

## Adoption Twitter for Health Literacy Among Saudi Doctors

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### ABSTRACT

**Background:** Health literacy by using social media is an accessible tool, Twitter on the top and Saudi population one of the top-ranked twitter user.

**Objective:** To explore the possibility of adopting Twitter as a mean to improve health literacy among Saudi doctors.

**Design:** Exploratory cross sectional.

**Settings:** Active twitter account of Saudi consultants for health literacy.

**Method:** We randomly collected 128 Saudi consultants' accounts. By SPSS, we analyzed their accounts through multiple factors including their presence on Twitter, influence, and activities. Influence was measured by the Moz Social Authority Score and number of followers, while the activities were evaluated by number of tweets. We compared these measurements with gender and specialties. We excluded non-active accounts and accounts less than 500 followers.

**Main outcome measures:** presence, influence, and activities of physician twitters' accounts.

**Sample Size:** 128 Saudi consultants' accounts.

**Results:** Followers are interacting with both gender and almost all specialty. However, we found male consultants are more popular and effective at Twitter. The *P*-value for the mean of the followers is .434. and the *P*-value for mean of the MozU is .968. However, the Saudi females' consultants more active and the *P*-value for the mean of number of tweets is .409. Medical consultants are more popular and effective. The *P*-value for the mean of the followers is .859 and the *P*-value for mean of the MozU is .057. However, surgical consultants are more active with *P*-value for mean number of tweets is .808.

**Conclusion:** Saudi consultants notably using Twitter for health literacy. We abled to point toward the popular and active accounts. Moz score showed the influence as well. We conclude to recommend formal utilization of social media with establishing appropriate regulatory rules.

**Keywords:** Saudi physician, Health literacy, Twitter

### INTRODUCTION

Health literacy (HL) is a new term referring to the relationship between outcomes and health education and communication activities. The definition of HL is "The cognitive and social skills which determine the motivation and ability of individuals to gain access to understand and use information in ways which promote and maintain good health"<sup>1</sup>.

The transmission of health information to a population is a crucial and fundamental part of health literacy. In the era of new media, there are

many social media tools that can be used to achieve health literacy. Chief among these tools is *Twitter*, which is growing globally, and has become part of daily life in Saudi Arabia. Statistics show that in 2015 around 11 million Saudis had a Twitter account, making Saudi Arabia one of the top-ranked countries in terms of registered users<sup>2</sup>. Therefore, Twitter is a promising communication tool for the field of public health, particularly in terms of health literacy (HL). Many studies have showed that most doctors use social media, including Twitter, in professional contexts. Doctors, of course, play an important role in health literacy

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because they are trusted and knowledgeable. Social media facilitates better communication and studies have showed that it is a cost-effective health education tool through which doctors can communicate easily with their patients and the public. While the presence of doctors on Twitter is notable, it has not been well explored. In this study we aimed to explore the possibility of adopting Twitter as a means to improve health literacy among Saudi doctors.

**METHODOLOGY**

This is an exploratory cross-sectional study among random samples of Saudi consultants. By SPSS, we analyzed their accounts through multiple factors including their presence on Twitter, influence and activities. Influence was measured by the Moz Social Authority score and number of followers, while the activities for each consultant were evaluated by number of tweets. We compared these measurements with gender and specialties. We excluded non-active accounts and any accounts with fewer than 500 followers.

**RESULTS AND DISCUSSION**

One study showed that during the past 15 years the percentage of adult users of the Internet has increased from 50% to 84% worldwide<sup>3</sup>. The adoption of new media is one of the fastest-growing worldwide, which makes it one of the most beneficial sites for improving health literacy. Notably, Twitter is becoming one of the most popular websites among the Saudi population, where 2015 statistics showed that 60% of Internet users have Twitter accounts<sup>2</sup>. We randomly collected 128 Saudi consultants' accounts. We classified the data into gender and specialty (Table 1 and 2).

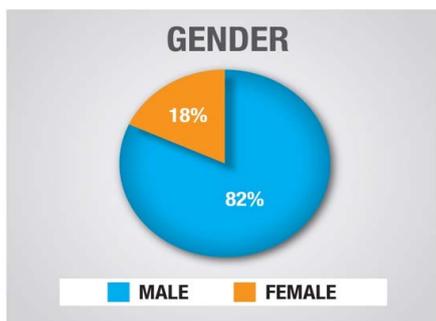
**Table 1:** Activity and popularity of doctors by sex

Gender	Male	Female	Total	P-Value
No of consultants	105 (82%)	23 (18%)	128	-
MozU *	53.5	53.3	53.5	.968
Followers*	26993.3	12855.7	24453	.434
Tweets*	7539	9718	7931	.409

**Table 2:** Activity and popularity of doctors by specialty

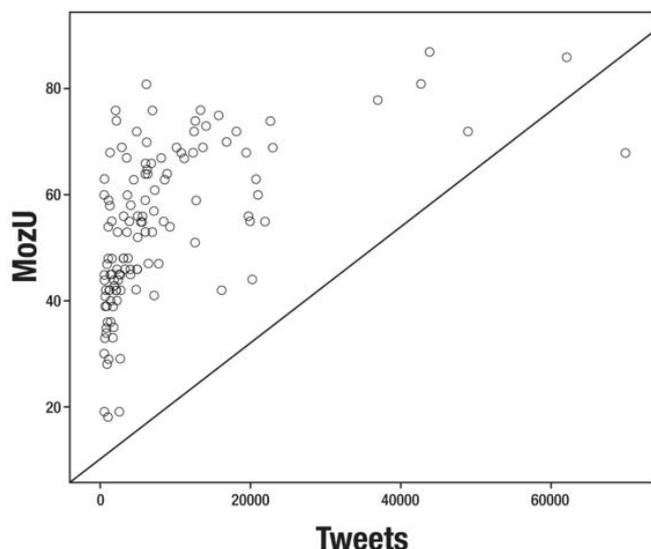
Specialties	Medicine	Surgery	Total	P-Value
No of Saudi consultants	83 (65%)	45 (35%)	128	
MozU *	55.3	50.3	53.5	0.057
Followers*	25358.0	22783.6	24453	0.859
Tweets*	7749.3	8264.7	7931	0.808

The male Saudi consultants represent 82% (105 participants) of the sample population; the female Saudi consultants represent 18% (23 participants) of the sample population (Figure 1)



**Figure 1:** Distribution of doctors by genders

This result was expected. According to the Saudi Ministry of Health (MOH) annual report 2015, the total number of doctors in Saudi Arabia (including dentists) is 86,756. The number of Saudi doctors is 22,534 (26%). Male doctors represent 14,786 (65.6%) and female doctors represent 7,744 (35.4%)<sup>2</sup>. Moreover, male Saudi consultants are more popular than female Saudi consultants, the P-value is .434 and the mean number of followers for male Saudi consultants represents 26,993.3 followers. The mean number of followers for female Saudi consultants represents 12,855.7 followers. Furthermore, we assessed the effectiveness of the Saudi consultants using MozU. We found that the mean of MozU for male Saudi consultants is 53.5, the mean of MozU for female Saudi consultants is 53.3 and the P-value is .968. Lastly and surprisingly, we assessed the activity of the Saudi consultants using the mean number of tweets. We found that females are more active, with a mean number of tweets of 9,717; the mean number of tweets for male Saudi consultants is only 7,539 and the P-value is .434. Moreover, we found that there is a significant relationship at the level of 0.01 between the MozU and the number of tweets equal to 0.557. Figure 2 Supporting our study, Nielson's report showed that 22% of females are active on Twitter, compared to only 15% of males<sup>4</sup>.



**Figure 2:** Relationship between the MozU and the number of tweets

The other interesting point that followers are in high demand for almost all specialties, Twitter has been becoming a growing platform for interactions between health care providers and patients<sup>5</sup>. We analyzed the data according to specialty. We found that 83 participants (65%) specialized in medicine, with 71 males and 12 females of the sample population. There were 45 participants (35%) who specialized in surgical subspecialties, with 34 males and 11 females of the sample population (Figure 3).



**Figure 3:** Distribution of doctors by specialties

In addition, the *P*-value of the followers is .859 and the mean number of followers for the Saudi consultants who specialized in medicine is 25358 followers. The mean number of followers for the Saudi consultants who specialized in surgery is 22783.6 followers.

Furthermore, we assessed the effectiveness of the Saudi consultants using MozU. We found a *P*-value of .057, a mean of 55.3 on MozU for Saudi consultants who specialized in medicine and a mean of 50.11 on MozU for Saudi consultants who specialized in surgery. This suggests that the consultants specializing in medicine are more present and popular on Twitter than surgeons. Lastly, we assessed the activity of the Saudi consultants using the mean number of tweets. We found that surgeons are more active (mean number of tweets of 8264.7), while the mean number of tweets for the Saudi consultants who specialized in medicine is only 7749.34; the *P*-value is .808.

We found a good data that tell us the current practice of some Saudi doctors in health literacy by using Twitter. male or female, medical specialties or surgical with using Moz score which told us about the influence of tweets of Saudi doctors on population regarding the health literacy. Gender wise, we found males were the most popular but females were more active. On the other hand, we found medical doctors were more present and popular, while surgeons were more active.

To conclude, although our physicians doing very nice job individually, and their presence clearly noted and measured. we recommend further institutional (formal) utilization of social media for education and this study showed the individual effort therefore, institutes should espouse and takeover, we showed how to measure and assess such activities and how to evaluate educators with even ability to distinguish the most influent and active physicians.

In conjunction with this recommendation, we have to stress on importance of establishing ethical and regulatory guidelines and rules for usage of social media in medical field, and more studies are needed in this aspect.

Lastly, further data about social media in medical themes will inspire further implementation of advanced Interactive social media (applications) which considered an advanced step beyond the education and literacy that may have variety of solutions that may lessen the burden on the health care systems and patients.

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**Competing Interest:** None

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