

Family physicians' utility of social media: a survey comparison among family medicine residents and physicians

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Abstract:

Introduction: Social media has become ubiquitous and has brought a dramatic change in health services. Little is known about its use by family physicians and residents for personal or professional purpose. The aim of the current study was to evaluate the utility of social media among family medicine residents and consultants.

Methods: The collection of data was through the use of a five part questionnaire developed by researchers. The questionnaire was delivered to 70 physicians and 100 residents, out of which 132 questionnaires were completed, representing a 78 percent response rate.

Results: Our findings demonstrate that there was an overall high use of social media. Females used social media more for general education and professional purposes. Men, by contrast, used it more frequently for personal purposes. The participants in this study appeared to consider social media as having several useful dimensions, such as: enabling them to accomplish job tasks, improve job performance, productivity and more effective patient care when using social media.

Conclusions: To date, limited studies have compared social media use among family physicians and residents. This study may serve as an initial step for future studies explaining the pattern of use among physicians.

Keywords: social media, family physicians, learning, pattern of use, attitudes and gender differences.

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Introduction

Social media use has grown substantially in the past decade¹. It has become an integral tool for physicians to solicit medical information². Recent estimates of social media usage by doctors has risen dramatically from 41% in 2010 to 90% in 2011³. A major rationale for its widespread utilization is its ease of use⁴.

According to uses and gratifications theory, media consumption is purposive and users search for relevant sites to fulfill their needs⁵.

A systematic review on social media use in medical edu-

cation using the nine databases (MEDLINE, CINAHL, ERIC, Embase, PsycINFO, ProQuest, Cochrane Library, Web of Science, and Scopus) conducted a literature search using the following defined terms: medical education, undergraduate medical education, graduate medical education, continuing medical education, medical student education, and resident education in combination with variations of the following “All Fields” terms: social media, social network, Facebook, Web 2.0, Web log, blog, Twitter, podcast, and Webcast from the start of each database till 2011 and found that interventions using social media tools are associated with improved knowledge, attitudes, and skills⁶. Social media channels are increasingly used as an educational source, and as powerful platforms to allow physicians to use and disseminate information^{7,8}. As a universal information nidus, it provides a comprehensive database of answers. Its importance in clinical practice has been documented in the academic literature^{9,10,11,12}.

According to technology acceptance model (TAM) an individual's acceptance of technology is determined by its perceived utility (perceived usefulness, relevance, importance, timeliness, accessibility or ease of use of information or of a source.)¹³. Perception and use may differ between various age cohorts¹⁴.

Younger doctors use social media more frequently than seniors, since juniors may have more familiarity with the technology and find it easy to use¹⁵.

When facing the broad range of patients' ailments, family physicians require a timely access to knowledge from trustworthy sources to help in clinical decisions. To comprehend this phenomenon amongst family physicians and residents, an understanding of how this group currently utilizes (perceived usefulness, relevance, importance, timeliness, accessibility or ease of use of information) social media is required.

There has been limited research on family physicians' utility of this technology or their attitudes towards it^{16,17}. A literature search found limited studies comparing social media use between Family physicians and residents¹⁸.

Hence, this study aimed to:

1. Assess the pattern and extent of social media use, among residents and practicing family physicians, and association with the socio-demographic variables.

2. Identify the attitudes, the perceived usefulness, and barriers to its use.

Methodology

Study design: Cross-sectional descriptive study.

Study population: The study targeted the Family Physicians and Residents (from the joint program) at the King Saud University, Riyadh, Saudi Arabia during the year 2014-15. The residents were almost all Saudi (a homogeneous set with similar ethnicity and cultural backgrounds). However, the physicians are a mix from different ethnic and cultural backgrounds.

Data sampling method

All the physicians and residents in the joint program were invited to participate.

Survey instrument development: A self-administered questionnaire was designed by the study team based on the existing literature^{19,20}; the items were reviewed by a team of experts. Only those items which were relevant for our study, guided by research questions were included. The statements were ordered in a logical sequence so that the questionnaire would be easy to work through. The survey instrument examined four content areas: A) Basic characteristic of the study population; B) Usage of social media C) Frequency of Social Media Usage D) Attitudes toward Social Media Usage which covered areas such as Usefulness, ease of use and Barriers E) Types of social media use (Appendix 1).

The collected demographic data included age, gender, marital status, highest degree and the type of practice. The survey instrument was piloted with ten residents and practicing physicians.

The reliability of the survey items was calculated for all questionnaire items. The alpha coefficient for our variables was 0.954.

Ethics approval:

The current study was approved by the Institutional Review Board of the College of Medicine; King Saud University (reference # E-14-1284). Participation was voluntary. Informed written consent was obtained from the participants and anonymity was assured.

Data collection

The survey questionnaire was distributed and collected as a hard copy (manually) from all the participants. The first page of the questionnaire explained the aims of the study and assured of anonymity and confidentiality. Data collection lasted around two months. No incentives were offered for survey completion.

Data analysis plan:

The Statistical Package for the Social Sciences (SPSS) version 21 was used for data analysis. Descriptive statistics such as frequency, percentages, mean, and standard deviation were calculated. Comparisons were made between

different categorical variables using Chi-square and other parametric tests as appropriate. A p value < 0.05 was considered significant.

Results

The survey was delivered to 70 physicians and 100 residents. The total number who filled out the questionnaire was 132. The overall response rate was 78%. Out of 100 residents, 92 responded 92.0% and out of 40 physicians, 57% responded.

Men outnumbered women with a ratio of (7/3). The mean age of the participants was 34.63 +9.50 years. Most of the physicians were younger than 40 years (77.0%) and were married (71.2%). (Table 1).

Table 1: Socio demographic characteristics of Family Physicians and residents

Demographics Characteristics	
Participant Characteristics	No (%) of respondents (n=132)
Age	
Mean± SD	34.63±9.50
Age (years)	
20-30	64(48.4)
31-40	37(28.0)
41-50	16(12.1)
≥ 50	15(11.3)
Gender	
Male	92 (69.7)
Female	40 (30.3)
Marital Status	
Married	94 (71.2)
Single	37 (28.8)
Type of Practice	
Residents	92 (70)
Physicians	40 (30.0)
Highest Degree	
MBBS	79 (59.8)
Post graduate Qualification	53(40.1)

Nearly all participants reported having social media accounts and reported checking them at least once a day (95.4%); half of the participants (51%) checked them four times or more daily (51%). The median time spent

on social media sites during a typical working day was 120 minutes with an interquartile range of 60-180 minutes. Most of the participants (80%) were happy with their social media usage (Table 2).

Table 2: Gender and professional status differences of social media use by family physicians

Item description	Total N (%) N=132	Male n=92 (%)	Female n=40 (%)	P value	Resident n=92, %	Physician n=40, %	P value
Happy with their social media use?	105 (79.5)	78.3	83	0.579	77.2	85	0.306
Using social media for personal purposes n (%)	100 (75.7)	83.5	60.0	0.004	78.0	72.5	0.49
Using social media for CME purpose n (%)	24 (18.1)	17.6	20.0	0.458	15.4	25.0	0.19
Using social media for general education	60 (45.4)	40.0	60.0	0.024	46.2	45.0	0.90
Using social media for professional purposes n (%)	34 (25.7)	18.0	45.0	0.001	21.0	37.5	0.04

Females showed statistically significant higher frequency of Google+ use for general use and for learning ($p=0.008$, 0.000) compared to their male counterparts (Table 4). However, men, reported a higher frequency of general purposes use of YouTube (73.9% versus 55%; $p=0.032$), and Twitter (57.6% versus 35.0%; $p=0.017$).

Most of the study population used social media for personal purposes (76.0%), general education (46.0%), and professional reasons (26.0%) and a smaller proportion for continuing medical education (18.2%) (Table 2). A significantly higher proportion of male participants (83.5%) utilized social media for personal use when compared to

female physicians (60%) ($p=0.004$). On the other hand, female physicians had a statistically significant higher frequency for professional purposes (patient care) and for general education ($p=0.001$, $p=0.02$). Overall, physicians used social media significantly more (38%) than residents (21.0%) for professional purposes ($P=0.04$) (Table 2).

The tools most frequently accessed were YouTube (68.2%), Facebook (45.5%), and Wikipedia (37.9%). LinkedIn (14.4%) was the least favorite social media application. A statistically significant higher proportion of physicians used Facebook in general as compared with residents ($p=0.027$). Regarding other sites, no significant differences were observed. (Table 3).

Table 3: Association of gender and professional status with social media usage among family physicians

		Male n=92(%)	Female n=40(%)	P value	Resident n=92(%)	Physician n=40(%)	P value
1	For general purposes						
	YouTube	68(73.9)	22(55.0)	0.032	64(69.6)	26(65.0)	0.605
	Facebook	44(47.8)	16(40.0)	0.407	36(39.1)	24(60.0)	0.027
	twitter	53(57.6)	14(35.0)	0.017	51(55.4)	16(40.0)	0.103
	LinkedIn	12(13.2)	7(17.5)	0.519	11(12.1)	8(20.0)	0.236
	Wikipedia	38(41.3)	12(30.0)	0.219	36(39.1)	14(35.0)	0.653
	Google+	26(28.3)	21(52.5)	0.008	34(37.0)	13(32.5)	0.623
	Instagram	26(28.3)	15(37.5)	0.292	32(34.8)	9(22.5)	0.161
2	For learning purposes						
	YouTube	60(65.2)	24(60.0)	0.567	62(67.4)	22(55.0)	0.174
	Facebook	23(25.0)	10(25.0)	1.000	21(22.8)	12(30.0)	0.382
	twitter	27(29.3)	9(22.5)	0.417	22(23.9)	14(35.0)	0.189
	LinkedIn	4(4.3)	5(12.5)	0.088	5(5.4)	4(10.0)	0.339
	Wikipedia	46(50.0)	16(40.0)	0.290	45(48.9)	17(42.8)	0.497
	Google+	20(21.7)	31(77.5)	0.000	36(39.1)	15(37.5)	0.860
	Instagram	7(7.6)	7(17.5)	0.090	11(12.0)	3(7.5)	0.0445
3	Do you think you are addicted to social media (yes)	29(32.0)	12(30.0)	0.832	33(35.0)	8(20.5)	0.083

In comparing the significance of the internet to other sources of accessing clinical information, participants favored the internet (78%), followed by books (65.2%), and, finally colleagues (39%). Less preferred sources were conferences (37%), scientific journals (32%), and pharmaceutical representatives (10%).

Overall, on a daily basis, 33% of respondents used social media to explore medical information and 23.4% to

contribute information to others. Once a week or more, the corresponding figures were 39% and 33%.

Female participants admitted that they would contribute information to others ($p=0.029$), seek specific information ($p=0.005$), and explore medical knowledge ($p=0.041$) as compared to their male counterparts (Table 4). Residents were more likely to be actively seeking information as compared to physicians, specifically about a medical problem or situation. ($p=0.055$).

Table 4: Association of gender and professional status with the frequency of social media usage to fulfill information needs of family physicians

		Male n=92 (%)	Female n=40 (%)	P value	Resident n=62 (%)	Physician n=22 (%)	P value
1	Frequency of social media use to contribute knowledge to others						
	Never	19(20.9)	8(20.0)	0.029	20(21.7)	7(17.9)	0.355
	Monthly	25(27.5)	5(12.5)		17(18.5)	13(33.3)	
	Once a week	16(17.6)	6(15.0)		15(16.3)	7(17.9)	
	2-4 times/week	15(16.5)	6(15.0)		16(17.4)	5(12.8)	
	Daily	10(11.0)	13(32.5)		16(17.39)	7(17.5)	
	Many times a day	6(6.6)	2(5.0)		8(8.7)	0(0.0)	
2	Frequency of social media use to seek specific information about a medical problem						
	Never	18(19.8)	1(2.5)	0.005	12(13.0)	7(17.9)	0.503
	Monthly	15(16.5)	3(7.5)		10(10.9)	8(20.5)	
	Once a week	16(17.6)	8(20.0)		16(17.4)	8(20.5)	
	2-4 times/week	19(20.9)	8(20.0)		19(20.7)	8(20.5)	
	Daily	13(14.1)	15(37.5)		22(23.9)	6(15.0)	
	Many times a day	10(11.0)	5(12.5)		13(14.1)	2(5.1)	
3	Frequency of social media use to explore medical knowledge for new insights						
	Never	21(22.8)	2(5.1)	0.041	16(17.4)	7(17.9)	0.055
	Monthly	14(15.2)	4(10.3)		11(12.0)	7(17.9)	
	Once a week	22(23.9)	9(23.1)		23(25.0)	8(20.5)	
	2-4 times/week	17(18.5)	8(20.5)		14(15.2)	11(28.2)	
	Daily	9(9.7)	11(27.5)		15(16.30)	5(12.5)	
	Many times a day	9(9.8)	5(12.8)		13(14.1)	1(2.6)	

Regarding the participants attitude towards social media use; approximately one-third of respondents considered them an essential use of time (65.9%), beneficial (77.3%), very engaging (72.0%) and a great way to get high-quality current information (76.3%) (Figure 1).

Approximately, more than 80% of physicians felt it was easy to use social media, and 65% believed that social media increased their job performance and improved the quality of patients' care (62%). As expected, barriers identified were time constraint (50%) and skills for use of social media (66%).

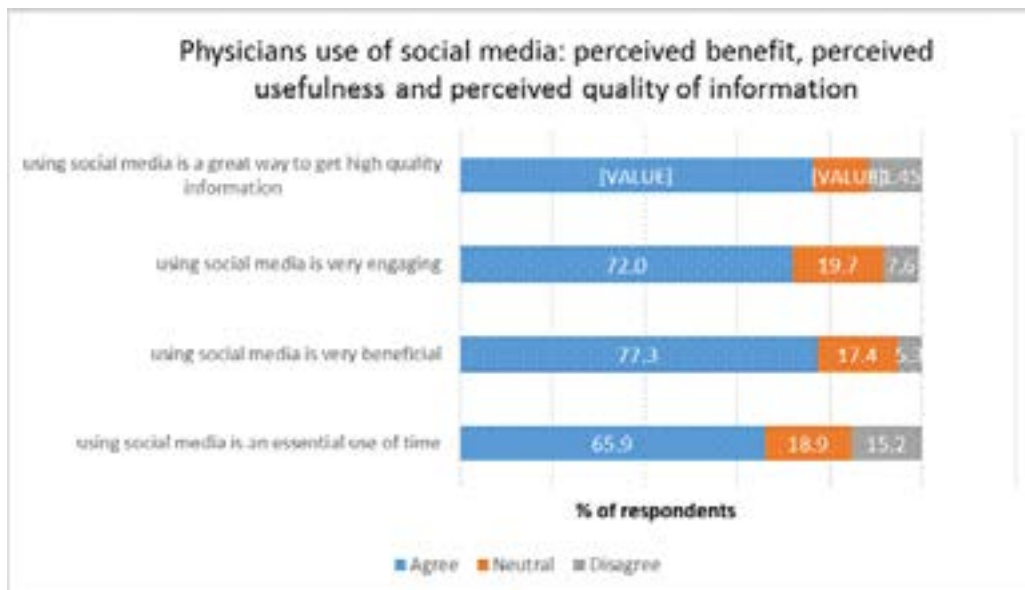


Figure 1: Physicians perception of the benefit, usefulness and quality of information of social media:

Discussion

Our findings demonstrate that there was an overall high use of social media among family medicine residents and practitioners of both sexes. Generally, females used social media more for general education and professional purposes. Men, by contrast, used it more frequently for personal purposes.

The most common types of social media used by participants were YouTube, Facebook and Wikipedia. Physicians considered social media to be beneficial and preferred social media over traditional approaches such as conferences and scientific journals for learning. They also thought it a great way to get high quality information, found it to be very engaging, and an effective use of time. Lately, the use of social media by health care professionals has increased significantly²¹. The higher use of social media in our study is consistent with previous literature that have shown that more than 90% of the physicians are social network users¹⁸. The use of social networking sites among youth and adults alike has risen significantly, however there are difference in trends of use amongst various age cohorts. We found a “digital divide” between physicians and residents in terms of using the social media. Residents were more likely to use social media than the physicians, although it was not significant. This is in keeping with other studies reporting young age as a pre-

dictor of social network users^{6,22,23,24}. The rate at which social media use is diffusing among the older generation is escalating, and the digital immigrants 16 are striving to close the gap by adopting social media habits similar to digital natives; still, it lags behind the figures of the young users²⁵. A plausible explanation could be that for young doctors, social media has been an integral part of their life and they feel perfectly comfortable with it. In contrast, older physicians got a taste of this new technology at a later stage in their lives. As a result, comfort level and fluency may vary. Moreover, another possible explanation for our results, which is substantiated by evidence^{24,26} is that physicians, being more medically experienced, might feel less need for professional use compared to younger residents.

Historically, women have been more avid users of social media than men, but these differences are no longer statistically significant²⁷. This is in line with our study finding. A variety of covariates are found to be associated with its use, but little systematic research has actually explored the reasons for these differences. An explanation for these differences seems like an important question, yet to be answered.

In general, adults as a whole remain less likely than the younger generation to use the technology²⁸, and the number further goes down with increasing age²⁹.

Family Physicians used social media more for personal, than for professional or educational purposes. This result is in line with the findings of other studies among health care professionals^{19,30}. A study among US physicians reported that 90% of physicians used social media for personal purposes and 65% for professional purposes²².

However, for exploration of medical knowledge, physicians reported higher frequency of use as compared to residents. One of the reasons could be that the seniors emphasize the informational and educational aspects of the internet, while their younger counterparts use it for entertainment. As a result, its use can vary greatly among a cohort of doctors within the same institute. The digital immigrants are however trying to adopt social media habits similar to digital natives²². These results are exploratory and need further validation with larger scale studies using other physicians as well.

Men and women have varying degrees of activity across different social media sites. Not much is known about the factors that might influence the actual use of social media for personal purposes. Our findings show the male gender to be positively associated with personal social media use. These are comparable to those shown in other studies^{24,31}. A possible reason could be a higher use of internet by males in this region³². This issue deserves attention in future studies, since it might be associated with cultural differences.

Our study provides insight into family physicians' relationship with social media by investigating which source of information physicians and residents use for general and learning purposes. YouTube in this study was ranked the number one site for general and learning purposes. This finding contrasts a previous study on clinician use of social media that reported the use of Facebook³³ and Wikipedia as high²¹. However, in a longitudinal study from 2009 to 2011, the use of social media increased tremendously, especially in the use of YouTube (from 2% to 20%)³⁴.

A plausible explanation could be that YouTube videos are search engine friendly and are easily accessible from both desktop and mobile devices, and healthcare professionals might come across them while doing Web searches. We suggest that future studies on this topic should include usage metrics, such as the amount and type of content

consumed, and the number of connections made for better understanding of web usage.

A higher proportion of respondents in our study as well as in other studies²² were interested in updates through medically related social media sites

The participants in this study appeared to consider social media as having several useful dimensions such as: enabling them to accomplish job tasks, improve job performance, productivity, and more effective patient care. Their attitudes towards its use were also positive, and the majority thought social media to be engaging, beneficial, and an effective use of time. Nonetheless, participants also identified several barriers, which were similar to previous research²² findings. The barriers hindering the use of social media were a busy schedule, and investment of time and skill. A highly possible explanation could be the time investment, as most doctors are usually pressed for time, trying to balance work and life³⁵.

Limitations:

Several limitations of the current study must be noted. First, the current study was conducted on a relatively small number of residents and physicians who were from the same region, which may not be a representative group of full network of physicians on social media. This reduces the generalizability of the findings.

Second, the questionnaire was pilot tested, but not validated. Additionally, social media usage and barriers were measured using only few items, which limits our ability to generalize to a wide variety of issues. To address this, future in depth studies should attempt to explore the issue by using more comprehensive measures. Thirdly, social media usage and attitudes are changing at a fast pace, and they might have changed over this period. Finally, the results of this study need to be supplemented with qualitative study to better understand this phenomenon.

The gender differences found in the use of social media for professional purposes in this study may have impact on how the different genders approach patient care. Although physician sex does not determine patient outcomes, it can serve as a sign of difference in practice. However, these attributes may change as the technologies evolve and will require further observation over time.

Despite limitations, the study may serve as an initial step for future studies explaining the pattern of use in different cultures.

Conclusion

This study demonstrates that social media was very popular among physicians and residents. YouTube emerged as the most frequently used application. Females and physicians used social media more for professional purposes than did residents. Male physicians used social media less for educational and learning purposes, and instead used it for personal reasons and leisure. Majority found it to be an effective use of time, and a beneficial and engaging way to get high-quality information. Further research is required to evaluate this difference to verify whether it is culture or career specific.

Declarations

Ethics approval and consent to participate:

Informed written consent was obtained from all participants prior to data collection. All the selected respondents were given assurance of confidentiality that the information gathered will be used exclusively for research purposes. The current study was approved by the Institutional Review Board of the College of Medicine; King Saud University (reference no E-14-1284).

Consent for publication: Not applicable.

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Availability of data and materials: The datasets used during the current study are available from the corresponding author on request.

Competing interests: The authors declare that they have no competing interests.

Authors' contributions

IK contributed to the study conception and design. FI contributed to the initial draft and revision of the subsequent drafts of the manuscript and analyses of results. EA, GP AA, MQ, AH, MN were involved in revision of the subsequent drafts of the manuscript. NM did the statistical analysis. CV contributed to critical revision of manuscript. All authors read and approved the final version of the manuscript.

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