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MANAGEMENT OF CONTENT IN SOCIAL NETWORKS, BY SCIENTIFIC JOURNALS INDEXED IN SCIELO SPAIN

GESTIÓN DEL CONTENIDO EN REDES SOCIALES, POR REVISTAS CIENTÍFICAS INDEXADAS EN SCIELO ESPAÑA

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ABSTRACT

The current digital age has social networks (SS.NN) as its main means of communication. On the other hand, scientific journals (SJ) are a fundamental part of the new knowledge society, the above suggests a link between SJ and NN.SS as content broadcast media. However, the task is not easy, for this to be carried out properly, the SJs must efficiently apply and manage the content they share on the NN.SS, in the case of this study, the social network Facebook. The objective was to describe the characteristics of the content shared by the SJs in the health field indexed in Scielo Spain on the Facebook social network. For this, an empirical investigation was carried out, of a correlational, descriptive, and cross-sectional type to the profiles of the SJs in the NN.SS. There is little participation of the SJ in the NN.SS, it can be added that the shared content is devoid of innovation and interaction, characteristics offered by web 2.0, additionally, a statistically significant relationship was found with Rho of 0.706, which suggests a high average relationship. Between the number of years on Facebook by SJs and their number of followers on the social network Facebook.

Keywords: Virtual communities, digital identity, Content Marketing, Publications, Alternative metrics, scientific journals, Facebook, content, social networks.

RESUMEN

La era digital actual tiene como principal medio de comunicación las redes sociales (RR.SS), por otro lado, las revistas científicas (RC) son parte fundamental de la nueva sociedad del conocimiento, lo expuesto anteriormente sugiere un vínculo entre las RC y las RR.SS como medios de difusión de contenido, sin embargo, la tarea no es sencilla, para que esto se desarrolle de forma adecuada las RC deben aplicar y gestionar de forma eficiente el contenido que comparten en las RR.SS como lo es Facebook para el presente estudio. El objetivo fue describir las características del contenido compartido por parte de las RC del campo de la salud indexadas en Scielo España en la red social Facebook. Para ello se realizó una investigación empírica, de tipo correlacional, descriptiva y de corte transversal a los perfiles de las RC en las RR.SS. Como resultado se obtuvo que existe poca participación de las RC en las RR.SS, el contenido compartido es carente de innovación y de interacción, características que se ofrecen en la web 2.0. Adicionalmente se encontró relación estadísticamente significativa con Rho de 0.706, lo cual sugiere una relación media alta entre la cantidad de años en Facebook por parte de las RC y su cantidad de seguidores en la red social Facebook.

Palabras clave: Comunidades virtuales, identidad digital, Marketing de contenidos, Publicaciones, Métricas alternativas, revistas científicas, Facebook, contenido, redes sociales.

GESTÃO DE CONTEÚDOS NAS REDES SOCIAIS, POR REVISTAS CIENTÍFICAS INDEXADAS NO SCIELO ESPANHA

RESUMO

A era digital tem como principal meio de comunicação as redes sociais (RR.SS), por outro lado, as revistas científicas (RC) são parte fundamental da nova sociedade do conhecimento, o anteriormente exposto sugere uma ligação entre RC e RR.SS como

meio de divulgação de conteúdo, no entanto, a tarefa não é fácil, para que isso seja desenvolvido adequadamente, as RC devem aplicar e gerenciar com eficiência o conteúdo que compartilham nas RR.SS, como o Facebook para o presente estudo. O objetivo foi descrever as características do conteúdo compartilhado pelas RC da área da saúde indexados no Scielo Espanha na rede social Facebook. Para isso, foi realizada uma pesquisa empírica, de tipo correlacional, descritiva e transversal aos perfis das RC nas RR.SS. Como resultado, obteve-se que há pouca participação das RC nas RR.SS, o conteúdo compartilhado é desprovido de inovação e interação, características que são oferecidas na web 2.0. Adicionalmente, foi encontrada uma relação estatisticamente significativa com Rho de 0,706, o que sugere uma relação média elevada entre o número de anos no Facebook das RC e o seu número de seguidores na rede social Facebook.

Palavras chave: Comunidades virtuais, identidade digital, Marketing de conteúdo, Publicações, Métricas alternativas, revistas científicas, Facebook, conteúdo, redes sociais.

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1. INTRODUCTION

One of the main functions, obligations, or duties of higher education institutions (HEIs), since their beginnings, is the dissemination of knowledge to society through channels such as congresses, books, journals, or other scientific products, so that knowledge reaches communities and helps their social and economic progress. Faced with this objective, the dissemination of knowledge through different channels or media becomes a determinant for the management and impact of HEIs (López and Olvera, 2016; Parejo et al., 2017).

One of the products most valued by HEIs is their scientific journals (SJ), which become a channel of communication of science, which through their editorial processes are responsible for validating, organizing, and publishing scientific knowledge of high rigor and quality (López-Hung et al., 2022). In turn, Repiso (2019) points out that this creation and dissemination of knowledge by SJs contributes to the positioning of HEIs in the eyes of the community, contributing significantly to the university brand. In this regard, it is important to note that globally there are at least 70,000 scientific publications dedicated to different lines of knowledge (Spinak and Packer, 2015), publications that compete strongly to attract the interest of readers, major researchers, and scholars in their areas of specialization.

In their eagerness to disseminate their scientific products, SJs have found the perfect ally in social networks. Social networks have positioned themselves as one of the most widely used communication media worldwide and have become firmly established in people's daily lives, covering areas such as personal life, work, and education. For this reason, SJs have also bet on social media to generate social appropriation of knowledge, thus reaching a much wider diversity of readers, and eliminating time and geographical limitations. Given the above, the main research question of this article is: How is the management of content in social networks by health SJs indexed in SciELO Spain?

1.1. Health scientific journals in Spain

The purpose of SJs is to publish research results that contribute significantly to the various areas of knowledge, thus promoting constant and consistent updating of the sciences (Fonseca-Mora and Aguaded, 2014).

SciELO (Scientific Electronic Library onLine) is an open-access virtual database where scientific journals from the Ibero-American region are grouped. It was created and developed as an initiative to give visibility and measure the impact of "the lost science of the Third World" (Gibbs, 1995).

Spain joined SciELO in 2001 with four journals. SciELO-Spain is an initiative that emerged from the National Library of Health Sciences (BNCS by its acronym in Spanish) of the Instituto de Salud Carlos III (ISCIII), and since then has been coordinated and maintained by this institution (Bojo-Canales et al., 2009; Veiga-de-Cabo, 2001), which is why Spain is the only single-thematic collection in SciELO.

Such is the relevance that SciELO Spain adopts for Spanish journals in the area of health, that Bojo-Canales and Sanz-Valero (2019) conclude in their study that the collection of journals in SciELO Spain is one of the three collections (along with Brazil and Colombia) that is present in all the bibliographic databases of relevance, the multidisciplinary ones: Web of Science and Scopus and those specialized in the area of health: Medline (Medical Literature On Line), ilacs (Literatura Latinoamericana de Ciencias de la Salud), Embase (Excerpta Medica Data Base), Cinhal (Cumulative Index to Nursing & Allied Health Literature), and Psycinfo.

Along the same lines, Bermúdez-Tamayo et al. (2020) point out that the history of Spanish public health has been largely written in two journals: *Gaceta Sanitaria* (1888) and *Revista Española de salud pública* (1926), both of which are indexed in SciELO Spain and to this day are still considered as referents in their field. Given the above, the present study will focus on the Spanish journals in the health field incorporated into SciELO, which, at the time of writing, consisted of 44 journals.

Taking into account the large number of SJs existing globally, publishers must begin to look at the management of content shared in the journals' social networks as another strategic element for the visibility and impact of their scientific production in their editorial management.

1.2. Social networks and strategic content management

There are several studies in which social networks are observed as other means of dissemination of research and scientific content (Meredith et al., 2011; Brito et al., 2012; Guzmán and Del Moral, 2014), which has given way to the fact that these non-formal virtual spaces can also be used as means of massification and dissemination of scientific content (Vivas et al., 2018). At this point, it can also be added that social networks are observed as virtual structures that allow the dissemination, diffusion, and creation of content oriented to image management both on a personal, professional, and institutional scale; additionally, they are consolidated as a means to maintain and cultivate social relationships (Herrero-Gutiérrez et al., 2011; Chan et al., 2020a; Silva et al., 2022).

However, other authors may argue that the use of social networks also allows the dissemination of poor-quality content (Arriagada, 2013; Parejo et al., 2017; Astorga-Aguilar and Schmidt-Fonseca, 2019). But if social network management is analyzed from the point of view of marketing and advertising, the important thing is that the name of the journal makes a presence in the place where the target audience is located, to capture their attention.

Scientific journals, mostly belonging to HEIs, have ventured into social networks to increase the visibility and impact of their publications, as well as the formation and consolidation of new virtual communities of researchers, readers, and even potential reviewers interested in the topics of the publication. It is necessary to emphasize that the incursion of scientific journals in the context of social networks allows improving indicators through "altmetrics", alternative metrics that analyze the scientific impact of journals based on the repercussion that a scientific product has had online, observing the number of views, the number of downloads, comments, and mentions in social networks as well as the export of the scientific product to other bibliographic managers and the citations obtained for the publication. It can be added that the incursion into social networks also allows for improving the impact factor, which is obtained through the average number of citations obtained by a journal in the last two years, a measure used to observe the importance of a publication in its field of specialization (Ojeda-Thies, 2022).

Regarding social networks in Spain, according to Interactive Advertising Bureau IAB, a company dedicated to the marketing, advertising, and communication industry, in its research on social networks, carried out in 2022, points out that 85% of Spanish Internet users use social networks, adding that the most popular social network used by Spanish Internet users and companies is Facebook, followed by Instagram and Twitter (IAB, 2022).

In this sense, it is essential to properly manage the content shared in the social networks of scientific journals. However, what is described above does not always happen, because in some cases the management of these virtual spaces is limited to sharing only text or simple images, without relevant planning, editing, and dissemination of content (Abadal and Rius 2008; Martínez-Guerrero, 2018). It is at this point where the management of scientific journals' social networks is linked to content management (CM).

This aspect of marketing has as its main work activities the creation, development, and strategic dissemination of content, to retain and captivate the attention of customers, for the present study, the readers on whom the journal focuses. For this, content management in social media should include strategies to attract new readers and researchers, besides maintaining the expectation and loyalty of current readers and researchers of the publication (Castelló, 2013; Cueva et al., 2021; Pachucho-Hernández et al., 2021). These strategies should be based on previously developed planning, which should outline and characterize each of the contents that should be available to the target audience according to the phase of the buying process in which they are, to make available the right content at the right time.

It can be added that strategic content management by any organization has become the fundamental element that drives its development and increases its positioning (San and Toledano, 2015). Perdigón et al., (2018) argue that the performance of an organization is directly negatively affected by the lack of use of CM strategies. It should be noted that the CM strategy is solidly based on the transmission of content that is truly appreciated by the target audience; for this, it must be clear what the needs, requirements, and interests of readers are (Giraldo, 2019; Mendia-Valarezo et al., 2022), which vary according to the profile of each reader (professors, reviewers, undergraduate or graduate students, researchers in general) and that SJs should investigate by conducting market research aimed at this target audience.

To continue, Table 1 shows the attributes and formats that should be analyzed and applied by scientific journals when generating strategies that seek to disseminate the content of their scientific articles in social networks, to generate and manage the content of the publication in a relevant way and so, consequently, the journal can receive the benefits that result from this management and directly impact its metrics.

Table 1. *Content attributes and formats.*

Content attributes	Content formats
Informative	Video
Educational	Photography
Interesting	Live video
Funny	Advertising graphics
Clear	Text
	Audio

Source: Own elaboration based on Kotler and Armstrong (2012); Armstrong and Kotler (2013); Velar-Lera et al. (2020); Atarama-Rojas and Vega-Foelsche (2020); Chan et al. (2020b); Paniagua and Rodés (2022); Palao (2022).

2. OBJECTIVES

After having examined the importance for SJs of the strategic use of content in social networks as a means to increase their visibility and consequently improve their impact factor and metrics, the current research aims to describe the characteristics of the content shared by the SJs in the health field indexed in the Scielo Spain database on the social network Facebook, to assess whether the publications of the SJs are framed in the context of content marketing.

3. METHODOLOGY

To achieve the main objective of this study: to describe the characteristics of the content shared by the SJs in the health field indexed in Scielo Spain on Facebook, an empirical, correlational, descriptive, and cross-sectional research was applied, for which qualitative and quantitative variables were analyzed, using observation as a research and data collection tool. The 44 Spanish journals in the health field incorporated and present in the SciELO database were considered as the sample of the present study. After a search process, it was determined that 18 of the journals have an active profile on Facebook. The content of 10 posts shared by each of the SJs on their Facebook profiles and fan pages was analyzed, for a total of 180 posts analyzed. The profiles on this social network are for personal use, other users can add

you as a "friend", and the number of friends is limited, while the fan page is for professional use, other users can click on "like" to become "followers", and the number of followers is unlimited. Taking into consideration the attributes that the shared content should have, table 2 below shows the indicators used during the observation process.

Table 2. *Observed dimensions and indicators.*

Dimension	Indicator
General Aspects	Title of the journal
	Uses Facebook
	Year of creation of the journal
Facebook activity	Uses Facebook as fan page
	Year the profile was created
	The number of followers
	Year of the last publication
	Quarter of the last publication
Formats	Number of posts (NP) in text
	NP in text and images
	NP in video
	NP in audio
Strategies	Use of short videos of one minute or less in length
	Use of posts with infographics
	Use of posts with links to external websites
	Use of hashtags in posts
Interaction	NP where authors of articles published by the journal are mentioned.
	NP where institutions/companies that deal with issues related to the journal are mentioned.
	NP where the staff involved in the journal is mentioned (editors, reviewers, community manager, university managers).
	NPs where users are invited to interact with questions or trivia.
Informative	NP where an article published by the journal is described.
	NPs where the notoriety of the journal is made known (indexing, achievements, number of citations, etc.)
	NPs showing call for papers with publication dates
	NPs where other social networks of the journal are communicated or shown.
Funny	NPs with current topics related to the journal's topics (external sources)
	NPs with humorous content (memes, funny videos)
Journal image	NP where the journal's logo appears or the name of the journal is explicitly mentioned.
	NPs with social content (help, environmental awareness, social issues)

Source: Own elaboration based on Kotler and Armstrong (2012); Armstrong and Kotler (2013); Velar-Lera et al. (2020); Atarama-Rojas and Vega-Foelsche (2020); Chan et al. (2020b), Paniagua and Rodés (2022); Palao (2022).

Next, to have conclusive results about the use of Facebook profiles and content management, correlation tests will be performed between the following variables: number of Facebook followers (Qty_Followers), year of Facebook profile creation (Facebook_Creation), years of the institutional life of the SJ (Existence_journal), and

content marketing (Sum_Content_Mkt), a variable that groups the assessment of all the items that measure this characteristic. First, the variables had to pass the Kolmogorov-Smirnov (KS) normality test. The alternative hypotheses to be tested were:

1. Alternative hypothesis H1. There is a correlation between Existence_journal and Qty_Followers.
2. Alternative hypothesis H1. There is a correlation between Facebook_Creation and Qty_Followers.
3. Alternative hypothesis H1. There is a correlation between Sum_Content_Mkt and Qty_Followers.

4. RESULTS

Regarding Facebook activity, Table 3 shows the most relevant statistics.

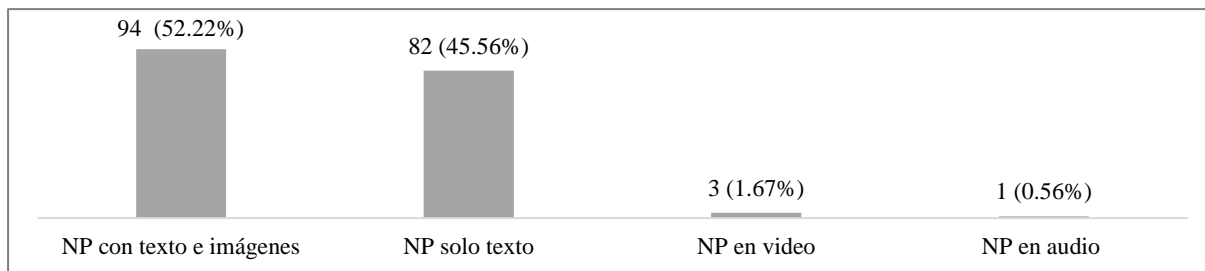
Table 3. Facebook activity.

Variable	Statistics
44 scientific journals analyzed	On average, they are 29 years old
	26 of the 44 journals analyzed, i.e. 59.09% DO NOT have a Facebook profile.
	18 of the 44 journals analyzed, i.e. 40.91% DO have a Facebook profile.
Facebook profile	<ul style="list-style-type: none"> • 17 (94.44%) of these publications have a FanPage and one (5.55%) has a Facebook profile. • On average, the 18 (100%) Facebook profiles of the SJs have been created 8 years ago.
	5 profiles of scientific journals on Facebook, i.e. 28% do NOT show publications during 2022.
Facebook posts	13 profiles of scientific journals on Facebook, i.e. 72% of them do show publications during 2022. <ul style="list-style-type: none"> • However, only 9, or 69% of the journals that published on Facebook during 2022 have a record of publishing during the last quarter.

Source: Own development, based on data collected during the study process. (2022).

Regarding the **content format** most commonly used by scientific journals for their publications in social networks, Figure 1 shows the results obtained.

Figure 1. *Formats used in social networks.*



Source: Own elaboration, based on data collected during the study process. (2022).

Similarly, the **strategies** used by scientific journals to disseminate their content in social networks are presented in table four, with the following results.

Table 4. *Strategies used on Facebook.*

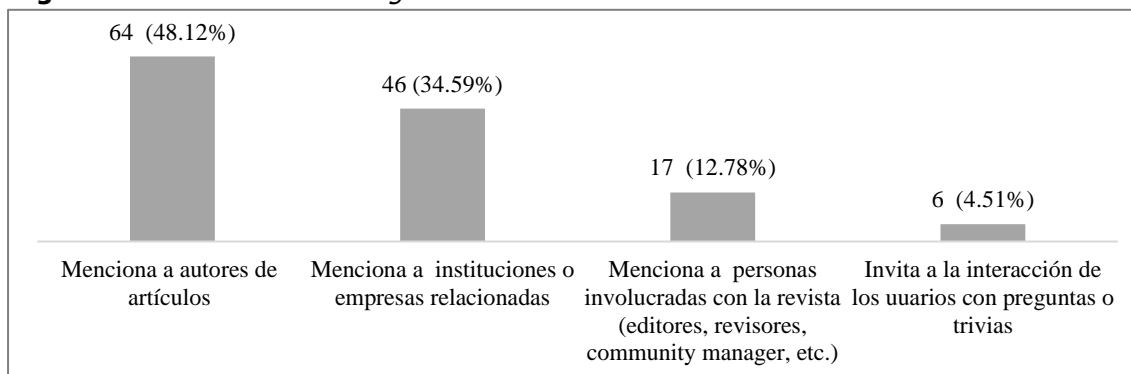
Strategy	Not applicable	Applicable
Short Videos	100,00%	0,00%
Infographics	77,78%	22,22%
Link to external websites	100,00%	0,00%
Hashtag	61,11%	38,89%

Source: Own elaboration, based on data collected during the study process. (2022).

The results in Table 4 show the lack of adaptability to new trends in the social media profiles of scientific journals, which do not make use of short videos, a trend widely used today to captivate the attention of users and readers. Likewise, the use of Hashtags is not recurrent although this allows for improving the positioning of the journal in web searches, which shows the absence of a specialized person for this management.

It was possible to identify 133 posts in the social networks of the scientific journals analyzed, which **encourage interaction** with users through different strategies. Figure 2 shows the distribution of the results obtained.

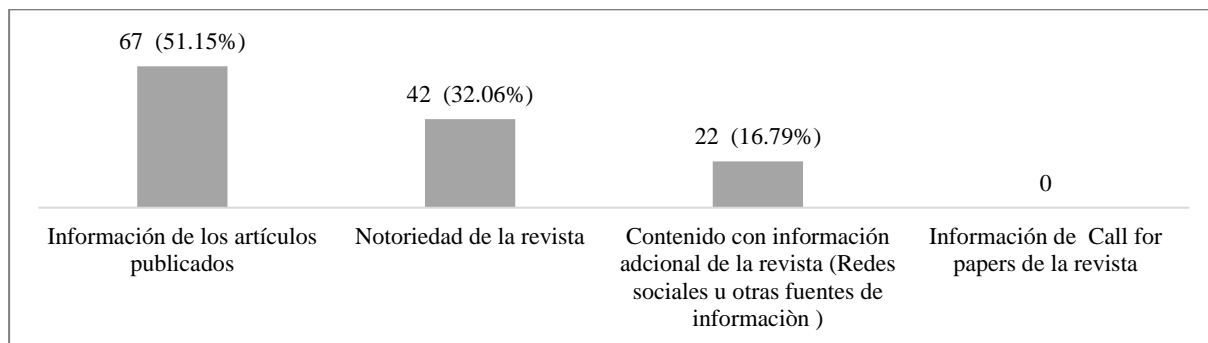
Figure 2. *Content that encourages interaction.*



Source: Own elaboration, based on data collected during the study process (2022).

We found 131 posts shared by the scientific journals in social networks with **informative content** related to the publication; Figure 3 shows the distribution of the data.

Figure 3. *Informative content.*



Source: Own elaboration, based on data collected during the study process (2022).

About the **funny content**, 13 posts were found in the social networks of scientific journals, of which all are related to news or topics of interest from external sources, it is necessary to emphasize that no publications with humor or explicit entertainment content were found. Similarly, regarding the **image of the journal**, it can be indicated that 91 posts were found related to this topic, of which 52 of them explicitly show the name and logo of the journal. While 39 are related to a social message of help to the community.

To start with the correlation analysis first, Table 5 shows the results obtained from the KS test on the variables of interest.

Table 5. *Summary of hypothesis testing.*

	Null hypothesis	Test	Sig.^a	Decision
1	The distribution of Qty_Followers is normal with a mean of 2552.78 and a standard deviation of 4499.74404.	KS Test	,000	Reject the null hypothesis.
2	The distribution of Sum_Content_Mkt is normal with a mean of 32.06 and a standard deviation of 15.59967.	KS Test	,467	Retain the null hypothesis.
3	The distribution of Facebook_Creation is normal with a mean of 7.83 and a standard deviation of 3.09173.	KS Test	,234	Retain the null hypothesis.
4	The distribution of Existence_journal is normal with a mean of 25.06 and a standard deviation of 16.76997.	KS Test	,745	Retain the null hypothesis.

a. The significance level is ,050. The Lilliefors method based on the 10000 Monte Carlo samples with the starting seed 1556559736.

Source: Own elaboration, based on data collected during the study process (2022) software SPSS.

Given the results obtained in the previous test, the applied statistical analysis was Spearman's rho correlation coefficient (SC). Table 6 shows the result for the first hypothesis.

Table 6. Result of the SC first hypothesis test (There is a correlation between Existence_journal and Qty_Followers).

			Qty_Followers	Existence_journal
Spearman's rho	Qty_Followers	Correlation coefficient	1,000	,143
		Sig. (bilateral)	.	,573
		N	18	18
	Existence_journal	Correlation coefficient	,143	1,000
		Sig. (bilateral)	,573	.
		N	18	18

Source: Own elaboration, based on data collected during the study process (2022) software SPSS.

For the following hypothesis, Table 7 summarizes the obtained results.

Table 7. Result of the SC second hypothesis test (There is a correlation between Facebook_Creacion and Qty_Followers).

			Qty_Followers	Existence_journal
Spearman's rho	Qty_Followers	Correlation coefficient	1,000	,706**
		Sig. (bilateral)	.	,001
		N	18	18
	Creacion_Facebook	Correlation coefficient	,706**	1,000
		Sig. (bilateral)	,001	.
		N	18	18

****.** The correlation is significant at the 0.01 level (bilateral).

Source: Own elaboration, based on data collected during the study process (2022) software SPSS.

In the case of the third hypothesis proposed, table 8 shows the results obtained.

Table 8. Result of the SC third hypothesis test (There is a correlation between Sum_Content_Mkt and Qty_Followers).

			Qty_Followers	Existence_journal
Spearman's rho	Qty_Followers	Correlation coefficient	1,000	,212
		Sig. (bilateral)	.	,399
		N	18	18
	Sum_Content_Mkt	Correlation coefficient	,212	1,000
		Sig. (bilateral)	,399	.
		N	18	18

Source: Own elaboration, based on data collected during the study process (2022) software SPSS.

After obtaining the results through correlation analysis, only significant statistical evidence was found to indicate that there is a relationship between the number of followers and the years of the creation of the Facebook profile, with a Rho of 0.706, which suggests a high average positive correlation between the variables (Bisquerra, 2009; 2012; Lind et al., 2012; Hernández et al., 2014). This result suggests that the management of social networks is a task of time and dedication, to create, increase, and sustain a community interested in the content published by the scientific journal.

5. CONCLUSIONS AND DISCUSSION

Regarding the adoption of social networks by scientific journals, it can be noted that there is a medium interest since only 40.91% of the journals analyzed had a fan page or profile on Facebook. This situation coincides with Arcila-Calderón et al. (2019), and Artigas and Guallar (2022), who point out that there is little interest on the part of SJs to adhere to social networks.

Hutt (2012); De Lara and García-Avilés (2019) conclude that video and sound are powerful tools for communicating and transmitting various types of information, and emphasize their usefulness in science-related content. They add that the first seconds of these multimedia products are decisive in attracting the public's attention; they also point out that this resource requires compliance with technical characteristics to guarantee good quality. Regarding the results of this research, it can be noted that SJs do not make adequate use of both video and audio despite their benefits as dissemination tools on Facebook, hence it is surprising that more than 98% of the profiles analyzed do not apply these dissemination formats based on audio and video. The resources most used by the SJs were text-only publications or a mixture of text and images, which suggests a lack of dedication to the management of these virtual environments on the part of the SJs. At this point, it can be noted that the design and elaboration of audiovisual products imply greater management of resources (economic, technical, human) and preparation time, which in many cases SJs do not have, so they opt for the use of posts using text and images, which a priori require less time and are simpler to elaborate.

Regarding the strategies used in SJs, De Lara and García-Avilés (2019); Campos (2020) point out the importance of the use of short videos as a dissemination strategy; however, in the present study, there were no SJs that used these multimedia products in their publications, at least in the posts analyzed, this in line with what was stated in the previous paragraph. Regarding the use of infographics, only 22% of the analyzed posts on Facebook reflect the use of this tool, a result that is shared with Vilaplana (2019) who points out that the use of infographics in education and research is relatively low, however, he adds in his results that 70% of the people surveyed indicated that their use facilitates the reading of a scientific publication, 80% observe this tool as an effective complement to the publication, while 85% suggest the implementation in SJs.

The use of hashtags in social networks suggests another good practice for the dissemination of content in this medium (Pastor-Ramón, and Páez, 2021); however, this procedure is not applied by SJs in their social media profiles, since only 38.89% of the posts analyzed do apply it. On the other hand, it is necessary to point out that

no posts were found in the SJ profiles that apply links to other sites, which could be the SJ's own website or another social network. Regarding interaction strategies, Ruiz-Corbella and Galán (2017); Rodríguez-Caro et al, (2022), add that the SJs that have profiles in social networks do not apply Web 2.0 strategies, following the results of this study where low rates of strategies that seek interaction with the different actors involved with scientific publication were evidenced, i.e. content that seeks or encourages action, discussion, and participation of its audience is not developed, to establish a bidirectional communication channel between the journal and its stakeholders (reviewers, students, researchers in general).

Social networks definitely have a fundamental role to play in the dissemination of science, given the variety of tools and ease of sharing content and achieving exponential reach. For this, SJs must allocate economic and technical resources and specialized human talent to develop content of interest to their own readers, authors, and potential reviewers, management that could help improve the metrics, visibility, and positioning of both the publication and the journal. This is why SJs must enter this world with content that is eye-catching to captivate interest and stand out among the huge number of publications that are published every second worldwide.

Since the main objective of the study was to describe the characteristics of the content shared by SJs in the health field indexed in Scielo España on Facebook, it can be concluded that there is a median rate (40.91%) of adoption of Facebook by the SJs; besides, it was also evidenced that there is a median rate (50%) of scientific journals that keep their profiles updated on Facebook (publications in the last quarter), which suggests the low interest of the SJs in the management of this virtual space.

Regarding the formats used to share content, it can be noted that SJs should venture into the use of much more elaborate multimedia products that allow them to generate a greater impact on the members of the virtual communities. In the case of the strategies used by the journals, it can be concluded that the journals do not have a team or person with the appropriate profile (community manager, digital publicist, among others) dedicated to the management of Facebook profiles, given that the application of strategies that effectively encourage the action and participation of their target audience was not evidenced. In this regard and regarding interactions, it can be noted that SJs interact with authors and other institutions related to them, however, it is advisable to improve the management of interaction through the mention of people directly related to the journal, as well as making posts that question topics of interest to the target audience.

Likewise, concerning the informative content, the SJs perform good management in this regard by publishing posts related to the articles, the notoriety of the journal, and information about other social networks or other sources of information; however, it is necessary to make clear that in the analyzed posts no Call for Papers of the journals was observed, an important situation to highlight since with a greater number of postulated articles, the journal will be much more selective when accepting or rejecting manuscripts for the publication of a new issue. A very low rate of publications related to funny or entertaining content was also identified, all of them have to do with news or other topics of interest; no publications with humorous content were identified in

such a way as to shorten the distance between readers and the SJ.

On the other hand, it can be pointed out that only high average significant statistical evidence was found between the number of followers and the years in which the journals have ventured into Facebook, a result that allows a glimpse of the importance of the time of permanence of the SJ in the social network to get new followers, authors, readers, and those interested in the shared content.

Finally, it should be noted that this study can be replicated in journals from other areas of knowledge, as well as other geographical areas, to evaluate their management of shared content. One of the main limitations of the study is the number of posts analyzed (180), which suggests the development of new research work in which a greater number of posts and content shared by SJs should be observed. In this sense, it can be pointed out that research tools such as interviews, which can be applied to the leaders of scientific journals and those in charge of social networks, were not used. On the other hand, through the survey, it is possible to research the perception of users regarding the content shared by SJs. All this would make it possible to observe the object of study in a much broader way, as well as to reach more generalizable conclusions.

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