Comunicar, n. 79, v. XXXIII, 2024 | Media Education Research Journal | ISSN: 1134-3478; e-ISSN: 1988-3478
www.comunicarjournal.com

Social Learning on TikTok: the Community as a Literacy Axis on Blood Donation

Aprendizaje social en TikTok: La comunidad como eje alfabetizador sobre hemodonación

Dr. Raquel Martínez-Sanz*. Associate Professor in the Area of Journalism. University of Valladolid (Spain) (raquel.martinez.sanz@uva.es) (https://orcid.org/ 0000-0002-4753-0282)
Dr. Patricia Durántez-Stolle. Associate Professor. University of Valladolid (Spain) (patricia.durantez@uva.es) (https://orcid.org/ 0000-0002-6898-6350)

ABSTRACT
This research examines the creation of knowledge on social networks about blood donation, the role of virtual communities and their potential to attract donors. We applied a two-step methodology, starting by interviews with blood donation management institutions in Spain (N=21) and concluding with the analysis of comments from 61 donor testimonials on TikTok (N=1,606). This social network was chosen because of the scarce institutional presence and the predominance of Generation Z, which is necessary for generational change. The results show that blood donation in Spain is seen from a positive perspective, where complaints are rare or relativized and the community encourages the behavior imitation thanks to the feeling of pride and gratitude to donors. Knowledge is generated both from the contributions of creators and audiences and is focused on informing about the process, conditions and consequences, supporting its voluntary and altruistic nature. Overall, social, group and collaborative learning takes place, with greater success in those contents shared by health profiles but supported by all users. We conclude that TikTok plays a relevant role in the literacy and awareness of blood donation based on the virtual community collective intelligence, which will affect the donor relay thanks to the behavioral models that obtain social recognition.

RESUMEN
Esta investigación examina la creación de conocimientos en redes sociales sobre la donación de sangre, el papel de las comunidades virtuales y su capacidad para atraer donantes. Se aplica una metodología en dos pasos que parte de entrevistas a las instituciones gestoras de la hemodonación en España (N=21) y concluye con el análisis de los comentarios de 61 testimonios de donantes en TikTok (N=1.606), por ser la red social con menor presencia institucional y donde predomina la Generación Z, necesaria para el relevo generacional. Los resultados muestran que la donación de sangre en España se observa desde una óptica positiva donde las quejas escasean o se relativizan y la comunidad favorece la imitación del comportamiento gracias al sentimiento de orgullo y agradecimiento a donantes. El conocimiento se genera tanto de aportaciones de los creadores como de las audiencias y se enfoca a informar sobre el proceso, condiciones y consecuencias, defendiendo su carácter voluntario y altruista. En conjunto, se produce un aprendizaje social, grupal y colaborativo, con mayor éxito en aquellos contenidos compartidos por perfiles sanitarios, pero apoyado en todos los usuarios. Se concluye que TikTok ejerce un papel relevante en la alfabetización y en la concientización sobre la hemodonación a partir de la inteligencia colectiva de la comunidad virtual que repercutirá en el relevo de donantes gracias a los modelos de comportamiento que obtienen reconocimiento social en la red.

KEYWORDS | PALABRAS CLAVE
Collective Intelligence, Health Information, Literacy, Social Learning, Social Media, Virtual Communities.
Alfabetización, Aprendizaje Social, Comunidades Virtuales, Información de Salud, Inteligencia Colectiva, Redes Sociales.

Received: 2023-09-29 | Reviewed: 2024-07-29 | Accepted: 2024-08-15 | Online First: 2024-09-30 | Published: 2024-10-01
DOI: https://doi.org/10.58262/V33279.5 | Pages: 47-58

1. Introduction and State of the Art

In the context of the network society and mass self-communication (Castells, 2009), collective intelligence finds its maximum capacity for development (Capistrán Gracia, 2022; Lévy, 2007), generating what authors such as Rheingold (2004) have called "intelligent crowds", which foster cooperation and social mobilization (Zuluaga-Duque, 2015). However, this new era brings both benefits and risks, in a demonstration of the applicability of the laws of media expounded by McLuhan and Powers (2011): while extending human capabilities and rendering previous media and systems obsolete, they also generate dysfunctions or unintended and unforeseen consequences. The evolution of Media Ecology gives more validity than ever to the ideas of technological determinists (Islas, 2009), with metaphors such as the global village today real thanks to the millions of Internet users in constant connection (Piscitelli, 2005; Sakdapat, 2022), not only passive consumers of content, but prosumers: a virtual world that changes the very foundations of society and the cognitive and relational processes of the human species.

This digital scenario provides the health sector with a learning-generating space, thanks to, among other possibilities, the capacity to increase the quantity and quality of health information and to rely on virtual communities and social networks, allowing users to acquire knowledge and in turn share it in a process of health literacy (Martín-García, Buitrago, & Martínez-Sanz, 2024; Parikh & Huniewicz, 2015). Among the most evident negative effects are the overabundance of information and the circulation of misleading content.

Different national and international studies have addressed health activism in networks (Fernández-Luque & Bau, 2015; Muthuswamy & Bayome, 2022; Sobowale et al., 2020), which generates social transformation and collective awareness around the topic being communicated, and in which health profiles become "influencers" in networks such as TikTok and Instagram or on platforms such as Twitch (Buitrago & Torres-Ortiz, 2022; Castro-Higueras et al., 2021; Martínez-Sanz, Buitrago, & Martín-García, 2023; Pérez-Ordóñez & Castro-Martínez, 2023; Siman et al., 2022).

In health literacy, previous research has determined the effectiveness of certain communicative strategies such as storytelling and, more specifically, storydoing (Martínez-Sanz & Arribas-Urrutia, 2023) or narrative-persuasive frames that foster identification with the receiver (Durántez Stolle, Martínez Sanz, & Rodríguez de Dios, 2022).

Likewise, the continuous representation of behaviors in the virtual space acts as an incentive for social learning (Paternina-Arango et al., 2022; Shelton et al., 2019) and influence (Bullers, Cooper, & Russell, 2001). And if these behaviors are also reinforced with the applause or admiration of third parties, it contributes to their imitation, regardless of whether or not they are achievable (Rotter, 1954). Johnson et al. (2012) point out that social learning is a group process that occurs when interactions change individual knowledge and understanding, and ultimately the actions of the group.

Exposure to models in social networks consolidates self-efficacy (Bandura, 2004; Rimer & Glanz, 2005), that is, the conviction of being able to carry out a certain activity, which, when transferred to the health care setting, has countless applications in terms of prevention, awareness and the acquisition of new healthy habits (Alkhafagy et al., 2023; Camelo-Guarín et al., 2021; Igartua et al., 2023).

As far as blood donation is concerned, Social Learning Theory argues that altruism is learned by imitation, causing role models to be key (Gilchrist et al., 2019; Tongat, 2022). Along these lines, Stock and Möckel's (2021) research recommends employing social media platforms such as Instagram, involving real donors in their promotion, and representing the perceived well-being of those who donate. At present, and despite efforts to manufacture it in laboratories, blood is irreplaceable; it falls to citizens to provide blood products to the health system, whose highest aspiration is self-sufficiency (WHO, 2020). Young people, who are assumed to be in better physical and health condition, are the main targets of awareness campaigns, although not always with the expected results (Balegh et al., 2016; Martínez-Santos et al., 2021).

In Spain, the procurement, treatment and supply of blood products is transferred to the autonomous communities, specifically to the blood banks (RD 1945/1985, of October 9; RD 1088/2005, of September 16), which undertake to act "in solidarity with each other in the fulfillment of their common aims, and to coordinate and complement each other reciprocally" (RD 1088/2005, of September 16, art.35.1). Around these publicly managed entities, the law also recognizes the emergence of associations and brotherhoods with the aim of reinforcing the task of raising awareness and promoting altruistic blood donation.

The system's need to attract new donors has led organizations in recent years to turn to the use of social networks in an attempt to adapt their content and messages to the format and audience (Ramondt, Kerkhof, & Merz, 2022). In the case of TikTok, the network closest to the young population, the study by Martínez-Sanz and Arribas-Urrutia (2023) concludes that there are three main types of messages about hemodonation: testimonials,

authoritative disclosure and empathetic awareness.

However, despite the growing interest of the academic community in the use of social networks by health organizations and profiles, there is a scarcity of studies on the reactions and creations of the audience in these contents. The present research aims to delve into the disseminating role in networks of organizations involved in the donation process and to analyze the importance of collective intelligence in the management of knowledge about hemodonation in Spain.

1.1. Objectives, Research Questions and Hypotheses

This paper focuses on the virtual communities that have emerged around blood donation, examining, on the one hand, the use given to them by the main organizations in charge of their management and, on the other hand, the main factors involved in social learning: the representation of models, the knowledge transferred and the reactions of prosumers. For the latter, TikTok is chosen because it is the preferred platform, together with Instagram, of Generation Z (IAB Spain, 2023).

Firstly, focusing on the institutional sphere, we asked ourselves: what communication strategies do Spanish entities linked to hemodonation develop in social networks and what benefits do they obtain from them; what needs do they detect to improve literacy and achieve generational relay; and what content in networks do they consider most effective?

And, secondly, considering what happens in TikTok, we ask ourselves: what traits of the user creator and their videos influence the success of the content published, how is the knowledge shared by users, and what kind of reactions do testimonial stories related to blood donation in Spain generate?

This questioning leads us to pose the following hypotheses:

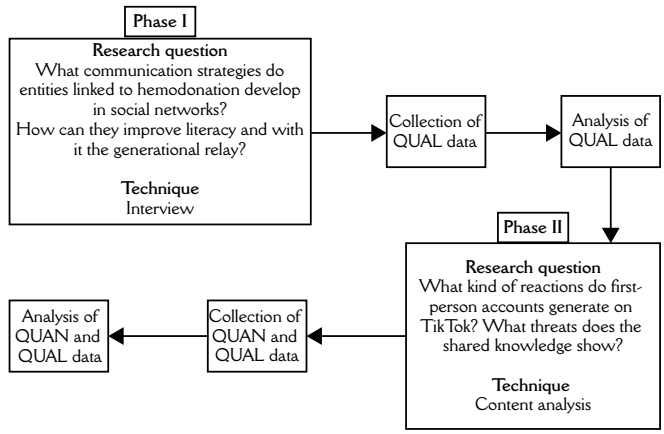
H_1: Awareness of blood donation in Spain increasingly relies on social networks as spaces for the exchange of information and the generation of knowledge, both through the profiles of the entities involved in its management, as well as the testimonials of donors and recipients.

H_2: The TikTok community contributes to the generation of knowledge and literacy around hemodonation thanks to donor testimonials and user responses, with the profiles of healthcare professionals being the ones that generate the most conversation and participate the most in resolving doubts.

2. Material and Methods

A mixed method of exploratory sequential design is proposed, since it enables the combination of a first qualitative phase, of a participatory nature, which with its results nourishes and strengthens the next phase of the research focused on the analysis of quantitative and qualitative data (Creswell & Creswell, 2018; Leech & Onwuegbuzie, 2009). Specifically, and in accordance with the objectives, the first step was to develop a questionnaire aimed at the main institutions linked to altruistic blood donation in Spain, i.e., blood banks (regional centers) and related associations and brotherhoods, which was followed by a content analysis of the publications and conversation generated on TikTok around this solidarity action.

Figure 1: Phases of the Applied Methodological Process.



The results of the first study made it possible to consolidate the relevance of the second, as well as to contribute to its definition: from setting the parameters for selecting the sample to outlining the content analysis indicators.

We interviewed 11 people in charge of campaigns or communication in regional donation centers (Andalucía, Aragón, Asturias, Cantabria, Castilla y León, Cataluña, Galicia, La Rioja, Murcia, Navarra and Comunidad Valenciana) and 10 presidents of donor associations (A Coruña, Alicante, Asturias, Cádiz, Huelva, León, Navarra, Toledo, Valladolid and Zamora). At the convenience of the professional, the interview was conducted by telephone call or using a form sent by e-mail. The questions dealt with the role played by social networks in their institution, the use they make of them, the most successful strategies identified, the most common forms of interaction with potential donors and the feedback received.

The testimonies obtained in the first phase corroborated the need to analyze in detail what happens outside the institutional profiles on social networks. Lack of time and personnel prevents these entities from advancing in digital foresight, despite being aware of their importance and the new forms of interaction, especially among the younger public, called to lead a generational relay. Thus, the second phase of the study focuses on TikTok because it is one of the most attractive platforms among young audiences and uses short video as the main dissemination format (IAB Spain, 2023; Peña-Fernández, Larrondo-Ureta, & Morales-i-Gras, 2022).

The sample was configured according to a single eligibility criterion: publication on TikTok that reflects the experience of a donor in Spain, as the first-person content was the one indicated by the professionals of the centers and brotherhoods as the "best received by the community". Special care was taken to ensure that the audiovisual content was confined to Spain in order to avoid allusions to problems in countries with other regulations or blood collection systems that might condition the conversation. It should be noted that the TikTok search engine does not allow filtering according to the origin of the video or its typology (explicit interest in the testimony), which made it necessary to manually monitor all the results offered. In two waves (January and June 2023) all researchers participated in the location and screening until reaching a point of redundancy in the collection of cases. Relying on the use of hashtags such as #donasangre, #donasangredonavida, #donantedesangre or #hemodonación, among others, a total of 61 videos accumulating 1,606 comments were collected and analyzed in their entirety.

The videos and their comments were processed using the quantitative "coding and counting" method, typical of Computer-Mediated Communication (CMO) studies, consisting of coding categories and counting their frequency, together with a subsequent content analysis (Torrego-Gonzalez & Gutierrez-Martin, 2016).

Table 1: Description of Categories and Variables of the Analysis.

Category	Variables
Creator (authorship)	Personal account / Institutional account Specialized health account / non-specialized account Donor account / blood recipient account Number of followers
Video (content)	Date of publication Male lead / female lead Young protagonist / adult protagonist Presence of sensitive content / absence of sensitive content Number of "likes". Number of comments
Conversation (community)	Complaints Inquiries Rational expressions of support for the donation (objective basis) Expressions of emotional support for the donation (personal basis) Expressions of pride in being a donor Support for third-party donations Future intention to donate Excuses or reasons for not being a donor Allusions to COVID-19 Knowledge transfer on donation Responses from the video creator himself Others

The definition of the categories of analysis first used an inductive approach based on the results of previous studies (Leiva Castillo et al., 2023; Zhang & Cassany, 2019) and the experience of the professionals consulted. The codebook was tested by all authors on 10% of the sample with a high level of agreement and after slight modifications the final record was obtained. The variables selected to analyze the content and reactions to TikTok publications that included blood donor testimonials were distributed as follows:

The statistical treatment of the data was carried out with the SPSS v.26 program to analyze the frequencies and relationships between the different variables, using the Mann-Whitney U test and Spearman's rho test.

3. Analysis and Results

3.1. Spanish Blood Banks and Donor Associations as a Digital Space for Reference and Consultation

All the regional blood donation centers consulted, except Navarra, have a direct institutional presence on social networks. They consider these platforms essential to raise awareness of the importance of donation and to reach out to young people, but point to the lack of personnel and resources as points for improvement. In relation to the brotherhoods and donor associations it should be said that, although most are classified as "public utility entities", the funding they receive is scarce and their activities go ahead, mainly, thanks to the selfless collaboration of volunteers. Some brotherhoods have even quantified the effects of their digital presence: "57% of new donors have found out about us through social networks," says the one in Toledo, while the one in Alicante puts the figure at 30%.

With corporate profiles, both regional centers and associations seek to disseminate relevant information about their activities: location of extraction points, opening hours, status of reserves, seasonal campaigns, etc. The usefulness of the information, therefore, is essential. In addition, they highlight the closeness and contact that social networks bring them: "Many people contact us privately to ask us questions and even congratulate us. All of this is redirected to the Donor Service Department so that it is recorded," staff from the Banc de Sang i Teixits de Catalunya explain. And they are aware that each social network has, apart from its particularities in handling, a different direct audience depending on age. "When we develop campaigns in universities or secondary schools we turn to Instagram because we know that they work better there," says the Regional Blood Donation Center of Murcia. However, many recognize that they would like to have a presence on TikTok, but are postponing its use due to lack of means, time and knowledge.

When asked about the publications that generate the most interaction, these institutions point to the testimonials of donors, recipients or professionals. "People like to put a face to the donation", which helps to empathize, according to several centers. However, they do not forget that ensuring generational relay is a priority and that they need to attract attention. For this, they are committed to dynamic, fun content, in most cases prioritizing image or video over text. "And if we want to reactivate inactive donors, we have found that social networks do not work. The direct phone call is more effective," acknowledges the Toledo Brotherhood of Blood Donors.

"It is not common to receive complaints" is the unanimous response of blood banks and associations when asked about the management of negative comments on networks. Some point out that when someone has had a problem they usually prefer to call or write an email, while those who have identified an unfavorable public review point out that the appearance of hematomas is usually the most common object of "criticism". "When the case has arisen, we have contacted the user privately to reassure and explain. As a general rule, the user, aware of the harm done to donations, withdraws it, seeing that this transitory effect is offset by its benefits," explains the Hemotherapy and Hemodonation Center of Castilla y León.

Through social networks, they receive numerous questions, the most frequent ones related to the possibility of donating -after getting a tattoo or having traveled abroad-, waiting times and collection points and times. On many occasions the queries are sent by direct message, which requires an almost immediate response capacity.

Among the wishes of many of the managers interviewed is to strengthen their community of users and for the donors themselves to be the ones who, on their personal social network accounts, relate their experience, upload photos and encourage others to donate, in short, to act as ambassadors for the blood banks.

3.2. Testimonials on Hemodonation in TikTok as the Axis of Social Learning based on Collective Intelligence

Of the 61 videos analyzed, published between 2020 and 2023, an anomalous case ("outlier") was detected that generated almost 60% of the total number of comments (961 out of 1,606), despite coming

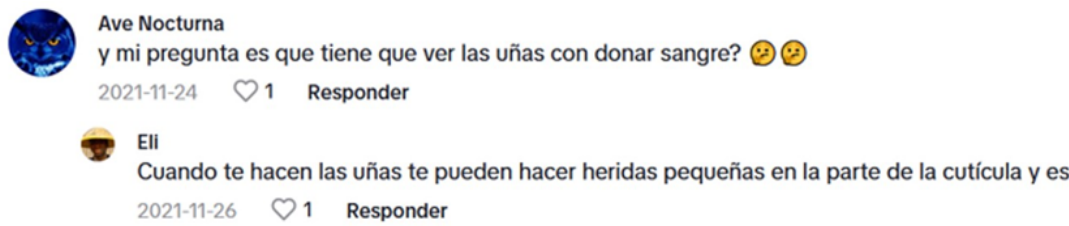
from a profile with an average number of followers. To avoid distorting the results by treating it with the other cases, it was decided to examine this unit independently and perform the overall quantitative and qualitative analysis on the sample of the remaining 60.

3.2.1. The Anomaly: Controversy Over Professional Manicure as a Criterion for Exclusion

The video, with 426,000 "likes" and 961 comments, reflects the complaint of a young woman with 12,800 followers about the hemodonation center's refusal to allow her to donate because she had a manicure in a beauty salon (a similar criterion to the obligatory wait after undergoing surgery or getting a tattoo). The video sparked controversy in the community of TikTok users, especially young people who in many cases follow the current trend of having professional manicures.

The debate centered on the convenience or otherwise of the criterion, the possible discretionary nature and lack of transparency in its application, and the recounting of experiences in other locations. The conversation generated 70 complaints, 50 doubts and more than 240 comments with knowledge, whether true or not, on the main topic and, to a lesser extent, on other aspects of hemodonation, such as the analysis of the blood collected, the information and donation sites. More than half of the questions were not answered directly, as many of them were repeated and had already been answered. The relationship between having a manicure and donating blood was the most common question (Figure 2). The participation of the creator of the video was anecdotal in the answers, focusing primarily on supporting what was presented with her testimony. This controversy occurred in November 2021, but it is noteworthy that in the rest of the videos analyzed, from 2020 to 2023, no other comment was repeated in this regard.

Figure 2: Doubt about not Knowing the Manicure Criteria to Exclude Donation.



3.2.2. The Importance of Health Profiles in the Success of Shared Content

Before developing the section, it should be noted that in the 61 videos analyzed only one institutional author (the Guardia Civil) and one author receiving blood were observed, so it is not possible to establish relationships with these characteristics of the subject who created the video. None of the cases involved a relevant deviation with respect to the rest, neither in quantity nor in type of comments, so they were treated with the overall set.

Regarding the number of followers of the creator profiles, the data show an average of 81,253 (Me=3,408), although the most interesting data is the sum of 4,875,194 as the minimum potential audience of the testimonials, added to the rest of the platform users who see it in contents suggested by the platform.

The videos analyzed obtained an average of 2,582 "likes" (Me=92) and a total of 154,918 "likes", the minimum audience that actually consumes the content. It should be noted that all of them are positive, even those that normalize a rejection for not meeting requirements or point out minor problems such as dizziness or fatigue after the action.

The user community participated 645 times, with an average of 11 comments per video (Me=3). Almost a third of the sample (18) did not get any response, despite having an average of 63 "likes". All the above data show the difficulty of getting interaction in this social network in the form of comments.

Regarding the type of user profile, a statistically significant relationship was observed between the results and those profiles from the health sector (physicians, nurses and pharmacists). These profiles, which represent 18.3% of the total, were more successful in several of the fields analyzed (Mann-Whitney U test):

- Profile followers (p-value=0.033). Compared to the average of 71,062 followers of the non-health

sector, those of the health sector reach 126,652.

- "Likes" of the video (p-value=0.022). Average of 785.2 "likes" for the general videos, compared to 10,585.9 for the healthcare videos.
- Number of questions (p-value=0.004). Mean of 0.33 questions in non-health videos vs. 3.73 in health videos.
- Causes of non-donation (p-value=0.025). Mean of 0.8 in non-health professionals vs. 2.82 in health professionals.
- Knowledge contribution by the community (p-value=0.009). Only 0.24 in the generic profiles vs. 2.73 in the health profiles.

Regarding the content of the videos, it is noteworthy that 80% of the users post sensitive images that clearly show the blood or the moment of the needle prick. In other words, the community of this social network normalizes the image of donation, despite comments alluding to their fear of needles (trypanophobia) or getting dizzy in front of blood (France & France, 2018; Gilchrist et al., 2019). However, their presence does not influence either the quantity or the meaning of the comments. These images are shared by both the general community (81.6%) and health profiles (72.7%).

As a general rule, there was only one protagonist: male in 35% of the cases and female in 60%. Gender was not found to affect any of the variables studied. Regarding the age range of the protagonists of the testimony, there is a clear predominance of young profiles (apparently under 30 years of age), which account for 71.7% of the total, compared to 18.3% of adults (between 30 and 60 years of age). In this case, the only variable linked with statistical significance was the number of comments by the author himself in the video (p-value=0.014, Mann-Whitney U test): compared to an average of 2.1 comments by young people in their videos (resolving doubts, adding information, thanking for support or encouraging donations), none of the adult authors followed up the conversation, despite having a similar average number of comments received (11.6 by young people and 7.5 by adults).

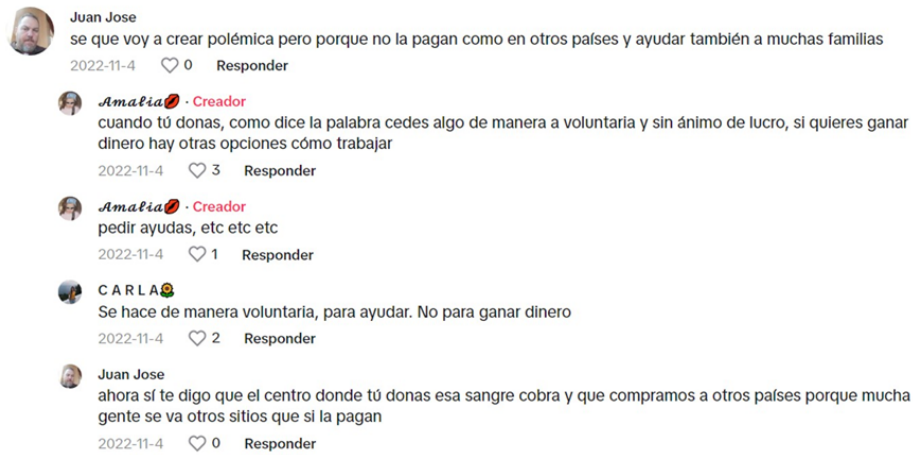
Finally, an analysis of the relationships between quantitative variables was performed using Spearman's rho, which showed expected correlations, such as between the number of profile followers and the number of "likes" received (r=0.680; p-value=0.01) or between the number of followers and the number of comments received (r=0.484; p-value 0.01). In this sense, none of the data showed an unexpected result, but rather reinforced the previous ones.

3.2.3. Typology of Comments and Knowledge Management

Regarding the type of comments received in the donation testimonial videos, one fifth (132 of 645) were classified as Other, either because their meaning was not understood, or because they dealt with topics outside the scope of the analysis, or because they referred to contexts other than Spanish. Excluding those that could not be analyzed, the dominant categories were recognition of the donations of third parties, usually the creator of the video (18.7% of the 513 that could be analyzed), comments by the authors themselves (18.3%), explanation of the reasons for not donating (13.6%), doubts (11.1%), and complaints (10.3%). Taking pride in one's own merit as a donor and expanding knowledge on the part of the community share sixth and seventh place, both with 8.2% of the total. In last position are the categories intention to donate (3.9%), emotional support for donation (2.7%), rational support (0.6%) and allusions to COVID-19 (0.2%). Of these fields, the most relevant for the research objectives are developed below.

First, regarding the comments expressing complaints or problems experienced during the donation process, it should be noted that the majority (86.8%) are concentrated in only two videos and are almost anecdotal in nature. The first shows a generous provisioning received after donating, which generates a cascade of complaints from other donors who have received less. The second case shows two young friends who have suffered low blood pressure during the donation, which leads to many comments referring to similar problems, such as fainting, interruption of the donation due to thin veins or thick blood, among others. However, it should be noted that both the creator of the video and other users relativize the problem, considering that it is worth suffering a little dizziness for the sake of helping others. Among other minority complaints found in the rest of the videos, those that consider that hemodonation should be remunerated are noteworthy. These statements are usually poorly received and receive a critical response from the TikTok community itself, which defends its voluntary and altruistic nature (Figure 3).

Figure 3: Example of Comments on Whether or Not the Donation Should be Remunerated.



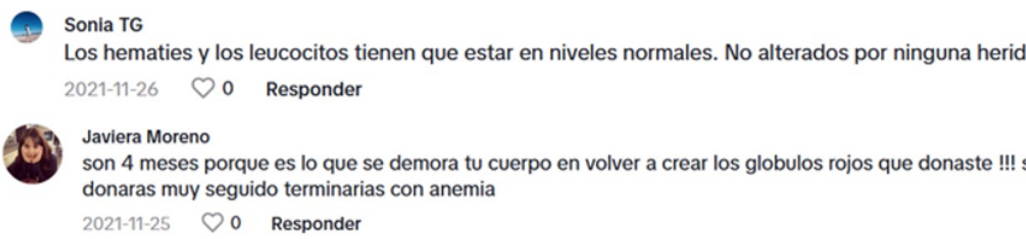
The direct or indirect questions received in the videos analyzed are mainly aimed at finding out the requirements to be a donor: either general questions, or specific questions about some of them (frequency, age, weight, fasting), or about the exclusion criteria, among which are piercings or tattoos (it is striking that none of them talks about the manicure that sparked so much controversy in a single video), having a disease, taking medication or being a smoker. In the minority, there are doubts about the amount donated, blood analysis, remuneration, possible consequences such as getting fat or suffering from anemia, and about the places to donate.

A total of 28.1% of the queries were resolved by the authors of the video, 15.8% were answered by other users in the community, and 3.5% by both types of users. It is also worth noting that almost half of the queries were produced in the same video, starring a health profile, with many remaining unanswered by repeating a query already answered.

Among the frequent reasons or excuses for not donating, we find low weight, the presence of diseases or anemia, needle phobia and the propensity to get dizzy, in that order. It is noteworthy that this type of comment is one of the top categories (accounting for 13.6% of the total), which shows the desire of many users to donate, even if they are currently unable to do so, and also provides information to others on what criteria may be exclusionary in the process, which is one of the most frequent questions.

Regarding the contribution of new knowledge by users, this is aimed at answering questions about the requirements already seen, general or specific, or about the donation process itself (analysis and tests, duration, consequences, rewards, uses of blood, donation sites and their characteristics) and in many cases they show technical knowledge, not only experiential (Figure 4), which reinforces the importance of the presence of health profiles in this digital conversation.

Figure 4: Example of Know-how Shared by Users.



However, despite the good will of most users and the benefits of collective intelligence to build knowledge, sometimes misinformation has been detected such as "donating takes years off your life", "centers charge

for donations" or "blood is sold to other countries and to pharmaceutical companies", dangerous questions if no one refutes them. In spite of this, the amount of shared misinformation detected in this research has been relevant, highlighting on the contrary the correct information, based on the donor's own experience or on the profiles of the health sector.

Finally, the 94 comments by the video author himself are organized into four main possibilities: answering questions (17), adding more information (9), thanking for the support of his donation (11) and thanking or encouraging other donors (18), as shown in Figure 5.

Figure 5: Comments from Non-health (left) and Health (right) Profile Creators who Answer Questions based on Experience and Encourage Donation.

4. Conclusions and Discussion of Results

The methodology developed in two steps, interviews and content analysis, has allowed to satisfy the research objectives and to determine the importance of the virtual community of social networks in the generation of knowledge about hemodonation and its influence in the creation of a generational relay, thus corroborating the ability of social networks and their surrounding ecosystem to mark social progression (Abdullah et al., 2022; Vizer & Carvalho, 2015).

The interviews conducted with the organizations involved in the process in Spain confirm that social networks are becoming increasingly important for attracting young people, attracting between 30 and 60% of new donors thanks to these channels. In their communication strategy, the organizations seek to inform and raise awareness of the importance of the act and, although they try to adapt to the new channels and formats, as recommended by authors such as Stock and Möckel (2021) and Ramondt et al. (2022), most of them do not have a presence on TikTok due to lack of means or knowledge, thus revealing an incomplete cultural convergence strategy (Islas, 2009; Wang et al., 2022).

One of the key points detected in the first phase of the research is the need for organizations to get donors and recipients themselves to become ambassadors for hemodonation, detecting that the network content that generates the most interaction is personal testimonials, which validates the results of studies such as Igartua et al. (2023) and Durántez Stolle et al. (2022). This, together with research such as that of Bandura (2004) or Rimer and Glanz (2005) on the importance of having role models to favor replication, reinforces the importance of examining the role of prosumers who share experiences on donation and observing the audience's reaction to determine the role of the community in this literacy.

The second phase of the fieldwork, the analysis of Spanish testimonies on TikTok about hemodonation, shows the lack of presence of the organizations, where only one appears as a participant in the conversations; this gap is filled by the digital community. The role played by health profiles stands out, but also the collaboration of donors based on their personal experiences.

A statistically significant relationship was observed between the profile creating the content and its success. Thus, videos shared by healthcare professionals, with a higher average number of followers than other profiles,

get more "likes", more questions and more comments from other users who, in turn, provide more information. These results reinforce those of previous research on the role of healthcare workers as "influencers" on platforms such as Instagram or Twitch (Buitrago & Torres-Ortiz, 2022; Castro-Higueras et al., 2021; Martínez-Sanz et al., 2023; Pérez-Ordóñez & Castro-Martínez, 2023). However, in the management of questions, other users are almost as important as the authors themselves, and in this way community contributes to the literacy.

In the users' comments we find a variety of issues as diverse as gratitude to donors, pride in donating, intention to do so in the future or justification for not doing so; together with all those linked to knowledge management: questions, problems, answers from the creator and information of interest added by the audience. The sum of the predominant comments favors the transmission of a positive idea about donation, hardly tarnished by complaints, and instead reinforced by donor pride and community support for those who show their concerns or intention to donate, in line with the contributions of authors such as Bullers et al. (2001) and Rotter (1954) on the influence and imitation of behaviors.

As for the most frequent questions and information, both the interviews and the content analysis coincide in pointing out the conditions for donating and practical information such as the location of centers, the frequency of donation or the analysis of blood. Donation centers hardly receive any complaints on their networks, and those found on TikTok are mainly anecdotal (difference in supplies after donating, minor dizziness or bruising), except for a notable case of a "new" exclusion criterion (professional manicure) and doubts about its motivation and application. To a lesser extent, there are comments on the appropriateness of remuneration for the act, which are usually responded to critically by those who defend the altruism of the act.

Finally, as a negative consequence of user participation in the transmission of hemodonation knowledge, there is a lack of filtering and review of the information, which can sometimes be erroneous or even malicious, with statements such as "donating shortens life" or "the centers profit from donation". However, in the analysis carried out, an almost irrelevant amount of this type of misinformation has been detected, a fact surely derived from the altruistic and voluntary nature of donation itself, which therefore promotes positive participation in the digital conversation. Even the comments collected as criticisms or problems are approached from a humorous or relativizing point of view, given the importance of the act and its benefits for society.

The present research therefore manages to validate the two starting hypotheses and thus expand knowledge about the communication of organizations linked to health and specifically to blood donation, as well as the role of the virtual community that participates in the media ecosystem (Vizer & Carvalho, 2015). Most relevant is that the article provides a novel framework for the analysis of the literacy capacity of users not only as main content creators but through their digital conversation in a social, collaborative and group learning process, based on collective intelligence, of particular relevance in the field of awareness raising in health issues. And while it is true that the research is limited to the national scenario, it is extensible to other contexts, especially those where altruistic donation is imposed.

The main limitation is the difficulty of distinguishing the meaning of some comments or their origin, which reduces the richness of the results. In future studies, it would be interesting to replicate the content analysis of the comments in other social networks to determine the existence of differences in the predominance of some categories or others and in the quantity and quality of the knowledge shared by the community about blood donation.

Notes

The authors are grateful for the selfless collaboration of the communication and campaign managers of the donation centers and donor associations who were interviewed.

Support

This work is part of the GID "Communicating to create social awareness" and the GIR "New Trends in Communication" recognized and funded by the University of Valladolid.

References

Abdullah, L., Garg, H., Awang, N. A., Pauzi, H. M., & Hashim, H. (2022). Non-pharmaceutical intervention strategies to respond to the COVID-19 pandemic: preference ranking method. *Operational Research in Engineering Sciences: Theory and Applications*, *5*(3), 108-130. https://doi.org/10.31181/oresta051022076a

Alkhafagy, T., Nazem, S. N., Farhan, A. F., Salman, S. D., Khudadad, A. M., Nsaif, A. D., et al. (2023). Cybercrime and Inheritance Legislation in Iraq: Extension of Perspectives on Inheritance Legislation within Iraq. *International Journal of Cyber Criminology*, *17*(2), 63-76. https://go.revistacomunicar.com/XaGJJr

Balegh, S., Marcus, N., Dubuc, S., Godin, G., France, C. R., & Ditto, B. (2016). Increasing nondonors' intention to give blood: addressing common barriers. *Transfusion*, *56*(2), 433-439. https://doi.org/10.1111/trf.13386

Bandura, A. (2004). Health Promotion by Social Cognitive Means. *Health Education & Behavior*, *31*(2), 143-164. https://doi.org/10.1177/1090198104263660

Buitrago, Á., & Torres-Ortiz, L. (2022). Influencers de ciencia en Twitch. Divulgación científica a través de vídeo-streaming en tiempos de COVID-19. *Teknokultura. Revista de Cultura Digital y Movimientos Sociales*, *19*(2), 165-176. https://doi.org/10.5209/TEKN.77941

Bullers, S., Cooper, M. L., & Russell, M. (2001). Social network drinking and adult alcohol involvement: A longitudinal exploration of the direction of influence. *Addictive Behaviors*, *26*(2), 181-199. https://doi.org/10.1016/S0306-4603(00)00099-X

Capistrán Gracia, R. W. (2022). Aróstegui, J.L., Rusinek, G. y Fernández-Jiménez, A. (Eds.) (2021). Escuelas musicales: Buenas prácticas docentes en centros de Primaria y Secundaria que educan a través de la música. Octaedro. *Revista Electrónica de LEEME*, (49), 139-143. https://doi.org/10.7203/LEEME.49.21751

Camelo-Guarín, A., Igartua, J. J., Vega-Casanova, J., & Palacio-Sañudo, J. (2021). Entertainment-education and HIV-AIDS prevention. Moderating and mediating processes [Edu-entretenimiento y prevención del VIH-SIDA. Procesos de moderación y mediación]. *Cuadernos.Info*, *51*, 268-287. https://doi.org/10.7764/cdi.51.29287

Castells, M. (2009). *La sociedad red: una visión global*. Madrid: Alianza Editorial. https://go.revistacomunicar.com/y26dP2

Castro-Higueras, A., Torres-Martín, J. L., Carballeda-Camacho, M., & de Aguilera-Moyano, M. (2021). Comunicación, salud y Covid-19. Cómo comunican los instagrammers sanitarios españoles. Ámbitos. Revista Internacional de Comunicación, 53, 42-62. https://doi.org/10.12795/Ambitos.2021.i53.03

Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage Publications.

Durántez Stolle, P., Martínez Sanz, R., & Rodríguez de Dios, I. (2022). Efectos de los marcos narrativo-persuasivos en Twitter sobre donación de sangre. Orgullo frente a empatía y personas vs. números. *Profesional de la Información*, *31*(4), e310415. https://doi.org/10.3145/epi.2022.jul.15

Fernández-Luque, L., & Bau, T. (2015). Health and Social Media: Perfect Storm of Information. *Healthcare Informatics Research*, *21*(2), 67-73. https://doi.org/10.4258/hir.2015.21.2.67

France, C. R., & France, J. L. (2018). Fear of donation-related stimuli is reported across different levels of donation experience. *Transfusion*, *58*(1), 113-120. https://doi.org/10.1111/trf.14382

Gilchrist, P. T., Masser, B. M., Horsley, K., & Ditto, B. (2019). Predicting blood donation intention: the importance of fear. *Transfusion*, *59*(12), 3666-3673. https://doi.org/10.1111/trf.15554

IAB Spain. (2023). *Estudio de Redes Sociales 2023*. https://acortar.link/k0kSrr

Igartua, J.-J., Rodríguez-Contreras, L., Guerrero-Martín, Í., & Honorato-Vicente, A. (2023). "It Happened to Me and It's Serious": Conditional Indirect Effects of Infection Severity Narrated in Testimonial Tweets on COVID-19 Prevention. *International Journal of Environmental Research and Public Health*, *20*(13), 6254. https://doi.org/10.3390/ijerph20136254

Islas, O. (2009). La convergencia cultural a través de la ecología de medios. *Comunicar*, *33*, 25-33. https://doi.org/10.3916/c33-2009-02-002

Johnson, K. A., Dana, G., Jordan, N. R., Draeger, K. J., Kapuscinski, A., Olabisi, L. K. S., et al. (2012). Using Participatory Scenarios to Stimulate Social Learning for Collaborative Sustainable Development. *Ecology and Society*, *17*(2), 9. https://doi.org/10.5751/ES-04780-170209

Leech, N. L., & Onwuegbuzie, A. J. (2009). A typology of mixed methods research designs. *Quality & Quantity*, *43*(2), 265-275. https://doi.org/10.1007/s11135-007-9105-3

Leiva Castillo, J., Rabanal Carrasco, M., Cabrera Palma, D., Canales Abarca, J., Gormaz Aguirre, M., Meza Espinoza, J., et al. (2023). Social and health behaviors of adolescence represented in TikTok. *Enfermería: Cuidados Humanizados*, *12*(1), e3078. https://doi.org/10.22235/ech.v12i1.3078

Lévy, P. (2007). *Cibercultura: la cultura de la sociedad digital*. Anthropos. https://go.revistacomunicar.com/XW2aeP

Martín-García, A., Buitrago, Á., & Martínez-Sanz, R. (2024). Mi vida con una ostomía: el rol del paciente influencer en Instagram. *Contratexto*, (41), 68-88. https://doi.org/10.26439/contratexto2024.n41.6851

Martínez-Santos, A.-E., Fernández-de-la-Iglesia, J.-d.-C., Pazos-Couselo, M., Marques, E., Veríssimo, C., & Rodríguez-González, R. (2021). Attitudes and knowledge in blood donation among nursing students: A cross-sectional study in Spain and Portugal. *Nurse Education Today*, *106*, 105100. https://doi.org/10.1016/j.nedt.2021.105100

Martínez-Sanz, R., & Arribas-Urrutia, A. (2023). Se buscan donantes: innovación narrativa en TikTok para activar la movilización. *Profesional de la información*, *32*(3), e320305. https://doi.org/10.3145/epi.2023.may.05

Martínez-Sanz, R., Buitrago, Á., & Martín-García, A. (2023). Comunicación para la salud a través de TikTok. Estudio de influencers de temática farmacéutica y conexión con su audiencia. *Revista Mediterránea de Comunicación*, *14*(1), 83-98. https://doi.org/10.14198/MEDCOM.23435

McLuhan, M., & Powers, B. R. (2011). *La aldea global: transformaciones en la vida y los medios de comunicación mundiales en el siglo XXI*. Gedisa. https://go.revistacomunicar.com/AQutcA

Muthuswamy, V. V., & Bayome, S. M. S. (2022). Transactional analysis and its IMPLICATION on leadership. *The Journal of Modern Project Management*, *10*(2), 345-357. https://go.revistacomunicar.com/AvOkMg

Parikh, S. V., & Huniewicz, P. (2015). E-health: an overview of the uses of the Internet, social media, apps, and websites for mood disorders. *Current Opinion in Psychiatry*, *28*(1), 13-17. https://doi.org/10.1097/YCO.0000000000000123

Paternina-Arango, C. M., J., C.-G., Arboleda-Serna, V. H., & Muñoz-Rodríguez, D. I. (2022). Friends, physical activity, and sedentary behavior in university students: A social network analysis. *Revista Facultad de Medicina*, *70*(1), e91270. https://doi.org/10.15446/revfacmed.v70n1.91270

Peña-Fernández, S., Larrondo-Ureta, A., & Morales-i-Gras, J. (2022). Current affairs on TikTok. Virality and entertainment for digital natives. *Profesional de la Información*, *31*(1), e310106. https://doi.org/10.3145/epi.2022.ene.06

Pérez-Ordóñez, C., & Castro-Martínez, A. (2023). Creadores de contenido especializado en salud en redes sociales. Los micro influencers en Instagram. *Revista de Comunicación y Salud*, *13*, 23-38. https://doi.org/10.35669/rcys.2023.13.e311

Piscitelli, A. (2005). *Internet, la imprenta del siglo XXI*. Gedisa.

Ramondt, S., Kerkhof, P., & Merz, E.-M. (2022). Blood Donation Narratives on Social Media: A Topic Modeling Study. *Transfusion Medicine Reviews*, *36*(1), 58-65. https://doi.org/10.1016/j.tmrv.2021.10.001

Rheingold, H. (2004). *Multitudes inteligentes. La próxima revolución social*. Gedisa. https://go.revistacomunicar.com/MtzIHZ

Rimer, B., & Glanz, K. (2005). *Theory at a Glance. A Guide for Health Promotion Practice*. U.S.: Department of Health and Human Services. National Institutes of Health. https://bit.ly/2EU7TkC

Rotter, J. B. (1954). *Social Learning and Clinical Psychology*. New York: Prentice-Hall.

Royal Decree 1945/1985, of October 9, regulating blood donation and blood banks. Official State Gazette, October 24, 1985, no. 255, pp. 33608 to 33612.

Royal Decree 1088/2005, of September 16, establishing the technical requirements and minimum conditions for blood donation and transfusion centers and services. Official State Gazette. September 20, 2005, no. 225, pp. 31288 to 31304.

Sakdapat, N. (2022). Analysis of the Path of influence of work skills in the new normal life of the undergraduate students in Thailand. *Przestrzeń Społeczna (Social Space)*, *22*(3), 152-168. https://go.revistacomunicar.com/sjRE1h

Shelton, R. C., Lee, M., Brotzman, L. E., Crookes, D. M., Jandorf, L., Erwin, D., et al. (2019). Use of social network analysis in the development, dissemination, implementation, and sustainability of health behavior interventions for adults: A systematic review. *Social Science & Medicine*, *220*, 81-101. https://doi.org/10.1016/j.socscimed.2018.10.013

Siman, E. M., García, D. S. G., Hernández, P. A. M., Ramírez, J. L. Z., Lara, R. R. D., & Ariceaga, C. C. G. (2022). Comparison of motives to buy organic foods among middle income urban consumers of the state of Mexico, Mexico. *Future of Food: Journal on Food, Agriculture and Society*, *10*(6), 1-10. https://doi.org/10.17170/kobra-202204136026

Sobowale, K., Hilliard, H., Ignaszewski, M. J., & Chokroverty, L. (2020). Real-Time Communication: Creating a Path to COVID-19 Public Health Activism in Adolescents Using Social Media. *Journal of Medical Internet Research*, *22*(12), e21886. https://doi.org/10.2196/21886

Stock, B., & Möckel, L. (2021). Characterization of blood donors and non-blood donors in Germany using an online survey. *Health and Technology*, *11*(3), 595-602. https://doi.org/10.1007/s12553-021-00532-y

Tongat, T. (2022). The Ambiguous Authority of Living Law Application in New Indonesian Penal Code: Between Justice and the Rule of Law. *International Journal of Criminal Justice Sciences*, *17*(2), 188-209. https://go.revistacomunicar.com/fjZZgw

Torrego-Gonzalez, A., & Gutierrez-Martin, A. (2016). Watching and Tweeting: Youngsters' Responses to Media Representations of Resistance. *Comunicar: Revista Científica de Comunicacíon y Educacíon*, *24*(47), 9-17. https://doi.org/10.3916/C47-2016-01

Vizer, E. A., & Carvalho, H. (2015). La perspectiva ecológica y la hipermediatización social. *Palabra Clave*, *18*(4), 1087-1110. https://doi.org/10.5294/pacla.2015.18.4.6

Wang, Y., Sukpasjaroen, K., Moudsong, P., & Chankoson, T. (2022). The Effects of Entrepreneurial Learning and Entrepreneurial Bricolage on the Startup Performance of Small and Medium-Sized Platform Enterprises (SMPEs). *International Journal of Operations and Quantitative Management*, *28*(2), 525-548. https://go.revistacomunicar.com/iEFUHs

WHO. (2020, June 14). *World Blood Donor Day 2020 - Safe blood saves lives*. World Health Organization. https://acortar.link/9Hn0hp

Zhang, L., & Cassany, D. (2019). The 'danmu' phenomenon and media participation: Intercultural understanding and language learning through 'The Ministry of Time'. *Comunicar*, *58*, 19-29. https://doi.org/10.3916/C58-2019-02

Zuluaga-Duque, J. F. (2015). La gestión crítica del conocimiento y la inteligencia colectiva y su relación con el desarrollo social. *Entramado*, *11*(2), 172-187. https://doi.org/10.18041/entramado.2015v11n2.22232