

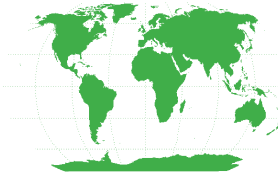
THE USE OF WEB 2.0 IN THE COMMUNICATION OF HEALTH PROFESSIONALS IN COLOMBIA

EL USO DE LA WEB 2.0 EN LA COMUNICACIÓN DE LOS PROFESIONALES DE LA SALUD EN COLOMBIA

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Abstract: This study analyzes the factors that determine the use of Web 2.0 by professionals and students (i.e., residents) in the nursing and medical fields in Colombia when providing health care in the medical centers in which they are employed. Using correlational-explanatory research, this paper conducted interviews of a representative sample of members ($n=424$) of the studied population ($e=\pm 4.8$ and $1-\alpha=0.95$). The obtained data reveal a low level of use of currently available digital resources despite the high level of self-perception of this use and a moderately high assessment of the usefulness of these types of resource while performing professional work. Gender, age, having children, socioeconomic status, training level and the years of experience of the members of the study population significantly affect the use of Web 2.0 social-level resources available today. Improve this use and facilitate a change of attitude for it could simplify meeting their responsibilities within the Colombian health-care system.

Keywords: Web 2.0; eHealth; social networks; Health 2.0; medical informatics.

Resumen: Tras una década de desarrollo, la aplicación de soluciones de Salud 2.0 ha comenzado a introducirse en Colombia. La investigación analiza cuáles son los factores que determinan los procesos de comunicación en el uso de la web 2.0 por parte de profesionales y residentes del campo de la enfermería y la medicina en Colombia cuando desempeñan la atención sanitaria en los centros médicos donde trabajan. Mediante una investigación de carácter correlacional-explicativa, se aplicaron encuestas a una muestra representativa de miembros de la población estudiada con $e=\pm 4,8$ y $1-\alpha=0,95$. Los datos obtenidos permiten apreciar, entre otros alcances, un bajo nivel de aprovechamiento real de los recursos digitales dispuestos en la actualidad, a pesar del alto nivel de auto-percepción sobre dicho aprovechamiento y la valoración medio-alta, sobre la utilidad de este tipo de recursos para el ejercicio de sus labores profesionales. Así mismo, se aprecia cómo el género, la edad, la posesión de hijos, el estrato socioeconómico, el nivel formativo y el tiempo de experiencia de los miembros de la población de estudio inciden significativamente en el nivel de aprovechamiento de recursos web 2.0 disponibles en la actualidad a nivel social que pueden facilitar el ejercicio de su función dentro del sistema de salud colombiano. **Palabras clave:** Web 2.0; eSalud; telemedicina; Salud 2.0; Internet; informática médica.

1. Introduction

The communication systems supported in Information and Communication Technologies have become an essential tool for development. These facilitate the creation of more egalitarian and just societies, through diverse fields of action (Vega, Vico and Rebollo, 2015, García y González, 2013).

Online services that are deployed on the Net both under the SaaS (software as a service) framework and through mobile applications have favored the exponential growth of highly scalable solutions for different contexts and needs. These open digital services and content have established a disruptive model for the exchange and production of information on the Web (García y Gétrudix, 2011: 125)

Despite this, there is no doubt that there is still an extraordinary digital divide that manifests itself in a different form and depth depending on the different geographic areas of the world. A process that is being studied profusely both by the Internet Studies and the sociology of stratification (Ragnedda and Muschert, 2013: xviii) and from communication for development (Caffarel y Sendín, 2013; García y Gonzalez, 2013).

Research on communication networks and developing societies in Latin America has addressed this process of growth of the knowledge society from different spheres: socioeconomic (Katz, 2015), inequality generated by the digit-

al divide (Selva y Rosa, 2015), the evolution of digital media (Barredo-Ibáñez, 2017), or education (Sunkel, Trucco y Espejo, 2014), among many others.

One of the areas that has gained increasing interest is e-health, whose historical journey from telemedicine to eHealth implies the transition from a model of technological mediation to a process of active participation (Said *et al.*, 2014: 42). This line of investigation has special relevance for the impact that the actions in this matter have directly for the citizens (Moreno, Bolívar and García, 2016).

2. Communication and Health 2.0: Theoretical Framework

Despite a substantial number of studies, it remains difficult to establish a standardized definition of Health 2.0. Hans (2005) compiles 51 definitions for this term, whereas Cepeda, Meijome and Santillán (2012) and Fernández (2013) compile 46.

In any case, there is some consensus on some of the aspects that characterize eHealth: a more active interaction between doctors and patients; the creation of shared knowledge among specialists through interdisciplinary processes; the incorporation of open, circular and dynamic communication processes among the different agents involved in the field of health; the digitization of procedures and administrative processes, monitoring and electronic registration of patients; access to more information for self-care and improvement of health and well-being; or the diversification of services related to care and medical care.

Researchers, such as Hughes, Joshi and Wareham (2008), Prieto (2010), Fernández (2013), Pérez-Manchón (2014) and Van De Belt *et al.* (2010), conceive of Health 2.0 as the different behaviors and attitudes that exist regarding the use of 2.0 tools available on the Internet and mobile devices in the health field.

The increasing scale of Web 2.0 has caused Health 2.0 to be perceived as a model of health care in which different actors (i.e., patients, professionals, managers, the state, and suppliers) must be actively involved in improving the quality of life at the social level to provide personalized health care. This process falls under the mediation of open systems, social networks, and tool sets that frame Web 2.0 (Fernández, 2013) and define a digital space that generates new content consumed from the Internet. This consumption relies on prosumer conditions (García-Galera and Valdivia, 2014) for users, who, in these contexts, have greater opportunities for content exchange and collaboration (Carroll and Romano, 2011; Belk, 2013).

The implementation of Web 2.0 in public health enables the following: health promotion through Internet and Communications Technology (ICT)

tools and devices, developing mechanisms for the monitoring and control of disease, the promotion of new training contexts in health education that target patients and the professionals in charge of the health-care system (Oliver-Mora and Iñiguez-Rueda, 2017), better organized health services and the development of social mechanisms that improve the prevention of disease and discourage the over-utilization of the health-care system (Prieto, 2010). Something that would also bring with it potential problems, such as: a lack of sufficient skills among professionals to take advantage of these tools, incorrect self-diagnosis by patients who consult erroneous or invalid information and the poor quality of information created by users (Roebuck, 2012; Ojalvo, 2014).

In any case, there is insufficient practical evidence of the application of 2.0 services to demonstrate the potential benefits of Web 2.0 in promoting Health 2.0, particularly in recognizing the quality and safety of these virtual tools in exercising and developing actions related to the international health-care system (Hesse *et al.*, 2011; Buijink, Visser and Marshall, 2013; Tomlinson *et al.*, 2013).

3. Methodology

This article is based on a correlational-explanatory study. The study population included professionals and students (i.e., residents) of the nursing and/or medical fields in Colombia. In terms of the sampling design, absent any indicators of the total number of professional and resident students in the health-care sector in Colombia that would enable the exact size of the universal population to be defined¹, estimation of a sample for infinite or unknown populations was chosen. The final selection of subjects followed the snowball sampling strategy. This decision was based on the impossibility of precisely knowing the number, location or contact details of the study subjects.

Thus, the final sample consisted of 424 health professionals and students (i.e., residents), who represent the universal population (with $1-\alpha=0.95$ and $e=\pm 4.8$) and were distributed as follows: 177 technical professionals (e.g., nurses), general practitioners and specialists and 234 resident students in nursing and medical programs. In terms of information-gathering, the questionnaire designed for our research purposes was validated in a pilot test. Using a reliability analysis on this

[01] According to Ruiz *et al.* (2008), the projected number of health-care professionals (i.e., doctors and nurses) at the national level for 2011 was 72,671 and 38,781, respectively. In addition, in 2006, a total of 161 higher education institutions (HEIs) offered health-care programs in Colombia, with medical, nursing and therapy degrees being the most frequently offered at the higher education level in the country, based on this study.

pilot, it was found that the Cronbach's alpha associated with the questionnaire was 0.931, which indicates a high level of internal consistency.

4. Results

Considering the ICT resource usage profile, the scenario described by the data obtained in this project reveals several health professionals and students with a low percentage use of software and platforms for contacting peers and patients and for strengthening teamwork in their professional work. As can be observed in general, none of the options shown in Table 1 exceeded 20% use by the surveyed health professionals and students. These results indicate a widespread scenario of failure to take advantage of the following: the inherent potential of current technological advances in the Internet and the new generation of equipment and resources available for communicating with peers (e.g., professionals and/or students) and patients, access to information and/or knowledge and strengthening patterns or habits to ensure the promotion of professional cooperation and collaboration for better patient care.

Table 1: Use of ICT resources in professional work (multiple choice questions)

	Frequency	Percentage
Search engines (Google, Yahoo, Bing)	239	17.0%
Chat and instant messaging (IM) (Messenger, WhatsApp)	232	16.5%
Social networks (Facebook, LinkedIn, Google Plus, Twitter)	196	13.9%
Specialized software (e.g., digital clinical history and information systems)	139	9.9%
Mobile applications	139	9.9%
Video hosting (YouTube)	129	9.1%
Wikis (Wikipedia, Wikispaces)	97	6.9%
IP Telephony (Skype, Google Hangouts)	86	6.1%
Blogs (Blogger, WordPress)	86	6.1%
Online discussion forums	67	4.8%

Source: The authors.

Note: N=424; n=377

95% confidence level / Sample error +/- 4.8

Regarding the Web 2.0 profile, it is worth noting the contradiction between the level of self-perception of the professionals and students participating in this study who consider themselves to be frequent users of this type of resource

(Table 2) and their actual use of Web 2.0 services. The results indicate that only two of every 10 respondents made frequent use of these resources. Facebook (26%), YouTube (20.1%), Google Plus (11.8%) and Twitter (16.6%) were the social networks that they primarily used.

Table 2: Considered a frequent user of Web 2.0

n	Minimum	Maximum	Mean*	Standard deviation
377	1	2	1.18	0.383

Source: Elaborado por los autores.

Note: N=424; n=377

95% confidence level / Sample error +/- 4.8

1) Yes / 2) No

*Mode=1

Analysis by level of training identified a strength in the students (i.e., residents) and medical specialists who mostly consider themselves to be frequent users of Web 2.0 (95% and 80%, respectively) compared with respondents with technical training and/or professionals (i.e., nurses and general practitioners) who considered themselves frequent users of Web 2.0 (59% and 63%, respectively).

Tables 3 and 4 on the impact of Web 2.0 use on professional practice show that the impact of these tools on health-care work tends to receive a medium-high evaluation among the analyzed sample of professionals and students. This outcome leads us to conclude that whereas there is a relative degree of recognition of the potential uses and importance of this type of resource, a margin of latent waste and reticence remains regarding this resource type, at least among the surveyed professionals and students.

Table 3: Usefulness of Web 2.0 for professional work

n	Minimum	Maximum	Mean*	Standard deviation
372	1	5	3.71	1.225

Source: The authors.

Note: N=424; n=372

95% confidence level / Sample error +/- 4.8

1) Not at all important; 2) Not important; 3) Neither important nor unimportant;

4) Important; 5) Very Important

*Mode=4

Table 4: Importance of Web 2.0 in patient care

n	Minimum	Maximum	Mean*	Standard deviation
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369

1

5

3.6612

1.27065

Source: The authors.**Note:** N=424; n=369

95% confidence level / Sample error +/- 4.8

1) Not at all important; 2) Not important; 3) Neither important nor unimportant;

4) Important; 5) Very Important

*Mode= 5

To determine the level of Web 2.0 use, an indicator or proxy variable was created based on a question posed to the study population regarding the different uses of this type of resource in their professional work. As a reference, this indicator used the four factors of interactivity used by Johnson, Bruner and Kumar (2006) to establish the level of interactivity: reciprocity², responsiveness³, response speed⁴ and non-verbal information⁵.

Based on the described procedure, the created indicator was categorized as follows:

→ High level (3): Having greater interaction with patients, colleagues, other professionals, students or personnel in charge.

→ Medium level (2): Being informed on general topics.

→ Low level (1): Entertainment and leisure.

→ Null Level (0): Not used.

Finally, the quartiles shown in Table 5 were used to define the final levels of the dependent variable 'Uses of Web 2.0':

Table 5: Levels of measurement of the dependent variable 'Uses of Web 2.0'

	Q1	69
[02] The capacity of ICT devices or resources to enable mutual action between two or more individuals.		
[03] The perceived level or degree of one's ability to respond appropriately made possible by the use of ICT devices or resources to resolve a user's informational needs.		
[04] The ability for immediate response that can be produced using ICT devices or resources.		
[05] The capacity of ICT devices or resources to establish multimedia communication processes for users.		

$$\text{Uses of Web 2.0} = \left\{ \begin{array}{l} 0 \text{ if it is below Q1} \\ 1 \text{ if it is between Q1 and Q2} \\ 2 \text{ if it is between Q2 and Q3} \\ 3 \text{ otherwise} \end{array} \right\}$$

Quartile	Q2	136
	Q3	183

Source: The authors.

The values of the dependent proxy were as follows:

Thus, the proxy variable used as a dependent variable called ‘Use of web 2.0’ took the following values: 0=null level, 1=low level, 2=medium level and 3=high level. Once the procedures for the identification and operationalization of a dependent variable that would enable the object proposed in this procedure to be addressed were created, a correlation analysis between this variable and the different independent socio-demographic variables was performed. This process made it possible to identify those variables whose relationship with the level of ‘Use of Web 2.0’ in professional work was statistically significant.

The only independent variables that were significantly correlated ($\alpha < 0.005$) with the proxy variable developed to measure the level of Web 2.0 use (based on the interaction of respondents with those digital resources (N=424), with $1-\alpha = 0.95\%$ and $e = \pm 4.8$) were gender ($\alpha = 0.003$), age ($\alpha = 0.003$), having children ($\alpha = 0.000$), socioeconomic status ($\alpha = 0.001$), level of training ($\alpha = 0.000$), and years of experience in health care ($\alpha = 0.001$). According to these findings, the surveyed male professionals and students will be more likely to use this type of digital resource than females. This finding confirms the results of authors such as Rodríguez, Vila and Freixa (2008), Espinar and González (2009) and Romero (2011) regarding the greater dominance of men with respect to the use of ICT at a social level, which evidences a pronounced androcentrism (Anderson, 2007).

Despite the changes in professional practices in the health-care sector introduced by Web 2.0 (Giustini, 2006), in Colombia, the use of these digital resources for participatory access to content, information, and knowledge by women tends to be less than that observed in men. This phenomenon could be a result of the hierarchization and segregation inherent in health work according to the positions and stereotypes related to functions assumed by men and

women (Carstensen, 2009). This finding contradicts the increase in Internet use at the social level and the potential impact of such use in leading to a greater involvement of women in Web 2.0 scenarios (Schönberger, 2008) and the promotion of Health 2.0. These characteristics were noted by Traver and Borrás (2013), particularly regarding changes in the patient-professional relationship mediated by the collective intelligence, free access to knowledge and the active role of all social actors involved in the health-care process (e.g., patients, family members and the state).

Similarly, there is a low but statistically significant relationship between age range and the degree of Web 2.0 use in professional work, with more use of these resources among the surveyed professionals and students who are in the young adult age range (20-30 years) compare to those in older age groups (over 30 years). This finding confirms findings by Prensky (2001), Tapscott (2009) and García and Gétrudix (2012) regarding the observable differences between those who consider themselves digital natives or part of the Internet generation and those who have had to adapt to the skills required for the successful appropriation and use of Web 2.0 in performing the different health administration and patient management tasks with which they are charged. Thus, health transformation of the Information Age, in the terms indicated by Pho and Gay (2013), Wachter (2013) and Máñez (2013), would only be accessible to young adults because they possess the skills required for tasks such as patient monitoring and strengthening their professional abilities in technologically mediated ways because of the early adoption of Web 2.0 services in their professional practice. The remainder are in a late or delayed adoption process, according to Rogers (1995).

Another variable for which a low incidence was observed but which was statistically significant with respect to the usage level of Web 2.0 for professional tasks is the presence of children in the home. In this case, the level of Web 2.0 use among those surveyed is greater for those with children.

This reaffirms the role of children as Web 2.0 socialization agents and literacy educators for the study population. As suggested by Gimeno (2013), respondents who act as the main protective agents in overseeing their children's development in digital environments must become directly involved in the technological training process required to accompany their children's literacy process. This process was characterized by Monereo (2005) as learning to learn, learning to communicate, learning to collaborate and learning to participate in social spaces. Thus, the use or increased use of Web 2.0 in professional work by respondents could be a direct result of the process of rapprochement with the technological reality that they first encountered through their chil-

dren, which Gimeno (2013) has termed ‘first-aid kit 2.0’.

Another factor observed regarding the use of Web 2.0 in professional work is that of socioeconomic status. The data indicate a low direct incidence between both variables such that lower socio-economic status is associated with a lower level of using this type of resource. Thus, respondents who stated that they reside in affluent socio-economic areas demonstrate a more frequent use of this resource type than those located in less affluent socio-economic strata in Colombia.

Additionally, the data reveal how resources, such as Web 2.0, that are essential for promotion, education and intervention in health care (Fernández, 2013) are being mediated by the digital gaps that occur at a social level in Colombia. In agreement with findings by Ballesta and Cerezo (2011), Bautista (2010) and Tirado (2007), the social digital gap also occurs in the health-care sector. This is particularly the case for what is referred to as the opportunities for the effective use of Web 2.0 to access knowledge that helps provide better and more health care. This phenomenon was previously noted by Hargittai (2002) and Mossberger, Tolbert and Stansbury (2003), who demonstrated the need to view the digital gap not only in terms of the ability to access Web 2.0 but also in terms of how the studied populations use it.

The training level also has a small but statistically significant impact on the degree of Web 2.0 use. The higher the level of training is, the more these resources are used within this group. Thus, the ability to take better advantage of such resources in the Colombian health-care sector centers on doctors, whereas the remaining professionals in the health-care system would be excluded from using the various functions that Web 2.0 could provide with respect to their development.

This assessment not only helps identify features that affect current Web 2.0 use in the Colombian health-care sector but also establishes conditions that substantially differ with respect to the use of this resource type in other countries, such as the United States, Sweden and the United Kingdom (Schmidt, 2012; Signorini, 2011), where Web 2.0 plays a significant role in the promotion for exchange, cooperation and training.

One final feature with a statistically significant effect on the usage level of Web 2.0 in the professional work of the respondents is years of experience. The respondents who obtained their degrees more recently demonstrated a greater use of this type of digital resource. This finding can be explained by the closer relationship of younger generations with technological advances (Tapscott, 2009) compared with those respondents who obtained their degrees over five years ago. Not surprisingly, the wide use of Web 2.0 and the subsequent impact

of that use on the creation of ‘spaces’ for social interaction on the Internet has occurred since the mid-2000s (Mazur and Richards, 2011; Bernal and Angulo, 2013). Thus, it is the younger individuals who have naturally appropriated these opportunities and taken advantage of them to access knowledge and strengthen training and cooperation in the context of Health 2.0 (Cepeda, Meijome and Santillán, 2012; Mair *et al.*, 2012; Leis and Mayer, 2011).

5. Discussion

Health 2.0 in Colombia is characterized by infrequent and limited usage, in which the different uses of Web 2.0 described by Prieto (2010), Buijink, Visser and Marshall (2013) and Tomlinson *et al.* (2013) and the promotion of digital systems as a model for health care in this country (Fernández, 2013) remain uncertain. These circumstances prevent a discussion of the proper implementation of Health 2.0 in Colombia, at least from the triple perspective described by Hesse *et al.* (2011): increase in participation, data collection and the creation of a ‘collective intelligence’.

In this study, several of the main factors that would explain the under-use of Health 2.0 in Colombia were evaluated: gender, age, raising children, economic status, the digital gap, the training level and the level of experience of health-care professionals.

The identification of determining factors has reinforced the findings of Harding (1991), Wajcman (2004) and Carstensen (2009) regarding the negative impact of hierarchization and segregation in the health-care sector according to the different roles played by women and men in this sector despite the increased participation of women in Web 2.0 (Schönberger, 2008) and the promotion of Health 2.0 (Traver and Borrás, 2013).

The health-care transformation in Colombia mediated by the technological advances defined by Pho and Gay (2013) and Wachter (2013) is only accessible to young adults (20 to 30 years) who have the skills (e.g., for technology-mediated patient follow-up and technology-mediated strengthening of professional skills) that result from the early adoption of Web 2.0 in their professional development.

The presence of children in the home affects the use of Web 2.0 services, with this use being more frequent for those respondents who were raising children. This finding is explained by the involvement of these respondents in the digital literacy of their children (Gimeno, 2013; Monereo, 2005).

Socioeconomic level is another determining factor. Here, the lower the socio-economic status is, the lower the level of resource use. This finding reflects the digital gaps at the social level in Colombia and that these gaps are reproduced in the context of the health-care system (Ballesta and Cerezo,

2011; Bautista, 2010), which delays the implementation and effective use of Health 2.0 solutions to improve the health care of patients.

However, health-care professionals with a higher level of training, particularly doctors, not only used Web 2.0 more intensively but also were able to take better advantage of its resources and apply them in their activities within the Colombian health-care sector. Similarly, recent graduates were more likely to adopt the technologies that are available to younger generations (Tapscott, 2009) and are more naturally involved in the accompanying digital immersion scenarios. In addition, it must contemplate the diversity of user profiles that are part of this new communication model (García and Gértrudix, 2012).

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7. References

- ANDERSON, P. (2007): 'What is Webs 2.0? Ideas, technologies and implications for education', in *JISC Technology and Standards Watch*, February. Retrieved online 12/04/2017, from <https://goo.gl/WE9Eu2>
- BARREDO-IBAÑEZ, D. (2017): 'La interactividad en el periodismo digital latinoamericano. Un análisis de los principales cibermedios de Colombia, México y Ecuador (2016)', in *Revista Latina de Comunicación Social*, 72, 273 a 294. DOI: 10.4185/RLCS-2017-1165
- BELK, R. (2013): 'Sharing versus pseudo-sharing in Webs 2.0', in *The Anthropologist*, 4(2).
- BERNAL, C., y ANGULO, F. (1988): 'Interactions of Young Andalusian People Inside Social Networks', in *Scientific Journal of Media Education*, 25-30.
- BUIJINK, A. W.; VISSER, B. J. y MARSHALL, L. (2013): 'Medical apps for smartphones: lack of evidence undermines quality and safety', in *Evid Based Med*, 8(3), 90-2. Retrieved online 19/04/2017, from <http://ebm.bmj.com/content/18/3/90.full.pdf+html>
- CAFFAREL, C. y SENDÍN, J.C. (2013): 'New African communication environment. A contribution to the study of communication and Africa', in *index.comunicación: Revista científica en el ámbito de la Comunicación Aplicada*, 3(2), 1-13.
- CAROLL, E. y ROMANO, J. (2011): *Your Digital Afterlife: When Facebook, Flickr and Twitter Are Your Estate, What's Your Legacy?* Berkeley, CA: New Riders.

- CARSTENSEN, T. (2009): 'Gender Trouble in Webs 2.0. Gender perspectives on social network sites, wikis and weblogs', in *International Journal of Gender, Science and Technology*, 1(1).
- CEPEDA, M. J.; MEJOME, M. M. y SANTILLÁN, A. (2012): 'Innovaciones en salud y tecnologías: las cosas claras', in *Revista Enfermería CyL*, 4(1), 28-32. Retrieved online 29/04/2017, from <https://goo.gl/ALJm1>
- ERIKSON, E. (1998): *O Ciclo de vida completo*. Porto Alegre: Artmed.
- ESPINAR, E. y GONZÁLEZ, M. (2009): 'Jóvenes en las redes sociales virtuales: un análisis exploratorio de las diferencias de género', in *Feminismo/s*, 14, 87-105. Retrieved online 28/04/2017, from <http://rua.ua.es/dspace/handle/10045/13302>
- FERNÁNDEZ, M. (2013): 'Impacto de las tecnologías de la información y la comunicación sobre la información en salud: Salud 2.0', in ECHEZURÍA, L.; FERNÁNDEZ, M.; RÍSQUEZ, A. y RODRÍGUEZ-MORALES, A. (Eds): *Temas de Epidemiología y Salud Pública (1099-1119)*. Caracas: Editorial de la Biblioteca de la Universidad Central.
- GARCÍA-GALERA, M. y VALDIVIA, A. (2014): 'Prosumidores mediáticos: Cultura participativa de las audiencias y responsabilidad de los medios', in *Comunicar*, 22(43), 10-13.
- GARCÍA, F., y GERTRUDIX, M. (2011): 'Naturaleza y características de los servicios y los contenidos digitales abiertos', in *Cuadernos de Información y Comunicación*, 16, 125.
- GARCÍA, F., y GÉRTRUDIX, M. (2012): 'El Mare Nostrum digital: Mito, ideología y realidad de un imaginario sociotécnico', in *Revista ICONO14*, 7(1), 7-30. DOI: <http://dx.doi.org/10.7195/ri14.v7i1.331>
- GARCÍA JIMÉNEZ, A., y GONZÁLEZ PASCUAL, A. (2013): 'Internet y África: de la brecha a la esperanza digital. Redes, libertades y comunicación', in *index.comunicación*, 3(2), 113-131. Retrieved online 8/05/2017, from <https://goo.gl/C7PQwn>
- GIMENO, A. (2013): 'Las nuevas tecnologías y la familia (o el arte de ser padres 2.0)', in SOLANO, M. y VIÑARÁS, M. (Eds): *Las nuevas tecnologías en la familia y la educación: retos y riesgos de una realidad inevitable*, 61-74. Madrid: CEU Ediciones.
- GIUSTINI, D. (2006): 'How Wev 2.0 is changing medicine', in *The BMJ*. Retrieved from: <http://www.bmj.com/content/333/7582/1283?ehom>
- HANS, O.; RIZO, C.; ENKIN, M.; JADAD, A. y PHIL, D. (2005): 'What Is eHealth (3): A Systematic Review of Published Definitions', in *Journal of Medical Internet Reseach*, 7(1): e1. DOI: 10.1001/jama.281.6.552.
- HARGITTAI, E. (2002): 'Second-level digital divide: Difference in people's online skills', in *First Monday*, 7(4).
- HARDING, S. (1991): *Feministische Wissenschaftstheorie. Zum Verhältnis von Wissenschaft und sozialem Geschlecht*. Hamburg: Argument.

- HESSE, B. W.; O'CONNELL, M.; AUGUSTSON, E. M.; CHOU, W. Y. S.; SHAIKH, A. R. y FINNEY RUTTEN, L. J. (2011): 'Realizing the promise of Webs 2.0: engaging community intelligence', in *Journal of health communication*, 16(sup1), 10-31.
- HUGHES, B.; JOSHI, I. y WAREHAM, J. (2008): 'Health 2.0 and Medicine 2.0: Tensions and Controversies in the Field', in *Journal of Medical Internet Research*, 10, 3. Retrieved online 8/05/2017, from <http://www.jmir.org/2008/3/e23/>
- JOHNSON, G. J.; BRUNER II, G. C. y KUMAR, A. (2006): 'Interactivity and its facets revisited: Theory and empirical test', in *Journal of Advertising*, 35(4), 35-52.
- KATZ, R. (2015): *El ecosistema y la economía digital en América Latina*. Fundación Telefónica.
- LEIS, A. y MAYER, M. A. (2011): 'Como utilizan los médicos de atención primaria en España las herramientas de la webs 2.0 con fines sanitarios: estudio piloto', in *Actas del XIV Congreso Nacional de Informática de Salud (Inforsalud 2011)*, 22-24. Madrid: Inforsalud 2011. Retrieved online 10/05/2017, from: <https://goo.gl/dhmqd>
- MAIR, F. S.; MAY, C.; O'DONNELL, C.; FINCH, T.; SULLIVAN, F. y MURRAY, E. (2012): 'Factors that promote or inhibit the implementation of e-health care systems: an explanatory systematic review', in *Bulletin of the World Health Organization*, 90(5), 357-364. Retrieved online 8/05/2017, from <https://goo.gl/uITGbs>
- MAÑEZ, M. A. (2013): *La webs 2.0 y la gestión sanitaria*. Madrid: Escuela Nacional de Sanidad. Retrieved online 12/05/2017, from <https://goo.gl/fdXtXr>
- MAZUR, E. y RICHARDS, L. (2011): 'Adolescents and Emerging Adults' Social Networking Online: Homophily or Diversity?', in *Journal of Applied Developmental Psychology*, 32, 180-188.
- MONEREO, C. (2005): *Internet y competencias básicas. Aprender a colaborar, a comunicarse, a participar, a aprender (5-23)*. Barcelona: Graó.
- MORENO, C. F.; BOLÍVAR, M. E. G. y GARCÍA, Á. J. (2016): 'El potencial de las TICs en la promoción de la salud 2.0', in *Enfermería docente*, 1(106), 230-231.
- MOSSBERGER, K.; TOLBERT, C. y STANSBURY, M. (2003): *Virtual inequality. Beyond the digital divide*. Washington: Georgetown University Press.
- OLIVER-MORA, M. y IÑIGUEZ-RUEDA, L. (2017): 'The contribution of Webs 2.0 technologies to the empowerment of active patients', in *Ciência y Saúde Coletiva*, 22(3), 901-910.
- OJALVO, H. E. (2014): 'Online advice: good medicine or cyber-quackery?', in *Internal Medicine*, 2014.
- PÉREZ-MANCHÓN, D. (2014): 'Telemedicina, una red social médica de ayuda humanitaria entre España y Camerún', in *Gaceta Sanitaria*, 29(1), 59-61. Retrieved online 12/05/2017, from <https://goo.gl/npo0a7>
- PHO, K. y GAY, S. (2013): *Establishing, Managing, and Protecting Your*

Online Reputation: A Social Media Guide for Physicians and Medical Practices. Phoenix: MD Greenbranch Publishing.

→ PRENSKY, M. (2001): 'Nativos digitales, inmigrantes digitales', in *On the Horizon*, 9(6).

→ PRIETO, D. (2010): 'La salud 2.0, las redes sociales en el modelo sanitario', en *Noticias Redes Sociales Con I*. Retrieved online 12/05/2017, from <https://goo.gl/ETmQ9X>

→ RAGNEDDA, M. y MUSCHERT, G. W. (2013): 'The digital divide: The Internet and social inequality in international perspective' (Vol. 73). Routledge.

→ RODRÍGUEZ, M.; VILA, R. y FREIXA, M. (2008): 'Barreras de género y actitudes hacia las redes sociales en alumnado universitario de las facultades de educación', in *Educativa*, 26(1), 45-72. Retrieved online 11/05/2017, from <http://revistas.um.es/rie/article/view/94111>

→ ROEBUCK, K. (2012): 'Webs 2.0: High-impact Strategies - What You Need to Know: Definitions, Adoptions, Impact, Benefits, Maturity, Vendors'. Dayboro: Emereo Pub.

→ ROGERS, E. M. (1995): *Difussion of Innovation*. Nueva York: The Free Press.

→ ROMERO, R. (2011): 'Género en el uso del e-learning en las universidades andaluzas. Profesorado', in *Revista de currículum y formación del profesorado*, 15(1), 121-138. Retrieved online 14/05/2017, from <http://www.ugr.es/~recfpro/rev151ART8.pdf>

→ SAID-HUNG, E.M.; GERTRUDIX, M.; ÁLVAREZ, S.; GERTRUDIS, M.C.y GÁLVEZ, M.C. (2014): 'Marco conceptual de Redyika', in SAID, E. (Ed.): *Redyika. La promoción de la eSalud en Colombia e Iberoamérica*. Barranquilla: Universidad del Norte Editorial.

→ SAID-HUNG, E. M.; JABBA MOLINARES, D.; MARIÑO, C. Y VINICIO CABALLERO, C. (2016): 'Webs 2.0 y trabajo colaborativo en el sector Salud en Colombia', in *Revista Cubana de Información en Ciencias de la Salud*, 27(3), 298-310.

→ SCHMIDT, C. W. (2012): 'Trending now: using social media to predict and track disease outbreaks', in *Environ Health Perspect*, 120(1), a30-a33.

→ SCHÖNBERGER, K. (2008): 'Doing Gender, Kulturelles Kapital und Praktiken des Bloggens', en HENGARTNER, T. y SIMON, M (Eds.): *Bilder - Bücher - Bytes, Berlin*. Retrieved online 10/05/2017, from <https://goo.gl/3cXBxL>

→ SELVA, A. y ROSA, A. (2015): 'Los nuevos rostros de la desigualdad en el siglo XXI: la brecha digital', in *Revista mexicana de ciencias políticas y sociales*, 60(223), 265-285.

→ SIGNORINI, A.; SEGRE, A. M. y POLGREEN P. M. (2011): 'The use of Twitter to track levels of disease activity and public concern in the U.S. during the influenza A H1N1 pandemic', in *PLoS ONE*, 6(5). DOI: 10.1371/journal.pone.0019467

→ SUNKEL, G.; TRUCCO, D. y ESPEJO, A. (2014): 'La integración de las tecnologías digitales en las escuelas de América Latina y el Caribe: una mirada multi-

dimensional'. Cepal.

→ TAPSCOTT, D. (2009): *Grown up digital. How the net generation is changing your world*. New York: McGraw Hill.

→ TRAVER, V. y BORRAS, J. E. (2013): 'Salud 2.0', in *Monográfico Retos de la Salud*, 195, 60-63. Retrieved online 8/05/2017, from <https://docs.google.com/file/d/0Bz0rZxuxPDBvUkRwWnE3Z20wRjA/edit>

→ TIRADO, R. (2007): 'Las TIC en el marco de la educación compensatoria', in CABERO, J.; CÓRDOBA, M. y FERNÁNDEZ, J. (Eds.): *Las TIC para la igualdad* (173-196). Sevilla: Eduforma.

→ TOMLINSON, M.; ROTHERAM-BORUS, M. J.; SWARTZ, L. y TSAI, A. C. (2013): 'Scaling up mHealth: where is the evidence?', in *PLoS medicine*, 10(2), e1001382.

→ VAN DE BELT, T.; ENGELEN, L.; BERBEN, S. y SCHOONHOVEN, L. (2010): 'Definition of Health 2.0 and Medicine 2.0: A Systematic Review', in *Journal of Medical Internet Research*, 12(2), e18.

→ VEGA CARO, L.; VICO BOSCH, A. y REBOLLO CATALÁN, Á. (2015): 'Motivaciones de uso de las redes sociales para el desarrollo del capital social de las mujeres de entorno rural', in *Revista ICONO14*, 13(2), 142-162. DOI: <http://dx.doi.org/10.7195/ri14.v13i2.839>

→ WACHTER, B. (2013): 'Global Health Hospitalists: Strange but Noble Bedfellows'. Retrieved online 15/05/2017, from <https://goo.gl/ilzBCP>

→ WAJCMAN, J. (2004): *TechnoFeminism*. Cambridge: Polity Press.

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