



## ORIGINALES

### Qualitative analysis of the twitter account of the Federation of Associations of Midwives of Spain

Análisis cualitativo de la cuenta de twitter de la Federación de Asociaciones de Matronas de España

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#### ABSTRACT:

**Introduction:** Twitter is the social network with the most users in which the Federation of Associations of Midwives of Spain (FAME) publishes content, and by studying your account, we can explain the characteristics and operation of FAME, in addition to understanding their interests through of the content analysis of your publications.

**Methodology:** A qualitative ethnographic study was carried out to describe and explain the elements that make up the social network system built by FAME through twitter, taking into account its evolution, structure and interactions through the published tweets.

**Results:** 358 tweets were obtained, classified in three coding matrices related to: Associations of Midwives of Spain, Mentions of the FAME twitter account and Categories of the FAME tweets.

**Discussion:** Social activity on Twitter was intense in the first years and scarce in the last due to the COVID-19 pandemic, unlike most scientific associations. FAME uses its account to disseminate information related to women's health and the visibility of midwives, relating it to current issues.

**Conclusions:** Due to their growing impact, social networks should serve as information systems between science and society, and professionals should know and use these types of tools. It is necessary to have sources of information that reflect the health of women and the FAME demonstrated its knowledge of this fact through its tweets published during the period analyzed.

**KeyWords:** Qualitative research, twitter, nurse midwives, Independent Practice Associations, social networking.

#### RESUMEN:

**Introducción:** Twitter es la red social con más usuarios en la que la Federación de Asociaciones de Matronas de España (FAME) publica contenido, y al estudiar su cuenta, podemos explicar las

características y funcionamiento de la FAME, además de comprender sus intereses a través del análisis de contenido de sus publicaciones.

**Metodología:** Se realizó un estudio cualitativo etnográfico para describir y explicar los elementos que integran el sistema de la red social construida a través de twitter por la FAME, teniendo en cuenta su evolución, estructura e interacciones a través de los tweets publicados.

**Resultados:** Se obtuvieron 358 tweets, clasificados en tres matrices de codificación relacionadas con: Asociaciones de Matronas de España, Menciones de la cuenta de twitter de la FAME y Categorías de los tweets de la FAME.

**Discusión:** La actividad social en twitter fue intensa en los primeros años y escasa en los últimos debido a la pandemia por COVID-19 a diferencia de la mayoría de asociaciones científicas. La FAME utiliza su cuenta para difundir información relacionada con la salud de las mujeres y la visibilidad de las matronas relacionándola con temas de actualidad.

**Conclusiones:** Debido a su creciente impacto, las redes sociales deberían servir como sistemas de información entre ciencia y sociedad, y los profesionales deben conocer y utilizar este tipo de herramientas. Es necesario contar con fuentes de información que reflejen la salud de las mujeres y la FAME demostró su conocimiento de este hecho a través de sus tweets publicados durante el periodo analizado.

**Palabras clave:** Investigación cualitativa, twitter, enfermeras obstetricas, asociaciones de práctica independiente, red social.

## INTRODUCTION

Communication is one of the essential tools in disseminating content from any scientific institution, as is the case with midwifery associations. Both citizens and professionals demand more and more information in this regard and in this type of situation, the spokespersons of the midwives' associations must give the population "the information that the public needs". Social networks have become one of the main forums for discussion on various topics related to health. However, the information published on these platforms often lacks scientific support, adding to the confusion, mistrust and fear among the population <sup>(1)</sup>.

Among these digital communication tools, social networks predominate due to their relevance and social presence. According to a DataReportal report, its global average penetration rate is 53.6% (reaching 79% in Western and Northern Europe and 74% in North America). These data confirm the importance of social networks in current communication processes and turn these digital tools into powerful communication tools <sup>(1, 2)</sup>.

Twitter is one of the most popular microblogging services, it has more than 322 million users and produces millions of tweets every day <sup>(3)</sup>. It allows users to write short messages and broadcast them to their followers in real time. Compared to traditional blogs, microblogging emphasizes speed and brevity, focusing on things that happen in real time <sup>(4)</sup>. Several studies have shown that users mainly use microblogs to describe their daily routines, conduct conversations, report news, and share information <sup>(5, 6)</sup>.

Twitter is the social network with the largest number of users in which the Federation of Midwifery Associations of Spain, hereinafter FAME, publishes content. This social platform has become an important forum for digital debate. Therefore, it is relevant to understanding many current events, including those related to health <sup>(1)</sup>, and is an important communication tool for institutions, as illustrated by several studies <sup>(7-9)</sup>. The power of Twitter as an institutional communication tool is not unidirectional; it allows institutions to connect with society <sup>(10)</sup>. With millions of users contributing to

microblogging every day, microblogging produces a vast written record of people's daily behavior in their natural environment. By studying microblogging, we can understand the interests and motivations of users who share information through their posts <sup>(3)</sup>.

FAME published its first tweet on March 6, 2014. Since then, FAME has engaged in outreach efforts through Twitter, seeking to provide access to real information for both healthcare professionals and the general public. Therefore, FAME's profiles on various social networks (particularly Twitter) became the organization's loudspeakers to deliver truthful and reliable information.

## **OBJECTIVES**

### **Objective**

Explain the characteristics, structure and operation of the twitter account of the Federation of Associations of Midwives of Spain (FAME).

### **Specific objectives**

- Describe the evolution and structure of the social system built by FAME through its twitter account.
- Understand the interests of FAME through social networks.
- Understand the nature of FAME messages through communication technologies.

## **METHODOLOGY**

This study has been carried out following the guidelines and recommendations of other authors in the analysis of communication through social networks, which were implemented in other studies on the use of Twitter in institutional communication <sup>(11, 12)</sup>. We apply these guidelines to our case, namely FAME's use of Twitter with respect to the content of its posts. The guidelines to follow consisted of the acquisition of social network data first for analysis, taking into account the recommendations on emerging ethical considerations in research based on social network data. The systematic analysis of text and published content is the basis of investigations based on Twitter, but it is necessary to avoid data that may imply an ethical commitment, such as the geolocation of the published tweets or the addresses of access to the internet point, and which, moreover, are not necessary to carry out the analysis of the content nor do they provide relevant information.

A qualitative ethnographic study was carried out in order to describe and explain the elements and categories that make up the social network system built through twitter by FAME, taking into account its historical evolution, social structure, interactions, language, norms and behavior patterns.

In order to carry out the study, the data was obtained through the social network itself on the internet of all the tweets published by the FAME (@fame\_matronas) account since its creation in March 2014 until November 2021. The choice of these documents was based on their easy accessibility by the research team and their validity as a

source of information to study written language in a non-intrusive way, since they were not requested to be prepared. In addition, the texts could be consulted at any time and analyzed as many times as necessary without spending time transcribing them.

The research team was made up of four members who were trained in the qualitative analysis of social networks prior to preparing the study.

The analysis of the data obtained was carried out with the software NVivo® version 12. An analysis program, useful for building large hierarchically structured databases, which can add documents such as the compendium of tweets to be analyzed.

The terms most used by FAME were identified and their intention was determined. This qualitative analysis yields quantifiable results (the number of appearances of the most used terms or messages with a specific nature) to obtain a representative image. The first analysis based on the most frequent terms, in order to identify the words most used by FAME in their tweets, laid the foundations for the subsequent semantic analysis aimed at determining the nature of the messages after reviewing their content and following the studies of Colle or Verd Pericás<sup>(13,14)</sup>. In this way, the necessary elements were obtained to study the behavior of FAME on its Twitter account.

On the other hand, this research is descriptive-analytical. In a first stage, the messages and the concepts used in them were listed. In a second stage, the meaning of all these elements was analyzed looking for possible relationships. To the extent that FAME tweets were considered over a specific period of time, the study is longitudinal and retrospective.

Each of the content units (tweets) were coded into categories according to the nature of the texts and according to the relationship they had with other Twitter accounts. The coding process was carried out in parallel to the reading of the tweets so that the categories were established as the content analysis progressed and was carried out by 5 different researchers in order to establish the final categories by consensus and to carry out the triangulation process.

The interpretation of the results was prepared individually by each of the 5 researchers and then a discussion group was created to make a final and consensual interpretation of the data obtained.

## RESULTS

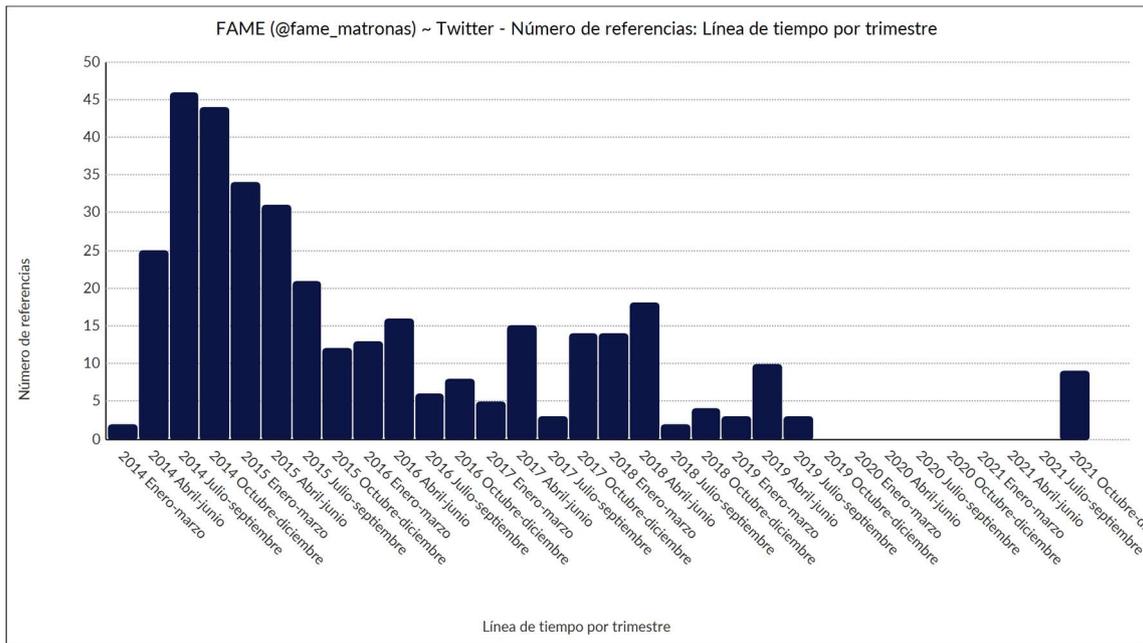
The social system under study was the Twitter account @fame\_matronas. The account shows a web address directly related to the federation (federación-matronas.org) and in its biography it describes the following:

*[Federación de Asociaciones de Matronas de España, trabajamos en pro del desarrollo de nuestra profesión y en la mejora de la calidad asistencial.]*

At the date of obtaining the results, the account had 1,474 followers and followed 55 users of the same social network, despite the social interaction through mentions or retweets is described through the sociogram in Figure 1.



**Figure 2.** Number of references per quarter of the @fame\_matronas account.



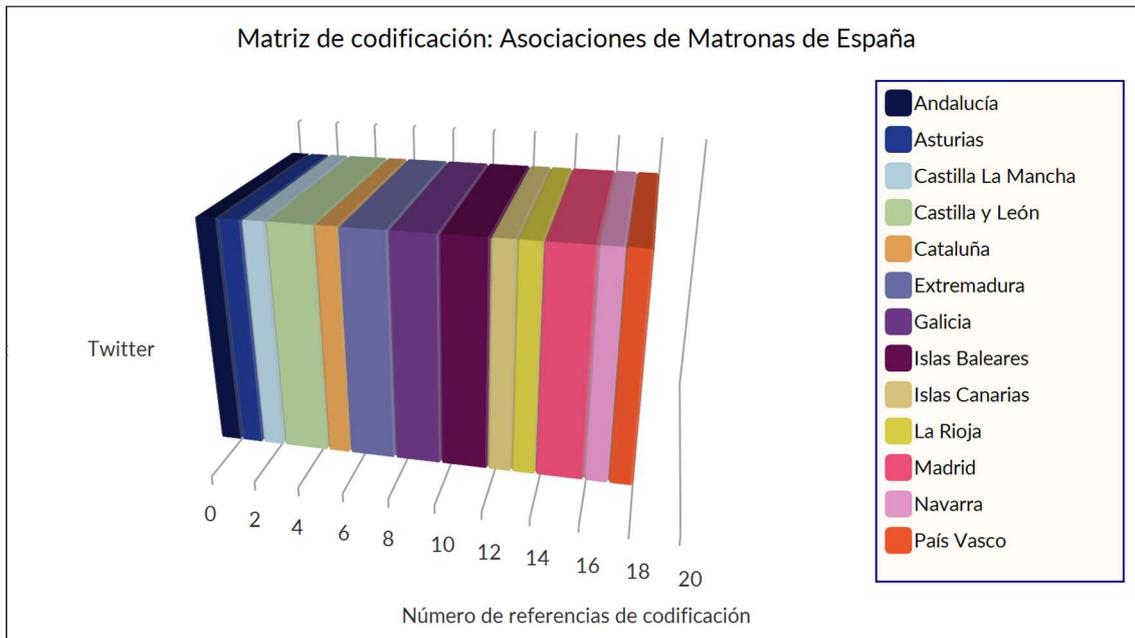
Regarding the frequency of words analyzed in the collection of tweets, a cloud of words was obtained (Figure 3), where the terms most used by FAME in their tweets were shown, the most used word being “midwives” with a count of 54 repetitions and a weighted percentage of 1.38% of the total number of words and the least used “maternity” with a count of 8 repetitions and a weighted percentage of 0.20%.

**Figure 3.** Word cloud.

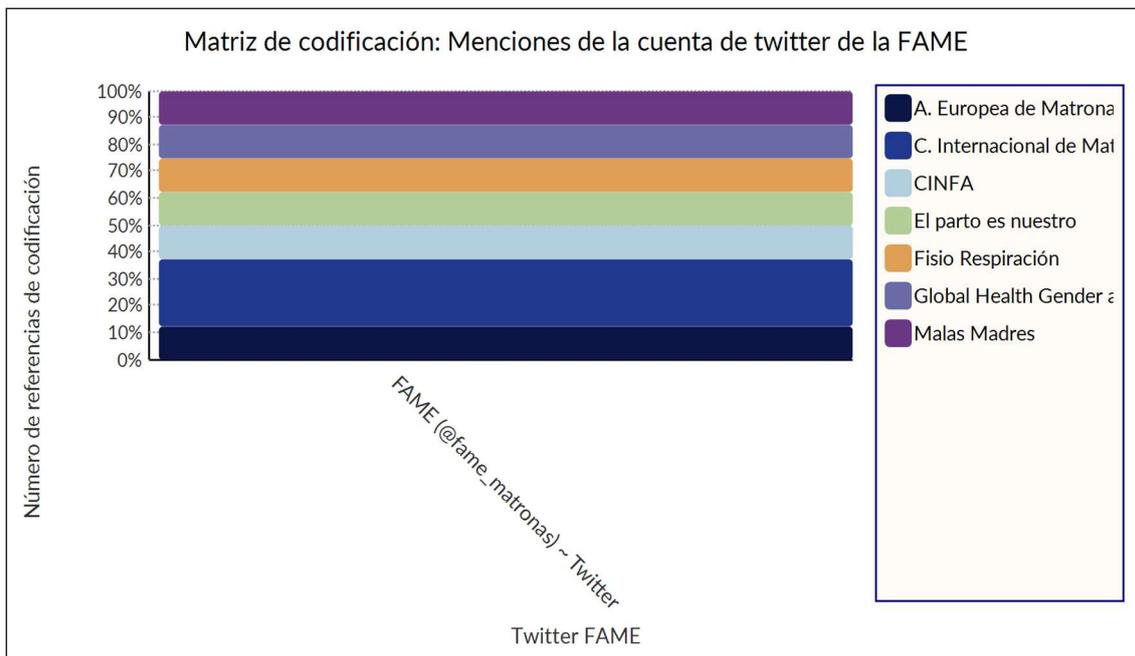


After classifying the content of each tweet, three coding matrices related to the following codes were obtained: Associations of Midwives of Spain (Figure 4), Mentions of the FAME twitter account (Figure 5) and Categories of the tweets of the FAME (Figure 6).

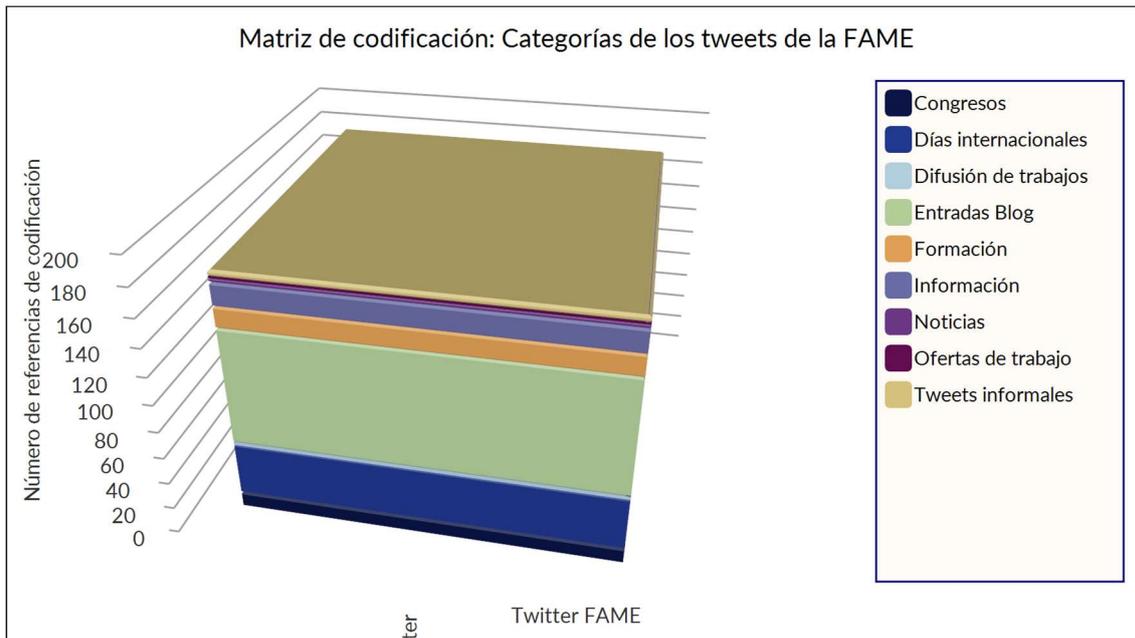
**Figure 4. Coding matrix: Associations of Midwives of Spain.**



**Figure 5. Coding matrix: Mentions of the FAME twitter account.**



**Figure 6.** Coding matrix: Categories of FAME tweets.



In the case of the code: Associations of Midwives of Spain, the subcodes referring to each of the Associations of Midwives by Autonomous Communities that make up the Federation were included, obtaining data from 13 associations that were mentioned by the FAME account through your tweets such as:

*[@fame\_matronas: También el 7 de mayo, la Associació Balear de Comares @ComaresB ha organizado una jornada científica. #DíadelMatrona <https://t.co/1gQJNcOefP>.]*

*[@fame\_matronas: Esta semana en nuestras asociaciones (Euskadi y Castilla La Mancha) #FAMEsemanal <https://t.co/p7FVRzdsqk>.]*

In the case of the code: Mentions of the FAME twitter account, the subcodes referring to each of the retweeted accounts in tweets were included, such as:

*[@elpartoesnuestr: El documental interactivo 'Parir en el Siglo XXI' gana el premio Boehringer Ingerheim de Periodismo en Salud. <https://t.co/Ny8jTZ0iVb> vía @rtve #parto #documental #parirenelsigloXXI #ElPartoEsNuestro]*

*[@world\_midwives: #SaveTheDate: The Dep. of Maternal, Newborn, Child, and Adolescent Health & Ageing, @WHO Geneva is organizing a global event to share experiences and lessons learned from the impact of COVID-19 on essential MNCH services. Register: <https://t.co/q13skN8ITq> <https://t.co/DV4spljduz>.]*

In the case of the code: Categories of FAME tweets, the subcodes referring to each of the general themes in which each of the tweets were framed were included, being the most numerous coding. In the Congress category, tweets were included such as:

*[@fame\_matronas: ¡Atención! Aún estás a tiempo de presentar tu comunicación para el II Congreso APROMAP y el XVII Congreso de la FAME. Fechas a tener en cuenta: 15/1: Apertura del plazo - 1/5: Cierre del plazo - 30/6: Comunicación a los autores decisión del Comité Científico sobre la aceptación.]*

*[@fame\_matronas: ¿Quieres hacer una presentación oral o presentar un póster en el siguiente congreso de la FAME? Aquí tienes en enlace a las normas de envío: <https://t.co/QNRqzrgg0Q>.]*

In the International Days category, tweets were included such as:

*[@fame\_matronas: 23 SEPTIEMBRE DÍA INTERNACIONAL CONTRA LA EXPLOTACIÓN SEXUAL Y EL TRÁFICO DE MUJERES Y NIÑAS. <https://t.co/L3aErJ8PFL> <https://t.co/OVuvVzVFCv>.]*

*[@fame\_matronas: 26 DE MARZO DÍA MUNDIAL DEL CÁNCER DE CERVIX <https://t.co/qCX1kIIPFW> <https://t.co/nGSTYOUHCm>.]*

In the Dissemination of works category, tweets were included such as:

*[@fame\_matronas: ¡Buenos días! Hoy compartimos el post ganador del concurso que hicimos hace unos meses. ¡Enhorabuena, Esther! <https://t.co/MEnNV0d7Bd> <https://t.co/ATCMK1U3Bd>.]*

*[@fame\_matronas: Un compañero de Ciudad Real nos manda esta encuesta para un trabajo de investigación: <https://t.co/UXm4Jc5LSM> #matronas.]*

In the Blog Posts category, tweets were included such as:

*[@fame\_matronas: Las «falsas contracciones» o contracciones de Braxton Hicks: consejos para reconocerlas <https://t.co/H7Rb6XBT6M> <https://t.co/5kwtilGPMz>.]*

*[@fame\_matronas: Bancos de leche: la mejor opción cuando no disponemos de leche de madre <https://t.co/gOMh7pHQof> <https://t.co/GQg7DscNwS>.]*

In the Training category, tweets were included such as:

*[@fame\_matronas: Las compañeras de la Asociación Profesional de Matronas Extremeñas han organizado unas jornadas de formación continuada en Hervás los días 10 y 11 de mayo. ¿Quién se apunta? #DíadelaMatrona <https://t.co/BX7rfFOT0y>.]*

*[@fame\_matronas: Curso gratuito de UNED y MAPFRE sobre la seguridad vial infantil <https://t.co/uDYUNDpuSc> #seguridadvial.]*

In the Information category, tweets were included such as:

*[@fame\_matronas: Reunión de la nueva Junta Directiva de FAME con la Dirección General de Salud Pública del Ministerio de Sanidad. @sanidadgob #matrona <https://t.co/xx2mYxL43R>.]*

*[@fame\_matronas: ¡Atención, matronas y residentes! Eucerin, con la colaboración de la FAME, ha puesto en marcha este concurso <http://t.co/ipmFzMbZ31>.]*

In the News category, tweets were included such as:

*[@fame\_matronas: Barcelona reforzará la educación sexual y la atención a jóvenes <http://t.co/VN89unyiS7> @llevadores.]*

*[@fame\_matronas: Sobre Elisabeth Eidenbenz, la maternidad de Elna y su historia: La cuna del exilio <http://t.co/kkZjcadDhA>.]*

In the Job Offers category, tweets were included such as:

*[@fame\_matronas: ¿Quieres formarte como matrona para el Reino Unido? Atent@s a esta información!! •Se organiza una Midwifery webinar el 24-10-2021 a las 12:00 am •Una oportunidad para formarse para ser matrona en Reino Unido (RU). #matrona <https://t.co/YFED4Y7tUp>.]*

The Informal Tweets category included tweets such as:

*[@fame\_matronas: ¡Feliz año nuevo! Brindemos por un 2019 con ninguna mujer sin matrona.]*

## DISCUSSION

The @fame\_matronas account is structured within the twitter sociogram as the center of a small group of 55 users directly related to its publications, being the subject of follow-up and interest for a total of 1,474 followers. These profiles are mostly made up of groups and health professionals.

From its creation on March 6, 2014 to November 30, 2021, the number of publications has been heterogeneous over time, with a significant increase in the number of tweets published in 2014 and 2015 compared to that of later years. In addition, a more intense social activity on the network has been observed in these years, compared to the last three years, largely due to the COVID-19 pandemic that coincides with the period of scarce activity analyzed, a fact that differs from the majority of scientific associations that publish content on the social network <sup>(1,15,16)</sup>.

Regarding the content of the tweets, the FAME publications focus on making the profession of midwives visible and improving the quality of care as described by the organization in its own biography, this is quickly evidenced through the high frequency of terms used such as “midwives”, “international”, “health”, “congress”, “pregnancy”, “lactation”, “women”... Which has made it possible to classify the content of published tweets into categories to understand the interests and motivations of the Association. The central theme in the publications is the dissemination of the content of the FAME blog, where information related to women's comprehensive health and aspects related to the reproductive life of women is published, aimed at both health professionals and the population in general. In addition, in a large part of these publications, an attempt has been made to relate the content to some international day or related special date to improve its dissemination through social networks with hashtags <sup>(4)</sup>.

It should be noted that in relation to the Associations of Midwives in Spain, there is greater interaction with the Associations of Cataluña, Islas Baleares, Madrid, Galicia,

Extremadura and Castilla y León; and less interaction with the rest of the Associations, being null with the Autonomous Communities of Cantabria, Aragón, Murcia and Valencia.

The research presented here allows us to reaffirm the positions previously held by other authors; that Twitter analysis is useful for extracting health data, as pointed out a decade ago by Paul and Dredze <sup>(1)</sup>, and more recently by Gough et al. <sup>(17)</sup>, Bode and Vraga <sup>(18)</sup>, or Gencoglu and Gruber <sup>(19)</sup>. Additionally, due to the nature and subject matter of a large part of the sample, this study also demonstrates the importance of social networks in disseminating the advances in health referred to by Breland et al. <sup>(15, 20)</sup>.

Given their growing prominence and impact, these digital tools should serve as transmission belts for truthful information between science and society. Health managers and professionals must be aware of this fact and be prepared for it, so they must know the dynamics of this type of tool in order to use it efficiently <sup>(7, 21)</sup>.

On the other hand, the interest shown by Twitter users in the messages published by FAME is evident in the number of “likes” and retweets. This, in turn, confirms Twitter's ability to carry out communication campaigns to deliver truthful information in the fight against disinformation caused by trolls and bots, as studied by Sutton <sup>(22)</sup>. The active presence of FAME on Twitter is an important weapon against disinformation, as discussed, among others, by Pérez Dasilva et al. <sup>(23)</sup>, Ramón Fernández <sup>(24)</sup>, Kouzy et al. <sup>(25)</sup> and Rosenberg et al. <sup>(26)</sup>.

Regarding the most frequent topics in the FAME tweets during the analyzed period, it is worth highlighting the role of midwives as a reference professional in comprehensive health care for women and the dissemination of content related to the activity of midwives. Associations of Midwives of Spain. This is related to FAME's efforts to give visibility to the professional activity of midwives in different fields.

As limitations of the study, it should be noted that the ethnographic analysis of FAME through its twitter account shows us a reduced reality or limited to a single social network, in this case twitter, since the social construction that develops from of said network can be considered a parcel within the multiple platforms that the Internet offers to publish content and apart from what may be established outside the Internet community.

## CONCLUSIONS

Within the world of social networks, it is necessary to have reliable sources of information that accurately reflect reality in relation to women's health. FAME demonstrated its knowledge of this fact with its tweets on topics related to women's health linked to its blog and on the professional activity of midwives in Spain during the period analyzed.

The results showed that the choice of topics, the nature of the messages that respond to changing needs and circumstances, and the publication of these tweets followed the dynamics of the current topics of that moment and the international days related to the contents in the matter health of women and their families. Thus, FAME informed

citizens of the facts and advances with scientifically based messages, while issuing warnings, announcements and appeals to promote responsible behavior to improve their health.

This study allows us to verify how the FAME narrative on its Twitter account bears witness to a period marked by significant advances in the fight against gender-based violence and misinformation in health, but also against labor intrusiveness and the invisibility of the collective of midwives.

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