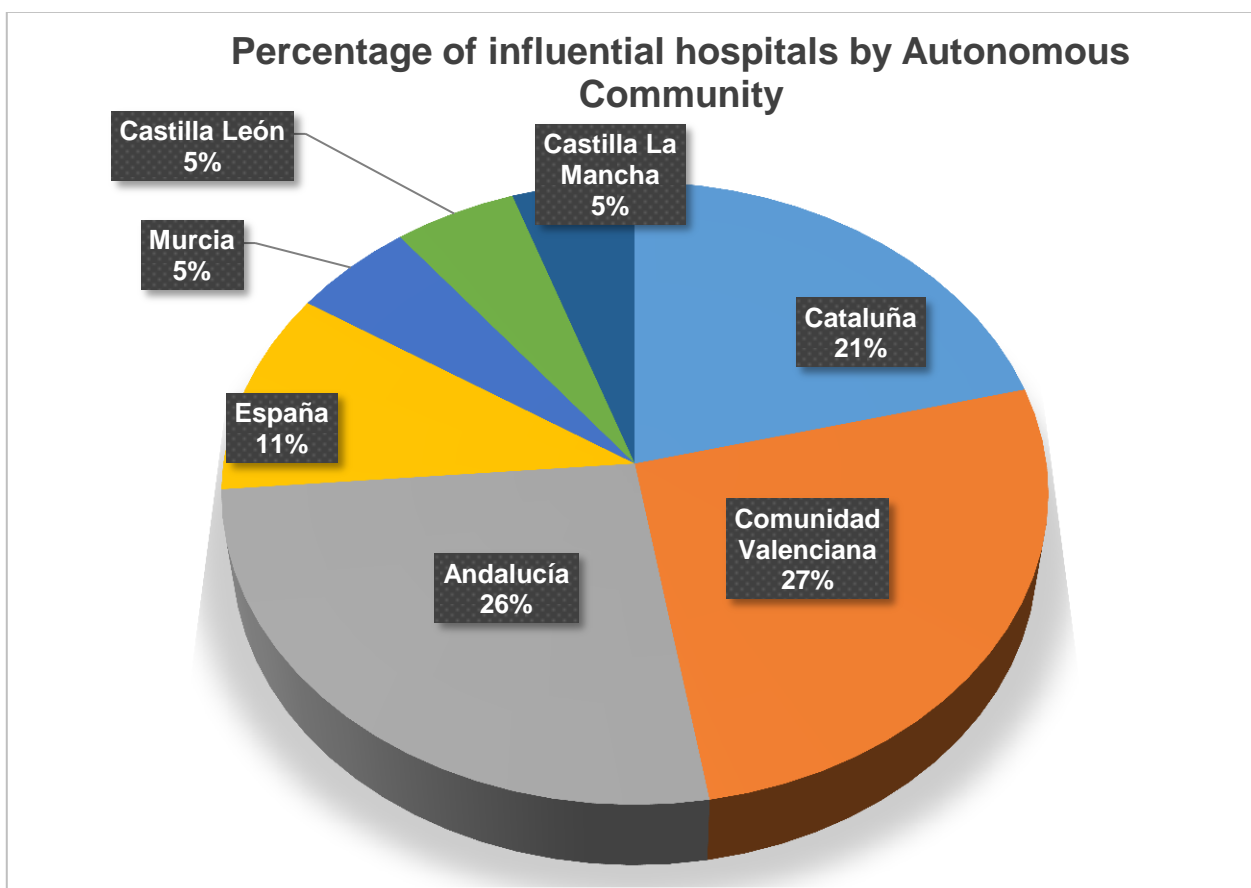


Graph 1. Source www.topinfluencers.net. In-house production.

Of the hospitals that are classified as the most influential in Spain on the social networks, eleven receive public funding and eight are managed by private entities.

| N. | Name | Score | Region | Followers |
|---|---|---|---|---|
| 1 | Hospital Clínic | 61 | Barcelona | 13.500 |
| 2 | Hospital de Denia | 58 | Alicante | 1.700 |
| 3 | Hospital Universitario y Politécnico La Fe | 54 | Valencia | 5.400 |
| 4 | Hospital de Nens BCN | 51 | Barcelona | 5.900 |
| 5 | Hospitales Nisa | 51 | Spain | 3.800 |
| 6 | Hospital del Mar | 50 | Barcelona | 5.800 |
| 7 | Hospital Ribera | 50 | Valencia | 3.400 |
| 8 | Hospital General | 50 | Valencia | 4.800 |
| 9 | Hospital Xanit | 47 | Málaga | 11.000 |
| 10 | Hospital de Manises | 47 | Valencia | 1.300 |
| 11 | Hospital Quirón | 47 | Spain | 11.800 |
| 12 | Hospital Puerto Real | 46 | Cádiz | 1.000 |
| 13 | Hospital de Poniente | 45 | Almería | 864 |
| 14 | Hospital de la Reina | 43 | León | 953 |
| 15 | Hospital del Mar | 41 | Cádiz | 738 |
| 16 | Hospital La Vega | 41 | Murcia | 828 |
| 17 | Hospital Delfos | 39 | Barcelona | 404 |
| 18 | Hospital Jerez Puerta del Sur | 30 | Cádiz | 112 |
| 19 | Hospital Almansa | 23 | Albacete | 262 |

Table 1. Source www. topinfluencers.net. (23 April 2016)

Our analysis will focus on the social network Twitter, since this is one of the networks that hospital corporations use the most, as well as Facebook. Authors such as Nwosu, Debattista & Rooney (2015) find Twitter a novel opportunity for ongoing participation and dialogue with the different social groups. This does not necessarily mean that true interaction between the institution and the citizen takes place.

Twitter is also highlighted by Taggart, Grewe, Conserve, Gliwa & Roman (2015), who consider that it enables greater access to information, and a greater ability to share information in comparison with other social networks.

The use of Twitter by hospitals is also analysed from a more functional point of view, since, as Gomes & Coustasse (2015, p. 203) point out, communication via this social network means "savings of resources"; an opportunity to cut costs by eliminating unnecessary visits to the doctor, for example.

Using the Twitonomy measuring tool, we have analysed the communicative activity of the most influential hospitals in Spain via this social network; their level of presence, and the level of interactivity that they exhibited, among other aspects.

Table 2 shows data obtained from a quantitative analysis of the Twitter accounts of a hospital or hospital group. The average number of tweets per day of the most influential Spanish hospitals, one of the indicators of their activity on this channel, is 2.52. Two of the three least active hospital centres on Twitter, with less than one tweet a day are Hospital de Jerez and Hospital Almansa, in the last two positions of the list. It can therefore be assumed that they exhibit less interactivity. Nonetheless, Hospital del Mar, which also posts less than one Tweet per day on average (0.73), achieves a greater response from citizens to its messages, and ranks in the middle of the list.

| Twitter account | Tweets /day | Hospital retweets | Retweeted Twitter posts | Hospital response | Favourite Tweets | Followers |
|---|---|---|---|---|---|---|
| @hospitalclinic | 1.19 | 37% | 40.05% | 6% | 31.23% | 13.500 (+) |
| @HospitaldeDenia | 1.09 | 22% | 24.02% | 6% | 12.83% | 1.700 (+) |
| @HospitalLaFe | 6.41 | 58% | 31.92% | 11% | 30.38% | 5.400 (+) |
| @HospitaldeNens | 2.89 | 27% | 44.61% | 15% | 33.96% | 5.900 (-) |
| @HospitalesNisa | 6.44 | 20% | 28.29% | 6% | 28.10% | 3.800 (-) |
| @hospitaldelmar | 0.73 | 27% | 43.40% | 5% | 29.03% | 5.800 (+) |
| @HospitalRibera | 3.36 | 39% | 46.29% | 10% | 32.65% | 3.400 (+) |
| @HGUVALENCIA | 4.67 | 31% | 41.47% | 5% | 36.83% | 4.800 (+) |
| @Xanit_Hospital | 3.26 | 8% | 37.25% | 17% | 26.21% | 11.000 (-) |
| @HospitalManises | 1.85 | 28% | 35.51% | 4% | 20.55% | 1.300 (+) |
| @Hospital_Quiron | 5.73 | 46% | 34.24% | 11% | 35.77% | 11.800 (-) |
| @HosPuertoReal | 1.83 | 23% | 51.92% | 18% | 23.42% | 1.000 (-) |
| @AS_HPoniente | 1.80 | 28% | 26.18% | 3% | 24.16% | 866 |
| @HospitalReina | 2.11 | 7% | 7.38% | 14% | 8.78% | 958 |
| @HUPMCadiz | 1.02 | 24% | 11.86% | 50% | 17.07% | 746 |
| @CinicaLaVega | 0.77 | 62% | 27.70% | 9% | 19.39% | 826 |
| @HospitalDelfos | 1.87 | 17% | 10.62% | 4% | 8.17% | 409 |
| @HospitalJerez | 0.58 | 23% | 29.53% | 2% | 18.90% | 126 |
| @HospitalAlmansa | 0.26 | 13% | 3.87% | 1% | 3.04% | 266 |

Table 2. Source: www.twitonomy.com. In-house production 21, 22 & 23 April 2016. (+) / (-) approximation of the figures to the number immediately above or below

In the same vein, another detail worth highlighting is that in all the hospitals, except Hospital Puerto Real, less than half the Tweets posted by the hospital obtain a response of any kind from citizens. In this Cádiz hospital, around 52% of its Twitter posts are retweeted.

These first results indicate that, although for communication to exist the hospital must post messages, posting a larger number of Tweets does not necessarily result in increased interaction. A higher number of messages does not correspond to a visibly greater response on behalf of the readers.

The Tweets posted by the hospital that are retweeted provide a score for citizen participation in Twitter, as well as the Tweets marked as favourites. At the same time, with a higher score for Retweets or favourites, one can improve one's reputation as a source of valid information.

It is for this reason that the figures for Tweets/day have been cross referenced with the figures for Tweets posted by the hospital, and those that are marked as favourites. In this way, we obtain information about the effectiveness of hospital communication [table 3], which causes a change in the order established in the initial classification performed by topinfluencers.net (the web page that analyses, together with Twitter, the activity of other social networks).

With regard to in-house production by hospitals, a good part of the messages posted by the hospital are copies of Tweets from other sources: 28.42% on average. When it comes to the hospitals' Retweet scores, the activity of Hospitals La Vega and La Fe stands out. Over half the messages posted by these centres (62% and 58%, respectively) are produced by other sources.

This detail indicates that being the origin of the messages is not a necessary condition to cause society to participate more with the hospital institution on Twitter, and neither are the Tweets in which the hospital responds to its users. In table 3 we can highlight the Hospital Universitario Puerta del Mar de Cádiz, where half the Tweets are answers to messages posted by citizens. Even though the interest demonstrated by the hospital should encourage dialogue with its stakeholders, in reality the answers do not cause this hospital to stand out from the crowd in terms of interaction with citizens .

| Twitter account | % Daily Tweets retweeted | % Daily Tweets favorited |
|---|---|---|
| @HospitalLaFe | 2.04 | 1.95 |
| @Hospital_Quiron | 1.96 | 2.05 |
| @HGUVALENCIA | 1.94 | 1.72 |
| @HospitalesNisa | 1.82 | 1.81 |
| @HospitalRibera | 1.55 | 1.10 |
| @HospitaldeNens | 1.28 | 0.98 |
| @Xanit_Hospital | 1.21 | 0.85 |
| @HosPuertoReal | 0.95 | 0.43 |
| @HospitalManises | 0.66 | 0.38 |
| @AS_HPoniente | 0.47 | 0.48 |
| @hospitalclinic | 0.44 | 0.37 |
| @hospitaldelmar | 0.32 | 0.21 |
| @HospitaldeDenia | 0.26 | 0.24 |

| | | |
|---|---|---|
| @CinicaLaVega | 0.21 | 0.15 |
| @HospitalDelfos | 0.20 | 0.15 |
| @HospitalReina | 0.16 | 0.18 |
| @HospitalJerez | 0.17 | 0.11 |
| @HUPMCadiz | 0.12 | 0.17 |
| @HospitalAlmansa | 0.01 | 0.008 |

Table 3. In-house source and production.

With respect to the origin of the Tweets that are retweeted or marked as favourites by the hospital, we must point out a kind of feedback exhibited by the hospital institutions analysed, in general. If we observe their Twitter accounts, the hospitals appear in the top positions of the accounts most mentioned in their own messages; most retweeted; and with the greatest number of favourites. Particularly in public hospitals, and in addition to the centre itself, other accounts of centres accountable to the public healthcare administration appear as the most mentioned, retweeted, and marked as favourites.

This characteristic leads us to think that, in parallel with the conversation that a hospital institution can have with citizens, it establishes a monologue with itself, which can sometimes be difficult to distinguish from the first conversation.

If we consider the typology of the content posted on social networks, according to the scheme of analysis applied to the Tweets analysed [table 4], in qualitative terms the messages have been divided into nine different categories:

   a. **Hospital or institutional news**, about events, participation of the health centre in all sorts of varied activities, achievements of the professionals that work there, among others.

   b. **Health-related information**, in general. This category includes Retweets of messages posted by other sources, like communication media. They are not produced in-house.

   c. **Messages about prevention and health promotion**, as a way of spreading hospital or externally generated information, in the interest of improving the quality of life and wellbeing of the patients and their families.

   d. Tweets with **information of service** to citizens. Messages that can be of great interest to the users of healthcare entities, but that have had little impact on the social networks.

   e. **Information about a hospital service or product for sale**, mainly posted in privately funded centres.

   f. **Public recognition or appreciation** of hospital professionals or users for their role in the proceedings in the centre.

   g. **Messages that refer to the hospital's own social networks and web page**, posted to talk about itself and invite the citizen to contact the institution via digital media.

h. **Non-health-related content**. Messages produced by private hospitals, generally speaking. This category includes information of a highly varied nature, and usually receives a greater response from citizens than other types of health-related content. References to people in the public eye who have had some kind of involvement with the hospital are found in the messages analysed. This is used as a way to boost the centre's reputation.

i. **Messages in response to another message, conversations.**

From the content analysis, we can infer that the majority of Spanish hospitals in the study, and that are known to have an influence among Twitter users, -except for Hospital Puerto Real- talk about themselves (94.74% of the centres post Tweets that make reference to this type of content). Information about the hospital; the activities the centre organises; its professionals or the institution it belongs to, whether public or private, in the case of hospital groups, is the content that appears most frequently on Twitter. In the case of the Hospital de Poniente, there are no messages of any other type posted on this channel.

| | Hosp. inf. | Health inf. | Health promot. | Service inf. | Sales | Recognit. | Social media | Non-health Inf. | Response |
|---|---|---|---|---|---|---|---|---|---|
| *H. Clínic* | 40% | - | 20% | 10% | 10% | 10% | - | 30% | - |
| *H. Marina Salud* | 50% | 20% | 10% | - | 10% | 30% | - | 10% | - |
| *H. La Fe* | 30% | - | 20% | - | - | 20% | - | 10% | 20% |
| *H. de Nens* | 20% | - | 50% | - | - | 10% | 10% | 20% | - |
| *H. Nisa* | 60% | 10% | 10% | - | - | 30% | 10% | 10% | - |
| *H. del Mar* | 60% | - | - | - | - | 40% | 10% | 20% | - |
| *H. La Ribera* | 50% | - | 30% | - | - | 30% | 10% | 50% | - |
| *H. General* | 30% | 20% | 30% | - | - | - | - | 20% | - |
| *H. Xanit* | 70% | 10% | 40% | - | - | 10% | 10% | 10% | - |
| *H. de Manises* | 80% | 10% | - | - | - | 40% | - | 10% | - |
| *H. Quirón* | 30% | 20% | 40% | - | - | 10% | - | 40% | - |
| *H. Puerto Real* | - | 10% | 70% | - | - | - | 20% | 20% | - |
| *H. de Poniente* | 100% | - | - | - | - | - | - | - | - |
| *H. La Reina* | 30% | 10% | - | - | - | - | 60% | - | - |
| *H. Puerto Real* | 90% | - | 10% | - | - | - | - | - | - |
| *H. La Vega* | 30% | - | - | - | - | 10% | - | 90% | - |
| *H. Delfos* | 30% | 30% | 70% | - | - | 20% | - | - | - |
| *H. Jerez* | 70% | - | 10% | - | - | 20% | - | 40% | - |
| *H. Almansa* | 20% | 70% | - | - | - | - | - | 10% | - |

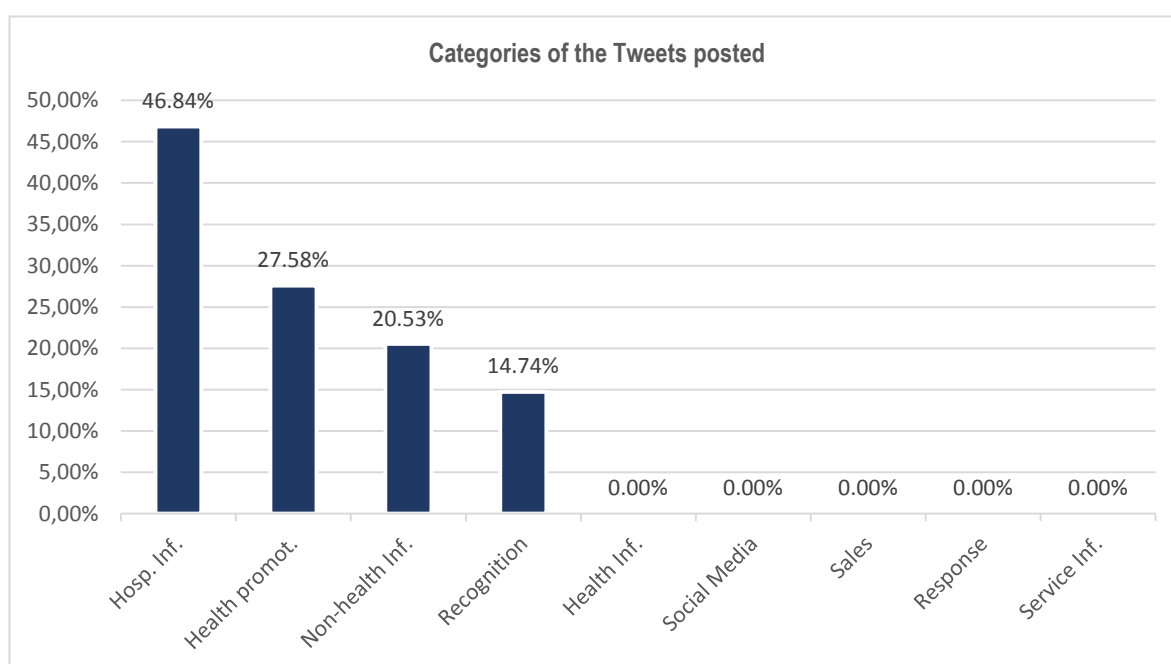Table 4. Source: www.twitonomy.com. In-house production 21, 22 & 23 April 2016.

Non-health-related information is another of the types of content that these centres post most frequently (78.45%). In general, the messages included in this category provide social content, making citizens feel closer to the community they belong to. The hospital serves as a link.

The next categories in the order of mentions in Twitter messages are health promotion content, and the category where the work of health centre staff or users is recognised, or gratitude is shown for an activity offered (with 68.42% each).

Over half the hospitals also post a considerable number of messages about health in general (52.63%) and the percentage of hospitals that speak about their activity on other digital communication channels, such as social networks and web pages, is far from negligible (36.89%).

Information related to sales (accounting for 10,53%), service to citizens in relation with the hospital (5.26%) and responses to a conversation or message posted (5.26%) are the categories that generate the lowest number of messages in the analysis performed.

On average, as graph 2 shows, 46.84% of the over 200 Tweets analysed contain information about the hospital itself; 27.58%, messages about health promotion and prevention; 20.53% contain non-health-related information; 14.74% are posted to recognise or show appreciation for someone's work; 11.05 % of posts are about health; and, with a lower percentage, are the Tweets that fall into the rest of the categories.



**Categories of the Tweets posted**

Graph 2. Source: www.twitonomy.com. In-house production 21, 22 & 23 April 2016.

The group does not add up to 100% of the messages posted, since it is not uncommon for some Tweets to be classified in different categories.

Among other characteristics the messages have in common, we can highlight the greater dissemination of Tweets from Monday to Friday. We find hardly any messages posted by the hospitals on Saturdays and Sundays, despite the fact that the specialised healthcare they provide does not stop at weekends, and that these could be the days when members of hospital interest groups are most active in social media. Having obtained a higher score for citizen participation on social networks does not mean that if hospitals plan messages for the weekends the relationship with citizens will not become even closer.

In addition, the use in Twitter of tags, links, or references to other user accounts on this social network is widespread, which encourages dialogue with other Internet users.

The tone used with the reader is warm, friendly, and on many occasions, very intimate, making use of casual and affectionate expressions, in particular when addressing certain segments of the population, such as mothers or child oncology patients, for example. There are many direct references to the users in the accounts we analysed, even asking for their opinion on the release of a new web page.

On prominent days of the year, such as Christmas, weekends, and other public holidays, as well as normal weekdays, the messages greet citizens cheerfully, wishing them well. In this sense, the results are in tune with the suggestions of José Luis Orihuela, who recommends adopting a "conversational style" when managing corporate Twitter accounts (2011, p. 82 & 83).

We found no messages related to managing a crisis, but a Tweet from Hospital La Fe does stand out. This Tweet apologises for something that the centre is not directly responsible for; the trouble nearby construction work could cause patients and their families.

The messages, in general, are short, concise and complete. Twitter's 140-character limit does not give the reader any sense of the message being unfinished.

Hospitals located in regions where two official languages are spoken provide content both in Spanish, and the second language used by the local residents. They do not translate the same message or repeat the same content in both languages. Instead, certain content is posted in Spanish and other content in the second official language, with much the same media impact.

The private character of some centres validates their posting certain content, such as questioning the use of generic medicines, something that would be unthinkable in publicly funded centres. Another difference we found between public and private centres is that private health centres make direct reference, using their full names, to famous people who have been patients in these centres (births, sports injuries, medical check-ups, etc.).

## 4. Conclusions

From the analysis of communication by the most influential Spanish hospitals via social networks, in general and in particular on Twitter, we can deduce common factors of activity in these health centres. The successes in communicative activity via social media of some hospitals, reflected in

greater interaction with citizens, could be extrapolated to other hospital centres whose presence on social networks has little apparent impact on society.

We are aware that there are no formulas that can be prescribed in a similar way for all health centres, due to their heterogeneity. We do, however, find shared characteristics that should be taken into account in order to achieve greater citizen participation in hospital social networks and, thus strengthen relations between both parties. A closer relationship between patients and their families, and the healthcare institution would lead to improvements in attention to the public due to a greater mutual understanding, and, with this, an improvement in citizen quality of life and wellbeing.

From the results obtained in the study, the first conclusion we can draw is that citizen participation in the Twitter accounts of hospital institutions is low. In any case, once the citizen-hospital communicative relationship is established, the citizen will be interested, in the main, in the messages in which the centre disseminates information about its activity, the events it organises, the actions performed by its professionals, or improvements to its structure, for example.

In addition to getting to know the hospital, citizens want to know how to improve their health, which is the reason why Tweets that have a social impact on prevention and health promotion stand out. Another type of information that is not about health, but related with the immediate surroundings, also generates a reaction in citizens who communicate with the hospital.

The typology of content referred to, together with other types of messages that arouse less interest among Twitter users, is what needs to be taken into account and looked after to strengthen the institutional relationship being discussed.

The low percentage of responses or conversation-type messages does not mean that this type of content should not be worked on, with the goal of building public loyalty. Nonetheless, we did not find evidence of this activity in the hospitals that were the most influential on social networks.

In an influential hospital, the citizen and the healthcare institution speak to each other as equals. The tone used by the health centres studied is intimate and, in many cases, casual; the content is correct, clear and not always of relevant scientific or social interest.

The health centre involves its readers in its activity and speaks their language, which means that messages are sometimes posted in one or two languages, depending on the autonomous community the hospital serves.

The origin of the Tweets, whether produced in-house, retweeted, or from an external source, does not determine a greater a lesser response from the readers. However, it is obvious that the hospital must maintain constant activity if it wishes to sustain social dialogue.

The noticeable decline of the hospitals' activity on social media during the weekends is a sign of a lack of media planning to post on Saturdays and Sundays. It would be of interest to analyse a change in this trend and for hospitals to post messages on these days to see how Internet users react.

This study, guided by others that take a close look at issues that improve message production on hospital social networks, hopes to offer a solid casuistry of actions to enrich corporate communication of hospitals.

## 5. References

Blázquez, C.; Cantarero, D.; Pascual, M. (2015): "Promoting the use of health information and communication technologies in Spain: a new approach based on the ICT-H". *Icono 14*, 13, pp. 238 a 259.

Campisi, J. (2015): "Social media users have different experiences, motivations and quality of life". *Psychiatry Research*, 228, pp. 774-780.

Castillo, A., López, P. y Carretón, M.C. (2015): "La comunicación en la red de pacientes con enfermedades raras en España". *Revista Latina de Comunicación Social*, 70, pp. 673 a 688.

http://www.revistalatinacs.org/070/paper/1065/35es.html

DOI: 10.4185/RLCS-2015-1065

Campos Freire, F.;Rivera Rogel, D. y Rodríguez, C. (2014): "La presencia e impacto de las universidades de los países andinos en las redes sociales digitales". *Revista Latina de Comunicación Social*, 69, pp. 571 a 592. http://www.revistalatinacs.org/069/paper/1025_USC/28es.html  DOI: 10.4185/RLCS-2014-1025

Campos Freire, F. y Ruas Araujo, J. (2016): **"**Uso de las redes sociales digitales profesionales y científicas el caso de las 3 universidades gallegas" El profesional de la información, ISSN 1386-6710, Vol. 25, Nº 3, 2016 (Ejemplar dedicado a: Metamedios y audiencias), págs.431-440

Cervera, Á.L. (2008): *Comunicación total*. Madrid: ESIC Editorial.

De la Peña, A.; Quintanilla, C. (2015): "Share, like and achieve: the power of Facebook to reach health-related goals". *International Journal of Consumer Studies, 39, pp*. 495-505.

Delgado, C. (2015): "Internet use for health-care information by subjects with COPD". *Respiratory*, 60, pp. 1276 -1281.

Elhai, J. D. (2015): "How secure is mental health providers' electronic patient communication? An empirical investigation". *Professional Psychology Research and Practise*, 46, pp. 444-450.

Gomes, C. (2015): "Tweeting and treating how hospitals use twitter to improve care". *Health Care Manager*, 34, pp. 203-214.

Gómez, B.J.; Paniagua, F.J. (2014): "Las universidades españolas en Twitter". *Historia y Comunicación Social*, 19, pp. 681 – 694.

Huertas, A.; Mariné, E.. (2014): "Uso y utilidades de las herramientas de análisis online para la evaluación de la comunicación de las marcas de destino a través de los social media". *Sphera Publica*, 2. 13, pp. 117 - 134.

Jha, A. (2016): "The use of social media by state health departments in the US: Analysing Health Communication through Facebook". *Journal of Community Health*, 41, pp. 174 – 179.

Koteyko, N. (2015): "Expectations in the field of the Internet and health: an analysis of claims about social networking sites in clinical literature". *Sociology of Health & Illness*, 37, pp. 468-484.

Mattingly, T.J. (2015): "Innovative patient care practices using social media". *Journal of the American Pharmacists*, 55, pp. 288-293.

Nwosu, A.C. (2015): "Social media and palliative medicine: a retrospective 2-year analysis of global Twitter data to evaluate the use of technology to communicate about issues at the end of life". *BMJ Supportive & Palliative*, 5, pp. 207-212.

Oviedo, C. (2013). "El camino sin retorno de la comunicación corporativa". *Telos: Cuadernos de Comunicación e Innovación*, 96, pp. 6 - 8.

Palomo, M.B. (2014): "Nuevas narrativas informativas: el caso de Storify". *Hipertext.net*, 12.

Peñafiel, C., Camacho, I., Aiestaran, A., Ronco, M. & Echegaray, L. (2014): "La divulgación de la información de salud: un reto de confianza entre los diferentes sectores implicados". *Revista Latina de Comunicación Social*, 69, pp. 135 a 151.
http://www.revistalatinacs.org/069/paper/1005_UPV/08c.html

DOI: 10.4185/RLCS-2014-1005

Peñafiel, C.; Echegaray, L. (coords.) (2014): "Estudios de Comunicación y salud". *Cuadernos Artesanos de Comunicación*, 63, p. 6. La Laguna: Latina.

Prestin, A. (2015): "Is online health activity alive and well or flat lining? Findings from 10 years of the health information national trends survey". *Journal of Health Communication*, 20, pp. 790-798.

Prybutok, G. (2015): "Social media, the key to health information access for 18- to 30- year- old college students". *CIN Computers Informatics Nursing,* 33, pp. 132-141.

Rando Cueto, D. (2014): "Presencia y estrategias de comunicación de hospitales andaluces en las redes sociales". *Cuadernos Artesanos de Comunicación*, 92, pp. 55-173.

Richter, J.P. (2014): "Social media: how hospital use it, and opportunities for future use". *Journal of Healthcare Management*, 59, pp. 447- 460.

Ros-Diego, V.-J. y Castelló-Martínez, A. (2011): "La comunicación de la responsabilidad en los medios sociales", en *Revista Latina de Comunicación Social*, 067, páginas 047 a 067
DOI: 10.4185/RLCS-067-947-047-067 / CrossRef link

Shepherd, A. (2015): "Using social media for support and feedback by mental health service users: thematic analysis of a twitter conversation". *BMC Psyquiatry*, 15.

Suit, L. (2015): "A correlation study of social network usage among health care students". *Journal of Nursing Education*, 54, pp. 207-213.

Taggart, T. (2015): "Social Media and HIV: A Systematic Review of Uses of Social Media in HIV Communication". *Journal of Medical Internet Research*, 17.

Urrutia-Pereira, M.; Ávila, J. & Cherrez-Ojeda, I. (2015): "Redes sociales para la vigilancia de niños con asma tratados en un programa especializado: expectativas de los padres y los cuidadores". *Revista Alergia Mexico*,62, pp. 255-264.

Yang, F. (2014): "Digital divide 2.0: the role of social networking sites in seeking health information online from a longitudinal perspective". *Journal of Health Communication*, 0, pp. 1-9.

Observatorio de las TIC en salud 2015 [www.observatics.com].

Top Influencers. Listas de Klout en España. [www.topinfluencers.net, consultado el 21, 22, y 23/04/16].

Twitter #analytics and much more… [www.twitonomy.com, consultado el 21, 22 y 23/04/16].

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