

An Exploration of Activities, Reasons, and Barriers of Using Social Media for Food Allergy Management

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Managing food allergies can be overwhelming for affected individuals. Social media may serve as a platform for individuals with food allergies to access and share useful information. This study investigated social media use among adults with food allergies. Fifty individuals with food allergies answered a series of open-ended questions related to their social media use behaviors. The answers were used to develop an online anonymous survey, which was completed by 319 individuals with food allergies. Results indicated that social media users mainly used social media to gather updated information about food allergies and hear somebody else's experiences and advices about food allergies. Lack of privacy, concerns about reliability of the

information, and lack of efficiency were barriers to the use of social media. Those who were younger, had an allergic reaction in restaurants in the past, and who were newly diagnosed with food allergy were more likely to engage in social media use for food allergy related purposes. Social media administrators may seek strategies to remove barriers and share information from credible resources to benefit those in need of such information.

Keywords: social media, food allergies, activities, barriers

Food allergies are one of the emerging health challenges in the U.S. They affect 9 million adults and 5.9 million children, which translates into 1 in every 25 American adults and 1 in 13 children under the age of 3 (Gupta et al., 2011; National Institute of Allergy and Infectious Diseases [NIAID], 2006). It is estimated that 30,000 episodes of food-induced anaphylactic shock occur in the U.S. each year, which results in 100 to 200 deaths (NIAID, 2008). Fish, shellfish, eggs, milk, soy, wheat, peanuts, and tree nuts, which are known as the "Big Eight," cause 90% of all the reported allergic reactions to food (NIAID, 2006). Many individuals develop food allergies

while they are young, but adult-onset food allergies are now becoming more common (Smith, 2016).

The impact of food allergies is significant. The expenses for medications, health insurance costs, and days of absence from work or school are higher in households with food allergies (Voordouw et al., 2010). Families with members who have food allergies also spend significantly more time shopping and preparing food than families without such individuals (Voordouw et al., 2010). In addition, another study that aimed to investigate the economic impact of childhood food allergies in the U.S. showed that the overall economic burden due to food allergies reached \$24.8 billion, or \$4,184 per allergic child each year (Gupta et al., 2013).

At the same time, with the increased popularity of social media in the past few years, healthcare professionals and individuals with different diseases have been actively engaged in social media for different reasons. Social media are known as a new way of accessing and sharing valuable information, gaining social support, enhancing connectivity, and encouraging collaboration between stakeholders. The various disease-specific groups (i.e., Diabetes) formed on social media have been shown to induce positive changes and improve health outcomes (Petrovski, Zivkovic, & Stratrova, 2015; Struik & Baskerville, 2014). Therefore, it is critical to learn more about using social media for food allergy management. More specifically, this study aimed to: 1) Describe characteristics of social media users with food allergies and their activities performed on food allergy-related social media sites; 2) Identify the participants' reasons for and barriers to the use of social media for food allergy related purpose; and 3) Investigate variables that differentiate social media users and non-users. Social media users are defined as food allergy patients who use social media for food allergy related purposes while social media non-users are those who did not use social media for food allergy related purposes.

LITERATURE REVIEW

Overview of Food Allergies

A food allergy is a chronic, complicated immunological disease in which the immune system attacks a food protein that is not harmful to the body (American Academy of Allergy Asthma, and Immunology [AAAAI], 2019). The food allergic reactions are manifested through cutaneous (itchiness of skin, throat, and tongue; rashes),

cardiovascular (tingling hands, difficulty breathing, increased heart rate), and/or gastrointestinal (vomiting, diarrhea) systems. Allergic symptoms range from mild (i.e., skin irritation) to severe. In severe cases, anaphylactic shock can occur and lead to life-threatening symptoms, such as loss of consciousness, difficulty breathing, coma, and even death (Mayo Clinic, 2009). An individual could have a food allergic reaction almost immediately, several minutes, or a few hours after being exposed to a food allergen (NIAID, 2008).

Fifteen million individuals are affected by food allergies in the U.S. (NIAID, 2008) and the consequences of food allergic reactions can be serious and life-threatening. Between 2004 and 2006, there were a total of 9,537 hospitalizations due to diagnosed food allergies among children 0–17 years compared to 4,135 in 2001–2003 (Branum & Lukacs, 2008). A reported number of 200,000 emergency room visits in the U.S each year is a result of food allergic reactions as well (Clark et al., 2004; NIAID, 2008). It is also estimated that 100 to 200 deaths occur yearly due to severe allergic reactions to food.

In addition to the significant medical bills, individuals with food allergies as well as their families are often emotionally, socially, and psychologically affected by this health condition (Walkner, Warren, & Gupta, 2015). They report having a restricted diet and lifestyle (e.g., their travel destination is often influenced by the level of accommodation they can receive while traveling). Meanwhile, many caregivers are frustrated with the social limitations and lack of awareness about food allergies among the general public (Springston et al., 2010). For children with food allergies, teasing, bullying, and harassment are common (Lieberman, Weiss, Furlong, Sicherer, & Sicherer, 2010).

The increased prevalence of food allergies highlights the need for laws and regulations that would protect the safety of affected individuals. The Food Allergy and Anaphylaxis Management Act (FAAMA) resulted in the "Voluntary Guidelines for Managing Food Allergies in Schools and Early Care and Education Programs," which provides support to schools that intend to implement food allergy management policies (FARE, 2016a). The Food Allergen Labeling and Consumer Protection Act (FALCPA) mandates the declaration of the eight major food allergens on food labels. Laws about food allergies that pertain to restaurants vary by states. For instance, Massachusetts,

Michigan, Rhode Island, and Virginia require restaurants to provide training to their employees and display a poster to increase awareness (FARE, 2016b).

Social Media and Food Allergy Management

Social media are defined as “a form of electronic communication through which users create online communities to share information, ideas, personal messages, and other content” (Merriam-Webster, 2017). In general, social media are divided into six categories based on use: social networks (e.g., Facebook, LinkedIn), blogging and microblogging (e.g., Twitter and Weebly), media sharing, forums and message boards, reviews and opinions, and bookmarking (Stern & Scott, 2010). It was estimated that 77% of the population in the United States (208 million) have a social media account in 2017 (Statista, 2018a), with Facebook being the most popular, followed by Instagram (Statista, 2018b).

As the use of social media in healthcare continues to expand, individuals with food allergies may leverage social media for their benefits. Several researchers have investigated the use of social media for food allergy management among children or young individuals with food allergies. Goese and Dimov (2014) found that online resources provided by Kids With Food Allergies Foundation (KWFA) influenced users’ behavior, provided valuable information and support, and played a role as a source of information and stress alleviator for childhood food allergy care. In addition, Strong et al. (2016) demonstrated that most families of food allergy children use online resources and social media to gather food allergy information. Alvarez-Perea et al. (2018) investigated the use of social media for food allergy management among pediatric patients with food allergies and their guardians in a hospital located in Madrid, Spain. However, their study concluded that the teenage patients rarely used social media as a source of food allergy information, although the majority claimed to be social media users.

Fewer studies focus on adults with food allergies and their use of social media for food allergy related purpose. Coulson and Knibb’s (2007) study among 32 individuals with food allergies showed that the benefits of food allergy online support group included greater accessibility to support, less social isolation, and better guidance on coping strategies. Another study conducted by Van Os-Medendorp et al. (2015) revealed modules with information of food allergy, diagnosis, and treatment were most visited topics on food allergy-related social media. Despite the popularity of social media, research has also

revealed some concerns about and barriers to using social media for health-related reasons (Antheunis, Tates, & Nieboer, 2013). Among these are privacy, confidentiality, and the legal risks of the information (Antheunis et al., 2013; Baptist et al., 2011; Fisher & Clayton, 2012).

Based on the literature review as stated above, more research needs to be done among adults with food allergies, as relates to what extent they have engaged in different activities on social media platforms and what their reasons for and barriers to use are. In addition, each food allergy organization has a social media page, but little is known about whether these pages are noted by individuals with food allergies. Therefore, this study sought to address the following research questions:

- 1) What are the characteristics of social media users with food allergies and their activities performed on food allergy-related social media sites?
- 2) What are participants' reasons for and barriers to the use of social media for food allergy-related purpose?
- 3) What factors differentiate social media users and non-users?

METHODS

Participant Recruitment

The study protocol was approved by the Institutional Review Board (IRB) prior to conducting the research. The target population included individuals who were more than 19 years old and had food allergies. All the participants were recruited by working with the project manager of a market research company (Cohee Research) that specializes in recruiting panelists and conducting research in the medical and healthcare fields. The market research company recruited the pool of potential respondents via different channels, such as members' referral, visits to the clinics, and targeted email lists. The researchers sent the e-mail invitations containing a link to the online survey to the market research company, which was then being forwarded to the pool of the panelists they identified. The participants were compensated directly by the market research company.

Instrument Development

To develop the online questionnaire, a series of open-ended questions were developed based on a review of the previous literature (Antheunis et al., 2013; Baptist et

al., 2011; Fisher & Clayton, 2012). These open-ended questions were pertaining to social media and food allergies (e.g., popular food–allergy related social media sites and activities performed there, as well as the reasons for and barriers to using such sites) were compiled and uploaded online. Participants were asked to provide detailed answers to each of these questions. The distribution of the online qualitative survey was suspended when the two researchers who independently examined the answers determined that the information collected had reached a point of saturation (n=56). The researchers then categorized the answers and incorporated them as the parts of the online questionnaire in stage two of the study, which was a quantitative online survey.

To ensure that only individuals with food allergies completed the online questionnaire, two screening questions were included. The questionnaire also contained five questions to solicit demographic information and nine items related to social media use behaviors. These were formulated as multiple-choice and open-ended questions. Reasons for using food–allergy related social media sites (seven items) were identified using a five-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Barriers to food–allergy related social media use (five items) were measured in the form of order ranking, with 1 being the most critical barrier and 5 being the least critical.

Data Collection

Once developed, the questionnaire was reviewed for readability and clarity by five researchers specialized in the areas of technology and/or food allergies. One question was found to be redundant and removed from the final questionnaire. Next, the market research company sent the invitation emails to their panel members.

Statistical Analysis

The data were analyzed using Statistical Package for the Social Sciences (SPSS) version 23.0. Descriptive statistics, such as the frequency, mean, percentage, and standard deviation, were used to summarize the data. The ranking question (i.e., perceived barriers to using social media for food allergy related purpose) was recoded. The top-ranked item was recoded into "5," while the lowest-ranked item was recoded into "1," and the item with the highest total score was the top barrier. Logistic regression was used to investigate the variables associated with individuals with food allergies who used (i.e., social media users) or did not use social media sites (i.e., social media non-users) for food allergy-related

purposes. An independent t-test was used to identify whether there was any difference between users and non-users in the perceived barriers to using social media. Statistical significant level was set at $p < .05$.

RESULTS

Among the 319 participants, approximately 63% (n=200) were females. The age of the participants ranged from 19 to 83 years old and majority had some college level education (n=109, 34.17%). Approximately 40% (n=123) of the participants had had food allergies for less than 10 years. Most of their allergic reactions were triggered by the oral ingestion of foods containing allergens (n=289, 90.60%). Slightly more than half of the participants (n=178, 55.80%) had experienced an allergic reaction to restaurant food in the past. Many reported being allergic to shellfish (n=88), followed by peanuts (n=74), milk (n=73), and tree nuts (n=52). Respondents also reported allergies to other food allergens, such as fruits (e.g., pineapples, mangoes, kiwis, various kinds of berries), vegetables (e.g., tomatoes, white potatoes, peas, corn, and mushrooms), herbs (e.g., cilantro and peppermint), color dyes, pork, and chicken (Table 1).

A total of 171 participants claimed that they had used social media for food allergy-related purposes and the rest (n=148) have not utilized social media for such purpose. Among the social media user group, nearly one-third of the participants (n=46) visited the food allergy social media sites a few times per week, followed by a few times per day (n=25, 14.5%) and once a day (n=25, 14.5%). These users identified some of the most popular food allergy social media sites, including Food Allergy Research and Education (FARE) (45.61%), followed by Allergic Living (36.84%) and Allergy Eats (36.36%) (Figure 1).

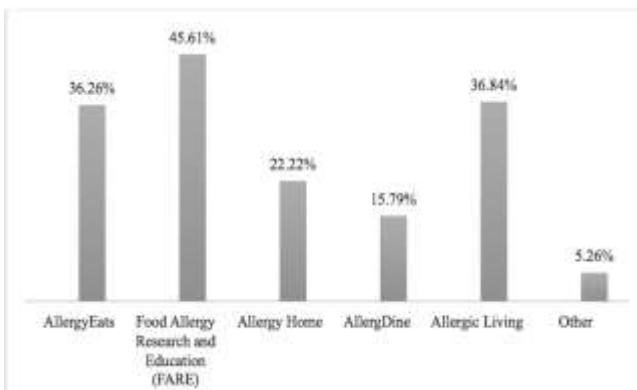


Figure 1. Percentages of Participants Using Various Food Allergy-related social media Sites. The top three most popular sites identified by the participants were Food Allergy Research and Education, AllergyEats, and Allergic Living.

Table 1
Demographic Profile of The Research Participants (N=319)

Items	Overall sample (N=319)		Social media users ^b (n=171)		Social media non- users ^c (n=148)	
	n	%	n	%	n	%
Gender						
Male	116	36.36	65	38.01	51	34.46
Female	200	62.70	106	61.99	94	63.51
Refused to reveal	3	0.94	0	0.00	3	2.03
Age						
19-24	63	19.75	47	27.49	16	10.81
25-34	80	25.08	56	32.75	24	16.22
35-44	71	22.26	36	21.05	35	23.65
45-54	48	15.05	21	12.28	27	18.24
55 and above	57	17.87	11	6.43	46	31.08
Education						
Less than high school	6	1.88	4	2.34	2	1.35
High school graduate or GED	41	12.85	25	14.62	16	10.81
some college	109	34.17	54	31.58	55	37.16
Associate's degree	40	12.54	22	12.87	18	12.16
Bachelor's degree	80	25.08	44	25.73	36	24.32
Graduate degree	43	13.48	22	12.87	21	14.19
Years of having food allergy(ies)						
0-9	125	39.18	87	50.88	38	25.68
10-19	75	23.51	42	24.56	33	22.30
20-29	43	13.48	24	14.04	19	12.84
30-39	32	10.03	13	7.60	19	12.84
40 and above	44	13.79	5	2.92	39	26.35
Types of food allergies^a						
Shellfish	88	27.59	46	26.90	38	25.68
Peanut	74	23.20	58	33.92	15	10.14
Milk	73	22.88	50	29.24	23	15.54
Tree Nuts	52	16.30	27	15.79	21	14.19
Wheat	46	14.42	29	16.96	17	11.49
Egg	39	12.23	27	15.79	12	8.11
Fish	32	10.03	22	12.87	10	6.76
Soy	27	8.46	20	11.70	7	4.73
Other	83	26.02	27	15.79	56	37.84
Having a food allergic reaction through...^a						
Inhalation	61	19.12	44	25.73	17	11.49
Skin contact	58	18.18	35	20.47	23	15.54
Oral ingestion	289	90.60	146	85.38	142	95.95
Experiencing allergic reaction at a restaurant before						
Yes	178	55.80	112	65.50	66	44.59
No	141	44.20	59	34.50	82	55.41

Note. ^a The total is more than n=319 since participants could select multiple answers.

^b Social media users is defined as those who used social media sites for food allergy related purpose; while social media non-users included those who did not use social media for food allergy related purpose.

Those social media users were also asked to provide information about their reasons for use and the activities related to food allergies performed on social media. The top three main activities were searching for updated information about food allergies (n=101, 59.06%), followed by asking questions (n=77, 45.03%) and seeking information about allergy-friendly restaurants (n=75, 43.86%) (Table 2). Participants indicated that, on average, they spent approximately 31 minutes (range = 5 to 160 minutes) on the food-allergy related social media sites each time they logged on. Their main reasons were to hear somebody else's experience (M=3.87±1.00), seek opinions and advice from others (M=3.84±0.96), and share and exchange knowledge (M=3.83±0.95) (Table 3).

Table 2
Activities Performed on Food Allergy-related Social Media Sites (N=171)

Items	N	%
Search for updated information about food allergies (treatments, diagnosis, etc.)	101	59.06
Asking questions	77	45.03
Find information about allergy-friendly restaurants	75	43.86
Search for allergen-free recipes	70	40.94
Post messages	55	32.16
Reply messages	48	28.07
Connect with individuals with the same condition	44	25.73
Offer advice or comments to other individuals with food allergies	37	21.64

Table 3
Participants' Reasons for Using Social Media for Food Allergies (N=171)

Items	Mean ± SD
Hear somebody else's experience	3.87±1.00
Seek opinions and advices from others	3.84±0.96
Share and exchange knowledge	3.83±0.95
Create a sense of community	3.64±0.96
Help someone else	3.63±0.99
Alleviate anxiety and/or stress	3.63±1.11
Get support and sympathy	3.35±1.15

Logistic regression was conducted to identify variables that differentiated individuals who used (i.e., social media users) and did not use (i.e., social media non-users) social media for food allergy related purposes. As shown in Table 4, five variables (gender, age, educational level, allergic reactions at restaurants [No=0, Yes=1], and years with food

allergies) were entered as predictors. The model had an acceptable fit, with Nagelkerke $R^2 = .25$, explaining 70.8% of the variance (58.9% for non-users of social media and 81.3% for users). Among these variables, age ($B = -.03$, $p < .01$) is a significant predictor of food allergy related social media use, indicating that those who are older were less likely to use social media for food–allergy related activities. In addition, allergic reactions at restaurants ($B = .86$, $p < .01$) and number of years with food allergies ($B = -.04$, $p < .01$) were also significant predictors of social media use for food allergy related purposes, suggesting that those who had an allergic reaction at a restaurant in the past and who are new to food allergies were more likely to use social media for food–allergy related activities.

Table 4
Logistic Regression of Variables Predicting Social Media Use Among Participants (N=319)

Variables	<i>B</i>	Wald	Exp (<i>B</i>)	95% CI ^a
Constant	1.97	5.94**	7.15	
Gender	-.32	1.18	.73	(.41, 1.29)
Age	-.03	8.45**	.97	(.95, .99)
Educational level	.04	.13	1.04	(.84, 1.30)
Allergic reaction at restaurants	.86	8.75**	2.37	(1.34, 4.19)
Years of food allergy	-.04	8.39**	.97	(.94, .99)
-2 log likelihood	282.26			
Model χ^2	6.07**			
Nagelkerke R^2	.25			

Notes. ^a CI=confidence interval ** $p < .01$ * $p < .05$

As shown in Table 5, social media users and non-users all showed similar patterns toward perceived barriers regarding use of social media for food allergy-related purposes. Their main concerns were a lack of privacy, reliability of the information, and the lack of efficiency (such as the organization of the site). An independent t-test was conducted to examine the group differences between social media users and non-users on all five barriers. Social media non-users (4.10 ± 1.15) perceived a lack of privacy as more of a barrier compared to users (3.68 ± 1.25), $t(288) = -2.93$, $p = .004$. Meanwhile, social media users (2.20 ± 1.54) also viewed the accessibility to internet as a stronger barrier compared to the social media non-users (1.50 ± 1.18), $t(288) = 4.22$, $p < .001$. There was no significant difference between social media users and non-users regarding other perceived barriers, such as concerns about the reliability of the information, inefficiency, and legal soundness.

Table 5

Participants' Barriers Regarding Food Allergy Social Media Use (N=290)

Barriers	Social media users (N=171)		Social media non-users (N=119) ^a		<i>t</i>
	Total Scores	Mean ± SD	Total Scores	Mean ± SD	
Lack of privacy	633	3.68±1.25	488	4.10±1.15	-2.93**
Unreliable of the information	633	3.68±1.24	437	3.67±0.95	.06
Inefficiency	534	3.10±1.18	379	3.18±1.03	-.60
Legal sound	416	2.42±1.22	303	2.55±1.10	-.91
Lack of access to the Internet	379	2.20±1.54	178	1.50±1.18	4.22***

Notes. ^a Only 119 out of 148 social media non-users completed this barrier question

*** $p < .001$ ** $p < .01$

DISCUSSION

There is an increased prevalence of food allergies in the U.S., and proactive measures need to be taken to avoid allergic reactions. Social media may be used as a platform for individuals with food allergies to share their concerns and exchange information. However, research related to food allergies and social media use is still limited. The current study contributes to the scarce body of research on this topic.

Many of the participants in this study were allergic to other food items (e.g., fruits and vegetables) in addition to the “Big Eight.” This finding was consistent with previous research, which indicated that people could be allergic to any food items and that allergies to corn, meat, spices, and seeds have been reported (NIAID, 2008). The increased varieties and prevalence of food allergies may prompt the exchange of information via various channels, including social media. Food allergy-related social media sites may consider extending their focus to less common food allergy triggers to better educate patients and disseminate information. Approximately 54% of the participants indicated using social media for food allergy-related purpose, as compared to one-third of parents/guardians of food allergy patients in a study conducted in Spain and 90% respondents recruited from a Food Allergy Institute email list (Strong et al., 2016). This may be due to differences in methods, demographics, disease state, and geographical locations (Alvarez-Perea et al., 2018).

In this study, FARE, Allergic Living, and AllergyEats were the most popular food allergy-related social media sites among users with food allergies. FARE attracted the highest amount of social media users (45.61%); these are very informative channels that aim to improve patients' quality of life and health by providing them with credible information about food allergy treatment and management through webinars, training programs, and conferences (FARE, 2016a). AllergyEats (2016) provides information about allergy-friendly restaurants across the U.S., rated by people with food allergies. Searching for allergy-friendly restaurants was one of the top three activities driving social media use, and therefore it is understandable that Allergy Eats was identified one of the food-allergy related social media sites. Allergic Living has a forum providing patients with a platform for sharing food allergy-related information and experience to help each other, in addition to the allergen-free recipe search function (Allergic Living, 2016), which maybe an interest of many individuals with food allergies. With a number of different food allergy-related social media sites exist on Facebook, the other less popular social media sites may develop strategies to make their presence more noticeable, so that they can continue to provide beneficial information and supports to the food allergy community for the fulfillment of their health needs.

Searching for updated information about food allergies was the top-rated activity for social media sites' use, which was consistent with Alvarez-Perea et al.'s (2018) study. Therefore, the site administrators should ensure that the information is trustworthy and updated in a timely manner. The administrators may implement a peer review system, asking health professionals to inspect critical pieces of information posted by some of the social media users before they get published. Social media were also commonly used among participants to find allergy-friendly restaurants. According to the U.S. Healthful Food Council, the average American adult buys a meal or snack from a restaurant 5.8 times a week, which makes restaurant social media sites, such as Yelp, extremely popular (United States Healthful Food Council, 2016). This also applies to patients with food allergies who dine out at restaurants for either social or personal reasons. Just as AllergyEats, more social media sites should consider providing food allergy friendly restaurant information to attract and engage food allergy patients and enhance their user experience.

Hearing somebody else's experience, seeking opinions and advice from others, and sharing and exchanging knowledge were among the main reasons for social media use, which was in accordance with previous findings relating to "sharing experience on the treatment of disease" (Antheunis et al., 2013). The participants in previous studies also discussed a variety of subjects, ranging from symptoms and side effects to doctors, clinics, and daily life advice (Eysenbach, Powell, Englesakis, Rizo, & Stern, 2004; Wright, & Bell, 2003; Zhang, 2010). Therefore, food allergy-related social media sites can consider inviting allergists to write monthly expert articles to provide food allergy patients reliable and useful information and advices regarding food allergy. The findings of this study further revealed that the participants were not in strong agreement about using social media sites to alleviate their anxiety or stress, and get support and sympathy from others. It has been shown that emotional support was best provided by individuals who have already known the patients personally rather than through an online platform (Newman, Lauterbach, Munson, Resnick, & Morris, 2011).

The results of this study indicated that the top-rated barriers by both users and non-users of food-allergy related social media include privacy, doubts about the reliability of information, and efficiency of the site, which were consistent with previous literature (Alvarez-Perea et al., 2018; Antheunis et al., 2013; Cotton & Gupta, 2004; Fisher & Clayton, 2012). Patients with food allergies were worried about their identity being revealed to insurance companies and third parties, as there is currently lack of regulations in this regard (Cline & Haynes, 2001). The efficiency of the site is also one of the barriers. As suggested by Cline and Haynes, information overload and content disorganization can both make it difficult to search for target information from social media sites (Cline & Haynes, 2001). In addition, the lack of user-friendly features on certain social media sites (e.g., being hard to navigate) may be another reason that patients with food allergies find these sites inefficient to use (Cline & Haynes, 2001). To remove the barrier relating to lack of efficiency, social media sites can be redesigned to enhance their navigation function. To remove the concern about privacy, the site administrators should identify strategies to maintain a large amount of information and be selective in what is being shared. The food allergy social media sites can also make their membership by invitation only, allow closed

group discussions, or provide users with option to select their communication partners (Newman et al., 2011).

Age, past experience with an allergic reaction in a restaurant, and number of years with food allergies were the variables that differentiated those who used social media for food allergy-related purposes (i.e., social media users) and those who did not (i.e., social media non-users), which was consistent with previous studies (Chou, Hunt, Beckjord, Moser, & Hesse, 2009). This may be because the younger generation is more technologically savvy and confident in using social media (Gursoy, Maier, & Chi, 2008). It is possible that participants who were newly diagnosed were more likely to use social media, because they lacked experience and information in managing food allergies (Abdurrahman et al., 2013). Individuals who have had an allergic reaction to food in the past may be more aware of the consequences thereof and be willing to share their experience with others (Coulson & Knibb, 2007). Hence, food allergy social media sites can consider use influencers to promote food allergy awareness and share advices targeting younger generation patients on Facebook, Twitter or Instagram as younger patients are more social media savvy. In addition, contents posted on social media sites can be customized toward newly diagnosed patients and those who had serious allergic reactions since they were the main users of these websites.

Limitations and Future Research

The study has several limitations. The study sample was recruited from a pool of panelists of a market research company, which may affect the generalizability of the data. A plotted map from the latitude and longitude data generated by the computers in which the participants were using, indicated that participants were from all cross the U.S., except Idaho, Nebraska, New Mexico and North Dakota. For future study, larger representative samples recruited through other channels are needed to examine this topic in greater depth. For future research, participants could be recruited voluntarily on-site in an allergy clinic or medical center. In addition, the study only inquired about the overall frequency and length of using food–allergy related social media sites and activities; it was not specific about each of the social media sites and activities. It might also be worthwhile to conduct additional research into what could improve these sites by soliciting participants from the sites themselves. Moreover, as three million children have food

allergies, and parents may be using social media to actively seek beneficial information for their children, future studies could include parents as part of the research to better understand their social media use behaviors as well. This study focused more on the behaviors of food allergy social media users, but not their counterparts. Future study may investigate where and how the social media non-users receive the food allergy information to ensure they have access to this information through a medium that is more convenient to them.

CONCLUSION

The use of social media can be leveraged to help individuals with different health conditions to better informed and manage their diseases (Antheunis et al., 2013). This study showed that slightly more than half of the participants used social media for food allergies, mainly to search for updated information about food allergies, post questions and seek information to identify restaurants that are allergy-friendly. Social media websites administered by non-profitable organizations, such as FARE and AllergyEats were frequently visited by the social media users with food allergies in this study. Privacy, reliability of the information and lack of efficiency were main barriers of using social media for allergies. Individuals who used social media for food allergies tended to be young, had had previous allergic reactions, and were newly diagnosed with this condition, which may signify that social media sites may tailor their page to be specific for these different groups and their needs. For examples, for younger adult audience, images and hashtags can be incorporated to capture their attention (Villanti et al., 2017). The study also implied that there might be an increased opportunity for organizations such as FARE to use their social media sites to form stronger support groups and to share credible and updated information about treatment, prevention, management, research outcomes, and restaurants.

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