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Research Article



Impact and engagement of sport & fitness influencers: A challenge for health education media literacy

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Citation: Recio Moreno, D., Gil Quintana, J., & Romero Riaño, E. (2023). Impact and engagement of sport & fitness influencers: A challenge for health education media literacy. *Online Journal of Communication and Media Technologies, 13*(3), e202334. https://doi.org/10.30935/ojcmt/13309

ARTICLE INFO

ABSTRACT

Received: 12 Mar 2023 Accepted: 06 May 2023

Influencers of physical activity and sport have acquired an important role in the promotion of health and well-being through digital social networks such as Instagram. The purpose of this study is to obtain a detailed view of the use that sports and physical activity influencers make of the Instagram social network, its reach and impact on the audience. This study monitored and collected data from the channels of ten Spanish Sport & Fitness influencers who projected their activity towards 6,804,930 followers on the social platform Instagram. In addition, the content of the biography and most popular publications of each influencer was analysed, considering the visual aspects, codes and digital languages. The results obtained show a commitment of the influencers to motivate and excite their audience to lead an active life, a healthy lifestyle and to perform a variety of exercises to increase their muscular strength, flexibility and cardiorespiratory resistance, among others. They also offer practical nutrition advice, performance-enhancing recommendations, and individualized training programs. All this through a style and strategies typical of digital marketing and influence to gain trust and credibility, achieve engagement and a positive impact on their audiences, even influencing the decision to purchase services and products from commercial brands. This scenario highlights the importance of media literacy for citizens towards a responsible use of the Internet and social networks, especially towards the consumption of content related to physical activity and sports, thus developing critical thinking to evaluate the information that can influence our decisions and perceptions about health and physical well-being.

Keywords: influencers, social media, Instagram, media literacy, health education, physical activity

INTRODUCTION

Sport and health are linked to the practice of sport by developing an improvement in physical health and mental balance. Enjoying the physical and psychological benefits of sport depends on how it is practiced, how it is participated in and how it is lived, especially in the post-digital society we are in, built by influencers and influenced by networks, where the emotional component acquires a relevant importance (Serrano-Puche, 2016). Social networks are an emerging digital medium in this society, changing communication, relationships, and participation (Escaño, 2022).

Instagram is a main platform for audiovisual content production and dissemination (Ravina Ripoll et al., 2022), transforming communication into a bidirectional and multidirectional model, affecting interpersonal

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relationships and consumption habits. Influencers emerge in this ecosystem, creating trends on a variety of topics through their audiovisual content.

This analysis focuses on the role of sports influencers in health education through digital social networks. The impact of these opinion leaders is strong, affecting young Spaniards (Leaver et al., 2020), due to their ability to select, modify and deliver messages (García et al., 2016).

Data were collected from 10 Spanish Sport & Fitness influencers who have an estimated total of 6,804,930 followers on Instagram, and analyzed from a media perspective, resulting in the revelation of their interest and commitment to motivating their followers to lead a healthy lifestyle and offering advice for their nutrition, developing training programs and improving performance.

The purpose of this study is to obtain a detailed account of the use that physical activity and sports influencers make of the social network Instagram, its reach and impact on the audience. Formally, the research seeks to achieve the following objectives:

- Objective 1. Identify the characteristics and defining elements of sport and fitness influencers' profiles on the Instagram social network.
- Objective 2. Study the use of digital media and content marketing strategies by sport and fitness influencers to position themselves as leaders in the field of physical activity and engage with their audience.
- Objective 3. Analyze the effectiveness of sport and fitness influencers' Instagram content in generating audience interactions and video views, taking into account their audience's location, gender, age, interests, and motivations.
- Objective 4. Describe and understand how media productions influence the audience's interaction, consumption, communication, and engagement with sport and fitness influencers.

LITERATURE REVIEW

We live in a Postdigital society where technologies are part of our everyday life (Jandrić, 2020). Analysing this context becomes a necessity in the midst of the new relationships between all the dimensions of the person and society, because there is no doubt that, what we put in our daily lives ends up influencing each of our actions and the development of our mindset. In this context, the role of social networks is fundamental because they have become spaces that generate links, spaces for exchange and mutual, professional and informal relationships, even during the COVID-19 pandemic, content creators increased their number of productions on platforms like YouTube, sharing pandemic-related themes and interacting with their viewers (Gil-Quintana et al., 2023). Therefore, the impact of these digital technologies in the modification, generation of communities and in the management and maintenance of our daily relationships is indisputable (Santoveña-Casal, 2020).

The Social Media Family (2022) published its VIII report on the use of social networks in Spain. The report, which was prepared by the research department of the digital marketing agency, shares the results derived from an analysis of the behaviour of users of social networks such as Facebook, Twitter, Instagram, LinkedIn, WhatsApp, and TikTok in Spain. The report presents interesting information, placing Instagram as the social network that has grown by 20% compared to data collected in 2020, followed by Twitter that has gained 100,000 users, LinkedIn increases by 1 million users; TikTok, which stands at 15.5 million, and WhatsApp, at 35.8 million, continue to project strongly. Facebook continues to lose hegemony, declining by 2% and standing at 21.7 million in 2021. According to this report, Instagram is positioned as a social platform with great projection in Spain, starting from its inception in 2015 with 7.4 million profiles to 24 million in 2021, with 54.17% being women, aged 18 to 39 years (64.17%).

As we now see, social networks have been projected in recent years as the preeminent communicative tool and channel in the post-digital society. There is a profitable medium created through this social space, involving interaction, collaboration and co-creation, (Karg et al., 2022) in all areas of human life, especially those related to health. Thanks to the development of digital technologies, the media and social networks, citizens have been able to access information, a strong weapon that empowers citizens in everything that affects their health. Sometimes, however, this instrument does not enable access to true media literacy,

(understood as the ability to access information, interpret and judge it appropriately), in areas such as health, taking advantage of it, to make decisions that benefit or harm us (Falcón & Ruiz-Cabello, 2012). Social networks, thus, become an information scenario where people suffering from certain diseases or health problems seek answers to their questions that, on some occasions, have not been understood in the explanations offered by public or private healthcare professionals (Mayor-Serrano, 2010), being replaced by these influencers who have become prosumers through the production of their content units (Rego Rey & Romero-Rodríguez, 2016). Influencers make remarkable use of these platforms as media for the consumption, production, and dissemination of their audiovisual content in this digital ecosystem.

Influencers in the health sector are characterized by their ability to lead, inspire and energize their communities towards an active and healthy lifestyle based on physical and sports practice. They play an important role in the promotion of health, physical well-being and adherence to physical activity and sports. Therefore, the role of these professionals has been supplanted by those people who, in social networks, exert influence on the public, those called influencers who have a loyal following in the main social networks (Ramos, 2019) and who influence the behaviour and opinions of their followers. Among the influencers with the most followers we find celebrities related to the sports field (Gil-Quintana et al., 2022), a fundamental part of health education (Gil-Quintana et al., 2021b), such as Sergio Ramos (49.3 million followers), Andrés Iniesta (38.7M), Isco Alarcón (22.8M) or Gerard Piqué (19.6M), who use social networks to get closer to their audience (Blaszka et al., 2012), even those who consider themselves more fanatical about a certain character, team or sport (Stavros et al., 2014). Other profiles with the highest number of followers include Georgina Rodríguez (36.1M), Ester Expósito (28.9M), Úrsula Corberó (24.9M), Rosalía (18.4M), AuronPlay (17.3M), Enrique Iglesias (16.4M), El Rubius (15.9M), Jaime Llorente (14.6M), Miguel Herrán (14.4M) and Arón Piper (14.1M). Social networks become spaces for consumer interaction and customer acquisition for certain brands in these profiles (Kotler & Armstrong, 2013), making use of marketing strategies (Villagómez & Acosta, 2020). In a recent review of research on user-generated content, influencer marketing, and commercial brand strategies, Romero-Rodríguez and Castillo-Abdul (2023) found a lack of sufficient evidence exploring the effects, repercussions, and possible dangers of uncontrolled brand exposure through Unofficial Brand Ambassadors.

This media scenario needs to be evaluated from the perspective of media literacy and critical thinking about social media, as well as the content that is consumed and the impact it can have on the health and physical well-being of the individual. Therefore, it is necessary to continue investigating their forms of information representation, in terms of their visual, textual and multimodal aspects, as well as in the general characteristics of digital codes and languages, in the strategies and narrative styles used in these media configurations, and in the new advertising and promotional formats of products, services and commercial brands, monetization, and massive data offered by their users, in a context of consumption on digital platforms (Castillo-Abdul et al., 2022). This phenomenon highlights the urgent need to formulate educational practices for health education aimed at media and information literacy.

MATERIALS AND METHODS

Social networks are shaped as emerging digital media platforms for the consumption, production and dissemination of content. Platforms such as Instagram modify the way in which we communicate, relate or participate (Jaramillo-Dent et al., 2020). In recent years, many researchers have focused on Instagram developing research from different perspectives and methodological approaches (Yang, 2021). This descriptive research studies the media phenomena established by sport & fitness influencers on the platform for the consumption and creation and dissemination of Instagram content, as well as their reach and impact on their audiences (Gil-Quintana et al., 2021a). To achieve the objectives of the study, a mixed approach is considered, combining quantitative and qualitative methods in the research design (Creswell & Creswell, 2018). This approach combines several strategies, techniques and research tools to obtain valuable data and information to expand and enrich knowledge, thus achieving a deeper understanding of this reality present in social networks. On the one hand, the technique of social network analysis and data mining was chosen to study the accounts of sport & fitness influencers on Instagram. This allows for collecting and analyzing a large amount of data on their activity, trends, reach and impact on their audiences (Walliman, 2011). To do so, the specific software Influencity was used as a tool. While, on the other hand, the quantitative-qualitative analysis

technique of profile biographies and publications was followed using an observation and analysis tool. This allows for collecting and analyzing the information in a standardized and systematic way (Saini & Shlonsky, 2012; Schreier, 2014), thus reaching a description of the features and elements of the profiles, the strategies employed in the use of the digital medium, and the influence of the productions on the interaction, communication, and consumption within this media ecosystem.

Sample

Ten Sport & Fitness influencers who project their activity on the Instagram social platform (**Table 1**) were used as a reference. The sample was selected based on the following criteria: a) public profiles on the social network; b) accounts linked to physical activity and sports; c) Spanish as the preferred language; d) minimum number of 500 posts on their account; e) minimum volume of 100,000 followers. In a preliminary phase, an Internet search was performed, and the main results obtained were explored using keywords such as: "Influencer", "Sport", "Physical activity", "Fitness", "Instagram", "Spain". This search provided a general overview in order to explore the main profiles. Subsequently, the influencer marketing platforms Heepsy and HypeAuditor were used to select the profiles. Their search, filtering and results analysis functions facilitated the process of choosing the accounts, considering the established inclusion criteria.

Table 1. Profile of the selected Sport & Fitness Influencers on the Instagram Social Network

Influencer names	Account name	Link to account
Patry Jordan	[@gymvirtual_com]	https://bit.ly/3CpDFox
Sergio Peinado	[@sergiopeinadotrainer]	https://bit.ly/3QgZHPX
David Marchante	[@powerexplosive]	https://bit.ly/3QfbLBq
Xuan Lan	[@xuanlanyoga]	https://bit.ly/3WKY3J7
Nieves Bolós	[@niieves_fit]	https://bit.ly/3Gb43ng
Cocó Constans	[@ffitcoco]	https://bit.ly/3VMGPK7
Rubén García	[@rvbengarcia]	https://bit.ly/3icrS6a
Almudena Cid	[@almudenacid]	https://bit.ly/3vBUHfl
Estefanía Gutiérrez	[@estefaniag24]	https://bit.ly/3GGOXqU
Paula Butragueño	[@pau_inspirafit]	https://bit.ly/3Zacvf4

The selected Sport & Fitness influencers are aged between 27 and 46 years old. They primarily focus on physical activity and sports, and have a total of 6,804,930 followers. The influencers included in the study enabled us to analyze the media impact they have through their channels and content on the Instagram platform. It was also interesting to study their content marketing strategies and interests to understand how they position themselves and lead their audience in this sector. Finally, we aimed to understand how media productions influence the interaction, consumption, communication, and engagement of the audience with these influencers. To achieve this, we extracted the content of their public biographies and their five most popular posts from each profile. We then analyzed a working universe of ten biographies and fifty publications based on visual and textual aspects, as well as the characteristics of their digital codes and languages.

Instruments

We used specific software such as Heepsy, HypeAuditor, and Influencity for the collection and analysis of data from the selected accounts to select, track, and monitor data over time in order to evaluate changes and trends in the performance of influencers based on data mining. These programs allow the collection of metrics on impact and consumption trends. The variables considered respond to the so-called key performance indicators in social networks (Keegan & Rowley, 2017), namely: the number of followers; engagement or degree of commitment established with followers; earned media from advertising; average interaction data from video views, likes, and comments; followers quality and differences between the number of nice and doubtful followers; average activity split from likes, comments, video views, and replies in posts; influencer interests and brand affinity; mentions, hashtags, audience ages and gender; audience top countries and cities; and audience interests and brand affinity. All of the data was entered into Atlas.ti, version 22, Microsoft Excel, and VOSviewer programs for network mapping and visualization.

An ad hoc analysis instrument was designed for the quantitative and qualitative content analysis of both the biographies of the profiles and the most popular publications of each influencer. The first version of the instrument was constructed after a thorough review of existing literature on the study object, which includes

categories and indicators to collect data and information from the biographies and publications of each profile on the social media platform Instagram.

To validate the instrument, the expert judgment technique was used, following the individual expert aggregation strategy. An expert validation instrument was developed to improve the content validity, reinforcing the relevance and adequacy of the instrument. Four members of the Social Media and Inclusive and Ubiquitous Media Education (SMEMIU) research group at the National University of Distance Education (Spain) participated in this process.

A scale from 1 (less) to 5 (greater) was used to assess the relevance and adequacy of each of the categories and indicators, along with an open response space to make relevant annotations, changes, and improvements. Mean and median were used as measures of central tendency, while maximum, minimum, and standard deviation were used as measures of dispersion to describe the degree of dispersion with respect to the central tendency measure. Once the expert evaluations were collected in the validation process, all responses and suggestions were processed, analyzed, and considered to build the final version of the instrument (Table 2).

Table 2. Dimensions, categories, and indicators

Dimensions	Categories	Indicators
Biographies	Account data	Number of posts
		Number of followers
		Number of accounts followed
	Privacy	Public or private account
	Verification	Verified or unverified account
	Channel name	Name
		Brand
		Combined
	Profile picture	Personal image
	·	Professional image
		Logo
	Location	Geographic location
	Contact method	Internal messaging
		Phone number
		Email
	Biography elements	Name
	-0 -1 - J	Sector and activity
		Interests and hobbies
		External link
		Link to social networks
		Emoticons
		Hashtag
		Mention of accounts
	Functions	Stories
		Fixed stories
Publications	Publication data	Date
		Number of likes
		Number of comments
	Format	Single image
		Single video
		Multiple images
		Multiple videos
		Combination of images and videos
	Communication model	Unidirectional and informative
		Bidirectional and communicative
	Content of images or videos	Main topic
	5	Interior or exterior space
		Presence or absence of influencer
		Appearance of other people
		Music
		Tagging own and/or other people's accounts

Table 2 (continued). Dimensions, categories, and indicators

Dimensions	Categories	Indicators
Publications	Content of description	Main subject
		Emoticons
		Hashtag
		Mention of own and/or third-party accounts
		Link to social networks
		External link
	Purpose	Procedural
		Guiding
		Sensitizing
		Informative
		Participative
		Formative
		Personal
		Reflective
	Advertising and promotion	Commercial brand
		Own and/or third-party products
		Own and/or third-party services
		Discount codes
		Product and/or service sweepstakes
		Purchase links

Procedures

The first phase of the study involved the search and final selection of sport & fitness influencers on the Instagram social network. The influencer marketing platforms Heepsy and HypeAuditor were used for this purpose. In both, filters were applied based on the initially defined criteria (public profile, field of physical activity and sports, Spanish language, number of publications and followers). In the second phase, the data of the sport & fitness influencers on Instagram were collected. The data collection was carried out from October 21, 2020, to October 21, 2021. The data was tracked, monitored and retrieved with Influencity. Then, the data was dumped into a spreadsheet through Microsoft Excel for analysis and processing, thus generating descriptive statistics (means, frequencies and percentages), contingency tables and graphical representations. The data set was then processed using the VOSviewer program for network mapping and visualization (Van Eck & Waltman, 2010).

The third phase involved capturing the information contained in the biographies of each influencer's profile and retrieving their five most popular publications. Subsequently, the observation and analysis instrument previously designed and validated was applied to analyze their content. First, the biographies of each profile were analysed and then the most popular publications. In the quantitative-qualitative content analysis, the material was segmented into coding units, according to the defined indicators, and then classified into categories, including descriptive statistics (frequencies and percentages) and the synthesis of the notes taken during the analysis process.

Data analysis

The metadata extracted through Influencity software was analyzed using descriptive statistics such as means, frequencies, and percentages. Microsoft Excel was used to process the data and generate contingency tables and graphical representations to present the results. Network visualization and mapping were carried out using the technique of association strength normalization, similarity of units of analysis, and grouping in nodes and clusters, with support from VOSviewer software version 1.6.17.

For the analysis of influencers' profile bios and posts, we categorized, coded, and classified them according to established categories and indicators. Descriptive statistics such as frequencies and percentages were incorporated. The annotations made during the analysis were systematically synthesized and structured using Atlas.ti version 22 and Microsoft Excel software to organize the narrative synthesis of the information.

RESULTS

The results provide a clear understanding of the state of the art regarding how physical activity and sport influencers characterize and use Instagram as a means of consumption, production, and dissemination of their media content to increase their reach, interest, and impact on their audiences through the most relevant information.

Characterization and Use of Digital Media

One of the main and most carefully considered areas by Sport & Fitness influencers on Instagram is the profile biography, along with the content they generate and share in their publications. It becomes a real showcase seeking a positive impression on those followers who visit their profile. **Table 3** shows the public biographies of the selected influencers, presenting below the most outstanding features based on the different visual, textual and multimodal elements they contain.

Table 3. Sport & Fitness Influencer's Instagram profile public biographies Influencer account Biography Patry Jordán gymvirtual com O Enviar mensaje [@gymvirtual_com] 558 publicaciones 2MM seguidores 36 seguidos Las mejores clases online en @gymvirtualcenter ENTRENA CON NOSOTROS Sergio Peinado sergiopeinadotrainer Denviar mensaje [@sergiopeinadotrainer] 2.747 publicaciones 667 seguidos 1,4MM seguidores Sergio Peinado Trainer ¡SíGUEME! Te ayudo a ponerte en forma 45% DESCUENTO MYPROTEIN en el link Empieza tu CAMBIO FÍSICO con mi CLASE ONLINE aquí 👇 linktr.ee/sergiopeinado 🥥 FONDOS 🖺 FUERTACOS **David Marchante** powerexplosive CEnviar mensaje [@powerexplosive] 3.927 publicaciones 1,2MM seguidores 1.149 seguidos Nuestra editorial 👉 @editorialtransverso 👈 Llevamos tus ideas al mundo y hacemos que puedas vivir (muy bien) de ellas. MI NUEVO LIBRO! . editorialtransverso.com/powerexplosive 🤡

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Table 3 (continued). Sport & Fitness Influencer's Instagram profile public biographies Influencer account Biography Xuan Lan xuanlanyoga 🌣 Enviar mensaje Seguir 🔻 … [@xuanlanyoga] 3.903 publicaciones 643K seguidores 651 seguidos Xuan Lan Yoga Xuan Lan Yoga

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xlystudio.info/openday @ Nieves Bolós [@niieves_fit] niieves_fit Enviar mensaje 1.529 publicaciones 538K seguidores 1.940 seguidos NI EVES BOLÓS Psicóloga & Nutritional coach & Entrenadora @biotechusa @BangEnergy Athlete

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Rubén García

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1.150 publicaciones 353K seguidores 299 seguidos

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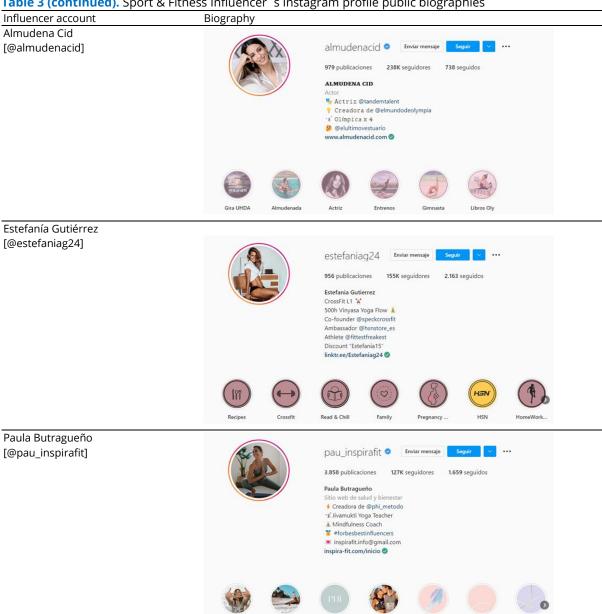


Table 3 (continued). Sport & Fitness Influencer's Instagram profile public biographies

The biographies of 10 Spanish Instagram influencers who focus on physical activity, sports, health, and personal wellness were analysed in a recent study. All the influencers had a public account except for Estefania Gutierrez. Having a public account helps influencers to gain more followers, increase visibility and reach. All the influencers, except for Estefania Gutierrez, had their account verified by Instagram to demonstrate that they are genuine. The usernames of the influencers are different from their profile names. The usernames define the URL of the Instagram profile, while the profile names are specified in the characters used to fill in the biography. Six of the influencers use combined usernames with keywords about their activity or specialty, two use a brand-related username, and two use their real names.

The main image in an influencer's profile is essential to showcase their activity or service. Among the 11 accounts analysed, seven influencers showed a personal image with their full body, sportswear, and athletic fitness, which is quickly identified with sports practice and physical activity. Two influencers used an image of their face only, while the last one used an image of their body with sports attire, although their face did not appear.

The influencers provide users with several ways to contact them, such as email or the internal messaging system of the Instagram platform. Some of the influencers use Linktree as an alternative tool to attract the

public to other social profiles or other web pages of interest to the influencer through the unique link that generates and agglutinates the selected addresses. The influencers also mention their channels on other social platforms such as YouTube. They all add a link to direct the audience to their website, a personal product that they want to promote, or even their own online classes or workout methods.

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The influencers' biographies explicitly focus on the field of physical activity and sports, as well as other directly related and specialized sectors, such as yoga and meditation, health and personal wellness, gymnastics, performance, training, sports psychology, and nutrition. They offer personalized services such as online classes, online platforms, specific apps, and even their own personal workout methods. The influencers use persuasive phrases such as "start your physical change with my online class here," "the secret to success is balance," "train with me and achieve your goals," or "we can help you take your ideas to the world and make a living from it."

All the influencers use emoticons in their biographies, providing a more visual aspect, a catchy appeal to emphasize the content of the biography and make it easier to read.

The biographies of these Spanish Instagram influencers show that they all have a clear focus on the field of physical activity and sports, and related sectors. They use persuasive phrases and emoticons to engage their audience and provide them with ways to contact them, purchase their products or services, or visit their website or other social profiles. They all aim to gain more visibility and reach by having a public account and a verified badge, using combined usernames with keywords, and adding links to their website and other social profiles.

Their content shows that they prioritize a healthy lifestyle and motivate their followers to pursue physical activity and fitness goals. They often share personal stories and experiences, as well as providing tips, workout routines, and healthy recipes. They also collaborate with other influencers, brands, and fitness experts, which adds credibility to their content and expands their reach.

It's worth noting that the success of these influencers isn't solely attributed to their physical appearance or popularity. It's also a result of their hard work and commitment to building a brand, producing high-quality content, and engaging with their audience. They must continually adapt to changes in the industry, such as new social media algorithms and trends, while maintaining a positive and authentic image to keep their following.

These Spanish Instagram influencers serve as great examples of how focus on a particular niche, dedication, and engagement with followers can lead to social media success. They've built a brand that reflects

their personal values and passion for physical activity and have successfully inspired and motivated others to adopt a healthy lifestyle.

Scope and Impact on Audiences

It is useful to be aware of the audience for which their media productions are built, beyond the main characteristics generated around influencers, as well as those groups of consumers who are exposed to this kind of content.

Table 4 shows the influencer´s audience gender distribution. The values shown for audience gender (men and women) are complementary (they add up to 100%). These percentages show the concentration of audiences by gender. Cocó Constans audience distribution shows a bias towards the female gender (96,14%). In opposition, David Marchante concentrates his audience in the male gender (79,65%). The account of the influencer Ruben Garcia presents an almost equal distribution: 50,20% (audience gender men) and 49,80% (audience gender women).

Table 4. Influencer's audience gender distribution

Influencer	Audience gender (men)	Audience gender (women)
Cocó Constans	3,86%	96,14%
Patry Jordán	7,44%	92,56%
Xuan Lan	9,08%	90,92%
Almudena Cid	23,01%	76,99%
Paula Butragueño	32,30%	67,70%
Rubén García	50,20%	49,80%
Nieves Bolós	59,53%	40,47%
Sergio Peinado	69,12%	30,88%
Estefanía Gutiérrez	78,62%	21,38%
David Marchante	79,65%	20,35%

Table 5 displays the distribution of the influencer's followers by age group. The age group of 25-34 years has the highest average percentage of the audience at 43%. Each age group has an influencer who leads or concentrates the highest percentage of the audience. Almudena Cid (13-17 years: 7.57%), Sergio Peinado (18-24 years: 42.79%), David Marchante (25-34 years: 49.16%), Estefanía Gutiérrez (35-44 years: 33.25%), and Rocío García Ramos (45-64 years: 15.80%). On the other hand, the 14-17 age group (under the age of 18) has the lowest proportion of the audience (3.8%). In descending order, the average percentage of the audience for the age groups of 18-24 years is 29.159%, and for the age group of 45-69 years is 18.01%.

Table 5. Influencer's audience age distribution

Influencer	13-17 years	18-24 years	25-34 years	35-44 years	45-64 years
Patry Jordán	4,27%	38,51%	43,78%	11,50%	1,94%
Sergio Peinado	4,14%	42,79%	40,36%	10,73%	1,98%
David Marchante	2,40%	31,82%	49,16%	13,59%	3,03%
Xuan Lan	2,98%	22,63%	41,65%	22,87%	9,87%
Nieves Bolós	4,20%	29,99%	41,70%	16,36%	7,75%
Cocó Constans	5,46%	38,05%	41,16%	11,43%	3,90%
Rubén García	3,07%	29,39%	47,04%	16,42%	4,08%
Almudena Cid	7,57%	31,10%	37,51%	16,84%	6,98%
Estefanía Gutiérrez	1,28%	10,09%	39,58%	33,25%	15,80%
Paula Butragueño	2,60%	17,22%	44,03%	27,10%	9,05%

In terms of geographic coverage of their audience, Nieves Bolós and Estefanía Gutiérrez have the most diverse following, with audiences from fifteen countries. On the other hand, Patry Jordan and Almudena Cid have the least diverse following, with audiences from only seven countries each.

Figure 1 shows the network map of influencer's audience top countries. The higher the frequency of cooccurrence of a country within the influencers' audience, the larger the size of the bubble. Low frequency countries are located peripherally within the map.

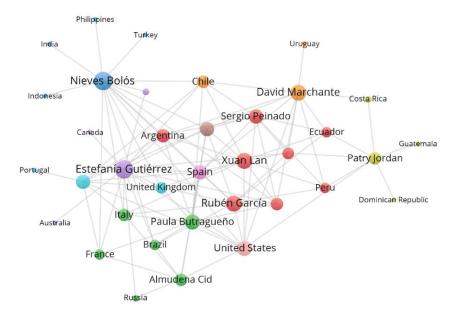


Figure 1. Influencer's audience top countries

The country with the highest number of appearances in the audience network is Spain. This is reflected in the size of the bubble and the centrality of its position in the network. This result is not surprising because the influencers studied are Spanish. Next to Spain, a high centrality of the United Kingdom and Argentina is observed. The presence of Argentina may be associated with the linguistic affinity of the influencers; however, the presence of the United Kingdom is an interesting finding because it is an English-speaking country.

The network periphery of **Figure 1** shows the countries with lower frequency of appearance within the audience listings. The similarities of the country and influencer links can be seen in the colour groups of the network map. Based on these results, it is reasonable to argue some characteristics of influencer audiences. Nieves Bolos has a diversified audience in Asian countries, Patry Jordan concentrates her audience in Central American countries, and David Marchante in South American countries.

The data shows that Xuan Lan is the influencer with the most diversified audience with a presence in 21 cities. In contrast, Nieves Bolós shows the highest geographic concentration of audiences, with her followers agglutinated in 13 cities.

Figure 2 shows the co-occurrence network map of the main cities of the influencers' audience. The higher the frequency of co-occurrence of a city within the influencer's audience, the larger the size of the bubble, and the more central position it has in the network. Low-frequency cities are placed on the periphery of the map.

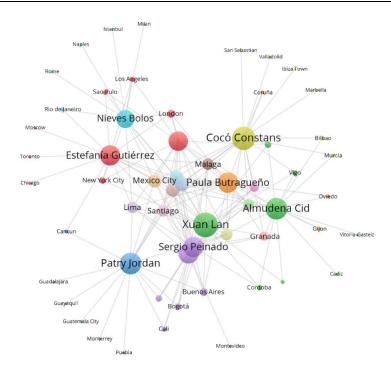


Figure 2. Influencer's audience top cities

Along with Madrid, Valencia and Barcelona, the most frequent cities in the audience listings are Mexico City (8 times), Lima and Seville (7 times), Malaga (6 times), London, Granada and Zaragoza (5 times), Buenos Aires (4 times), Bogota, Medellin and Sao Paolo (3 times) and Las Palmas GC (2 times).

Interests, Connections and Consumption

The interest list shows preferences based on a combination of who they follow, what posts they like or comment on, and other websites and apps they use. Ruben Garcia's account (347.01 k followers) shows the largest list with a total of ten interests. Ruben Garcia's account (347.01 k followers) shows the largest list with a total of ten interests. In contrast, Xuan Luan (627.59 k followers) and Sergio Peinado (1.24 k followers) show the shortest lists, with two interests each.

Co-occurrence is the coincidence of two or more elements within a list or text. **Figure 3** shows the interest matches from the co-occurrence networks from the interest lists. The higher the frequency of co-occurrence of an interest within the influencer's listings, the larger the size of the bubble and the higher the centrality within the network. Low frequency interests are located peripherally within the map.

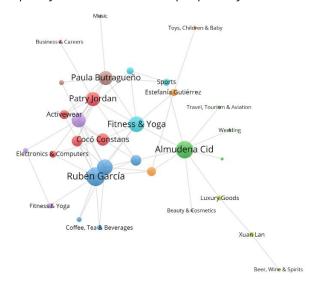


Figure 3. Influencer's interest co-ocurrence network

The interest with the highest levels of coincidence is Fitness & Yoga. This is shared by 90% of the influencers. In contrast, the least frequent interests are music, Beer, Wine and spirits, Business & Careers. All appear in only one list of interests.

The brand affinity represents the correlation of an influencer's fans for the brand's target audience. Two of the influencers analysed do not report brand affinity. They are David Marchante and Estefanía Gutierrez. In contrast, Ruben Garcia's account presents the highest number of brand affinity (9).

From the analysis of the influencer's brand affinity co-occurrence map, a similarity between them can be inferred. **Figure 4** shows the map of the influencer's brand affinity co-occurrence network. Influencers with the highest similarity will share brand affinity. Within the whole set of influencers, four subgroups are formed taking affinity as a parameter. Three isolated groups and a main component are identified. The isolated groups are formed by Paula Butragueño, Sergio Peinado and Almudena Cid.

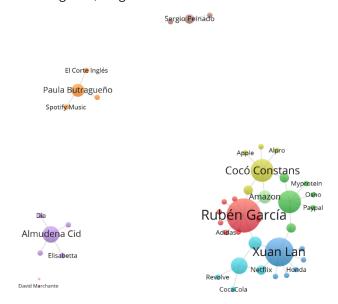


Figure 4. Influencer's brand affinity co-occurrence network

The main component is the largest set of nodes that are linked within a network. Based on this criterion, a main group or main component is identified, composed by: Ruben Garcia, Xuan Luan, Coco Constans, Patry Jordan and Nieves Bolos. This group of influencers presents a high degree of affinity based on the affinity of the brands.

Interaction, Engagement and Impact

Table 6 summarizes the profile of the sport and fitness influencers included in the study. These profiles are organized in descending order according to the number of followers. An Instagram follower is a user who follows one account and can see, like, and comment on any media posted in the profile. In addition, **Table 6** includes the degree of commitment established with the followers (engagement), the income obtained by advertising in dollars (earned average) and the interaction rate (average interactions).

Table 6. Number of followers, engagement, earned media and average interactions of influence	

Influencer	Number of followers	Engagement	Earned media	Average interactions
Patry Jordán	2.06 M	1,25%	3.3618,41 \$	25.88 k
Sergio Peinado	1.24 M	1,38%	35.135,31 \$	17.14 k
David Marchante	1.16 M	0,2%	6.691,97 \$	2.32 k
Xuan Lan	627.59 k	1,41%	6.689,36\$	8.84 k
Nieves Bolós	496.83 k	2,54%	2.351,37 \$	12.37 k
Cocó Constans	366.35 k	1%	4.774,69 \$	3.68 k
Rubén García	347.01 k	1,41%	7.279,8 \$	4.88 k
Almudena Cid	221.69 k	4,84%	10.124,6 \$	10.72 k
Estefanía Gutiérrez	160.05 k	1,68%	1.070,12 \$	2.68 k
Paula Butragueño	125.41 k	1,03%	1.822,67 \$	1.30 k

Patry Jordan is the influencer with the highest number of followers (2.06M). However, Almudena Cid's account has the highest level of engagement among them (4,84%). Instagram engagement rate is a quantitative measure of how users interact with the content on a profile. It considers the number of followers, likes, comments, and shares.

Table 7 summarizes the quality of followers for the sports influencers analyzed. This quality indicator allows us to determine the rate of truly engaged followers, which is closely related to the engagement rate. Cocó Constans, who has 366.35k followers, has the highest rate of quality followers at 91.32%. This rate is complemented by nice followers and doubtful followers. The account with the highest number of nice followers is Patry Jordan (1.79M). However, this same account also has the highest number of doubtful followers (276.58k).

Table 7. Follower's quality, nice and doubtful followers of influencers

Influencer	Follower's quality	Nice followers	Doubtful followers
Cocó Constans	91,32%	334.53 k	31.82 k
Xuan Lan	88,21%	553.60 k	73.99 k
Sergio Peinado	86,86%	1.07 M	162.75 k
Patry Jordán	86,61%	1.79 M	276.58 k
David Marchante	86,33%	1.00 M	158.51 k
Almudena Cid	79,09%	175.33 k	46.35 k
Paula Butragueño	78,68%	98.67 k	26.74 k
Estefanía Gutiérrez	67,78%	108.48 k	51.57 k
Rubén García	64,44%	223.61 k	123.40 k
Nieves Bolós	45,59%	221.95 k	264.88 k

The interactions refer to the number of actions taken on an account. **Table 8** shows three metrics of interaction data: video views, likes, and comments. The account with the highest number of video views belongs to Sergio Peinado, who has a total number of 1.24 million followers. Patry Jordan has the account with the highest number of "likes" (25.70k), and Estefania Gutierrez has the highest number of comments among the influencers analyzed."

 Table 8. Interaction's metrics data for influencers

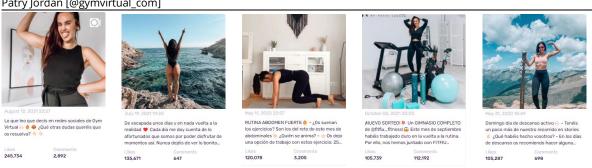
Influencer	Video views	Likes	Comments
Sergio Peinado	167.77	17.02 k	120
Patry Jordán	151.03	25.70 k	180
Almudena Cid	42.56	10.52 k	201
Rubén García	33.42	4.76 k	123
David Marchante	32.89	2.29 k	27
Xuan Lan	26.36	8.70 k	135
Cocó Constans	21.45	3.64 k	34
Paula Butragueño	8.29	1.25 k	49
Estefanía Gutiérrez	2.95	2.01 k	670
Nieves Bolós	-	12.29 k	72

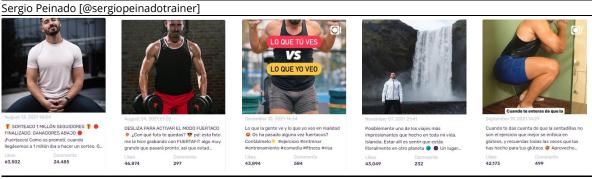
Projection of media production

Besides the time influencers dedicate to defining their biography and projecting their profiles on Instagram. As creators of digital content, the format and content of their media productions are key aspects to achieve engagement with their followers, promote conversation, influence the decision to consume services and products, gain credibility and trust among their communities, among other issues. **Table 9** shows the fifty publications selected and analysed.

Table 9. Most popular posts on Instagram by Sport & Fitness Influencers

Patry Jordán [@gymvirtual_com]









Nieves Bolós [@niieves_fit]

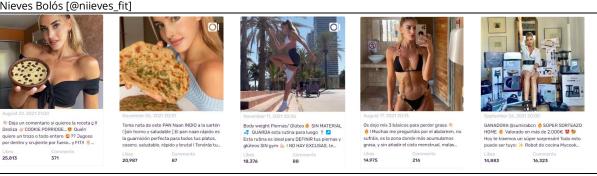
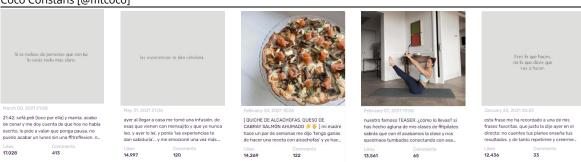
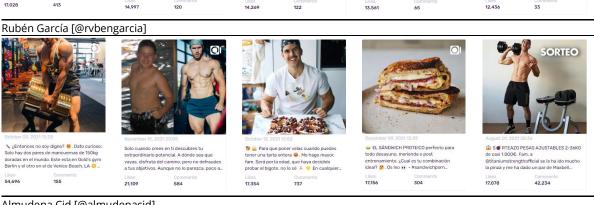
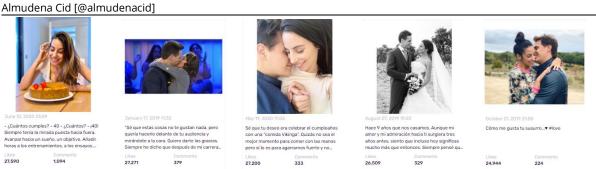


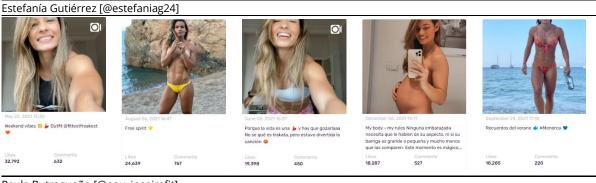
Table 9 (continued). Most popular posts on Instagram by Sport & Fitness Influencers

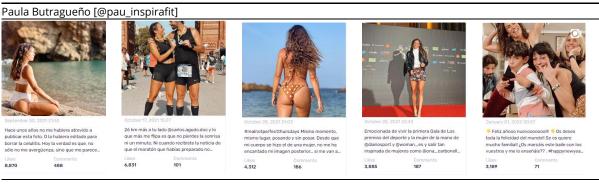
Cocó Constans [@ffitcoco]











The most popular influencer publications primarily use single videos (34%) and single images (30%), with multiple images (22%) and a combination of images and videos (12%) used to a lesser extent. The content of these publications is often filmed indoors (60%) in places like gyms and homes or outdoors (30%) in natural environments or specific city areas.

The influencer is present in most of the productions (76%), either alone or accompanied by others. The videos are typically simple and edited by the influencer (28%), with a background song added. Influencers also commonly tag personal or other influencer accounts (28% and 36%, respectively) and promote products or services (40%). Discount codes (16%) and giveaways (8%) are also used to encourage followers to engage. The influencer is present in most of the productions (76%), either alone or accompanied by others. The videos are typically simple and edited by the influencer (28%), with a background song added. Influencers also commonly tag personal or other influencer accounts (28% and 36%, respectively) and promote products or services (40%). Discount codes (16%) and giveaways (8%) are also used to encourage followers to engage.

Emoticons (82%), hashtags (86%), and mentions of other accounts (34%) are often incorporated into captions. Personal purposes (46%) dominate the content, with a focus on sharing experiences and events from daily life (26%). Informative (32%), procedural (24%), and orientational (12%) content is also used.

The communication model used by influencers is generally informative (50%) or bidirectional and communicative (46%), with the goal of prompting follower participation through challenging questions or requests for opinions (26%).

DISCUSSION

Sport & Fitness influencers are prominent on the Instagram social network, which is used as a suitable platform to promote a healthy lifestyle based on physical activity (Aguilar & Arbaiza, 2021; Durau et al., 2022) and a balanced diet (Gil-Quintana et al., 2021b). It is a framework where the influencer's figure plays a fundamental role for the market and consumption, where companies position their products and services, thus achieving greater influence in the purchase or consumption decision among their audiences (Castelló-Martínez, 2016; Castelló-Martínez & Del Pino-Romero, 2019), even sometimes far from the advice on health, sports, and physical well-being promoted by the World Health Organization.

This research has revealed that the selected Sport & Fitness influencers gather their followers in Spanish-speaking countries such as Spain, Mexico, Argentina, Chile, and Colombia, and other English-speaking countries such as the United States and the United Kingdom. In Spain, the cities where these influencers have the greatest impact are Barcelona, Madrid, and Valencia. Internationally, cities such as Mexico City, Santiago, Buenos Aires, and Lima stand out. Regarding the distribution of their audiences by gender (men and women), the percentage of women (60.49%) is higher than those of men (39.51%), similarities that are related to recent study findings examining the age and gender profile of Spanish content creators' followers on digital platforms such as YouTube (Gil-Quintana et al., 2023). If we look at the gender distribution of the audience of each influencer, it can be seen that both genders tend to follow influencers of the same gender (Gil-Quintana et al., 2022).

Regarding the distribution of their audiences by age, the most noticeable age ranges are between 18 to 24 and 25 to 34. A generational group that has a significant role in the consumer market (González-Loyola et al., 2018). In these ranges, a higher percentage of women predominate over men.

This research verifies that the selected Sport & Fitness influencers have a high number of followers on the Instagram social network, a characteristic that influences the support and credibility of the followers, providing information and content shared by them (Janssen et al., 2022). The engagement rate makes it possible to analyze the true commitment formed between the influencer and their audience (Tafesse and Wood, 2021). The relationship of trust includes the constant publication of new content, the interactions generated through visualizations, the number of "likes," and comments on their publications (Martín-Critikián & Medina-Núñez, 2021).

That commitment is complemented by the quality of their audiences. This indicator helps to distinguish between real followers that genuinely interact with the account (nice followers) and fake followers that can be acquired through follower buying services or spam techniques. Follower quality is a key factor for

influencers and brands, affecting the credibility and reputation of an account (Muhammad et al., 2021), account's activity, and interaction with other users.

The study is related to previous findings that identify the elements of the channels of influential people in social networks, communication strategies, popularity, interactions with their audience, presence of commercial brands (Segarra-Saavedra & Hidalgo-Marí, 2018), advertising uses and their engagement with the main influencers (Segarra-Saavedra et al., 2022). Among the biographies of the influencers, an intentional and careful shaping of the items structuring them is perceived in order to gain trust and achieve a positive impact on their audiences. They become a showcase prepared to impact the followers who access their profiles for the first time. The public nature of their accounts stands out, which allows them to reach a large number of users and thus gain more followers. Verification badges make it easy for followers to properly search for the influencer in question through their username and/or profile. The main images of profiles are relevant elements to ensure a position in the social network and the projection of their activity and/or service. Personal images are mostly used in which they display their full body or face, have a defined body and athletic fitness, and wear sports clothes. This is related to the positive influence that can be established among the followers and the physical attractiveness of the influencer towards their publications, due to their sympathy, opinions, behaviors, habits, and mindset. These are factors that move followers to idealize these influential figures (Roy & Mehendale, 2021). Likewise, it is worth noting the importance of acquiring prevention and health promotion strategies by young people and adolescents in these environments. Influencers promote the construction of a new ideal of the individual and their body (Hijós, 2018), seeking bodily perfection (Pilgrim & Bohnet-Joschko, 2022).

The visual elements, along with other content in the biography, establish a clear link between activity and the field of health, specifically physical activity and sports, as well as with other sectors such as personal wellbeing, nutrition, and sports psychology, among others. Within this space, influencers take the opportunity to offer and launch their personalized services such as online classes, specific personalized training applications, and even their own personal work methods, encouraging their followers to tirelessly evaluate and work on their bodies (Silva et al., 2021). In addition to providing the influencer with different ways of contact, they add links to direct the public to their website, to a product and/or service they wish to promote, and even to their profiles on other social networks and websites of interest to the influencer. Finally, in this same space, linked accounts are also mentioned to promote vitamin products, supplementation, energy drinks, products and/or services of the influencer, accounts dedicated to nutrition, training, advice, etc. In this sense, the use of discounts and promotional codes on supplementation, nutrition and food products stands out (Goodman & Jaworska, 2020), as well as the different services that are offered from their profiles.

They use features such as Instagram Stories to connect and communicate with their followers, trying to bring their brand closer by interacting in a relaxed way. They provide an original and creative touch by incorporating emojis and fun effects, setting up surveys to obtain user feedback, and finding out opinions about products or needs (Luque-Ortiz, 2019). All of this is done through intensive personalization and orientation towards interesting topics (López-Rabadán & Doménech-Fabregat, 2018). The content of these stories revolves around situations in their personal lives, events in which they participate, food, promotion of products and/or services, discount coupons, training routines, stories shared by other users about their experiences, promotion of other accounts, places, products, and more. These productions are consumed, sometimes without criteria, by their followers. In this sense, it is necessary to explore the effects, repercussions, and risks of uncontrolled brand exposure by these content creators (Romero-Rodríguez & Castillo-Abdul, 2023).

By analyzing the most popular publications, it is observed that influencers show commitment in both the format and content of their posts to achieve greater engagement with their followers. They aim to promote conversation, influence consumption decisions of their products and/or services, and establish credibility and trust with their audiences (Manovich, 2020).

Regarding the format of the publications, videos and single images are predominant, followed by the multiple images. The publications are located in interior spaces such as gyms or the influencer's own private spaces, which are equipped for physical and sports activities. Others show outdoor spaces such as environments and natural landscapes of the coast, mountains, or specific areas of the city. The individual

presence of the influencer predominates over others where they are accompanied by another person or group. In the photographs and videos, specific hashtags are used, and both the influencer's own accounts linked to the influencer and other external accounts of influencers who have a similar follower base and activity as the influencer are also tagged. Additionally, other accounts that highlight the commercial collaboration established with these figures of influence for the promotion of different products and/or services are tagged (Gómez-Nieto, 2018).

In this line, the influencer's Instagram feed includes a variety of advertising messages from both third-party commercial brands as well as the influencer's own products and services (Castillo-Abdul et al., 2022). Marketing strategies are used to generate more followers and strengthen their loyalty, such as the use of discount codes to purchase products and services, offering free trials, launching raffles and participation regulations.

Regarding the main purpose of the publications, the situations, experiences, and personal events of the influencer stand out, even going so far as to share their values, thoughts, and feelings through their reflections and their lifestyle based on healthy behavior and fitness (Sokolova & Pérez, 2021). Other purposes include being informative, to transmit information on a specific topic; procedural, to carry out procedures such as exercise routines and physical conditioning (Godefroy, 2020); or preparatory, to prepare healthy food dishes, and to provide guidance to clarify and solve doubts. In the digital environment, influencers aim to increase their number of followers and subscribers by sharing their personal experiences, while seeking to establish credibility and engagement with their audience towards their audiovisual content (González-Carrión & Aguaded, 2020).

Finally, in terms of the communicative model, there are similarities between publications that use a unidirectional and informative approach and others that maintain a bidirectional and communicative approach. The latter seek to promote the participation of followers through calls to action, such as commenting on stories, answering challenging questions, or providing personal opinions on specific topics. However, it is not common for influencers to respond to their followers' questions in their publications. Influencers strive to appear approachable and close to their followers, although this may not always be genuine but rather a part of their marketing strategy. This social attractiveness is aimed at idealizing followers' access to influencers outside social networks, creating opportunities for interaction and fostering positive interactions between the audience and the influencer (Roy & Mehendale, 2021).

CONCLUSIONS

In the fitness, physical activity, and sports sector, influencers are consolidating their presence on social media platforms such as Instagram, where they have profiles that reach a large number of followers. These influencers have the potential to influence the field of health through their media productions, including attitudes, thoughts, behaviors, and purchasing decisions of their audiences. Their content revolves around training routines, physical exercises, tips for sports nutrition and food, recommendations to improve physical performance, individualized and specific training programs, healthy habits, and even the promotion of their own products and services. They aim to propose physical practices and exercises to create beneficial habits for health and personal well-being, while also considering their relationship with the market.

This study found that a young, primarily female audience concentrated in Spanish-speaking countries places special emphasis on visual and aesthetic elements when creating their profile biographies to make a positive first impression on their followers. These influencers aim to inspire and encourage their communities to lead active and healthy lifestyles through their publications, which focus on physical activity and sports. They receive feedback from their audiences through constant actions and interactions such as likes, replies, and comments on their posts, through which they exchange opinions, knowledge, and similar experiences.

However, the emotional element in their content aims to guide attitudes, behaviors, and personal values towards building one's own identity and satisfying followers' physical and psychological needs. This aspect can affect self-esteem, comparisons to the influencer's physical appearance, the creation of unrealistic and negative body standards, excessive preoccupation with body image, inappropriate use of beauty products or supplements not prescribed by professionals, and other potential negative outcomes.

Creating content that captures the attention of brands interested in using them as a new form of advertising and promoting their services and products is also a significant factor. Hyperlinking navigation enables collaborations with other influential profiles in the sports sector, including sports centers, gyms, sports brands, and food products. This creates new consumption formats related to health, economic benefits, and monetization of online activity, using digital marketing strategies such as contests, raffles, discount codes, and promotions aimed at their audience.

From the perspective of the fields of physical education, physical activity, and sports it is necessary to examine the role of fitness influencers in creating audiovisual content and virtual services offered for public health, which have a direct impact on the citizens who consume them. Therefore, it is important to assess whether these influencers are suitable to make physical exercise recommendations, promote safe and healthy practices, or if there is scientific evidence or necessary training to consider the characteristics of their audience who consume their content.

It's important to assess whether fitness influencers are suitable to make physical exercise recommendations, promote safe and healthy practices, and base their advice on scientific evidence or appropriate training. Additionally, media literacy among followers is crucial to avoid imprudent and irresponsible practices that can threaten their health and lead to accidents, injuries, or other pathologies.

Families, social networks, and educational agents all have a vital role to play as guides and facilitators of information, ensuring that everyone is aware of the risks and problems associated with inappropriate use of these platforms and the information that's consumed. To this end, it's necessary to continue promoting strategies and didactic actions aimed at knowledge, awareness, and training to be responsible users of the internet and social networks, both in formal and non-formal educational contexts. These efforts align with the work carried out in the project "Media Literacy for All Programme (2020): YouVerify! (LC-01648381) (European Commission).

In conclusion, influencers in the fitness, physical activity, and sports sector have significant potential to influence the health-related behaviors and purchasing decisions of their audiences. However, it is crucial to assess their suitability for making physical exercise recommendations, promote safe and healthy practices, and consider the characteristics of their audience. Promoting media literacy of followers is also important to avoid irresponsible practices that threaten health and promote a balanced and sustainable lifestyle. Additionally, influencer marketing campaigns should align with evidence-based practices and public health recommendations.

Transparency in influencer marketing is another essential aspect. Influencers should disclose any commercial relationships they have with brands and products they promote, allowing their audience to make informed decisions. The lack of transparency in influencer marketing can mislead their followers and compromise their trust in influencers.

Finally, it is essential to remember that influencers are not healthcare professionals and should not replace medical advice. People should always consult with their doctors or other healthcare providers before starting any new physical activity or dietary practices.

In summary, influencers can be a valuable source of information and inspiration for healthy behaviours, but it is essential to approach their content with a critical and informed perspective. Influencers, brands, and policymakers must work together to ensure that influencer marketing is responsible and promotes health, safety, and wellbeing.

Author contributions: Each author contributed evenly to this manuscript. All authors read and approved the final manuscript.

Funding: The authors received no financial support for the research and/or authorship of this article.

Acknowledgements: This study is based on the work carried out by the research project "Media Literacy for All Programme (2020): YouVerify! (LC-01648381) (European Commission).

Ethics declaration: Authors declared that the study did not involve the collection of personal data, as it was a documentary research that extracted data from Instagram public channels with a standard license from the platform. The Institutional Review Board (IRB) of the authors' institutional affiliations was not required because the study did not involve the analysis of people or animals.

Declaration of interest: Authors declare no competing interest.

Data availability: Data generated or analysed during this study are available from the authors on request.

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