

## Social media as a tool for the management of food allergy in children

**Running title:** Social media and food allergy

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## Abstract

*Background:* Food allergy heavily impairs quality of life. Avoiding the offending food requires extensive patient education. Social media have been proven a useful source of information for other chronic conditions. Our aim was to describe how pediatric patients with food allergy and their families are using social media.

*Methods:* We performed a cross-sectional study in the Pediatric Allergy Unit of a third-level hospital. Patients with food allergy were surveyed about their disease and the use of social media. Patients over 13 years filled in the survey themselves, while parents or guardians did in the case of younger patients.

*Results:* We included 193 patients (162 guardians, 31 adolescents). Social media was used by 109 guardians (67.3%) and 29 adolescents (90.3%), of which 30.3% and 6.9%, respectively, used them for food allergy-related purposes. Most popular websites were Facebook™ for guardians (52.2%) and YouTube™ among teenagers (80.6%). Having cow's milk and/or egg allergy was the only feature related to using social media for food allergy.

Utilizing social media for food allergy information, did not correlate with the frequency of recent reactions, self-scored knowledge about food allergy or the opinion on evidence-based or alternative therapies for their disease.

*Conclusions:* Most patients and guardians of patients with food allergy used social media. However, only a small portion accessed them for increasing the knowledge of their disease.

**Key words:** Social media, Internet, Food allergy, Paediatrics, Information

## Resumen

*Introducción:* La alergia alimentaria afecta a la calidad de vida de quienes la sufren. La evitación de los alimentos que la producen exige la educación de los pacientes. Las redes sociales han demostrado ser una fuente útil de información acerca de otras enfermedades crónicas. El objetivo de este estudio fue describir el uso de las redes sociales por parte de los pacientes en edad pediátrica con alergia alimentaria, así como el de sus familias.

*Métodos:* Se realizó un estudio transversal en la Unidad de Alergia Infantil de un hospital de tercer nivel. Se encuestó a pacientes diagnosticados de alergia alimentaria, acerca de su enfermedad, así como de su uso de las redes sociales. La encuesta fue cumplimentada por los propios pacientes a partir de los 13 años de edad, mientras que los tutores lo hicieron en los casos de pacientes menores.

*Resultados:* Se incluyeron 193 pacientes (162 tutores y 31 adolescentes). Las redes sociales eran utilizadas por 109 tutores (67.3%) y 29 adolescentes (90.3%), de los que el 30.3% y el 6.9%, respectivamente, lo hacían en relación con la alergia alimentaria. Las páginas web más frecuentes eran Facebook™ en el caso de los tutores (52.2%) y YouTube™ entre los adolescentes (80.6%). Ser alérgico a la leche y/o al huevo era la

única característica que se relacionó con el uso de redes sociales en relación a la alergia alimentaria.

El uso de las redes sociales para informarse acerca de la alergia a los alimentos no se correlacionó con la frecuencia de reacciones, la percepción del conocimiento propio acerca de la alergia alimentaria o la opinión sobre terapias científicas y alternativas para su enfermedad.

*Conclusiones:* La mayoría de los pacientes con alergia alimentaria y sus tutores son usuarios de las redes sociales. Sin embargo, sólo una pequeña porción las utiliza para formarse acerca de su enfermedad.

**Palabras clave:** Redes sociales, Internet, Alergia a alimentos, Pediatría, Información

Accepted Article

**Introduction:**

The use of Internet and, particularly, social media, has dramatically increased in recent years. The number of allergists using social media to disseminate scientific data has grown extensively, around the world. And so is the number of patients using them to access information concerning their conditions [1]. A potential use is to improve the ways in which the information is being shared [2].

Food allergy affects numerous children, and is responsible for substantial morbidity, impaired quality of life and costs to the individual, family and society [3]. A key strategy in the management of food allergy involves eliminating the offending food from the diet. Avoidance requires extensive patient education. Still, unintended exposure is not uncommon. Due to these factors, food-allergic patients usually need to search for additional information, which might increase their knowledge and sense of security [4].

Internet and social media have proven useful as a source of information for patients with other conditions, such as diabetes [5], psoriasis [6] or psychiatric disorders [7]. Evidence also supports the utility of social media and other electronic interventions in allergic conditions [8,9]. In spite of the effort of scientific societies and patient associations to disseminate trusted content in social media and the Internet, there is still a gap in knowledge of food allergy among the general population, or even patients [10]. There are few studies evaluating the impact of social media in allergic patients. There are indications that it might have a beneficial effect in other allergic diseases [11]. Yet, a paradoxical effect seems also possible [12,13], facilitating the access to incorrect and potentially harmful information [14,15]. Thus, it seems important to increase knowledge about the use of social media by food-allergic patients and their families, in order to

better direct educational efforts. This could result in an enhancement of their information on the disease and a subsequent decrease of morbidity.

The aim of this study was to describe how paediatric patients and their families use social media as a source of food allergy information, to find out differential characteristics between users and non-users and to evaluate the impact of social media in the burden of food allergy.

## **Methods:**

### Overview

We performed an observational, cross-sectional study of patients with food allergy attended in the Paediatric Allergy Unit (PAU) of Hospital General Universitario Gregorio Marañón between October and November 2016. Our hospital is a reference centre for a catchment population of 650,000 people in the city of Madrid, Spain. Use of social media is not encouraged by physicians in the PAU.

Participants were approached and invited to fill in an anonymous survey if they already had a diagnosis of food allergy. The survey was presented on paper form and filled in the office. The survey was completed by the guardians of patients 12 and younger, while patients 13 and older completed it themselves. The limit was set at 13 years, because that is the age set by the terms of use of most social networks. The survey design and implementation was approved by the Ethics Committee for Medical Research of our institution, and a written informed consent was obtained from all participants.

### Survey

The survey contained 24 questions (included as Supplementary material). Most of the questions were asked in a dichotomous format. Demographic information including age,

sex and allergic history was collected, as well as information regarding food allergies, disease duration, number of reactions in the last year, history of anaphylaxis and use of epinephrine.

Participants were asked to quantify on a 1 to 10 visual analogue scale (VAS) their knowledge about food allergy, as well as their opinion on that of the general population. They were questioned about their use of personal computers (PC) and other Internet devices, personal Internet connection habits and if they were users of social media, the frequency of use of social media, which networks they used for any purpose and for food allergy-related contents. They were also inquired about food allergy-related uses of social media and which types of users they followed on social media, food-allergy related use of other mobile applications and instant messaging.

Finally, all participants were asked to quantify on a VAS (1 to 10) the utility of social media as a source of information on food allergy, as well as their opinion on evidence-based and alternative therapeutic options (1 to 5 or unknown).

#### Data analysis

The statistical analysis was performed with IBM SPSS Statistics 20.0 for Windows. Qualitative variables are expressed as frequency and quantitative variables are expressed as median and interquartile range (IQR).

Categorical variables were compared using the chi-square test, Fisher exact test and crude odds ratio (cOR); quantitative variables were compared using the Mann-Whitney test, Wilcoxon signed-rank test and Kruskal-Wallis one-way analysis of variance. Multivariate logistic regression model was used to assess independent variable variables and their adjusted odds ratio (aOR).

A projected sample size of 200 participants was based on a population use of social media of 40% and a response rate of 50%.

## **Results:**

A total of 193 completed surveys were returned by patients (response rate 96.5%). Guardians of patients younger than 13 years represented 84% of the sample, and 16% were patients of 13 or older. Demographic data is listed in Table 1.

### *One out of five guardians use social media for their children's food allergy*

Guardians of 162 patients under 13 filled the survey, since the terms of use agreement of the major social media networks do not accept users under this age. The group included 122 women and 40 men, with a median age of 42 years (IQR: 6). They accounted for represented 95 boys and 67 girls, with a median age of 7.5 years (IQR: 5). Nuts were the most common trigger of food allergy while seventy percent had other allergic diseases. (Table 1).

The guardians of all 162 children had Internet connection. Most of them accessed the Internet from their homes (84%). One hundred and thirty-seven guardians (84.6%) had a smartphone and 122 (75.3%) owned a PC. Instant messaging (e.g. WhatsApp™) was used by 124 (76.5%) (Table 2).

The guardians of 109 patients (67.3%) used social media (Table 2), of which. Seventy-nine (72.5%) accessed the networks every day, while 26 (23.9%) did at least once a week and 4 (3.7%) less frequently. Facebook™ (52.5%) and YouTube™ (42%) were the most visited sites (Figure 1).

However, only 33 (30.3%) of the users of social media, said that they used them for food allergy-related purposes. Most frequently Facebook™ (78.8%), well ahead of YouTube™ (27.3%) and Twitter™ (9.1%) (Figure 1).



The most popular food allergy-related use of social media were for accessing food security information (78.8%). Patients associations were the most popular profiles to be followed by guardians of food-allergic children (48.5%) (Figure 1).

We assessed explanatory variables to understand why social media users did or did not adopt them for food allergy-related commitments. Only the fact that the patient was allergic to cow's milk and/or egg resulted significant, with an cOR of 3.27 (95% CI 1.21-8.85). This association was verified as independent from other allergic diseases, the number of food groups the patient was allergic to, history of anaphylaxis, time from the diagnosis or parental age, with a resulting aOR of 3.25 (95% CI 1.17-9.08) (Table 3).

#### Teenagers rarely used social media for food allergy

Thirty-one patients of 13 years or older filled in the survey. The group included 20 boys and 11 girls, with a median age of 14 years (IQR: 3). Eighty-seven percent had other allergic diseases. Nuts was the most common trigger of food allergy (Table 1).

All these patients had regular connection to the Internet. Most of them connected from their homes (90.3%). PCs were used by only 41.9%, significantly less than adults. Twenty-eight (90.3%) were instant messaging users (Table 2).

Twenty-nine teenagers (93.5%) were social media users (Table 2). When asked about the frequency they accessed the networks, 23 (79.3%) did every day, while 6 (20.7%) did at least once a week. YouTube™ (80.6% vs 62.4% adults,  $p=0.02$ ), Instagram™ (61.3% vs 25.7% adults,  $p<0.0001$ ) and Snapchat™ (22.6% vs 1.8% adults,  $p<0.0001$ ) were the most popular networks. The use of Facebook™ (16.1%) was significantly lower than that of adults (52.5%),  $p<0.0001$  (Figure 2).

Only two (6.9%) of the patients in this group used social media for food allergy-related purposes. The first one was a 14-years-old male, allergic to shellfish, without a history

of anaphylaxis. The second one was a 16-years-old-male, with a history of anaphylaxis due to hen's egg. Both had been diagnosed over 5 years ago. Data was not further analysed due to the small sample.

*The impact of social media use for Allergy remains to be established*

The survey included several questions with the aim of trying to evaluate the outcomes of the use of social media. It included subjective (opinion on utility of social media for food allergy, their knowledge about food allergy and that of the general population) and objective metrics (accidental exposure to an offending food in the last year, knowledge of scientific and alternative therapies).

All patients who did use social media (guardians and teenagers) were asked about their opinion on the utility of social media as a tool for food allergy in a 1 to 10 VAS. Globally, a median score of 6 (IQR: 3.25). Still, this mark was deemed higher by those who already used social media for food allergy-related purposes (median 7; IQR 2) than by those who did not (median 5; IQR 4) ( $p < 0.0001$ ).

In the same fashion, patients were asked to score their own knowledge on food allergy and that of the general population. There were no significant differences in self-reported knowledge between those who did use social media for food allergy (median 8; IQR 1) and those who did not (median 8; IQR 2) ( $p = 0.37$ ). However, participants who used social media for food allergy scored the knowledge of the general population lower (median 4; IQR 3) than those who did not (median 5; IQR 2) ( $p = 0.03$ ).

Another approach to evaluate the utility of social media was asking if the patients had had a food-triggered allergic reaction within the past year. Only 120 patients who had been diagnosed for more than one year were included in this analysis. Globally, 61 (50.8%) kids had at least one reaction. Among those who used social media for food allergy, this amounted to 12 patients (38.7%) having a reaction within the last year,

while there were 49 (55.1%) of the patients who used social media for other purposes. However, this difference was not significant ( $p=0.12$ ).

Finally, the participants were asked to give their opinion on 10 different allergy-related evidence-based and alternative therapies using a 1-5 VAS, or unknown. Globally, scientific therapies scored higher than alternative therapies (4 vs 2;  $p<0.0001$ ). However, as shown in Table 4, there were no significant differences between patients who used social media for food allergy and the rest of social media users, regarding either the knowledge of therapies or their opinion.

### **Discussion:**

In this cross-sectional study about the social media habits of food-allergic patients and their families, we included almost 200 patients attended in the PAU of a tertiary hospital in Madrid, Spain. We obtained detailed information about the way they or their guardians use social media. Over two thirds of them accessed to this kind of networks, most of them daily. However, only 25% of social media users used them to gather information related to the disease.

Internet in general, and social media in particular, has become an important source of health information. A systematic review reported that most pregnant women use Internet as a source of information [16], while a survey found that 44.4% of patients with melanoma or psoriasis searched Internet for information on their disease [6]. The utility of social media has been documented in medical disciplines, such as oncology [17], psychiatry [7] and allergy [1]. Positive outcome has been obtained using social media and Internet for improvement of education on cystic fibrosis [18], asthma [19] or other chronic diseases [20,21]. Health-related uses of social media are not limited to

patients education, but also cover research [22], increasing the impact of scientific literature [23] and more [10].

The results of our study are difficult to compare because of methodological variability. In 2010, a telephone survey conducted in the US, found that 15% of social media users (46% of American adults), had gotten health information in social websites [24]. In a EU-wide survey conducted by the European Commission in 2014, 59% of the respondents had used Internet to search for health-related information. However, only 17% tried to find information on a specific disease in social media [25]. Another survey conducted in 2015 by the Spanish Government, 60.5% of adults in Spain acknowledged they used Internet with health-related purposes. While 59.3% of these respondents used social media, only 37.6% of them did to search for health-related information [26]. In our study, the number of social media users is higher than the Spanish average, probably due to lower age. However, there is a lower rate using social networks for their disease. This is remarkable, since a quality of life-limiting disease, such as food allergy, does not seem to drive to a potential source of information. Our result is in between the 63.5% of Spanish patients with melanoma or psoriasis who used Internet social networks to gather health information [6], and the 19.6% of type 1 diabetes patients who had health-related contacts in their social profiles [5].

The use of social media by food allergic patients does not seem to be hampered by technological limitations. Internet access, availability of devices with Internet connection and use of instant messaging are well above the European and Spanish average [2,27]. This seem consistent with the generational gap in the use of social media, which is more frequent among younger generations [2].

Availability of information should not be the limiting factor, either. In the last years, the number of English-speaking allergists in Twitter™ grew by 470% between 2011 and

2012 [1], and their activity has been documented during congresses, in the USA [28] and Spain [29]. However, in our study Twitter™ was only the third source of information for guardians of food-allergic children, far behind Facebook™ and YouTube™. It is possible that part of the reason why most patients don't use social media is because the networks they use are not the same which are being used by healthcare professionals to disseminate information, or because they are getting their Internet information from other sources, as has been documented in asthma [15] and dermatological diseases [6]. Information available in other platforms has been hardly documented [15]. Also, language might be another barrier in the case of Spanish-speaking patients. There is no documentation on the amount of information about food allergy available in Spanish.

Another reason for not using social media seems to be the perception of poor reliability of these networks. Only 14.7% of Spaniards considered social media as a trustworthy source for health-related information [26]. This low opinion has been documented in other studies among adolescents and young adults [30] or patients with type 1 diabetes [5]. Reliability of social media remains controversial. There are no standardized methods to measure the quality of available information [31]. In the particular case of allergy and immunology, reliability of videos posted on YouTube™ has been found to be low for asthma, rhinitis, and immunodeficiencies [10]. Providing contrasted information, backed by scientific societies and health professionals, might improve the perception of social media by the general public and increase its use [5].

The main utility of social media for food-allergic patients and their families was gathering information (security updates about food products and additional medical advice). It is possible that patients consider they get enough information from their physicians, considering additional sources unnecessary. A hint supporting this is the

fact that patients score 8 out of 10 their own knowledge about food allergy. However, this subjective measure might not be realistic, since a large number of patients did not know important evidence-based therapies for their disease, such as epinephrine or oral immunotherapy.

The only independent factor that explained which guardians of food-allergic children used social media for food-allergy related information was to be allergic to cow's milk and/or egg. This is consistent with other results of the survey, such as the high rate of social media use for getting food security information. Also the fact that patients associations' profiles, which usually release this kind of information, are the most frequently followed. Cow's milk and egg allergy have been described as the main triggers of anaphylaxis in children from our area [32], and being allergic to them would be perceived as important enough to move guardians to get as much information as possible from any source.

It is of note the particular case of adolescents. On the one hand, their use of social media was superior than older parents/guardians, as described elsewhere [2,25,26,30]. On the other hand, teenagers are one of the populations at higher risk of severe anaphylaxis [4]. However, less than 7% of the respondents over 13 years used social media for food allergy-related purposes. Overconfidence and other personality traits are well known characteristics of adolescents, leading them to act differently regarding their food allergy [33]. Maybe the fact that their social media habits are different from adults (more smartphones and instant messaging, different networks), as described previously [30], might also play a role in understanding their underuse of social media for food allergy.

In spite of our efforts, the study has been unable to measure the impact of social media use on food allergy. Using social media did not show any effect on the objective

parameters evaluated, which were the number of reactions during the last year or the knowledge and perception of different evidence-based and alternative therapies. Regarding subjective parameters, social media did not affect self-scoring of knowledge about food allergy. However, patients who used social media for food allergy had a worse opinion on the knowledge of the disease among the general population, which might be influenced by their experiences in social websites. From our point of view, these findings should not be interpreted as lack of effect of the use of social media on food allergy, but rather as evidence that our approach was not valid to measure it. In spite of this, patients who used social media for food allergy, scored them more useful than those who did not (7 vs 5). This finding suggests that benefit of social media described in other diseases might be applicable to food allergy.

The most important aspect of this present study is that it represents the first approach to understand the way that social media may or may not influence daily lives of patients with food allergy. Our cross-sectional design has provided insight on the way children, adults and teenagers use new technologies, and how they might impact the management of their disease.

This study is subjected to a series of limitations. First, the cross-sectional design from which only associations, rather than causality can be established. The study was done, with data only collected in a tertiary hospital PAU, which may lead to a lack of external validity. Second, the number of teenagers included in the study was small, so the information derived from this subgroup is limited. Lastly, the limit to fill the survey by the patient was set at 13 years. However, it is possible that some patients do access them before that age, and we did not get information on that subgroup.

In conclusion, most patients and guardians of patients with food allergy do use social media often. However, only a small portion access them for food-allergy related

purposes. The ones who do so are those who are allergic to the most ubiquitous allergens, and once they use social media, they find them useful. Although we have reasons to believe that social media may be a useful tool for the management of food allergy, we have not been able to establish it. Further investigations should be led to assess the quality of allergy-related information in social media, since its reliability is questionable.

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Table 1. Characteristics of patients with food allergy included in the study.

	<b>Guardians of patients &lt; 13 years (n=162)</b>	<b>Patients ≥ 13 years (n=31)</b>	<b>All (n=193)</b>	<b>p</b>
<b>Sex (female/male)</b>				
Patients	67/95	11/20	78/115	0.5
Parents/guardians	122/40	-	-	-
<b>Age median (IQR)</b>				
Patients	7.5 (5)	14 (3)	8 (5.5)	-
Parents/guardians	42 (6)	-	-	-
<b>Food allergy</b>				
Peanut and tree nuts	75 (46.3%)	15 (48.4%)	90 (46.6%)	0.8
Egg	62 (38.3%)	9 (29%)	71 (36.8%)	0.3
Cow's milk	53 (32.7%)	5 (16.1%)	58 (30.1%)	0.0
Fruit	31 (19.1%)	8 (25.8%)	39 (20.2%)	0.4
Finned fish	28 (17.3%)	7 (22.6%)	35 (18.1%)	0.4
Legumes	12 (7.4%)	0	12 (6.2%)	0.2
Shellfish	9 (5.6%)	1 (3.2%)	10 (5.2%)	0.6
Other	4 (2.5%)	2 (6.5%)	6 (3.1%)	0.2
<b>Time since onset</b>				
< 1 year	19 (11.7%)	1 (3.2%)	20 (10.4%)	0.2
1-5 years	47 (29%)	5 (16.1%)	52 (26.9%)	0.1
> 5 years	96 (59.3%)	25 (80.6%)	121 (62.7%)	<b>0.0</b>
<b>History of anaphylaxis</b>	100 (61.7%)	22 (71%)	122 (63.2%)	0.3
<b>Adverse reactions in the last year</b>	83 (51.2%)	15 (48.4%)	98 (50.8%)	0.7
<b>Associated allergic diseases</b>	114 (70.4%)	27 (87.1%)	141 (73.1%)	0.0
Asthma	80 (49.4%)	24 (77.4%)	105 (53.9%)	<b>0.00</b>
Rhinoconjunctivitis	52 (32.1%)	18 (58.1%)	70 (36.3%)	<b>0.00</b>
Atopic Dermatitis	44 (27.2%)	9 (29%)	53 (27.5%)	0.8

Table 2. Internet-related habits by patients with food allergy and their guardians.

	<b>Guardians of patients &lt; 13 years (n=162)</b>	<b>Patients ≥ 13 years (n=31)</b>	<b>All (n=193)</b>	<b>P</b>
<b>Internet connection</b>				
Home	136 (84%)	28 (90.3%)	164 (85%)	0.363
Mobile phone	122 (75.3%)	22 (71%)	144 (74.6%)	0.611
<b>Devices with Internet connection</b>				
Personal computer	122 (75.3%)	13 (41.9%)	135 (69.9%)	<b>&lt;0.0001</b>
Smartphone	137 (84.6%)	29 (93.5%)	166 (86%)	0.262
Tablet	87 (53.7%)	12 (38.7%)	99 (51.3%)	0.126
<b>Social media users</b>	109 (67.3%)	29 (93.5%)	138 (71.5%)	<b>0.003</b>
Food allergy-related	33 (30.3%)	2 (6.9%)	35 (25.4%)	<b>0.01</b>
<b>Instant messaging (WhatsApp)</b>	124 (76.5%)	28 (90.3%)	152 (58.8%)	0.09

Table 3. Predictors of the use of social media for food allergy among guardians of food-allergic children, who connected to social networks. cOR=crude odds ratio; aOR=adjusted odds ratio; 95% CI=95% confidence interval.

	Use of social media for food allergy		cOR (95% CI)	aOR (95% CI)
	Yes (n=33)	No (n=76)		
<b>Allergic to <math>\geq</math> 3 food groups</b>	6 (18.2%)	8 (10.5%)	1.89 (0.59-5.96)	1.57 (0.45-5.43)
<b>Cow's milk and/or egg allergy</b>	27 (81.8%)	44 (57.9%)	<b>3.27 (1.21-8.85)</b>	<b>3.25 (1.17-9.08)</b>
<b>Anaphylaxis</b>	20 (60.6%)	42 (55.3%)	1.25 (0.54-2.86)	1.29 (0.54-3.16)
<b>Diagnosis <math>\geq</math> 5 years</b>	18 (54.5%)	42 (53.9%)	1.02 (0.45-2.33)	0.93 (0.34-2.52)
<b>Associated allergic diseases</b>	21 (63.6%)	53 (69.7%)	0.76 (0.32-1.79)	0.77 (0.29-2.07)
<b>Guardians <math>\geq</math> 45 years</b>	7 (21.2%)	14 (18.4%)	1.19 (0.43-3.29)	1.39 (0.44-4.40)

Table 4. Opinion of social media users on the utility of scientific and alternative therapies.

		All social media users (n=138)	Use of social media for food allergy		P
			Yes (n=35)	No (n=103)	
<b>Oral immunotherapy</b>	Unknown <i>n</i> (%)	42 (30.4%)	10 (28.6%)	32 (31.1%)	0.78
	Score <i>median</i> ( <i>IQR</i> )	5 (1)	4 (1)	5 (1)	0.32
<b>Epinephrine</b>	Unknown	34 (24.6%)	9 (25.7%)	25 (24.3%)	0.86
	Score	5 (2)	5 (2)	5 (1.25)	0.79
<b>Allergen immunotherapy</b>	Unknown	60 (43.5%)	19 (54.3%)	41 (39.8%)	0.14
	Score	4 (2)	3.5 (1.75)	4 (2)	0.33
<b>Inhaled corticosteroids</b>	Unknown	38 (27.5%)	10 (28.6%)	28 (27.2%)	0.87
	Score	4 (2)	4 (2)	4 (2)	1
<b>Accupuncture</b>	Unknown	88 (63.8%)	11 (31.4%)	39 (37.9%)	0.49
	Score	2 (3)	3 (3)	2 (3)	0.85
<b>Bach flower remedies</b>	Unknown	107 (77.5%)	24 (68.6%)	83 (80.6%)	0.14
	Score	1 (2)	1 (2)	1 (2)	0.91
<b>Homeopathy</b>	Unknown	71 (51.4%)	17 (48.6%)	54 (52.4%)	0.69
	Score	2 (2)	2 (3)	2 (2)	0.88
<b>Naturopathy</b>	Unknow	95 (68.8%)	25 (71.4%)	70 (68%)	0.7
	Score	2 (2)	2 (3)	2 (2)	0.53
<b>Osteopathy</b>	Unknow	37 (26.8%)	25 (71.4%)	76 (73.8%)	0.79
	Score	3 (3)	2 (3)	3 (3)	0.58
<b>Reiki</b>	Unknown	99 (71.7%)	22 (62.9%)	77 (74.8%)	0.18
	Score	1 (2)	1 (2)	1 (2)	0.93
<b>Scientific therapies</b>	Score	4 (1.75)	4 (2)	4 (1.5)	0.57
<b>Alternative therapies</b>	Score	2 (2)	2 (2.4)	2 (2)	0.88



Figure 1. Use of social media by food-allergic patients or their guardians. A: Social networks used by guardians (general and food allergy-related purposes) and teenagers (general only); B: Food allergy-related uses of social media; C: Types of profiles followed for food allergy purposes.

